Contemporary South Asian Studies

Sumana Bandyopadhyay
André Torre
Paulo Casaca
Tomaz Dentinho *Editors*

Regional Cooperation in South Asia

Socio-economic, Spatial, Ecological and Institutional Aspects

Springer

Contemporary South Asian Studies

Series editor
Paulo Casaca
Brussels, Belgium

This book series features scientific and scholarly studies focusing on politics, economics and changing societies in South Asia. Utilizing recent theoretical and empirical advances, this series aims at providing a critical and in-depth analysis of contemporary affairs and future developments and challenges in the region. Relevant topics include, but are not limited to, democratization processes, human rights concerns, security issues, terrorism, EU-South Asia relations, regional and economic cooperation and questions related to the use of natural resources.

Contemporary South Asian Studies (CSAS) welcomes monographs and edited volumes from a variety of disciplines and approaches, such as political and social sciences, economics and cultural studies, which are accessible to both academics and interested general readers. The series is published on behalf of the South Asian Democratic Forum (Brussels), which is one of the most well-known think tanks in Europe focusing on South Asia.

More information about this series at http://www.springer.com/series/15344

Sumana Bandyopadhyay • André Torre •
Paulo Casaca • Tomaz Dentinho
Editors

Regional Cooperation in South Asia

Socio-economic, Spatial, Ecological and Institutional Aspects

Springer

Editors
Sumana Bandyopadhyay
University of Calcutta
Kolkata, India

Paulo Casaca
South Asia Democratic Forum
Brussels, Belgium

André Torre
INRA/AgroParisTech
Paris Cedex 05, France

Tomaz Dentinho
University of Azores
Angra do Heroísmo, Portugal

ISSN 2509-4173 ISSN 2509-4181 (electronic)
Contemporary South Asian Studies
ISBN 978-3-319-56746-4 ISBN 978-3-319-56747-1 (eBook)
DOI 10.1007/978-3-319-56747-1

Library of Congress Control Number: 2017944784

© Springer International Publishing AG 2017
This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.
The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.
The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Contents

Abbreviations

ADB	Asian Development Bank
AFACT	Asia Pacific Council for Facilitation of Procedures and Practices for Administration, Commerce and Transport
AIIB	Asian Infrastructure Investment Bank
ASYCUDA	Automated System for Customs Data
BJP	Bharatiya Janata Party
CBIP	Central Board of Irrigation and Power
CMSR	21st Century Maritime Silk Road
CPEC	China-Pakistan Economic Corridor
CWC	Central Water Commission
DBSA	Development Bank of South Africa
DEPB	Duty Entitlement Pass Book
EC	Economic Corridor
EDI	Electronic Data Interchange
FOCEM	Fund for Structural Convergence of MERCOSUR
FTA	Free Trade Agreement
GDP	Gross domestic product
GEMS	Generators of Economic Momentum
GMS	Greater Mekong Subregion
GWDR	Godavari Water Disputes Tribunal
HRC	Human Rights Council
IDSMT	Integrated Development of Small and Medium Towns
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
MoEF	Ministry of Environment & Forests
MoTA	Ministry of Tribal Affairs
MoWR	Ministry of Water Resources, River Development & Ganga Rejuvenation
MPI	Multidimensional Poverty Index
NCU	National Commission on Urbanization
NEG	New economic geography
NPP	National Perspective Plan
NRLP	National River Linking Project
NWDA	National Water Development Agency
OBOR	One Belt, One Road

PPP	Public-private partnership
RTA	Revised Trade Arrangements
RTA'	Regional Trade Agreements
SAARC	South Asian Association for Regional Cooperation
SDGs	Sustainable Development Goals
SIPCOT	The State Industries Promotion Corporation of Tamil Nadu Limited
SNA	Social network analysis
SREB	Silk Road Economic Belt
TNALIPA	The Tamil Nadu Acquisition of Land for Industrial Purposes Act
UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns
ULBs	Urban local bodies
VAO	Village Administrative Officer

Contributors

Anisah Lee Abdullah Universiti Sains Malaysia, Gelugor, Penang, Malaysia

Rajat Acharyya Jadavpur University, Kolkata, India

Sumana Bandyopadhyay University of Calcutta, Kolkata, India

Kanika Basu Human Settlement Management Institute, Housing & Urban Development Corporation Ltd., New Delhi, India

Paulo Casaca South Asia Democratic Forum – SADF, Brussels, Belgium

Anna-Luise Chané Leuven Centre for Global Governance Studies, University of Leuven, Leuven, Belgium

Ram Upendra Das Research and Information System for Developing Countries (RIS), New Delhi, India

Roxane de Flore Lab'Urba, Université de Paris-Est, Marne-la-Vallée, Champs-sur-Marne, France

Tomaz Dentinho University of Azores, Angra do Heroísmo, Azores, Portugal

Klara Feldes Department of Asian and African Studies, Faculty of Humanities and Social Sciences, Humboldt-Universität zu Berlin, Berlin, Germany

Idesbald Goddeeris University of Leuven, Leuven, Belgium

Md. Jakariya Department of Environmental Science and Management, North South University, Dhaka, Bangladesh

Md. Humayun Kabir Department of Geography and Environment, University of Dhaka, Dhaka, Bangladesh

Habibullah Magsi Agricultural Economics at Sindh Agriculture University, Tandojam, Pakistan

Syeda Shahida Maknun Department of Geography and Environment, University of Dhaka, Dhaka, Bangladesh

Chinmoyee Mallik Department of Geography, Mrinalini Datta Mahavidyapith, Kolkata, India

Vijay Pandey Delhi School of Economics, University of Delhi, New Delhi, India

Nila Pandian Human Settlement Management Institute, Housing & Urban Development Corporation Ltd., New Delhi, India

Kalyan Rudra Pollution Control Board, Government of West Bengal, Kolkata, India

Muazzam Sabir UMR SAD-APT INRA AgroParisTech, University Paris Saclay, Paris, France

M. Mizanur Rahman Sarker Department of Agricultural Statistics, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh

Arjun Sharma Leuven Centre for Global Governance Studies, University of Leuven, Leuven, Belgium

M. Javed Sheikh Department of Rural Sociology, Sindh Agriculture University, Tandojam, Pakistan

Joaquim Ramos Silva Instituto Superior de Economia e Gestão, Universidade de Lisboa, Lisboa, Portugal

André Torre INRA – Agroparistech, Université Paris Saclay, Paris, France

Siegfried O. Wolf South Asia Democratic Forum (SADF), Brussels, Belgium

Wolfgang-Peter Zingel South Asia Institute (SAI) of Heidelberg University, Heidelberg, Germany

Introduction: Interdisciplinary Approach to Regional Cooperation in South Asia

Sumana Bandyopadhyay, André Torre, Paulo Casaca, and Tomaz Dentinho

South Asia is one of the more important and central spaces of the twenty-first century globalization. Therefore, the interactions between people, institutions and countries in this part of the world have a fundamental effect not only for peace, development and sustainability in the region but also for the wealth, harmony and welfare around the world.

On-going globalization creates opportunities and threats for all the world but those challenges are even more fundamental for South Asia where globalization is rooted. But, notwithstanding the growing global proximity between peoples and places all over the world there still remain major communication barriers, knowledge gaps and missing understanding of each other which limit trust and cooperation between various groups of people.

The aim of the book is to contribute to reduce these communication barriers, knowledge gaps and missing understandings by highlighting the major issues that emerge for regional cooperation in South Asia, in different ways. The publication is a participatory look into various themes and topics: the socio-economic issues, infrastructure networks and adapted spaces; environment and ecological problems and institutional themes.

S. Bandyopadhyay
University of Calcutta, Kolkata, India
e-mail: sumona_bm@yahoo.com

A. Torre
INRA – Agroparistech, Université Paris Saclay, Paris, France
e-mail: torre@agroparistech.fr

P. Casaca
South Asia Democratic Forum, Brussels, Belgium
e-mail: paulo@sadf.eu

T. Dentinho (✉)
University of Azores, Angra do Heroísmo, Azores, Portugal
e-mail: tomas.lc.dentinho@uac.pt

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_1

For each of these broad areas, the book focuses and analyses the major facts that occur in the past and present and highlights the consequences that these facts could have on regional cooperation and development in South Asia and the challenges they generate for its societies, scientific knowledge and public entities policies.

The book identifies, justifies and clarifies the major challenges and opportunities for regional cooperation and development in South Asia. In light of the ongoing globalization process, the contributors investigate how socio-economic developments are changing the spatial organization of production and the profile of cities and landscapes, stimulating the creation of routes and channels, however, putting increasing pressures on natural and environmental resources.

The book is divided into four parts: The first part analyses the increasing intensity of human interaction through trade, investment and migration; the second focuses on channels and adapted spaces; the third one addresses sustainability and natural resources, while the fourth highlights institutional issues. This introductory chapter goes along the different parts and chapters of the book and proposes some integrated reading guidelines for the various texts, identifying challenges for further research.

1 Human Interaction in Space

The First Part of the book focuses on human interactions in space. In the contribution written by Rajat Acharyya the author looks into the international trade and wage gaps using a general equilibrium framework. The contribution written by Tomaz Dentinho and Joaquim Ramos Silva, analyses the causes and the effects of foreign direct investment in South Asia. Finally, the contribution authored by Mizanur Sarker proposes an analysis of migration flows in South Asia.

Rajat Acharyya discusses different theories to explain the impact of trade liberalization in the widening of the wage-gap in developed and developing countries, providing some examples regarding the relation between India and the World. It is a very enlightened and pedagogic exercise that makes a robust review of the literature and suggests alternative theoretical frameworks to explain the changes in the wage-gap. The argument is that, beyond the influence of production factor abundance, other elements such as production specificities, initial level of protection and segmented labour markets may cause the widening of wage-gaps, as has been observed in develop and developing countries.

Tomaz Dentinho and Joaquim Ramos Silva also examines globalisation, while assuming South Asia to be in the core of the process. The authors argue that the institutional barriers that constraint the flows of goods, investment and knowledge will strongly influence the structure of globalisation. Using an econometric model to identify the factors that shape the flows of investment to and from the region they show that institutional barriers are the main constraints that influences FDI, cooperation and development in the region.

The First Part finishes with the contribution of Mizanur Sarker that analyses the causes and categories of migration in South Asia and looks into the major

outcomes—such as the allocation of remittances and the income multiplier effects they entail—and side effects concerning gender violation and children trafficking. The author concludes that in South Asia remittances have been gradually becoming the main engine of GDP growth.

2 Role of Infrastructural Networks on Cooperation and Development

The Second Part of the book explores the role of infrastructure networks on cooperation and development. The text written by Ram Upendra Das, looks into the South Asia Connectivity. The contribution developed by Siegfried Wolf, raises awareness on the China-Pakistan Economic Corridor. Vijay Pandey looks into the urbanization and infrastructural needs in South Asia. And, finishing the part of adapted spaces, Chinmoyee Mallik, scrutinizes the issue of land dispossession in Rajarhat and Singur.

Ram Upendra Das argues that connectivity is not just infrastructure but also claims that in South Asia the limitations of the infrastructure network constitute a strong limiting factor for human, commercial, informational and financial flows. Ram Upendra Das favours the private sector to play a major role in infrastructure investments to boost the growth of South Asia as a region. In his conclusions some concrete recommendations are provided, namely South Asian agreements on railways, motor vehicles and energy.

Siegfried Wolf focuses attention on the China-Pakistan Economic Corridor (CPEC) that links the South West of China to the Indian Ocean through Pakistan. The author puts CPEC in the contexts of terrestrial and sea connections between China and the outside world and refers to its implementation. In a second point the texts highlight the interests of Pakistan in attracting FDI, the interests of China in improving security and development in South West China, and the worries of India associated to the possibility of changes of the equilibrium of forces in disputed territories or the creation of a Chinese naval base in the Indian Ocean. The chapter proposes a set of recommendations for a future agreement between India and Pakistan stressing that infrastructure is not a sufficient condition for a fruitful interaction between people.

Still in the scope of adapted spaces, Vijay Pandey pays attention to the infrastructural gap in urban areas which the increasing urbanization process reinforces. The countries under analysis are India, Pakistan and Bangladesh and its focus is not only transport infrastructure (and its impacts on the access to education, health and security) but also in housing, water supply, sanitation, sewage and solid waste management. The author argues that, beyond other, there is a need for improved urban governance involving coordination and decentralization, adequate taxes and subsidies, competition, autonomous regulations, accountability, corruption control, attraction of FDI and improving the performance of local financial markets.

The Second Part of the book finishes with the contribution of Kanika Basu and Nila Pandian that addresses the important issue of housing in South Asia centring

the analysis on India. The argument is that the supply of housing is behind the demand coming from increased urbanization which leads to the growth of slums in the urban landscape. The chapter synthesises the eleven Housing Plans since the fifties until today and tries to find the policy gaps that allowed the proliferation of slums in urban areas. The problem is that the construction programmes were made but not taking into account those who need them, at a place and price that is suited.

3 Sustainability and Natural Resources

The Third Part of the book looks into the allocation, sharing and sustainability of natural resources in South Asia. The contribution written by Chinmoyee Mallik, looks into the importance of land property rights. The text written by Klara Feldes, analyses inter-state water conflicts in India. Kalyan Rudra looks into water sharing between India and Bangladesh. The reflections developed by Habibullah Magsi and M. Javed Sheikh, focus on seawater intrusion in coastal areas of Pakistan. Also related to coastal issues, Anisah Lee Abdullah looks in the sustainability of marine resources. Finally, Humayun Kabir, Jakariya and Syeda Shahida Maknun, analyse energy interdependency in South Asia highlighting the role of renewable energies.

Chinmoyee Mallik, looks into the processes of land requisitions in the deployment of the new city of Rajarhat and the industrial site of Singur, both in the region of Kolkata. The study shows that, first, those whose land were not requested are better off that the ones whose land was requested; second, landlords gain more than tenant cultivators; and, thirdly, those who sold land to private entities have better outcomes than those who sold their land to the State. Summing up, asset poverty is a key issue in transition livelihoods. Therefore, it is not strange that land is the most contentious element for policy makers that deal with the territory.

Border disputes on water between Indian States are analysed by Klara Feldes. It looks at the case of Polavaram Dam, a dam planned within the scope of the Indian National River Linking Project. The author argues that the multidimensionality of water issues has real difficulties in being generally accepted by simplistic agreements defined at State level. She also highlights the lack of effective law enforcement schemes for the developers of the projects.

Transboundary water issues are analysed by Kalyan Rudra focussing on water sharing between India and Bangladesh. The author says that rivers are political entities, and that sustainable balance between water use and water flow should be reached. The chapter highlights the disruptive impact on river flows of the delimitation of the border based on religion affiliations of populations. The cases analysed are the diversion of the Ganges by the Farakka Dam and its impacts on irrigation, salinization, navigation and soil composition; the water sharing plan of the Teesta river, which not only overestimated available resources but also did not sort out conflicting demands of urban ecological flow, water supply, irrigation and hydroelectricity. These conflicting demands mobilize stakeholders in both countries.

The issue of seawater intrusion in the coastal area of Pakistan caused by the dams in the Indus River is analysed by Habibullah Magsi and M. Javed Sheikh. Using a questionnaire made to a representative sample of farmers the study concluded that most of the affected farmers had to switch from agriculture either to livestock herding and fishing as an alternative source of employment and income, or to migrate. The chapter concludes that the dissemination of salt tolerant crop varieties, the improvement of infrastructure and soil reclamation can enhance social and economic conditions of local populations.

Anisah Lee Abdullah highlights the issues of shrinking biodiversity, reduction of fish resources, sea level rise, climate exodus and human health hazards related to environmental issues. Examples of severe cases in South Asian coastal areas suffering from increasing population pressures are shown. The importance of the text comes from its integrated proposals on urban infrastructure; waste recycling; river cleaning and long term strategic action for biodiversity restoration.

The analysis of sustainable management of natural resources in South Asia ends with the contribution of Humayun Kabir, Jakariya and Syeda Shahida Maknun dedicated to energy interdependency. The main argument is that the economic growth of the region is increasing energy demand which, associated with the actual distribution of energy resources and production capabilities, is requiring further energy cooperation in the region. Issues related to rent allocation for the use of natural energy resources are getting more attention. The strategy proposed involves the creation of a regional market of energy based on suitable infrastructures, supported by good rules for trade and investment on energy.

4 Institutional Issues

The Fourth and last part of the book explores the institutional issues related to land, trade, infrastructural investments, world organisations and international relations. Roxane de Flore looks into land practices in the process of city-making in South India. Wolfgang-Peter Zingel analyses Indian trade relations with Europe. Muazzam Sabir and André Torre look into conflicts on the creation of big infrastructures in Pakistan. The text developed by Arjun Sharma, Anna-Luise Chané and Idesbald Goddeeris, focuses on the differences between South Asian countries regarding human rights. Finally, Siegfried Wolf proposes an analysis of democracy in Bangladesh, India and Pakistan.

Roxane de Flore pays attention to the design and impact of laws and practices of land acquisition and land conversion in the creation of cities. The paper emphasises the way the Indian Government acts when there is a need to use space for some huge investments. It is explained how individual strategies and social networks play a crucial role in the determination of land prices that have impacts on equity, power reconfiguration, project sustainability and the profile of conflicts. The paper shows that land acquisitions for big projects are complex because users and owners are historically, socially and territorially rooted.

Wolfgang-Peter Zingel begins by a synthetic historical and geographical contextualization of India; compares the growth path of India with the one of China along the twenty-first century and discusses the pros and cons of regional integration, explaining why India keeps the protection of the service sector while highlighting that South Asia is the least integrated region of the world. Nevertheless, the author notes the good trade relations with the Arab countries and Israel, increasing trade with South East countries, on-going negotiations with European countries and understandable queries on the impacts of Brexit. The basic assumption is that with the weight of India any change in trade relations will have an important impact.

The role of proximity in institutional relations is discussed by Muazzam Sabir and André Torre. It analyses land use conflicts arising from the project of construction of a dam in Pakistan, trying to understand how geographical and organized proximities influence these conflicts. There is a description of the region and the project, an identification of the main conflicts related to compensation payments to common and private land as well as to ethnicity and how these conflicts are associated with geographical and organized proximities. The text concludes that strong negotiation skills and involvement of third parties may be helpful for improving the situation of local actors and afectees.

Human rights in South Asia are the focus of the analysis of Arjun Sharma, Anna-Luise Chané and Idesbald Goddeeris. Using social network analysis, the authors show that a majority of South Asian countries do not participate actively in (co-) sponsoring resolutions at the Human Rights Council. Nevertheless, it is shown that South Asian countries share a common commitment to socio-economic rights and to the protection of women and children and some common agreement to disagree with western countries.

The last chapter of the book analyses the state of democracy in South Asia, focusing on the political systems of Bangladesh, India and Pakistan. Siegfried Wolf addresses the challenges for democracy in these countries and argues that other than looking into the regularity of elections it is also required to look on the electoral regime, civil rights, participation, separation of powers and governance in those countries. All countries have now regular elections. Nevertheless, media controls are still enduring, human rights violations are high, separation of legislative, executive, judiciary and military powers is blurred, and effective governance is clearly missing. The chapter concludes that although a smooth progress is sensed in the region regarding embedded democracy, there are major constraints related to inequality and major threats linked to terrorism.

5 Conclusion

Nowadays, South Asia is one of the more remarkable places of the globalisation process and an example of reflection in terms of development processes, with implicit challenges and opportunities for regional cooperation. Along this book different authors show the enormous growth potential that can be generated if

agreements on free trade, wise migration, adjustable investments and development of strong and adequate local institutions can be effectively implemented in the region. They should be seconded by route and energy links and by sensible urban network policies regarding accessibility, housing, employment, sewage and waste and associated with prudent policies on water, land, coastal and conservation management. All these changes are difficult to implement without smooth institutional changes in water, land and trade negotiations. For these changes, human, organized and geographical proximity play a crucial role, a role that should be complemented by the smooth development of an embedded and resilient democracy.

Part I

Social and Economic Aspects in South Asia Interaction

International Trade and Widening Wage Gap: A General Equilibrium Approach

Rajat Acharyya

1 Introduction

Liberal trade policies and participation in the globalization process have so far been observed to have quite significant adverse effects on labour markets in many countries. Rise in open unemployment has coincided with more open trade regimes in many European countries (Marjit and Acharyya 2003). The dimension of the problem is somewhat different in developing countries. An increasingly large number of workers with almost no or very low levels of skill are losing jobs in organized and formal sectors and are forced to take up informal jobs. This has largely been caused by contraction of production in the organized manufacturing sectors in developing countries, and, in many instances, outsourcing of either the entire production or unskilled-labour intensive stages of production to informal and unorganized production units, in face of increased foreign competition that trade liberalization and globalization have ushered in. In the process, vast majority of working population in many developing countries has been working at a subsistence wage in informal sectors without any job security and often under miserable working environment.

On the other hand, skill premium and wage gap among the skilled and unskilled workers has been on the rise in almost every parts of the globe. Moreover, empirical evidences show that this phenomenon of widening wage gap between the skilled and unskilled workers is sustained over a rather long period of time, beginning since the mid-1980s. There are two significant dimensions of this phenomenon. First, with a few exceptions, the wage gap has been widening and wage inequality has been rising in both developed and developing countries, rich and poor countries. That is, widening of wage gap is *symmetric* across countries. Second, in many

R. Acharyya (✉)
Jadavpur University, Arts Building, Kolkata, India
e-mail: rajat.acharyya@gmail.com

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_2

instances, such as in Chile India and the USA, there has been an asymmetric changes in the wage gap across different skill levels.

Given this perspective, this Chapter discusses different alternative theoretical explanations towards the role of trade liberalization and globalization in symmetric widening of the wage-gap across developed and developing countries, and dimensions of the problem in the context of developing countries.

2 Debate on the Cause of Widening Wage Gap: Trade vs. Technology

There is a general consensus among the economists and researchers that globalization-induced changes in production pattern and the consequent increase in the demand for skilled labour relative to that of the unskilled labour is the root cause of the widely observed phenomenon of systematic and symmetric widening of skilled-unskilled wage gap.

But there has been no general agreement over the possible source of such increased demand for skilled labour. This has led to intense debate and discussions among the economists over the two plausible causes: Technological change, particularly the advent of information technology, that ushered in the rich nations in the 1970s and 1980s (Bound and Johnson 1992; Krugman 2000; Lawrence 1984); and significant and sustained episodes of liberalization of trade regimes across the globe beginning in the 1980s (Robbins 1995; Leamer 1995, 2000; Feenstra and Hanson 1996; Wood 1997; Jones and Engerman 1996). Different dogmatic positions of economists in the debate over trade vs. technology has been articulated in the writings of Alan Deardorff, Paul Krugman, Edward Leamer and Arvind Panagariya in a special issue of Journal of International Economics (Deardorff 2000; Krugman 2000; Leamer 2000; Panagariya 2000, V50).

However, much of the scepticism regarding the role of trade arises primarily because of the failure of the standard neoclassical trade theories to predict the observed wage movements. The Heckscher-Ohlin (HO) theorem and the Stolper-Samuelson (SS) theorem, the two work-horses of the neoclassical trade theory, predict that freer trade between developed and developing countries should lower the wage gap (and the wage inequality) in the developing countries but raise the same in the developed countries. The reason is simple. By the factor-abundance argument of HO theorem, skilled-labour abundant developed countries in general export skill-intensive goods and services, whereas the unskilled labour-abundant developing countries by and large export unskilled-labour intensive goods and services (with some notable exceptions though as we will argue later). With such pattern of trade, prices of skill-intensive goods and services relative to the prices of unskilled-labour intensive goods and services should fall in the developing countries as they increasingly engage themselves in trade with the developed countries. The opposite should happen in the developed countries. That is, freer trade should lead to asymmetric changes in the relative prices of skill-intensive goods and services, and subsequently to *asymmetric* changes in the wage-gap

(through SS theorem or price magnification effects) in the developed and developing countries. But contrary to this prediction, wage gap has been observed to widen in both parts of the world.

In contrast to this apparent failure of standard trade theories to explain symmetric widening of wage gap, the link between technological change and widening wage gap is more symmetric across countries since their asymmetric endowment patterns do not have any significant implication for such a link. The rise in relative demand for skilled labour underlying the widening age gap phenomenon can be explained either in terms of factor-biased technical change or in terms of sector-biased technical change. Whereas the labour economists view the former as an explanation of how technological changes widen wage gap across the globe, the trade economists (who subscribe to technological change as the most plausible explanation in the trade vs. technology debate) emphasize on sector-biased technical change.

However, there has not been any overwhelmingly conclusive evidence so far in favour of either of these two plausible causes. For example, Greenaway et al. (1999) find a significant impact of international trade competition from Newly Industrialized Countries in South-East and East Asia on widening wage gap in the UK. Gera and Massé (1996) argued that the effect of trade on wage inequality may be industry-specific. On the other hand, some of the studies in late 1990s and early 2000 observed that technical progress has been skilled biased (Machin and Van Reenen 1998; Berman and Machin 2000; Hansson 2001).

Indeed, the issue of trade versus technology has to be settled empirically. But, discarding international trade as a plausible cause for widening wage gap simply because the predictions of the standard trade models are at odds with the observation seems to make little sense. Inconsistencies between trade theory predictions and empirical observations should reflect limitations of the standard trade models than anything else. This has led a growing number of trade theorists to go beyond the standard trade models to provide theoretical basis for a link between trade and widening wage gap across developed and developing countries. The reason for such theoretical explorations is simple. Once the theoretical link has been set out properly, and the channels through which trade can result in symmetric rise in wage inequality is understood, the empirical research testing the causality can be made more focused, appropriate and relevant.

3 Role of International Trade: Recent Theoretical Explanations

For trade theorists the theoretical challenge that the empirical observations have thrown up has been two-fold: First, how does trade liberalization increase intra-country wage inequality in the developing countries given that they in general import skilled-labour intensive goods; and second, how does liberalization of trade between countries with asymmetric factor abundance (or scarcity) increase intra-country wage inequality in almost all of them.

Since the mid-1990s several trade theorists have provided alternative set of theories of trade to generate the kinds of predictions as empirically observed. One set of theories attempts to explain universal widening of intra-country wage gap by generalizing the Heckscher-Ohlin-Samuelson (henceforth, HOS) and Ricardian models of trade in a multi-commodity setting, where goods—final or intermediate—differ in terms of their skill-intensity. The building bloc of such explanations is the difference between local and global skill-intensity ranking of a commonly produced "middle" good (Davis 1996; Feenstra and Hanson 1996; Marjit and Acharyya 2003, 2006; Zhu and Trefler 2005).

The other set of theoretical explanations is based on specificities and imperfection in production structure and dimensions of factor markets in developing countries. Production specificities and imperfection as explanations of widening wage gap in the developing countries include existence of non-traded goods or increasing returns to scale (Chakraborty and Sarkar 2007, 2009; Jones and Marjit 1992; Marjit and Acharyya 2003; Xu 2003), and product market imperfections (Ruffin 2003, 2009). On the other hand, segmented labour market characterizes factor market specificities in the developing countries that can offer plausible explanation of widening wage gap (Marjit and Acharyya 2003). Diverse trade pattern of some of the relatively advanced developing countries (like China and India) that generates a complementarity between exports of goods with different skill-intensity for such countries, also provides an alternative theoretical explanation for the observed wage gap phenomenon (Marjit and Acharyya 2003).

In contrast to these alternative theoretical constructs, of late Acharyya (2010, 2011) provides two alternative explanations of the symmetric rise in the wage gap in trading nations even in the context of the standard two-good-two-factor HOS model without deviating from its core assumptions. One in which the initial condition (in terms of the level of tariff from which trade is liberalized) holds the centre stage; and the other in which conversion of quantitative restrictions (such as import quotas) into equivalent tariffs resulting in a reduction of rent-seeking activities and consequent rise in the relative world price of the skill-intensive product through income effect explains the symmetric widening of wage gap.

In the next two sections, I elaborate upon some of these alternative theoretical explanations of the two dimensions of the wage gap phenomenon mentioned earlier.

4 Symmetric Widening of Wage Gap: Examples

Three distinctly different explanations for symmetric widening of wage gap in trading nations differing in terms of their respective factor endowments have emerged from the recent theoretical developments mentioned above. We begin with two explanations in terms of local and global factor intensity ranking of final and intermediate goods produced and traded by countries.

4.1 Continuum of Stages of Production, Outsourcing and Widening Wage Gap

Feenstra and Hanson (1996) considered a continuum of stages of production of a final good and trade between a developing country and a developed country in the final as well as intermediate goods produced at different stages of production. Their analysis was contextualized in trade and investment flows between Mexico and the United States. To present their case in the simplest possible manner refer to Fig. 1, where a continuum of stages of production is indexed by $z \in (0, 1)$, and is represented by the vertical line over the interval (0, 1). Each point along this vertical chain represents a stage of production. The output of a particular stage $z_1 \in (0, 1)$, on the one hand, uses the intermediate good produced in the preceding stage $z_1 > z_0 \in (0, 1)$, and, on the other hand, is used as an input in the production in the next stage $z_1 < z_2 \in (0, 1)$. The output at stage $z = 1$ is the final good for consumption. Suppose, production at successively higher stages requires more intensive use of skilled labour compared to preceding (or lower order) stages. That is to say, more finished intermediate goods are relatively skilled labour intensive.

Consider two countries, one of which is relatively abundant in skilled labour and the other is relatively abundant in unskilled labour. These are the two primary factors of production. By the standard presumption, the skilled labour abundant country is termed as the developed country (such as, United States) and the other as the developing country (such as, Mexico). When trade opens up between these two countries, the two countries completely specialize in distinctly different stages of production along the vertical chain according to their pattern of comparative advantage in different stages of production. Suppose technological and factor endowment asymmetries between these countries are such that the developing country specializes in lower stages of production defined over the interval $(0, \bar{z})$ and the developed country specializes in all higher stages of production including the final consumable good defined by the interval $(\bar{z}, 1)$. Note that in this continuum of stages set up, the intermediate good $\bar{z} \in (0, 1)$ is produced by both the countries. By the pattern of specialization, the final good being produced only in the developed country is exported by it. On the other hand, the intermediate good produced in the stage immediately preceding stage $\bar{z}$, which is produced only in the developing country and is required to produce the intermediate good $\bar{z}$ in the developed country, is imported by the developed country.

Now consider outsourcing of some of the lowest stages of production—those defined over the small interval $(\bar{z}, \bar{z} + \varepsilon)$—by the developed country to the developing country. Outsourcing (and corresponding change in the pattern of trade) of these stages of production now lowers the demand for both skilled and unskilled workers in the developed country, but more for unskilled workers than for skilled workers, since these production stages over the interval $(\bar{z}, \bar{z} + \varepsilon)$ are least skill-intensive stages there. Thus, relatively, the demand for unskilled labour falls and with it declines the unskilled-wage relative to the skilled-wage resulting in widening of wage gap.

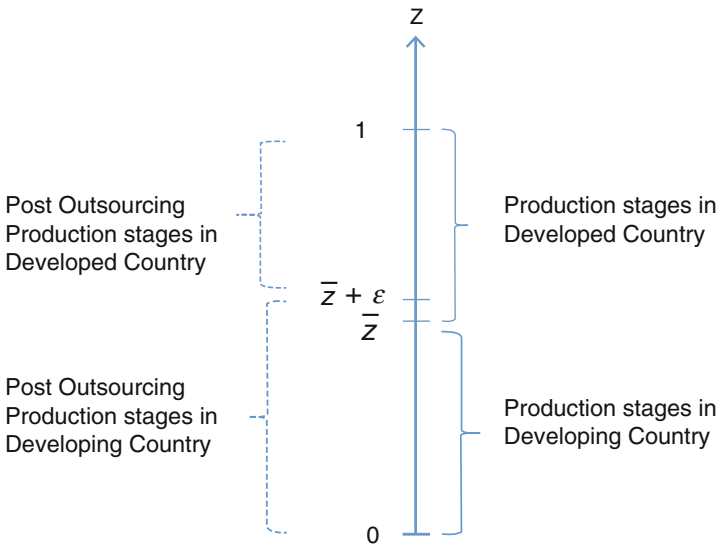

Fig. 1 Pattern of specialization in stages of production

On the other hand, the outsourced stages of production being relatively more skill-intensive compared to all stages $z \in (0, \bar{z})$ produced in the developing country before outsourcing, the relative demand for skilled workers rise in the developing country resulting in a rise in the skilled wage relative to the unskilled wage. Therefore, the skilled-unskilled wage gap widens in both the countries.

Note that the intermediate good $\bar{z}$ produced by both the countries before outsourcing is the most skill-intensive good in the developing country but least skill-intensive in the developed country according to their respective post-trade specialization in the vertical production chain. Thus, the local intensity of this commonly produced intermediate good $\bar{z}$ differs from its global intensity ranking (the latter being shown in Fig. 1). This different local ranking of the same good results in the symmetric widening of wage gap in the two countries through outsourcing of some of the production stages in the neighbourhood of it.

4.2 Tariff Reduction in a Generalized HOS Model

Similar result as above can be generated in the context of a generalized HOS model a la Jones (1979) where many final goods are produced by two factors of production—skilled labour and unskilled labour (Marjit and Acharyya 2003). It is a well-known result that in a competitive general equilibrium setting with more goods than the number of internationally immobile domestic factors production, countries will be producing only the number of goods equal to the number of

domestic factors production.[1] With each good produced in both countries by identical technology, the pattern of production specialization, which is, whether the countries produce the same set of goods (as in a typical two-commodity-two-factor HOS model) or different sets of goods, is determined by the factor endowment of two countries. To exemplify, consider Fig. 2, which is reproduced from Marjit and Acharyya (2003), where the rays through the origin represents expansion paths of three goods X, Y and Z. The expansion paths are drawn linear because of the assumption of constant returns to scale technology, for a given set of commodity prices (and corresponding skilled and unskilled wages), and show the skill-intensity choices (that is, the ratio of skilled labour to unskilled labour per unit of output) for these three goods. The expansion paths and corresponding skill-intensities of producing these three goods differ from each other due to differences in their production technologies. For any given set of factor prices, the expansion path Os_Z for good Z is drawn steepest and for good X flattest under the assumption that good Z is the most skill-intensive (such as software) and good X is the least skill-intensive (such as rice or wheat). The three rays produce two Cones of Diversification (CoD). If bundle of endowment of skilled and unskilled labour of a country lies in the CoD labelled s_XOs_Y, for example, then this country produces both goods X and Y, but not good Z as the skilled workers per unit required to produce this good (relative to unskilled workers) is larger than what this country is endowed with. If endowment bundle of its trading partner also lies within the same CoD, then it also produces only goods X and Y, and the above setting boils down to the standard two-commodity-two-factor HOS model with both countries producing the same set of goods. Otherwise, the two countries will produce different pairs of goods.

Now consider a developed country with endowment bundle E^* and a developing country with endowment bundle E lying in two different CoD as shown in Fig. 2. Thus, the developed country is assumed to be relatively skilled labour abundant. Then, following the above argument, the developed country will produce the most skill-intensive good Z and the good Y, which is the middle good in the global ranking of these three goods. The developing country, on the other hand, will produce the least skill-intensive good X and the middle good Y. By the assumed endowment patterns and corresponding production specialization, it is obvious that if consumers everywhere consume all the three goods, then the developed country will export good Z and import good X. Regarding good Y, suppose this is exported by the developing country (along with good X). That is, the export basket of the developing country is relatively diversified. This would be the case, if the endowment bundle E^* lies closer to the Os_Z ray than to the Os_Y ray, whereas the endowment bundle E lies closer to the Os_Y ray than to the Os_X ray. This means

[1] See Jones (1979) for detailed explanation. Given the international commodity prices, the factor prices will be determined in such a way as to provide the best return to each factor and a competitive equilibrium will select the sectors, which promises such best returns. If, for example, skilled and unskilled labours are employed in productions of goods X and Y in an economy that can produce X, Y and Z, then it must be the case that the average cost of producing good-Z at the existing factor prices exceeds the world price of Z.

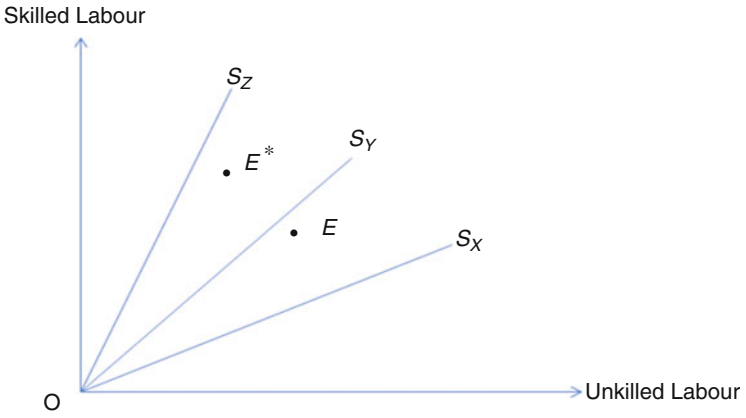

Fig. 2 Production specialization in generalized HOS model. Source: Reproduced from Marjit and Acharyya (2003)

that the developed country will produce a lot of good Z, whereas the developing country will produce a lot of good Y (relative to good X).

Given these patterns of endowments, production specialization and trade, suppose while each country allows free import of the good that it does not produce (i.e., good Z and good X), the import of good Y by the developed country is subject to an ad valorem tariff. Thus, whereas the tariff inclusive price of good Y $-$ (1 + t)P^W—relative to the world price of good Z is relevant for production and consumption decision in the developed country, the world price P^W (relative to the world price of good X) is relevant for production and consumption decision in the developing country. When the developed country liberalizes imports of good Y by lowering its tariff, the world price of good Y rises, that is, its terms of trade worsens. This is because, reduction in the tariff rate lowers the domestic relative price (at initial world price P^W), which in turn raises the local demand for good Y. The production of good Y, on the other hand, falls. Consequently, the excess demand for good Y rises in the developed country, which raises its import demand the world price of good Y. Since good Y is the most skill intensive good in the production specialization of the developing country, so the skilled wage rises there relative to the unskilled wage. In the developed country, on the other hand, the domestic price of good Y falls because by the standard result of HOS model, the rise in P^W is less than proportional to the reduction of tariff rate.[2] Now, good Y being relatively unskilled labour intensive in the production specialization of the developed country, fall in its domestic price lowers the unskilled wage relative to the skilled wage.

[2]This is analogous to the mirror image of the usual case of an imposition of tariff lowering the world price less than proportionately and thereby raising the tariff-inclusive domestic price. The case where fall in the world price is more than proportionate to the tariff rate, so that the tariff-inclusive domestic price falls is known as the Metzler's Paradox, and depends on the value of import demand elasticity. See, for example, Caves et al. (1999).

Thus, the wage gap widens in both countries, but now as a consequences of trade liberalization by the developed country, and again the difference in the local factor intensity ranking of the commonly produced good Y in the two countries drive home the symmetric result.[3]

Using a similar production specialization in a generalized HOS model, Davis (1996) illustrated asymmetric wage movements across unskilled labour abundant developing countries. Consider two developing countries, both being globally unskilled labour abundant so that their endowment bundles lie in the $s_X O s_Y$ Cone of Diversification. Thus, both countries produce the same set of goods X and Y. However, their unskilled labour abundance may vary locally (that is, within this CoD) such that in trade between them the country with endowment bundle closer to Os_Y will produce a lot of good Y and export it whereas the other country with endowment bundle closer to Os_X will produce a lot of good X and export it. That is, despite both the countries being globally unskilled labour abundant, one of them is locally skilled labour abundant relative to the other. Suppose both these developing countries are small and thus cannot affect world prices of these goods by varying their export and import volumes. Now consider a reduction of tariff by the locally skilled-labour abundant country on imports of good X from the other country. Given the world prices, such a reduction of tariff lowers the tariff-inclusive domestic price of good X in that country and since good X is relatively unskilled-labour abundant so the unskilled wage falls and the wage gap widens. On the other hand, a reduction of tariff by the locally (as well as globally) unskilled labour abundant developing country on imports of good Y from the other developing country will lower the skilled wage there relative to the unskilled wage. Thus, tariff reductions by developing countries will have asymmetric impacts on the wage gap according to their local factor abundance vis-à-vis the other.

In sum, using the standard properties of HOS model in a more generalized setting as the above, one can explain contrasting results in the context of developed country-developing country (or North-South) trade and the developing country-developing country (or South-South) trade. Whereas symmetric widening of wage gap in both North and South as a consequence of trade liberalization follow from the differences in the local factor-intensity ranking of the commonly produced good, the asymmetric wage effect of trade liberalization across the developing countries follows from local factor abundance of these countries.

[3]This may sound as a case of factor intensity reversal, but though it is not. The good Y has unique global ranking when ranking of all three goods are considered together, but has different local rankings in the two cones of diversification relevant for the two countries. The local factor intensity ranking in each CoD is relevant for effects on the wages and crucially differentiates this case from the usual (global) factor-intensity reversal case.

4.3 Tariff Reductions in 2 × 2 HOS Model: Role of Initial Level of Protection

Since the 1990s, most of the Asian and Latin American countries started lowering their tariffs unilaterally under their respective structural adjustment programs, which had been neither simultaneous nor once and for all. More often, tariff barriers have been lowered in different stages. Thus, except for reciprocated tariff reductions under regional trade agreements which also proliferated since 1990s, at any point of time and at any phase of the trade liberalization process, levels of protection have been different across trading nations.

In such a context, Acharyya (2010) has analysed what implications these different tariff reduction scenarios and initial conditions may have on intra-country wage-gap and wage inequality. Two broad cases were considered. First is a successive tariff reduction by a country in a two-country framework. Second, is bilateral tariff reduction by the two countries. The latter is analysed under three alternative initial conditions—tariff reductions achieved from an initial arbitrarily chosen tariff levels; from an optimum-tariff global equilibrium; and from a revenue-maximizing tariff equilibrium. Following results were established by such thought experiments. First, in all these cases, it is possible to predict symmetric widening of wage gap in the two countries. Of course, this is not unconditional, but it is noteworthy that the underlying conditions depend on the *initial level of protection*. Second, in case of unilateral successive reduction of tariff rates by a country, the domestic relative price of its import good changes asymmetrically across initial and later phases of tariff cuts, ceteris paribus. Thus, it *may* be possible that the intra-country wage inequality rises initially only in the exporting country, but then rises in both exporting and importing countries at a later stage of trade liberalization. Third, bilateral tariff reductions may still cause the wage gap to widen in both countries, but the condition for that is more stringent compared to that under unilateral tariff reduction.

Consider the standard two-factor, two-commodity HOS model without any of the above-mentioned departures from its usual production structures and specifications. Two countries, developed and developing, produce two goods, 1 and 2, with internationally immobile (but mobile across sectors in each country) skilled labour and unskilled labour. The developed country being relatively skilled-labour rich and the developing country beings relatively unskilled-labour rich, export relatively skilled-labour intensive good 1 and relatively unskilled-labour intensive good 2 respectively. Let p^w, p_d and P_d^* denote respectively the world relative price of the skill-intensive good 1 (which is imported by the developing country), the domestic relative price of this good in the developing country and the domestic relative price of unskilled-labour intensive good 2 in the developed country. Let $t > 0$ and $t^* > 0$ denote the initial rate of ad-valorem tariffs imposed by the developing and the developed countries respectively. The relative domestic prices of imports in the two countries are related to the world price in the following way:

$$p_d = (1+t)p^w, \tag{1}$$

$$P_d^* \equiv \frac{1}{p_d^*} = \frac{(1+t^*)}{p^w}, \tag{2}$$

where p_d^* is the price of (export) good 1 in the developed country.

In the above set up, consider a unilateral tariff reduction by the developing country ($dt < 0$) starting from an initial world equilibrium given by the following trade-balance condition for the developing country:

$$p^w M(p_d, y) = M^*\left(P_d^*, y^*\right), \tag{3}$$

where, $M(.)$ and $M^*(.)$ are respectively import demand functions of the developing and the developed country; y and y^* are their real income levels measured in terms of their respective export goods.

As shown in Acharyya (2010), a unilateral tariff reduction by the developing country raises the world relative price of the skill intensive good 1 unambiguously,

$$\widehat{p}^w = \frac{-\varepsilon\mu}{(\varepsilon+\varepsilon^*-1)+\widetilde{m}+\widetilde{m}^*}\widehat{t} > 0 \tag{4}$$

and raises the domestic relative of its skill-intensive import good if import demand elasticity of the developed country is sufficiently small in the following sense:

$$\widehat{p}_d = \frac{\mu[\varepsilon^* - (1-\widetilde{m}-\widetilde{m}^*)]}{(\varepsilon+\varepsilon^*-1)+\widetilde{m}+\widetilde{m}^*}\widehat{t} > 0 \text{ if } \varepsilon^* < (1-\widetilde{m}-\widetilde{m}^*), \tag{5}$$

where, hat over a variable denotes its proportional change (e.g., $\widehat{p}^w \equiv \frac{dp^w}{p^w}$), $\widetilde{m} = \frac{m}{1-tm}$, $\widetilde{m}^* = \frac{m^*}{1-t^*m^*}$, $\mu = \frac{t}{1+t}$, m and m^* are respectively marginal propensities to consume the import good by the developing and the developed countries; and ε and ε^* are respectively import demand elasticities of the developing and the developed countries. Note that the $\varepsilon+\varepsilon^*-1>0$ by the Marshall-Lerner stability condition.

Since by assumption, the developing country imports the skill intensive good 1, so a rise in domestic relative price of its imports (p_d) raises the wage gap. On the other hand, since the developed country does not change its tariff rate, so the domestic price of its import of unskilled labour intensive good falls proportionately with the fall in world price of it (which is reciprocal of p^w) thereby widening the wage gap there. Thus, as long as $(1-\widetilde{m}-\widetilde{m}^*) > 0$, under condition (5), a unilateral tariff reductions by the developing country importing skill-intensive good raises intra-country wage inequality in both the countries.[4]

[4]Under similar condition, if the country importing unskilled-labour intensive good unilaterally lowers its tariff rate, intra-country wage inequality declines in both the countries.

Since the condition in (5) implies that ε^* *must* be less than one in value, given any import demand function along which elasticity of demand varies (such as a linear import demand function), the size of initial (restricted) trade must be large enough for realization of this condition. The initial conditions matter in another interesting way. Let ε^*_{UL} denote the critical value of the import demand elasticity of the developed country specified in (5), which depends on marginal propensities to consume and initial tariff rates. That is,

$$\varepsilon^*_{UL}(m, m^*, t, t^*) = (1 - \widetilde{m} - \widetilde{m}^*). \tag{6}$$

Given the definition of $\widetilde{m}$, it is now straightforward to check that this critical value varies inversely with the initial level of tariff protection offered by the developing country, ceteris paribus. On the other hand, for the developed country, less restricted is its initial trade, smaller is the value of its import demand elasticity. Thus, it is quite possible that when small tariff reductions are achieved from a high level of protection, domestic prices change in the way predicted by the standard SS theorem (which is, as noted earlier, at odds with the wage gap phenomenon); but at a later stage, when a large degree of liberalization has already been achieved, a further reduction of tariff raises the domestic price in the developing country, leading to widening of wage gap in both countries. Note that since ε^*_{UL} is inversely related to t^*, so a global rise in the wage inequality is more likely following a reduction in the tariff rate by the developing country smaller is the initial tariff rate of the developed country.

In case of equi-proportionate tariff reductions by both countries ($\widehat{t} = \widehat{t}^* < 0$), the condition for global rise in intra-country wage inequality is more directly related to the initial levels of tariff protection. In particular, starting with a global optimum-tariff equilibrium, where each country imposes its best-response tariff, small scale tariff reductions leads to the following changes in the world and domestic prices:

$$\widehat{p}^w = \frac{\varepsilon^*\mu^* - \varepsilon\mu}{(\varepsilon + \varepsilon^* - 1)}\delta > 0 \text{ if } \varepsilon^* < \frac{\mu}{\mu^*}\varepsilon, \tag{7}$$

$$\widehat{p}_d = \frac{(\mu + \mu^*)\varepsilon^* - \mu}{(\varepsilon + \varepsilon^* - 1)}\delta > 0 \quad \textit{if} \quad \varepsilon^* < \frac{\mu}{\mu + \mu^*} \equiv \varepsilon^*_{opt}, \tag{8}$$

where, $\mu^* = \frac{t^*}{1+t^*}$ and other variables are as defined earlier.

Two comments are warranted at this point. First, it is easy to check that $\varepsilon^*_{BL} < \varepsilon^*_{opt}$. Second, $\frac{\partial \varepsilon^*_{opt}}{\partial t} = \frac{\partial \varepsilon^*_{opt}}{\partial \mu}\frac{\partial \mu}{\partial t} > 0$, so that if at the initial optimum-tariff-war equilibrium, the tariff rate of the developing country was very high and that of the developed country low, then the critical value of $\varepsilon^*$is higher. Hence, a larger set of values of import demand elasticity of the developed country now supports symmetric widening of wage gap in the developed and developing countries.

4.4 Conversion of Quantitative Restrictions, Rent-Seeking and Wage Gap

Though many developing countries across the globe started liberalizing their trade policies and integrating their economies with the global economy since the mid-1980s, the nature and degree of such trade liberalization policies varied from one country to another. Such variations are also evident in more open policies of quite a few developed countries in regard to manufacturing imports from the developing countries. There have been conversions of one type of physical restrictions into another, such as conversion of import quota into voluntary export restraint (VER) by USA and many other countries in the mid-1980s. There has also been conversion of physical restrictions on imports into price restrictions. For example, conversion of import quotas into equal-import tariffs during the Indian liberalization episode in the mid-1990s, which was termed as tariffication. The implications of such conversions of one type of trade restrictions into another for within-country wage inequality have been examined by Acharyya (2011) in a two-commodity-two-factor HOS model of trade.

Following the celebrated price-equivalence results of Bhagwati (1965), under perfectly competitive conditions, such tariffication by India would leave the domestic relative price of its imports unchanged in the home country.[5] As shown in Fig. 3, tariffication, ceteris paribus, also leaves the world price of its imports unchanged. OI and OU represent respectively free trade offer curves of India and (say) the United States, with free trade equilibrium denoted by their intersection point E_f. At the initial binding import quota $\overline{M}$ imposed by India on imports from the United States, India's offer curve was the kinked one labelled $OK\overline{M}$ resulting in the bilateral trade equilibrium at point E_Q with the world relative price of India's import given by the reciprocal of the slope passing through the origin and this quota-ridden equilibrium point E_Q. When this import quota is replaced by an equal-import tariff, India's offer curve must shift to the left from OI to the extent such that it passes through this point E_Q. Such an offer curve under equal-import tariff is shown by the broken curve labelled OI'. Note that if India's offer curve is further to the left (or to the right) than OI'—corresponding to a higher (or lower) tariff—then that would result in lower (or higher) imports than O$\overline{M}$ permissible under the initial quota restriction. Accordingly, the bilateral trade equilibrium remains the same with no change in the world price of India's imports. Thus, overall, the tariff-inclusive domestic price of India's imports should be the same as under the initial (equal-import) quota. On the other hand, if the United States does not have any trade restriction, the relative domestic price there remains aligned with the

[5]Bhagwati's (1965) seminal work on (price) equivalence of equal-import tariff and import quota subsequently led to development of a huge literature examining the robustness under different market structures. In a conjectural variation approach to duopolistic competition, Hwang and Mai (1988) had shown that the equivalence result holds even for Cournot conjecture.

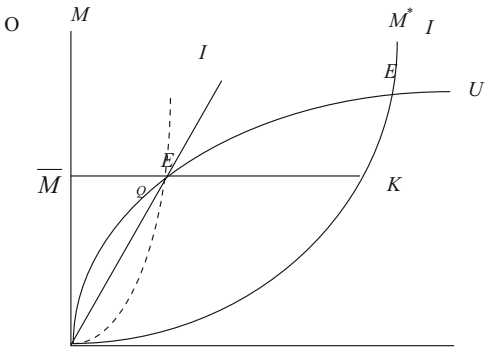

Fig. 3 Import quota and tariff

unchanged world price. So the domestic price does not change there either. Thus, wage gap in both India and the United States should not change.

But, as shown by Krueger (1974) and later generalized by Bhagwati (1982), import quotas lead to DUP-lobbying rent-seeking activities and thus entails real income losses for importing country. Hence, tariffication will mean a decline in rent-seeking activity—lobbying for obtaining import licenses each of which offer a premium on imports per unit—and consequently real income gains for India.[6] The real resources previously used to lobby for getting the import licenses can now be used for production of commodities, causing real income gains, which in turn raise the import demand and lower export supply by India. The consequent rises in the world price of India's imports from the United States lowers the tariff-inclusive domestic relative price of its imports (given the equal-import tariff rate), and raises the domestic relative price of exports of the United States proportionately. If United States was exporting skill-intensive good, then it means that the relative price of skill intensive good rises in both India and the United States so that the wage gap widens in both these countries.

There can be some mitigating effect on demand for imports (thereby weakening the effect on wage gap) though from the supply side if rent-seeking activity had been using skilled workers than using unskilled workers, which seems to be more realistic. As tariffication lowers the rent seeking activity, skilled workers earlier engaged in such activities can now be used to produce the traded goods. This increased supply of skilled workers for production of goods will raise the output of the skill-intensive good and lower that of the unskilled labour intensive good by the Rybczynski effect. Correspondingly the import demand of India will fall to some extent, thereby mitigating the real income effect on the world relative price of its imports.

[6]With import quotas spread over almost the entire range of importable during the 1970s and 1980s, real income gains from tariffication for India were quite significant. Kumar (1999) estimated overall income leakage into the parallel economy due to trade and exchange restrictions to be roughly a-third of the official GDP during 1990–1991.

5 Dimensions of Wage Gap in Developing Countries

5.1 Diversified Export Basket and Complementarity

Since the 1990s some of the developing countries like Brazil, China, India and Mexico with technical capabilities and skilled manpower have emerged as exporters of skill based medium and high technology intensive goods and services (like aerospace, chemicals including pharmaceuticals, scientific instruments, transport equipment's including automobiles, software, IT enabled services), alongside traditional export items (like cotton textiles, leather manufacture, tea, coffee, rice). Such diverse trade pattern can neither be explained in terms of their relative abundance in unskilled labour nor be effectively captured through an aggregative index of skill-intensity of their exports. This phenomenon of diversified trade pattern of some of the developing countries again suggests that thoughtless application of the HO theorem in the context of trade between developed and developing countries will only result in predictions regarding implications of such trade far away from the actual. But with a few exceptions (Marjit 2000; Marjit and Beladi 1998) not much attention has been paid so far in the literature to this diversified trade pattern while analysing the widening wage-gap in the South.

In a variant of the specific-factor model a la Jones (1971), with two export goods varying in the skill-intensity, the intriguing result that Marjit and Acharyya (2003) show is that export-driven rise in price of the most unskilled-labour intensive agricultural product raises the money wage of the skilled labour that is not at all used by agriculture. This happens because of the latent complementarity between skilled and unskilled exports. Thus, for widening of the wage-gap it is not necessary that skill intensive exports must grow or the terms of trade moves in its favour. As long as expansion of the unskilled-labour intensive exports affects the cost and production of the skill-intensive exports, wage-gap may widen. It is this complementarity which is typically absent in a two-good model and is overlooked by trade theorists and empiricists alike.

To fix ideas, consider a small developing economy producing three goods: an agricultural good that uses unskilled labour and land; and two manufacturing goods—one that uses unskilled labour and capital; and the other that uses skilled labour and capital. To begin with, we assume that the country concerned exports skill-based manufacturing good and imports the other manufacturing good. Agricultural good X is the potential exportable. But initial trade restrictions prohibit farmers and traders to take advantage of the higher world price, which is not at odds with reality, since in many part of the world, the developing as well as the developed, agriculture is still protected in some form or the other.

Starting from such an initial scenario, liberalizing agricultural trade should equalize the domestic price of the agricultural good with its (higher) world price if the country has a comparative advantage in that good.

With the increased demand for unskilled labour in the agricultural activity consequent upon such price increase, the unskilled wage increases. The increased money wage-bill in the import competing sector, on the other hand, causes its

production to contract and with it pushes down the rate of return to capital under competitive conditions. In the skill-intensive export sector the lower capital cost, in turn, encourages production and raises the wage of the scarce skilled labour. Therefore, both the unskilled and skilled wages increase making the change in wage-gap ambiguous following an increase in the price of agricultural exports. Algebraically, as shown in Marjit and Acharyya (2003), the wage gap changes to the extent given below:

$$\widehat{W}_S - \widehat{W} = -\left[\frac{\theta_{KZ} - \theta_{KY}}{\theta_{SZ}\theta_{LY}}\right]\widehat{r}, \tag{9}$$

where, θ_{KZ} is the share of capital in average cost of producing the skilled-based manufacturing good Z; θ_{KY} is the share of capital in average cost of producing the imported manufacturing good Y; θ_{SZ} is the share of skilled-labour in average cost of producing the skilled-based manufacturing good Z; and θ_{LY} is the share of unskilled labour in average cost of producing the imported manufacturing good Y.

As evident from (9), agricultural trade liberalization widens the wage-gap if $\theta_{KZ} > \theta_{KY}$. This condition tells us that the savings on capital cost is more in the skill-intensive export sector than in the unskilled-labour intensive import-competing sector. Hence, the skilled-wage should increase more than the unskilled-wage thereby widening the wage-gap, notwithstanding the fact that it is the agriculture that does not use skilled labour, has expanded. The latent complementarity between agriculture and the skilled manufacturing leads to widening wage gap and growing wage-inequality.

Note that as the agricultural output expands and since the endowment of land is given, the real unskilled-wage, W/P_X, must fall. This is the case where a rise in the price of unskilled-labour intensive exports leads to a decline in the real wage of the unskilled and widen the wage-gap. This result is consistent with the fact that the consumption basket of the unskilled is loaded in favour of food.

Interestingly, as shown by Marjit and Acharyya (2003), a capital inflow will also widen the wage gap under the same condition.

5.2 Segmented Labour Markets and Informal Wage

For the developing countries informal labour markets offer an opportunity to absorb unskilled workers displaced from formal import-competing sectors in face of foreign competition under a liberalized trade regime, and thus keep open unemployment at low levels (Agenor 1996; Agenor and Montiel 1996). But this has also been the cause of concern for policymakers primarily for two reasons. First, the workers displaced from the organized or formal sectors are worse-off not only because the informal sectors offer a lower (and often subsistence) wage but also because of poor work-environment, lack of job security and other long term benefits. Second, the workers already employed in the informal sectors are worse-off if the informal wage itself drops down due to such migration of workers

Table 1 Share of unorganized sector employment in India

Sector	1988	1994	2004–2005
Agriculture	99.3	99.4	99.9
Mining & quarrying	54.7	59.0	64.4
Manufacturing	81.1	82.1	87.7
Electricity, gas & water	0	0	12.4
Construction	90.0	89.1	92.4
Transport, storage	62.8	71.1	82.2
Total Unorganized	90.1	91.1	93.0

Source: ILO (1996)

displaced from the formal sectors. Thus, alongside the relative position of unskilled workers vis-à-vis skilled workers, it is also important to know how does the absolute position (or wage) of the unskilled workers employed in the informal or unorganized sectors change due to the process of trade liberalization and globalization.

These issues are important because vast majority of the working population is employed in the informal and/or unorganized sectors. Table 1 below reports shares of unorganized employment in total employment in different sectors of the Indian economy during 1988–2005.

In agriculture almost all the workforce is unorganized followed by 90% of workers being in the unorganized segment of construction sector and more than 80% in that of manufacturing sector. Transport and storage is the other sector where share of unorganized segments in total employment is quite high. In all these sectors, the shares have been on the rise particularly during 1994–2005, with overall share of unorganized sectors in total employment rising from 91.1 to 93%, indicating a phenomenon which is termed as informalization of the Indian economy (Marjit 2000, 2003).

This informalization by itself indicates a rise in the wage gap in the developing countries because migration of unskilled workers displaced from the formal or organized sectors to the unorganized sectors mean lower wage for them. In addition, migration itself has some impact on informal wages. However, depending on the degree of capital mobility between formal and informal sectors of the economy and whether all goods are traded or not, trade liberalization induced contraction of the formal import-competing sector of an economy and corresponding migration of unskilled workers into the informal or unorganized sectors may raise or lower the informal wage (Marjit 2000, 2003; Marjit and Kar 2003; Marjit and Acharyya 2003). When capital cannot move out of the contracting formal sectors in the short run, or is sector-specific in use, then of course trade liberalization induced informalization of production lowers the informal wage in an economy that produces only traded goods. This widens the wage gap further. But when capital can move out of the formal sectors and can be used in production activities in the informal sectors, the informal wage will in fact increase. This is because, when capital is not sector-specific in use, and can move out of the contracting organized sectors of the economy (at least in the medium and long run), marginal productivity

of workers in the informal sectors may increase and this creates scope for the informal wages to increase despite general expansion in the size of workforce in the informal sectors. The degree of capital mobility matters less, however, when the economy also produces a few non-traded intermediate good used in the import-competing production (Marjit 2003). In such cases of rising informal wage, the initial widening of wage gap due to informalization of the economy is mitigated to some extent, though may not be reversed altogether.

6 Conclusion

This chapter has discussed new developments in general equilibrium trade theories that explains role of trade liberalization in symmetric widening of wage gap in developing and developed countries, on the one hand, and widening wage gap in unskilled-labour abundant developing countries, on the other. Whether it is the universal policy of trade liberalization and globalization since the mid-1980s that have caused widening of wage gap across the globe or not is an empirical issue. However, mere application of the standard factor abundance theory in testing such a causality may be grossly inappropriate as it fails to capture local versus global factor intensity ranking of goods and factor abundance of countries, initial conditions like the level of protection and rent-seeking activities, diverse trade pattern of many developing countries not consistent with their general factor abundance, production specificities and segmented labour markets in developing countries. All these, in isolation or in combination, may cause widening of wage gap as has been observed.

References

Acharyya R (2010) Successive trade liberalization and wage inequality. Keio Econ Stud 46:29–42

Acharyya R (2011) A note on quantitative trade restrictions, income effects and wage inequality. Econ Model 28(6):2628–2633. doi:10.1016/j.econmod.2011.07.020

Agenor PR (1996) The labour market and economic adjustment. IMF Staff Pap 32:261–335

Agenor PR, Montiel P (1996) Development macroeconomics. Princeton University Press, Princeton

Berman E, Machin S (2000) Skill-based technology transfer around the world. Oxf Rev Econ Policy 16(3):12–22

Bhagwati JN (1965) On the equivalence of tariffs and quotas. In: Caves R et al (eds) Trade, growth and the balance of payments. Rand-McNally, Chicago

Bhagwati JN (1982) Directly-unproductive profit-seeking (DUP) activities. J Polit Econ 90 (5):988–1002

Bound J, Johnson G (1992) Changes in the structure of wages in the 1980's: an evaluation of alternative explanations. Am Econ Rev 82(3):371–392

Caves RE, Frankel JA, Jones RW (1999) World trade and payments. An Introduction, 9th edn. Harper Collins, New York

Chakraborty BS, Sarkar A (2007) Trade, wage inequality and the vent for surplus. Mimeo, Indian Statistical Institute, Calcutta

Chakraborty BS, Sarkar A (2009) Trade and wage inequality with endogenous skill formation. Paper presented at the international conference on globalization, agglomeration and inclusive growth, Jadavpur University, 21–22 May 2009
Davis D (1996) Trade liberalization and income distribution. NBER working paper no 5693
Deardorff A (2000) Factor prices and the factor content of trade revisited: what's the use? J Int Econ 50:73–90
Feenstra R, Hanson G (1996) Foreign investment, outsourcing and relative wages. In: Feenstra R, Grossman G, Irwin D (eds) Political economy of trade policies. Essays in honour of J.N. Bhagwati. MIT Press, Cambridge, MA
Gera S, Massé P (1996) Employment performance in the knowledge-based economy. Industry Canada, Working paper no 14
Greenaway D, Hine RC, Wright PW (1999) An empirical assessment of the impact of trade on employment in the United Kingdom. Eur J Polit Econ 15:485–500
Hansson GH (2001) Should countries promote foreign direct investment. Discussion paper 9, UNCTAD, Geneva, February
Hwang H, Mai C-C (1988) On the equivalence of tariffs and quotas under duopoly: a conjectural variation approach. J Int Econ 24(3–4):373–380. doi:10.1016/0022-1996(88)90044-X
ILO (1996) Annual & quarterly employment review, Ministry of Labour, New Delhi
Jones RW (1971) A three-factor model in theory, trade and history. In: Bhagwati J et al (eds) Trade, balance of payments and growth. North-Holland, Amsterdam, pp 3–21
Jones RW (1979) International trade: essays in theory. North-Holland, Amsterdam
Jones RW, Engerman SL (1996) Trade, technology and wages. A tale of two countries. Am Econ Rev 86:35–40
Jones RW, Marjit S (1992) International trade and endogenous production structures. In: Riezman R, Neuefiend W (eds) Economic theory and international trade. Springer, Berlin
Krueger AO (1974) The political economy of the rent-seeking society. Am Econ Rev 69 (3):291–303
Krugman PR (2000) Technology, trade and factor prices. J Int Econ 50:51–71
Kumar A (1999) The black economy: Missing dimension of macro policy-making in India. Econ Polit Wkly 34(12):681–694
Lawrence R (1984) Can America compete? Brookings, Washington, DC
Leamer E (1995) A trade economists' view of US wages and globalization. In: Collins SM (ed) Imports, exports and the American worker. Brookings Institution Press, Washington, DC
Leamer E (2000) What's the use of factor contents? J Int Econ 50:51–71
Machin S, van Reenen J (1998) Technology and changes in skill structure: Evidence from seven OECD countries. Q J Econ 113(4):1215–1244
Marjit S (2000) Economic reform and informalization in a developing economy. A general equilibrium analysis. DSA working paper 15/2000, Jawaharlal Nehru University
Marjit S (2003) Economic reform and informal wage: a general equilibrium analysis. J Dev Econ 72:371–378
Marjit S, Acharyya R (2003) International trade, wage inequality and the developing economy: A general equilibrium approach. Physica/Springer Verlag, Heidelberg
Marjit S, Acharyya R (2006) Trade liberalization, skill-linked intermediate and two-sided wage-gap. J Policy Reform 9(3):303–317
Marjit S, Beladi H (1998) Trade and wage inequality in developing countries. Mimeo, Centre for Studies in Social Sciences, Calcutta
Marjit S, Kar S (2003) Pro-market reforms and informal wage: theory and the contemporary Indian perspective. Paper presented at the annual conference at the centre for studies in social sciences, 22–24 Dec 2003
Panagariya A (2000) Evaluating the factor-content approach to measuring the effect of trade on wage inequality. J Int Econ 50:51–71

Robbins D (1995) Trade, trade liberalization and inequality in Latin America and East Asia. Synthesis of seven country studies. Working Paper, Harvard Institute of International Development

Ruffin RJ (2003) Oligopoly and trade: What, how much, and for whom? J Int Econ 60(2):315–335. doi:10.1016/S0022-1996(02)00050-8

Ruffin RJ (2009) Monopolistic competition. In: Reinert K (ed) Princeton encyclopaedia of world economy. Princeton University Press, Princeton

Wood A (1997) Openness and wage inequality in developing countries: The Latin American challenge to East Asian conventional wisdom. World Bank Econ Rev 11(1):33–57

Xu B (2003) Trade liberalization, wage inequality and endogemeously determined non-traded goods. J Int Econ 60(2):417–431. doi:10.1016/S0022-1996(02)00049-1

Zhu S, Trefler D (2005) Trade and inequality in developing countries: A general equilibrium analysis. J Int Econ 65(1):21–48. doi:10.1016/j.jinteco.2003.11.005

Causes and Effects of Foreign Direct Investment in South Asia

Tomaz Dentinho and Joaquim Ramos Silva

1 Investment, Cooperation and Development

Those who study the rise of Asia tend focus on economic development in Eastern Asia, Asia-Pacific Rim or, more recently, individual studies of big countries such as China, India and Indonesia. South Asia, particularly its continental shore, although an important part of the process, is often forgotten in these endeavours. This is perhaps due to the large heterogeneity of Asia, but its Southern territories are essential for several reasons, including geopolitical, population, and natural resources. Moreover, in the long run, after the experiences of Singapore and China during the last decades, the relation of Asian economies with foreign direct investment (FDI) became one of the most important strategic instruments to catch up with more advanced economies (Ozawa 2011). But, even from this perspective, diverse paths were followed (for example, in South Korea and Taiwan development processes, FDI was negligible but foreign aid was not; Ranis 1995), and South Asia did not fully take part in these trends or, at best, loosely integrated in the "flying-geese" pattern under the leadership of countries outside the region (Akamatsu 1962; Kojima 1985, 2000). In these circumstances, the present paper proposes to fill the gap with a comparative perspective, looking more carefully at the role played by FDI in the continental part of South Asia. More specifically, the countries we shall focus on in this study are. . . In spite of their heterogeneity, at the regional level, the countries of the sample have some common characteristics. For example, compared to the first waves of "Asian dragons" they clearly lagged behind, as a consequence of their lack of economic growth (despite strong recent progress in some cases),

T. Dentinho (✉)
University of Azores, Angra do Heroísmo, Azores, Portugal
e-mail: tomas.lc.dentinho@uac.pt

J.R. Silva
Instituto Superior de Economia e Gestão, Universidade de Lisboa, Lisboa, Portugal
e-mail: jrsilva@iseg.utl.pt

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_3

they are less integrated in global economy, and have, on the average, a much lower GDP per capita. Notwithstanding this, what matters most is these countries' push to move forward, particularly evident in the 2000s, and the fact that these changes take place in a rapidly changing context. Due to their global importance (geopolitical, population, strategic, and increasingly economic), all this may have significant consequences, not only in the region itself, including its advances towards integration, but also on a global scale.

Taking into account its long-term character and implications, the study of FDI has attracted increasing research work, either theoretical or empirical. Since the 1960s, when Hymer (1960) first proposed an accurate notion of FDI (clearly differentiated from theoretical explanations of trade and financial flows, which were inappropriately used to deal with FDI), a succession of theories has been developed, like the ownership advantage theory (Hymer 1960), the product life-cycle theory (Vernon 1966), the Uppsala model—behaviour approach (Johanson and Wiedersheim-Paul 1975; Johanson and Vahlne 1977), and the OLI Paradigm (Dunning 1977, 1980), just to mention those who have been most salient for the research field up until recently. Moreover, some of these theories knew considerable adaptations and developments (see, for the Uppsala model, Forsgren and Johanson 1992; and for the OLI Paradigm, Dunning 1977, 2001, not considering outside authors). From the empirical point of view, the research on FDI has been quite extensive in the last decades, including reviews, namely with a focus on some Asian countries like China (Fetscherin et al. 2010).

The literature on FDI has focused on many factors as causes (or determinants) as well as effects. On the one hand, we have for example the multinational characteristics (Zhang and Markusen 1999), location (Becker et al. 2005), natural resources (Asiedu and Lien 2004), and institutional quality (Masron and Nor 2013), on the other hand, economic growth (Prasad et al. 2007; Ljungwall and Tingvall 2010), productivity spillovers (Barrios and Strobl 2002), technology transfer (Glass and Saggi 2002), exports (Helpman 1984), etc. On the basis of these studies, we have determined the most important factors to be considered for our sample of countries. Anyway, there are a large number of studies on FDI moving from developed to developing countries, although, more recently, flows coming from the South also became important, as shown below.

More specifically regarding FDI in poor countries, the literature shows that environmental, technological and economic factors such as low production costs for products oriented in large developed markets (Vernon 1966); resources ownership, internationalization and location (Dunning 1977, 1998); and access to large markets in the developing world (Helpman 1984) do play a major role in rooting the global production networks in the developing world (Hummels et al. 2001). Nevertheless, there are also institutional factors such as intellectual property rights protection (Antràs 2011; Bilir 2014), levels of corruption (Adams et al. 2015) and the contractual environment (Feenstra and Spencer 2005) that play a major role in FDI attractiveness. All factors have a cumulative influence on institutions (Acemoglu et al. 2005a; Nunn 2007; Levchenko 2007), on the industrial structure of countries (Acemoglu et al. 2005b; Nunn and Trefler 2014); and necessarily on

the environment and the economy, with positive and negative effects (Yalta 2013; Flora and Agrawal 2013).

Nevertheless, institutional factors are mainly relational in nature, meaning that the factors attributed to one country do not necessarily attract FDI from all countries (Stone 2016). In fact, multinationals originating from developing countries are more resilient to poor institutions (Azemar et al. 2012) and countries that cooperate and are similar to each other tend to interact (Mohlmann et al. 2010; Méon and Sekkat 2006; Levchenko 2007).

The objective of this chapter is to understand the economic and institutional factors that mould the evolution of the FDI Net Stock in South Asia. To achieve this, we first describe the evolution of the FDI Net Stock in South Asia (point 3.2); then evaluate its effects and causes showing the relation to economic growth, testing the impact of the main causal factors identified in the literature and analysing the impacts of institutional factors in the FDI Net Stock (point 3.3). In point 3.4, some concluding remarks and policy suggestions are proposed.

2 Foreign Direct Investment in South Asia: An Overview

Figures 1, 2 and 3 show the evolution of Inward and Outward Stocks of FDI by continent in US$ million dollars at constant prices of 2015. Notice that these FDI statistics report data between countries and if one wishes to use this data to analyse groups of countries, one must take that into consideration. There are also modifications of exchange rates due to FDI that influence the numbers presented in one common currency and at constant prices (Jongwanicha and Kohpaiboon 2013). Yet, some general thoughts can be proposed based on this data.

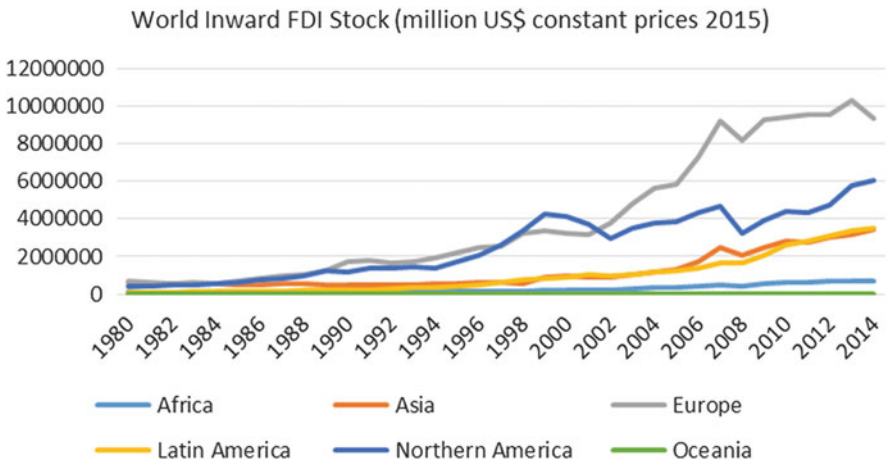

Fig. 1 Inward FDI by continent in million US$ (constant prices of 2015). Source: World Bank

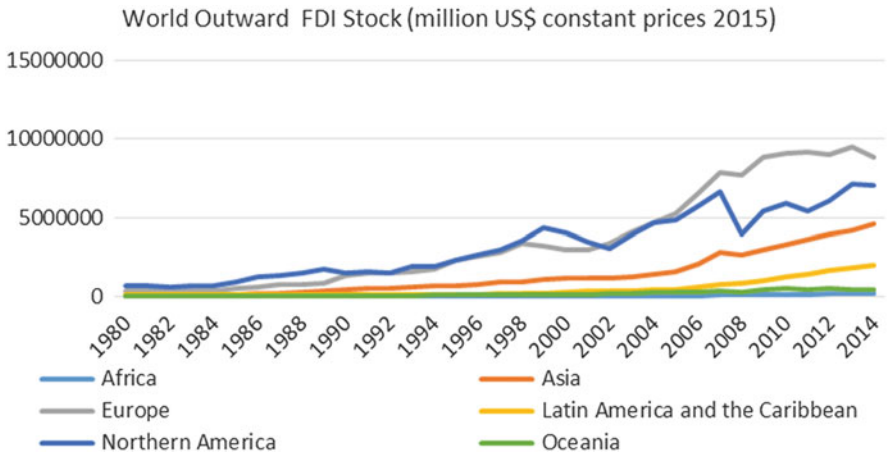

Fig. 2 Outward FDI stock by continent in million US$ (constant prices of 2015)

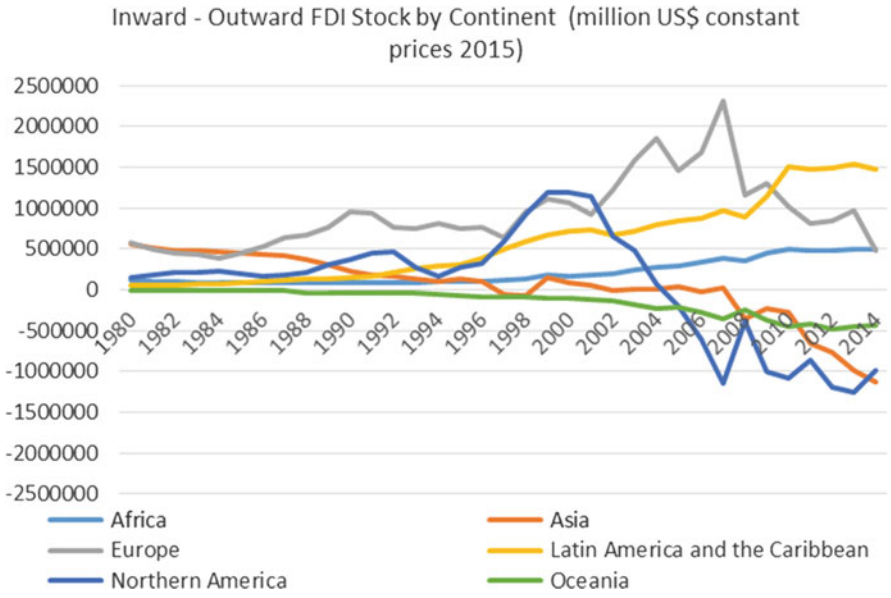

Fig. 3 Inward—outward FDI stock by continent in million US$ (constant prices of 2015). Source: World Bank

First, there is a general increase in inward and outward FDI stocks in the last four decades with temporary drops during the economic and financial crises (Radelet et al. 1998). Currently, the highest levels of FDI stocks are concentrated in Europe and North America, which were up until recently their main destination and origin. Second, although inward and outward FDI stocks tend to go along with each other

in the long term, the net stocks (the difference between inward and outward; Fig. 3) show more clearly that since the beginning of the century when the euro was introduced, emergent markets—particularly China and the other BRICS—play an increasing role in the world economy leading to a boom in international markets. Later, after the crisis of 2007–2008, Africa, Europe and Latin America become net importers of FDI while Asia, North America and Oceania became net exporters of FDI, in the net stock perspective. Thirdly, there are signs of a slowdown in FDI stocks associated with the financial and economic global crises in recent years, mainly in Europe, which has the bigger amount of FDI stocks, both inward and outward. Interestingly, Latin America is showing an increasing importance in FDI inward stocks whilst Asia is becoming an ever more prominent exporter of FDI, owning considerable stocks abroad.

Taking a closer look at the major Asian countries and regions (Figs. 4, 5 and 6) the image of the evolution of FDI stocks in this continent becomes clearer. China, and more recently India have an increasing proportion of the inward FDI stock; however, as far as the outward FDI stock is concerned, the picture looks differently, with Japan playing an outstanding role but losing ground to China after the late 1990s. Moreover, according to Fig. 6, Japan is a consistent net exporter of FDI during this period, while China became a net exporter of FDI by the turn of the century, and is becoming the big player in the field. This last aspect is clearly linked to huge surpluses in the balance of payments of the two countries as well as to their high saving rates. Interestingly, India and the other South Asian countries have a relatively reduced role in FDI stocks in Asia, while Western Asia, (including countries in the Persian Gulf) shows an increased inward FDI stock and also net inward FDI stock. This is clearly a consequence of the endowments of these countries in natural resources, particularly energy; with high oil prices since the beginning of this century up to 2013, the region became very attractive for foreign capital, notably under the form of FDI.

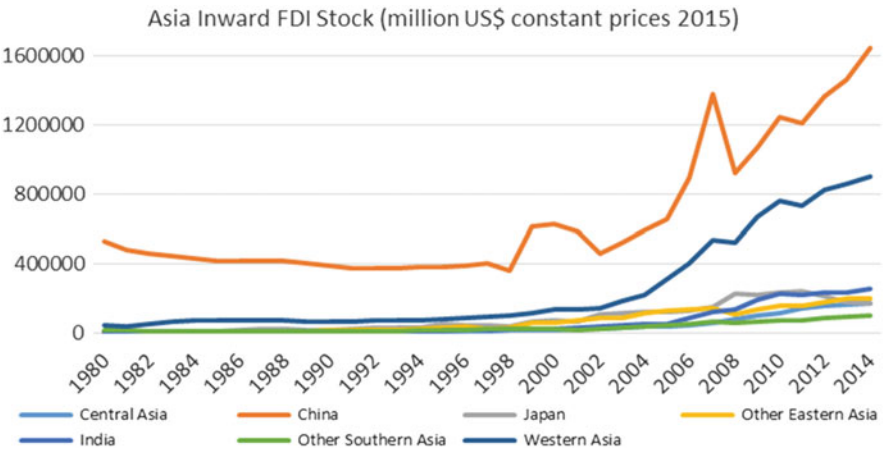

Fig. 4 Inward FDI in Asia in million US$ (constant prices of 2015). Source: World Bank

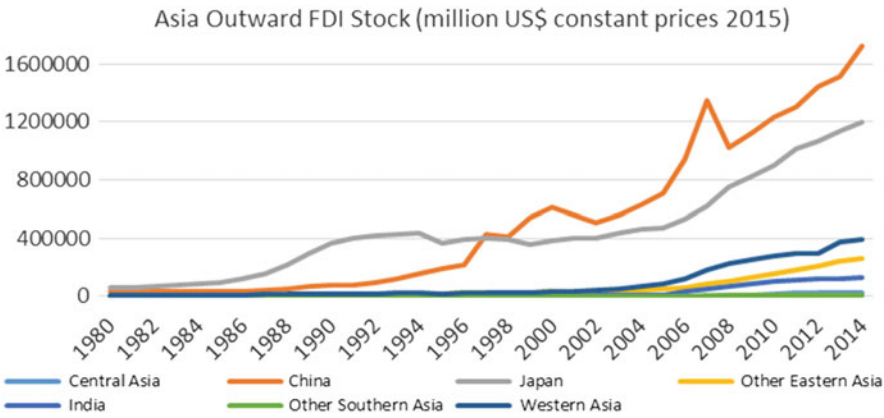

Fig. 5 Outward FDI in Asia in million US$ (constant prices of 2015). Source: World Bank

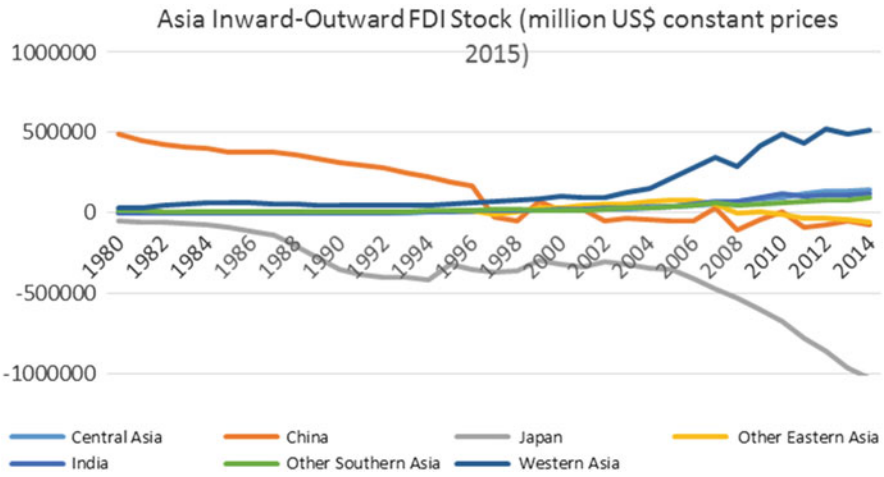

Fig. 6 Inward—outward FDI in Asia in million US$ (constant prices of 2015). Source: World Bank

Focusing on South Asia in 'per capita' terms (Figs. 7, 8 and 9), it is possible to understand the temporal and spatial profile of FDI in the region. At this scale the profiles tend to not only be related to the economic evolution of the major economic blocks, but also to the political evolution of each one of the countries. Regarding major inward FDI stocks per capita, the position of Iran and Sri Lanka are unique in the region, in India the ratio has increased but is still low in comparison with these two countries. Yet, as far as Iran is concerned, it also had a major inward FDI stock at the beginning of the eighties, however, its relation to GDP per capita has slowly been depreciated until the end of the century when major diplomatic changes allowed its recovery, a few years later, the growth of outward FDI stock from

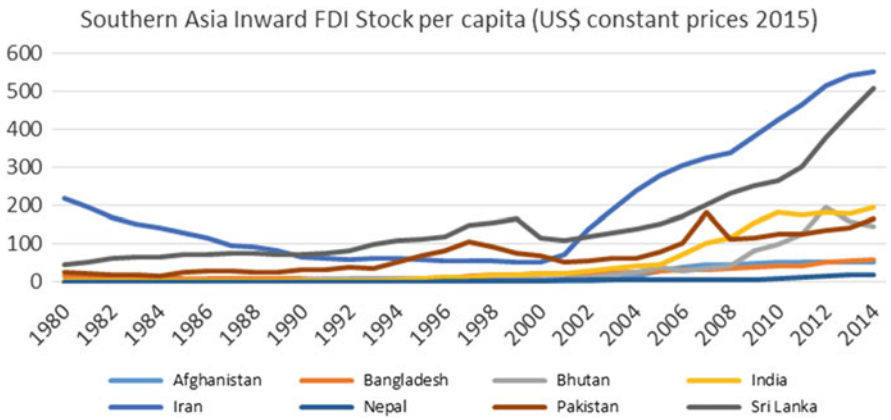

Fig. 7 Southern Asia inward FDI per capita US$ (constant prices of 2015). Source: World Bank

Iran has increased too. The process is similar in all the other countries of the region although with different intensities and varying temporal profiles. For India there is some interesting growth of inward and outward FDI only after 2005. In Sri Lanka, the process is smoother but for the other countries in the region there is almost no outward FDI. The difference between inward FDI stock per capita and the corresponding outward FDI, is not very distinct (Figs. 7 and 9).

The main questions are to know what the effects of theses flows in economic development are on the region? And secondly, what economic and institutional causes influence investment flows among South Asian countries?

3 Effects and Causes of FDI in South Asia

After a brief description of the role of FDI in South Asian countries, it is necessary to raise some questions on the subject. As referred to above, there are few studies who analyse the region in this manner. For a long time, South Asia was known for its economic isolation and political and religious conflicts, either internal (Sri Lanka), foreign intervention (Afghanistan) or war between countries, the most obvious example of this are the border conflicts between India versus Pakistan in the wake of their independence. In such conditions, to attract FDI was certainly not a priority for policy makers nor were foreign investors interested in the region, in spite of its abundant natural resources and labour. In the initial stage of its independence, the policy of India toward FDI was particularly unfriendly (von Mises 1979). However, this negative environment gradually began to shift. In the early nineties, after more than four decades of isolationism, the biggest South Asian country, India, initiated a policy of growth and openness (Bhagwati 1993), that—while it has known its ups and downs—continues till this day. Other countries, even

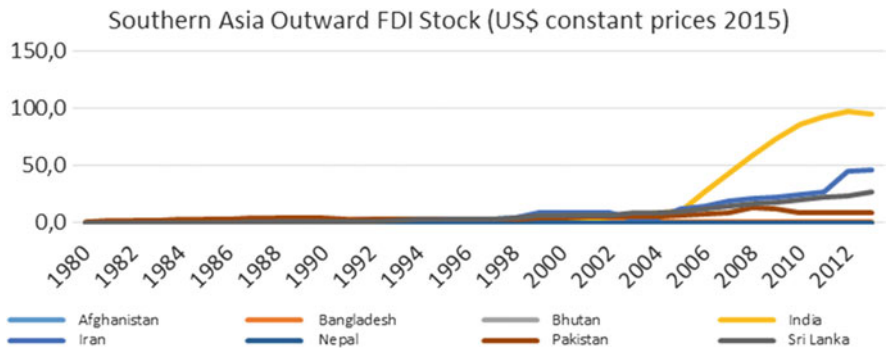

Fig. 8 Southern Asia outward FDI per capita US$ (constant prices of 2015). Source: World Bank

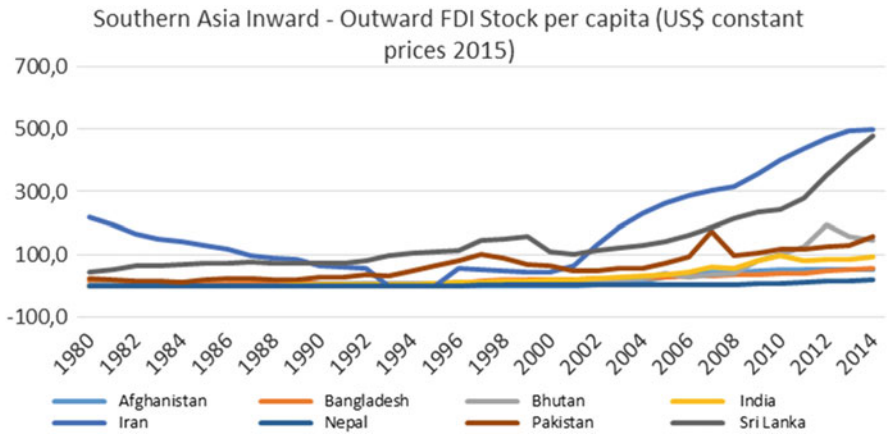

Fig. 9 Southern Asia inward—outward FDI per capita (US$ constant prices of 2015). Source: World Bank

if slowly, followed the same path. While we were unable to consider all of them in our sampling, Myanmar is the best example of a policy of openness in recent years.

As South Asia is considered a poor region with a low GDP per capita, FDI may play an important role in its economic rise insofar domestic savings are not enough. Some neighbouring countries like Malaysia have understood this, and have successfully used FDI to positively affect growth. During the period 1960–2003, FDI amounted by almost one fifth of the total investment (Ang 2009). As South Asian countries become more open and recognise the positive role that their economic ties with the outside world may have on their development process, it is necessary to generate a credible framework to sustain such a policy. It is vital that any regional policy of this kind is well managed. As the Chinese case shows, one of the most important aspects of sustainable economic growth is transfer of technology (TOT).

Notwithstanding this, the signs provided by the quocient between the FDI inward-outward indice with the base of 1990 and the GDP indice with the base of 1990 does not show a great effect of FDI on the economic performance of the South Asia countries. In fact, only in the early 1990s there are indications that FDI played an important impact on growth in Afghanistan and in Maldives. It seems that, at least in South Asia, FDI flows follow growth rather than pushing it.

Regarding causes of FDI in South Asia, the analysis we propose to explain the Net FDI stock per country seeks to find variables that can be related to the literature such as the Demographic Potential [Dpi = Σj (Pj.exp.(−β dij)) and the Economic Potential [Dpi = Σj (Yj.exp.(−α dij)) that include Pj = Population in country j; Yj = Product in country j; dij = distance between country i and country j; and attrition parameters α and β. Besides those two sets of variables, there are also time, country and time/country dummies to perceive the impacts of institutional changes.

Table 1 presents the justification of the variables proposed for the explanatory model of FDI in South Asia. The Demographic Potential can explain the importance of large and developed markets as well as the role of location and internalization, it is expected to have a positive impact on the FDI net stock per country. The Economic Potential represent the location, size, structure and development of the economies but can have a positive and negative effect of FDI net stock per country since a country with a greater economy can also export FDI. Institutional factors are explained by Country and Country/Time Dummy variables. For the purpose of this analysis, we did not find data for intercountry relations and some of these effects are explained by the Country (Di) and Country/Time (Dti) and time (Dt) Dummy institutional variables.

Table 1 Model explanatory variables of net FDI stock per country

	Demographic potential (DPi)	Economic potential (EPi)	Time dummies (Dt)	Country dummies (Di)	Time/ country dummies (Dit)
Large and developed markets (Vernon 1966; Helpman 1984)	+	+		±	±
Internationalization and location (Dunning 1977, 1998)	+	±	±		
The industrial structure (Acemoglu et al. 2005b; Nunn and Trefler 2014)		±			
Institution factors (Feenstra and Spencer 2005; Antràs 2011; Bilir 2014; Adams et al. 2015)				±	±
Intercountry institutional relations (Stone 2016; Azemar et al. 2012; Mohlmann et al. 2010)				±	±

The Model Expression explains the Net FDI Stock per country by the exponential form:

$$\begin{aligned}\text{NetFDIStock(it)} = {} & \text{EXP[B0} + \text{B1.DP(it)} + \text{B2.EC(it)}] \\ & + \Sigma t\ \text{EXP[B3t.(Dt)}] \\ & + \Sigma it\ \text{EXP[B4it\ (Dti)}] \\ & + \Sigma it\ \text{EXP[B5i.(Di)}] + \text{eit},\end{aligned}$$

where B0, B1; B2; B3ts; B4(it) AND B5i are the estimated coefficients of the variables presented above. Physical distances between South Asian countries and the world where considered by a direct connection between capitals. Net FDI Stocks, Product and Population where obtained in the World Bank Data Base that have these data since 1990 until 2014. The parameters β and α of the Demographic and Economic Potential where simulated for the values (0,1,2 and 3) to obtain different variable distributions but the ones that showed better estimates for the Net FDI Stock Model where $\beta = 3$ and $\alpha = 2$.

Model results are presented in Table 2 and in Fig. 10. Interestingly, the Demographic Potential with a higher attrition factor ($\beta = 3$) has a positive effect, but the Economic Potential with a lower attrition factor ($\alpha = 2$) has a negative effect. This confirms what is proposed in the literature, that the industrial structure associated with the economic potential can have positive and negative effects on the attraction of FDI. On the other hand, the implicit spatial interaction of the indicators of Demographic and Economic Potential reveals that FDI is very munch influenced by the spatial structure. Finally, the difference in attrition parameters indicate, as expected, that population is more rooted than goods and services. It is also remarkable that two small countries for which only Country Dummies were used have a completely different capability to attract FDI: The Maldives receives high levels of FDI linked to tourism, whereas the more closed off Bhutan receives much less.

Looking at the evolution of the fixed effects in Fig. 10, that also balance the relative dimension of the Economic and Demographic potentials, it seems interesting to make a few remarks. First, the fixed effect for time is always increasing, which reveals the general growth of the Net FDI Stock in the region as being an explicit—if relatively modest—sign of the integration of South Asia in the world economy. Second, whereas the fixed effect for India is in some way increasing and reinforcing the general trend, the fixed factors of other countries grow in the late 1990s but decrease after that; since the economic and demographic factors are included in the economic and demographic potential and also in the time fixed

Table 2 Model of net FDI stock per country of South Asia

	$AdjR^2$	0.976	F	53.39
	B	Std. Error	t	p
(Constant)	8.716	0.290	30.040	0.000
Bhutan	−3.331	0.168	−19.771	0.000
Maldives	3.417	0.118	28.975	0.000
D3	9.875E-06	0.000	6.462	0.000
E2	−1.348E-06	0.000	−4.438	0.000
Dummies	Fig. 10			

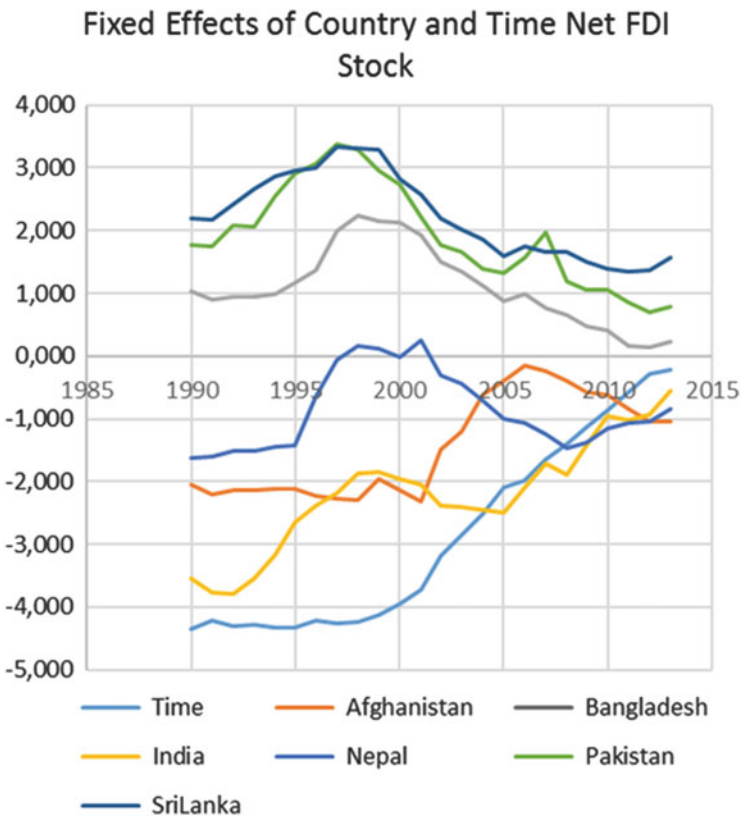

Fig. 10 Fixed effects of the net FDI stock for time and country/time

effect what might be the cause, possibly an institutional cause, that might affect the attraction of FDI to the various countries of the region?

To answer that question a few institutional qualitative variables were analysed but the absolute change in refugees (moving average of 3 years) is the one that is more revealing. There are three situations: (i) In the first one FDI coincides with conflict, that is the case of Afghanistan where there is a close relationship between the number of refugees after 2002 and the Country Time Fixed Effect of the Net FDI Stock; (ii) In a second situation the FDI coincides with peace and that is clearly the case of Bangladesh, Nepal and to some extent Pakistan; (iii) Finally there is no clear relation between peace and FDI, or there is FDI for war and for Peace that counterbalances the effects, this seems to be the case in India and Sri Lanka. The evidence suggests that there is an FDI that reacts to Conflict and an FDI that goes with conflict, this may be one of the reasons why the relation between FDI and growth is becoming less clear in the region (see Fig. 11). However, is undeniable that institutions play a crucial role, not only in the amount of FDI but also in its nature: with peace or with war (Fig. 12).

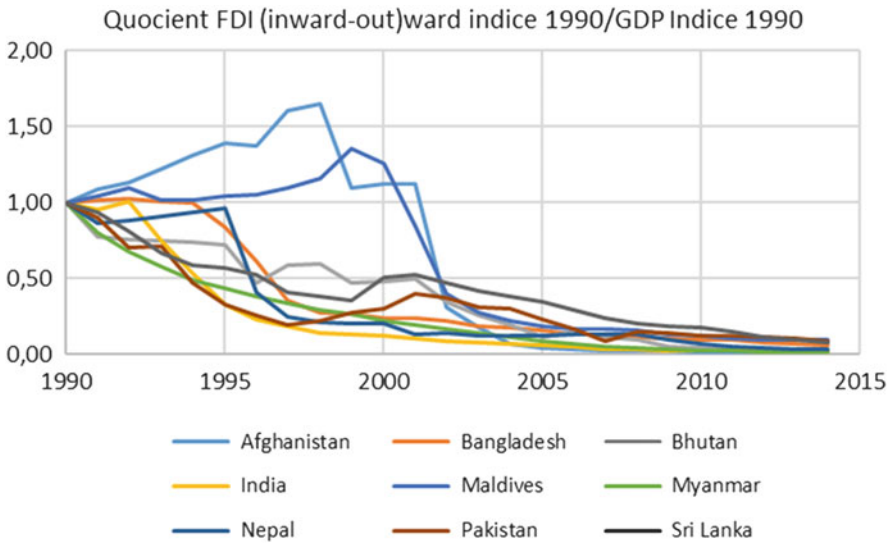

Fig. 11 Quocient FDI (inward–outward) indice 1990/GDP indice 1990

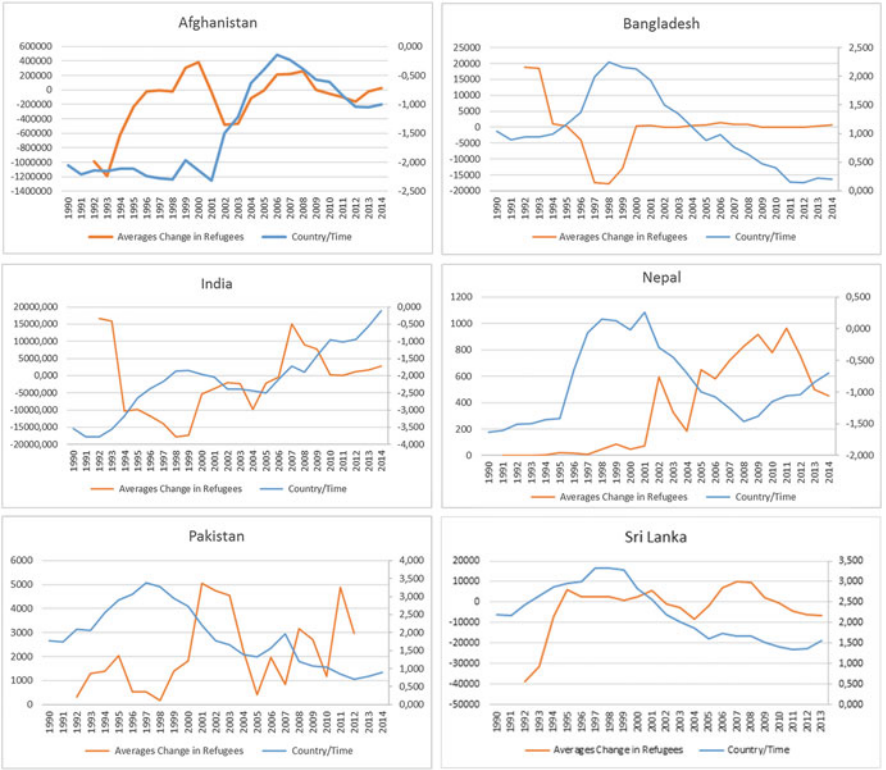

Fig. 12 Fixed effects of the net FDI stock for country/time and change in refugees

4 Concluding Remarks

The objective of the chapter is to better understand the economic and institutional factors that mould the evolution of FDI in South Asia. It is shown that FDI in South Asia is very low compared to what is seen in other parts of the world and that the effects on economic growth are limited and decreasing in the last 25 years. It is possible that this poor growth is related to the poor performance of India—which is the main economic heavyweight in the region—and/or to the conflicts that continuously occur in Afghanistan, Pakistan, Bangladesh, Sri Lanka and Nepal, impeding the development of institutional frameworks and attracting FDI either to military activities, as seems to be the case in Afghanistan, or FDI to recover from military conflicts, as appears to happen in Bangladesh, Pakistan and Nepal. Most importantly, institutions and institutional change play a major role not only in the amount of FDI but also on its nature; and it is the quality of FDI that influences economic growth, not its quantity that can be associated only with destruction and reconstruction associated with conflicts.

References

Acemoglu D, Johnson S, Mitton T (2005a) Determinants of vertical integration: finance, contracts, and regulation. 11424. NBER Working Paper Series

Acemoglu D, Johnson S, Robinson J (2005b) Institutions as a fundamental cause of long-run growth. In: Aghion P, Durlauf S (eds) Handbook of economic growth, vol 1A. Elsevier, Amsterdam

Adams S, Evans E, Opoku O (2015) Foreign direct investment, regulations and growth in sub-Saharan Africa. Econ Anal Policy 47:48–56

Akamatsu K (1962) A historical pattern of economic growth in developing countries. Dev Econ 1 (1):3–25

Ang JB (2009) Do public investment and FDI crowd in or crowd out private domestic investment in Malaysia? Appl Econ 41(7):913–919

Antràs P (2011) Grossman-Hart (1986) goes global: incomplete contracts, property rights and the international organization of production. 17470. NBER Working Paper Series

Asiedu E, Lien D (2004) Capital controls and foreign direct investment. World Dev 32(3):479–490

Azemar C, Darby J, Desbordes R, Wooton I (2012) Market familiarity and the location of south and north MNEs. Econ Polit 24(3):307–345

Barrios S, Strobl E (2002) Foreign direct investment and productivity spillovers: evidence from the Spanish experience. Weltwirtschaftliches Arch 138(3):459–481

Becker SO, Ekholm K, Jäckie R, Muendler M (2005) Location choice and employment decisions: a comparison of German and Swedish multinationals. Rev World Econ Weltwirtschaftliches Arch 141(4):693–731

Bhagwati J (1993) India in transition: freeing the economy. Clarendon Press, Oxford

Bilir LK (2014) Patent laws, product life-cycle lengths, and multinational activity. Am Econ Rev 104(7):1979–2013

Dunning JH (1977) Trade, location of economic activity and the multinational enterprise: a search for an eclectic approach. The international allocation of economic activity

Dunning JH (1980) Toward an eclectic theory of international production: some empirical tests. J Int Bus Stud 11(1):9–31

Dunning JH (1998) Location enterprise: the multinational neglected. J Int Bus Stud 40(1):45–66

Dunning JH (2001) The eclectic (OLI) paradigm of international production: past, present and future. Int J Econ Bus 8(2):173–190
Feenstra RC, Spencer BJ (2005) Contractual versus generic outsourcing: the role of proximity. NBER Working Paper Series
Fetscherin M, Voss H, Gugler P (2010) 30 Years of foreign direct investment to China: an interdisciplinary literature review. Int Bus Rev 19:235–246
Flora P, Agrawal G (2013) Foreign direct investment (FDI) and economic growth relationship among highest FDI recipient asian economies: a panel data analysis. Int Bus Manag 8 (2):126–132
Forsgren M, Johanson J (1992) Managing internationalization in business networks. In: Forsgren M, Johanson J (eds) Managing networks in international business. Gordon and Breach, Philadelphia
Glass AJ, Saggi K (2002) Multinational firms and technology transfer. Scand J Econ 104 (4):495–513
Helpman E (1984) A simple theory of international trade with multinational corporations. J Polit Econ 92:451–471
Hummels D, Ishi J, Yi KM (2001) The nature and growth of vertical specialization in world trade. J Int Econ 54(1):75–96
Hymer S (1960) The international operations of national firms: a study of direct foreign investments. MIT Press, Cambridge, MA
Johanson J, Vahlne J-E (1977) The internationalization process of the firm—a model of knowledge development and increasing foreign market commitment. J Int Bus Stud 8(1):23–32
Johanson J, Wiedersheim-Paul F (1975) The internationalization of the firm: four Swedish cases. J Manag Stud 12(3):305–322
Jongwanicha J, Kohpaiboon A (2013) Capital flows and real exchange rates in emerging Asian countries. J Asian Econ 24:138–146
Kojima K (1985) Toward a theory of industrial restructuring and dynamic comparative advantage. Hitotsub J Econ 26:135–145
Kojima K (2000) The flying geese model of Asian economic development: origin, theoretical extensions, and regional policy implications. J Asian Econ 11:375–401
Levchenko AA (2007) Institutional quality and international trade. Rev Econ Stud 74(3):791–819
Ljungwall C, Tingvall P (2010) Is China different? A meta-analysis of the effects of foreign direct investment on domestic firms. J Chin Bus Econ Stud 8(4):353–371
Masron TA, Nor E (2013) FDI in Asean-8: does institutional quality matter? Appl Econ Lett 20:186–189
Méon P-G, Sekkat K (2006) Institutional quality and trade: which institutions? which trade? DULBEA Working Papers 06-06.RS, ULB. Universite Libre de Bruxelles
Mohlmann J et al. (2010) Intangible barriers to international trade: a sectoral approach. In: The gravity model in international trade. Cambridge University Press, Cambridge
Nunn N (2007) Relationship-specificity, incomplete contracts, and the pattern of trade. Q J Econ 122(2):569–600
Nunn N, Trefler D (2014) Domestic institutions as a source of comparative advantage. In: Handbook of international economics, vol 4. Elsevier, Amsterdam
Ozawa T (2011) The role of multinationals in sparking industrialization: from 'infant industry protection' to 'FDI-led industrial take-off'. Columbia FDI Perspectives, 39, 6 June
Prasad ES, Raghuram GR, Subramanian A (2007) Foreign capital and economic growth. Brook Pap Econ Act 1:153–209
Radelet S, Sachs JD, Cooper RN, Bosworth BP (1998) The East Asian financial crisis: diagnosis, remedies, prospects. Brook Pap Econ Act 1998(1):1–90
Ranis G (1995) Another look at the East Asian miracle. World Bank Econ Rev 9(3):509–534
Stone TA (2016) Institutional quality, knowledge intensity and multinational location choice: Evidence from developing countries. Congress of the European Regional Science Association, Vienna, 2016

Vernon R (1966) International investment and international trade in the product cycle. Q J Econ 80:190–207
von Mises L (1979) Economic policy: thought for today and tomorrow, 3rd edn. Ludwig von Mises Institute, Auburn
Yalta Y (2013) Revisiting the FDI-led growth hypothesis: the case of China. Econ Model 31:335–343
Zhang KH, Markusen JR (1999) Vertical multinationals and host-country characteristics. J Dev Econ 59(2):22

Migration Flows in South Asia

M. Mizanur Rahman Sarker

1 Introduction

Migration have received great attention in economic and political debate worldwide. Global migration flows have increased day by day including South Asia. Nowadays the practice of moving away from home to another country is becoming common. Migration has emerged as a major global issue and ranks high on international, regional and national policy agendas. Furthermore, a continuous rapid growth of population and working labour force in developing countries facing vulnerable economic condition, environmental degradation and resource depletion have increased pressure on people to migrate. The number of international migrants persons living in a country other than where they were born reached 250 million or 3.4% of the world population in 2015 for the world as a whole, an increase of 77 million, or 44%, compared to 2000 (World Bank 2016c). Over the last decade, the number of South Asian migrant workers going abroad has continuously risen, reaching into more than hundreds of millions in 2015 although the actual total migrants are likely to be much higher than officially registered figures since significant number informal migrants.

South Asia covers about 5.1 million km^2 (1.9 million mi^2), which is 11.51% of the Asian continent or 3.4% of the land and surface of the world. Comprising Afghanistan, India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan and Maldives as the constituent countries. The poverty incidence declined significantly last few decades in this region but the regional differences are great and the percentage living below the poverty line is still higher. According to multidimensional poverty index (MPI), around 66% of people in Afghanistan being multidimensional poor using 2010/2011 data, India (2005/2006) is with 54%, followed by Pakistan

M.M.R. Sarker (✉)
Department of Agricultural Statistics, Sher-e-Bangla Agricultural University, Dhaka 1207, Bangladesh
e-mail: mrs_bd@yahoo.com

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_4

(2012/2013) at 44%, Bangladesh (2014) with 41%, Nepal (2014) at 29%, Bhutan (2010) at 27%, and Sri Lanka and the Maldives at 5% (OPHI 2016). The economic conditions and poverty are important drivers of migration but it is not only reason. People migrate for a variety of reasons such as natural disaster, law and order crisis, political insatiability, high unemployment, low wages, under privileged life style, minority are also reasons from this region. South Asian countries are experiencing rapid changes in economic, social, political, demographic and labour trends as an outcome of globalization, modernization, industrialization and advancement of technology. Remittance is the accelerator for the economic development of South Asia. South Asian countries send out a significant number of migrant workers annually and receive remittances which is play key role for economic growth and poverty alleviation. Global poverty fell by about 1 percentage point a year in response to the average annual GDP growth rate of 4% (World Bank 2015b).

Compared to all developing countries as a group, remittances flow have accounted for a larger share of external flows to South Asia. Among the regions, South Asia is the second largest remittance recipient in 2015 following the East Asia and Pacific. Among the South Asian countries, India, Pakistan and Bangladesh ranks first, eighth and ninth in the world, respectively in terms of volume of remittances received in 2015 (World Bank 2016c). Some of the countries remittance inflow exceed the revenue, international trade, foreign aid, foreign direct investment, and other capital inflows. The common uses of remittances are basic consumption, housing, child education, purchase of land, medical facilities, enterprise development etc. although it is depend on household condition and surrounding environment.

The United Nations has recently adopted Sustainable Development Goals (SDGs) and considering the share, scale, impact and important of migration, fixed the targets and indicators for migration such as explicit targets to ensure safe, orderly and regular migration, including through well-managed migration policies (10.7); efforts to end human trafficking (5.2; 8.7; and 16.2) and promote decent labour conditions for migrant workers, including women migrants (8.8); reductions in the costs of remittance transfers (10.c); and the collection of statistics on migration disaggregated according to migratory status (17.18). Migration and remittances help cope with natural disasters and epidemics. Migrants send more remittance after natural disaster for his/her family member or and relatives to the home country. Remittances to all developing countries increased by about 2% of average GDP in the first year following an extreme disaster, and by almost 5% by the third year (World Bank 2016a).

It is essential to critically know the migrations pattern, impact, remittance flow, uses of remittance, link between migration and development etc. to make any plan or to take any initiative for South Asian development and poverty alleviation.

2 Causes and Factors of Migration

Millions of people across the world every day although sometimes it is a complex process. The distances between countries and travel time are no longer as significant barrier for us to live in a world due to advancement of communication and

transportation technologies. The rate of human migration has increased last few decades. There are many reasons why peoples choose to migrate. These reasons can be classified as economic, social, political or environmental. There are pull and push factors which are related to each causes.

Actually, migration is determined considerably by push and pull factors. Migration does not simply move from one to another palace. Most of the cases migration is a function of adverse condition in the home country and or attractive conditions in the destination country. The many incentives that influence immigration that fall into four categories (Bodvarsson and Van den Berg 2013) (1) negative incentives that push people to emigrate, (2) positive incentives that pull immigrants to the destination country, (3) positive incentives that induce people to stay at home, and (4) negative incentives that causes people to stay away from a foreign country.

Push factors are the reasons why people left the South Asia. It is a circumstance that something forcefully pushes them away from their native country. It is generally home place related problem or distress cause people to explore for a better life. South Asia has huge push factors such as unemployment or low paying employment, famine/drought, poverty, land scarce, primitive conditions, loss of wealth, overpopulation, and high taxes. discrimination, lack of services or amenities, natural disasters (earthquakes, floods, droughts, etc.), human right violation, low medical and or sanitary facilitates, pollution, bullying, slavery, political and or religious persecution, civil war, violation and crime, forced military service, lack of equal education, loss of family or friends, lack of fear voting, unfair court system etc.

Pull factors are those factors in the destination country which attract the peoples to migrate from home country to other country voluntarily and live there. It is generally a comparative benefit or advantage which is known as place utility. There are many pull factors although these are vary from place to place. The pull factors which are often attracted the immigrants and discussed the literature are higher income, better economic opportunities, more employment, fewer natural disasters, greater innovative, personal economic and religious freedom, better schooling for children, less discrimination and lower level of taxation, gain civil political and voting rights, better law and order, health care and services, social mobility, personal safety, property rights, climate and peace etc.

The relationship between migration and push and or pull factor is not linear. In addition to the push and pull factors, there are stay and stay away factors. These two factors also highly related to push and pull factors. The stay factors are positive motivators that cause people to stay at home such as family ties, friendship, social position, lifestyle, cultural familiarity, profession, employment, property, familiarity, certainty, political favour etc. the stay away factors are negative motivators that cause people to stay away from a foreign country such as language barriers, cultural barriers, unfamiliarity, discrimination, low social status, lack of political rights, uncertainty etc.

2.1 Types of Migration

Migration is a historical phenomenon. Recently patterns of migration have changed. It is important to classify the types of migration for understanding the migration and its impact. Spatial mobility are diverse in nature and a single universally recognized classification of migration does not exist. Thus, the basis for classification of migration is the purposes of departure and length of stay. It is depend on each individual's perspective such as education, financial capability, skill, purpose etc. There are two basic types of migration studied by demographers: internal and international migration.

Internal migration means a migrant moves within national boundaries, such as between states, provinces, cities, or municipalities. An internal migration is occurred in different administrative territory within the country.

International migration means that a migrant moves from one country to another country. It is more complex and expensive. International migrants are further classified as legal migrants, illegal migrants, smuggled migrants, trafficked persons, refugees and asylum-seekers. Several other forms of migration are exist. These include migration for permanent settlement, migration in seasonal employment, marriage migration and student migration. In addition to the types of migration described above, migrants can be voluntary or forced and it may be professional, skill, semi-skill and un-skill. South Asian most of migrants are semi-skill and un-skill. The predominant flows of international migration in South Asia are made up of workers undertaking temporary labour migration, generally in low-skill or low-status jobs, and which are usually facilitated and regulated by Governments but carried out by private recruitment and employment agencies. The major countries of origin of temporary labour migration vary in the skill composition of the migrant workers such as some 0.5% of newly hired, land-based workers from the Bangladesh in 2013 were professional, 33% skill, 15% semi-skill and 52% unskill (UNESCAP 2016).

2.2 Migrants Trend

Over the last few decades, the number of migrant workers going abroad has continuously risen. In a typical year, over half a million people leave Bangladesh, India, Nepal and Pakistan to work abroad, while Sri Lanka deploy well over 100,000 migrant workers per year (UNESCAP 2016). In 2015, the number of international migrants worldwide reached 250 million, an increase of 77 million, or 44%, compared to 2000. Around 3.4% of the world population are international migrants, compared to 2.8% in 2000. The share of international migrants in total population varies considerably across major areas. Between 2000 and 2015, Asia added more international migrants than any other major area but South Asian migrants decreased in 2015 due to economic weakness of destination countries. These flows are affected by economic trends in countries of destination. It is important to note that the actual total migrants are likely to be much higher than

officially recorded figures since significant number informal migrants. India has the highest rates of out migration in the South Asian sub region and is one of the top ten out migration countries in the world followed by Pakistan. Table 1 shows the trend of migrants and their demographic characteristics.

2.3 Demographic Characteristics of Migrants

Globally, women represent slightly less than half of all international migrants. The contribution of women to the migrant labour force is an issue that has been largely overlooked or ignored in the region. The female share of the total number of international migrants fell from 49.1% in 2000 to 48.2% in 2015. The stock of female migrants increased by more than 40% from 22 million in 2000 to 32 million in 2015. Economic development plays an important role in migrant households and influences gender relations, as women start working outside the family through labour market participation (Dannecker 2009; Phouxay 2010). In recent years, Asia has witnessed a rapid increase in the number of male migrants. Although some governments banned temporary female migration abroad for limited period such as Bangladeshi government banned female migration abroad in response to wide-spread reports of physical and sexual abuse of migrant domestic workers in 1997 again started to migration in 2004. The stock of male migrants in Asia grew by 62%, from 27 million in 2000 to 44 million in 2015. The increase in male migrants in Asia has been accelerated by the strong demand for migrant workers in the oil producing countries in Western Asia.

The median age of international migrants worldwide was 39 years in 2015, slight increase from 38 years in 2000 while the South Asia was 32 years in 2000 and 33 years in 2015. Migrants from Sri Lanka were the youngest, with a median age of 25 in 2015, followed by Bhutan (28 years), Afghanistan (30 years). Indian migrants were comparatively older (49 years). Today, one out of every six international migrants is under the age of 20. In 2015, the number of international migrants below age 20 reached 37 million or 15% of the global migrant stock and 17.2% of the South Asian migrants. Most international migrants are of working age such as in 2015, 65.8% international migrants from South Asia were between the ages of 20 and 64 and older persons share were 17.0% (Table 1).

2.4 Remittances Inflow and Share of GDP

Most of the South Asian countries have seen remittances increase significantly. In recent years, remittances have increased tremendously and are now the largest source of external funding for many South Asian countries. In most South Asian countries, remittances significantly contribute to their gross domestic product (GDP) as well as foreign exchange earnings. Remittances are significantly larger than foreign direct investment and official development assistance. For instance, remittances make up almost thrice the magnitude of foreign aid in Nepal.

Table 1 Trend of migrants and demographic characteristics

	Migrants (thousand)		Percentage of total population		Percentage of female		Percentage of age group, 2015			Median age	
Country or area	2000	2015	2000	2015	2000	2015	0–19	20–64	65+	2000	2015
Afghanistan	75.9	382.4	0.4	1.2	43.6	49.4	28.2	68.9	2.9	30	30
Bangladesh	987.9	1422.8	0.8	0.9	13.9	13.3	20.5	76.5	2.9	29	33
Bhutan	32.1	51.1	5.7	6.6	18.5	18.9	11.8	85.6	2.6	28	28
India	6411.3	5241.0	0.6	0.4	48.5	48.8	5.4	64.6	29.9	48	49
Maldives	27.1	94.1	9.7	25.9	45	29.7	19.0	76.8	4.2	33	33
Nepal	717.9	518.3	3	1.8	66.3	69.0	19.3	74.3	6.4	31	33
Pakistan	4181.9	3629.0	3	1.9	46.2	48.9	25.0	57	18.1	34	37
Sri Lanka	40.1	38.7	0.2	0.2	45.3	47.7	42.3	45.6	12.1	47	25
South Asia	1881	1084.6	1.1	0.8	44.9	45.4	17.2	65.8	17.0	32	33
Asia	49,340.8	75,081.1	1.3	1.7	45.6	42.0	18.0	72.8	9.2	35	35
World	172,703.3	243,700.2	2.8	3.3	49.1	48.2	15.0	72.5	12.5	38	39

Source: Adapted from United Nations (2016)

Furthermore, the stability and predictability of remittances is far higher than other sources of external finance such as aid, which is often contingent on political imperatives, and investment, which is contingent on business sentiment and confidence (Premaratne and Mel 2009). In most South Asian countries, remittances are a key component of sustainable economic development and most of the case total amount of official remittance as a percentage of GDP has increased over time. The results suggest that a 10% increase in remittances leads to 3–4% increase in real GDP per capital (ADB 2012). Table 2 shows the remittance inflows and respective contributions to GDP in South Asia.

Within the global context, the South Asia made up 20.27% in 2015. According to World Bank reports, remittance inflows into South Asia totalled US$117.9 billion in 2015. Remittance flows have been broadly steady in India, Bangladesh and Sri Lanka. This is only the official estimate. A significant amount of remittances are transferred through informal channels that are unaccounted in the official data. The country in the region receiving the largest amounts of remittances in the region is India, followed by the Pakistan and Bangladesh. In some countries remittances constitute a large portion of the GDP. In South Asian case, foreign remittances contribute 4.28% in the accumulated sum of GDPs of South Asian economies. In 2014, remittances contributed to 1.3% of GDP of Afghanistan, 8.7% of Bangladesh's, 3.1% of India's, 0.7% of Bhutan's, 0.1% of Maldives', 29.2% of Nepal's, 7.0% of Pakistan's and 8.9% of Sri Lanka's.

2.5 Projection of Remittance Flow

Remittance flows to developing countries are projected to rise by about 4% in 2016 and 2017 or nearly twice the growth rate anticipated for 2015. In contrast, South Asia achieved the most rapid growth rate of remittances, a projected 5.1% in 2018 while the world growth rate projected 4.0%. The growth rate of remittances to developing countries is estimated to have fallen from 3.2% in 2014 to 0.4% in 2015 (Table 3). The slowdown in grow is largely due to economic weakness of the major remittance sending countries and continuing weakness of the price of oil and currencies. Bangladesh experienced flat remittances of around US$2.1 billion in FY2016. In Pakistan, the growth in remittances is expected to be around 5.5% until FY2018, way below the 16% average growth of the previous 5 years. In Sri Lanka, remittances flow are projected to grow less than GDP (World Bank 2016b).

2.6 Uses of Remittances

The migrants send a reasonable portion of their earned money to home country for household's members or other relatives or repayment the credit or investment. The utilization pattern of remittances depends on the length of migration, economic status of household, dependency ratio, government policy etc. Many researcher and

Table 2 Remittance inflow and contribution to GDP in South Asia

Migrant remittance (US$ million)	2000	2005	2010	2011	2012	2013	2014	2015	Share of GDP in 2014
Afghanistan	–	–	342	185	252	314	268	350	1.3%
Bangladesh	1969	4642	10,850	12,071	14,120	13,867	14,983	15,359	8.7%
Bhutan	–	–	8	10	18	12	14	20	0.7%
India	12,845	22,125	53,480	62,499	68,821	69,970	70,389	68,910	3.4%
Maldives	2	2	3	3	3	3	3	3	0.1%
Nepal	112	1212	3464	4217	4793	5589	5770	6976	29.2%
Pakistan	1080	4280	9690	12,263	14,007	14,629	17,066	19,255	7.0%
Sri Lanka	1163	1976	4123	5153	6000	6422	7036	6999	8.9%
South Asia			81,960	96,401	108,014	110,806	115,529	117,872	
Percentage of World			17.80	18.43	19.86	19.38	19.52	20.27	
World	126,750	282,536	460,527	522,934	543,943	571,759	591,968	581,640	

Source: Adapted from World Bank (2016c)

Table 3 Estimates and projections of remittance flows to South Asian region

Area	2010	2013	2014	2015e	2016e	2017e	2018e
	($ billions)						
South Asia	82.0	110.8	115.5	117.9	123.3	129.3	135
Developing countries	331.7	416.6	429.9	431.6	447.9	465.7	484.7
World	460.5	573.0	592.0	581.6	603.2	626.4	651.3
	(Growth rate, %)						
South Asia	9.4	2.6	4.3	2.0	4.6	4.9	5.1
Developing countries	11.4	4.9	3.2	0.4	3.8	4.0	4.1
World	8.4	5.3	3.3	−1.7	3.7	3.8	4.0

Source: Adapted from World Bank (2015c); e for estimated value

policy makers have assumed that households spend most of their remittance income on consumption with only small fraction of such income being spent on investment (Adams 2005) Remittances are mostly used to meet current consumption needs. Expenditures on basic consumption (e.g. food, clothes, and utilities) are the most important use of remittances. The largest portion of remittances is spent on consumption and that the second largest is spent on houses, land and related expenditure (Cuc et al. 2006). The continuous remittance flows use for ensuring the livelihood security includes food security, capacity to enjoy medical facilities, and the ability to undertake social capital development such as education of children, land acquisition and housing, and enterprise development (Premaratne and Mel 2009).

However, in many cases, when the family is very poor and contributions to family income are not sufficient to meet basic needs, they raised their consumption level-unless the migration was recent or occasional and their situation improved considerably. Those families who did not have financial problems to begin with managed to increase their consumption level by, for example, buying a new car or renovating their house/this change in consumption levels has motivated friends and relatives to leave or to prepare to leave. As basic needs are met, an increasing portion of remittances is oriented toward durable, investment in housing, savings and business investment. Debt repayment is the second most important use in the first year, but becomes marginal over time as debts settled. Spending on house hold durable increases over time, almost mirroring the decrease in expenditures on basic consumption goods. Families receiving remade also likely to increase investment considerably in business activities in the future, albeit to lower levels than housing and human investment (Cuc et al. 2006).

Remittances are used in many countries to build schools and clinics (Martin et al. 2002). Remittances may increase expenditure on education by helping to finance schooling and reducing the need for child labour. Girls' school attendance and educational attainment can rise from the receipt of remittances (e.g. Pakistan) (Rajan 2014). Studies show that only a little share of the remitted money is used for productive investments, about 5–7% of the total (Orozco 2000). Remittances

may serve as insurance policies against risks associated with new production activities (Taylor 1999).

2.7 Impact of Migration Flow

Nowadays the impact of migration have received greater attention in the economic, social and political development, especially considering the importance of remittances. Migration has both positive and negative on individuals and their families, community, nation and finally South Asian region as a whole. Migrants can help promote development through remittances, investments and physical returns. The benefits of remittances can improve living conditions, household income and productivity. Investment of remittance makes job opportunity, poverty reduction, empowerment of underprivileged segments of the society and numerous human capital formation. Return migrants also contribute significantly as development actors to the society and nation by using their gained knowledge, ideas, skills, experiences. The major's impact of migrations are as follows.

2.8 Demographic Impact

Increasing migration has various demographic impacts at family, community and national level. It is effect the dependency ratio and sex ratio. As mentioned in Table 1 the most of the migrants are working age group (15–59) and gender distribution is not equal. Therefore, migration increases the dependency ratio and brings down the masculinity ratio of population. The migration of working group of males is also threat for the balance of population distribution. It is comparatively increase the proportion of other group women, children and old (Gautam 2005). Sometime migration is a threat for family life including husband wife relation. Sometimes migration control for producing babies in time. A study (Hildebrandt and McKenzie 2005) inspected the effect of remittances on both infant mortality and birth weight. The findings indicated that solid significant negative effect of remittances on infant mortality.

2.9 Social and Political Impact

The practices of migrants become an example to the villagers because these, have heavy economic and social consequences on their families and relatives. Migrants often carry home new thought, skills and knowledge that they have acquired from their change of location. Many enterprises, farm exercise, and economic investment have been started by people who got ideas and knowledge during the times they spent in migration. Better housing, education and the purchase of land can produce an impact on the households' local conditions by substantially increasing social and human capital (Sørensen et al. 2003). Recent ILO research demonstrates that

children from remittance receiving families have better access to information technology and knowledge of foreign languages, and they could more often afford to continue their studies at tertiary level (Sintov and Cojocaru 2013). Relationship among family members and neighbours has been changing in the society. Having cash income is important for good relation and no cash income have no good relationship at the present. Migrated people seem to be more aware politically. They have taken some political position like ward representatives in a local government although they had no knowledge about leadership before migration (Gautam 2005).

2.10 Economic Impact

Migration has been a critical factor in South Asian economies as a source of employment and livelihood for workers, and as a source of remittances which provide a stable flow of external finance. Remittances also contribute significantly to overall GDP and external economic stability in South Asian countries. There is a positive correlation between the contribution of remittances to family income and the level of welfare of the recipient family. Remittances represent a large share of the income of the recipient's family, thus raising its welfare. Migrants send lots of money home to support their family. That is a massive flow of foreign exchange or funds that the local government and families can tap into for development and economic growth. When the working people departure, there is less pressure for employment or business, and people are more likely to hunt something to do in the origin.

Remittances are a major source of household income in Nepal, Bangladesh (World Bank 2015a). Investment of remittances contribute to output growth, and if it is consumed, then also it generates positive multiplier effects. Inward remittances are believed to have a positive impact on savings and investment. Household surveys in Pakistan indicated that the marginal propensity to save was higher (0.711) for income from international remittances than from domestic urban rural remittances (0.49) or rental income (0.085) (Adams 2002).

However, a significant contribution is made indirectly by way of transfer payments that are used to finance household consumption and investment. In the context of households, which in fact are the direct recipients, remittances play a dual role, one is offering livelihood security for many poor households and acting as a savings and investment channel for wealthy households. The livelihood security includes food security, capacity to enjoy medical facilities and the ability to undertake social capital development such as education of children, land acquisition and housing, and enterprise development. Remittances are found to have a positive and significant effect on the accumulation of important assets in rural Pakistan: irrigated and rain-fed land (Premaratne and Mel 2009).

Remittances are instrumental to keep current account deficits, help to improve health and education outcomes through direct spending and contribute to the alleviation of poverty by raising households' income. A return migrant becoming

an entrepreneur due to accumulation of savings and human capital, while abroad (Gubert and Nordman 2011). In addition, migrants could play a role in facilitating trade and investment flows between origin and destination countries (Plaza and Ratha 2011).

Remittances have helped countries in South Asia adapt to various shocks such as natural (tsunami in Sri Lanka, floods in Bangladesh) or economic (global economic crisis of 2008/2009). Remittances are a stable source of funds during external shocks and even tend to be counter cyclical. This means that unlike private capital flows, remittances tend to remain stable or actually rise during financial crises, natural disasters, or periods of political instability (Premaratne and Mel 2009).

2.11 Detrimental Effects

Migration is considered a problem in the developing world, including South Asia. Brain drain, inflationary pressures and labour force depletion restrict the progress and development related other works. Many South Asian doctors, nurses, engineers, teachers and very bright professionals are lost due to migration. It increases inequality at the community and region levels. Children and other dependents suffer the most in absent of parents. Children miss the good parenting and some of them are misguided at their childhood. It is hamper the proper psychological development of the children. Migration brings some family problems, too as some family heads and members do not return to their villages for some time or forever. The absence of migrants for a long time creates social psychological anxiety. This case is stronger when the family head represents a strong factor for family unification. Sometimes, migrants found their wives tired and impatient in the husband's long and continuous absence and few wife fly with other man.

Most of the young males and females member of rural migrant family leave their rural residence for urban area. They are living permanently buying house and land or in rent. The old couples are alone at home. No one is there at home to look after them.

Productivity has decreased in the rural area due to the lack of active labour force. Many people have learned the habit of drinking alcohol and gambling. Many return migrants are habituated to drinking alcohol and gambling. It also creates some social problem in the South Asian region.

3 Human Trafficking and Gender Violence

Human trafficking is one of the great threats for migration throughout the world. One of the increasingly important major phenomenon's associated with migration from south Asia concerns human trafficking including women and children trafficking. The South Asian region is known to be a primary source of global trafficked persons. Victims of trafficking persons from this region are found worldwide. Victims of human trafficking means populations at risk of modern slavery are

subjected to force, fraud, or coercion for the purpose of sexual exploitation, smuggling, debt bondage, forced labour, domestic servitude, camel racing and organ trade which is defend on destination and trafficker.

A recent study of the International Labour Organization estimates that whereas 43% of all victims are trafficked for sexual exploitation, another 32% are victims of economic exploitation, the rest being undetermined (ILO 2005) and there are incidences of boys being traded for sex, as in Sri Lanka where foreign paedophiles lure beach boys with money (Huda 2006). They are inherent vulnerable men, women, teenagers and young children. South Asia is the one of the low cost labour intensive regions. The poverty, social exclusion or civil unrest, increasing demand for cheap labour and heavy population growth in the region encourages migration. Their goal is to survive and earn money for their families through migration whether legal or illegal. Many migrants are attracted by dishonest hope and fall victims to human trafficking. Many people, illegally migrate to other countries by land or sea is seen as the best way to change their present vulnerable situation and other organized group such as previous migrants and or brokers support them to go to destination country and work illegally although it is a dangerous process. This is known as trafficking in migration.

Victims from South Asia have been detected in or repatriated from 37 countries in all regions of the world. Trafficking occurs on a large scale, but its extent is difficult to assess. It can be tricky to judge whether migration is voluntary or forced and difficult to extract data specifically on trafficking from data on other forms of illegal migration and exploitation (Human Development Report 2015 2016). Nonetheless, it is difficult to obtain a clear picture of trafficking because it is undocumented or unregulated labour migration. But available facts and figures indicate that the number of trafficked persons has increased over time. There are an estimated two million people, mainly women and girls, trafficked annually (approximately 2.3% of female migrants) (Murison 2005). The estimated number of people trafficked each year vary from ten thousands to millions. Some estimates suggest that every year 1–2 million women, men and children are trafficked worldwide, around 150,000 of them are from South Asia (Nawaz et al. 2012).

An estimated 9000 girls are trafficked annually within South Asia from Nepal to India and from Bangladesh to Pakistan. India and Pakistan are the main destinations for children under 16 who are trafficked in South Asia (UNDP 2007). In many Indian cities, girl children as young as eight or nine are sold at auctions. News published in the Hindustan Times (11th October, 2012) states that around 20 children go missing in Delhi every day. Around eight of them or 40% are never seen again (Kumar 2015). The Ministry of Women and Child Development estimates in 2007 that the number of individuals trafficked for commercial sexual exploitation in India is 2.8 million (Uddin 2014). Religious pilgrimage centers and cities popular for tourism continue to be vulnerable to child sex tourism. Women and girls from Nepal and Bangladesh, and an increasing number of females from Uzbekistan, Ukraine, and Russia, are also subjected to sex trafficking in India (Trafficking in Persons Report-India 2012). Bangladesh reports a high level of child trafficking, while in Nepal, women remain the most frequently reported victims of trafficking.

The Economic and Social Commission for Asia and Pacific shows that in South Asia young girls from certain rural areas of Bangladesh, India and Nepal are trafficked for marriage and then sold into prostitution (Shamim 2010). It has been found that India has the world's largest labour trafficking problem with hundreds of thousands of sex trafficking victims and millions of bonded labourers including forced child labourers (Ghosh 2009).

The Asian Development Bank estimates that 1.8 million people (1% of total population) are bonded labourers in Pakistan, though many NGOs place the estimate much higher. Girls and women are also sold into forced marriages; in some cases their new "husbands" move them across Pakistan's land borders and force them into prostitution in Iran or Afghanistan (Trafficking in Persons Report-Pakistan 2012). Around 100–150 women are estimated to enter Pakistan illegally every day. Few ever return to their homes (Trafficking in Persons Report 2012). Approximately 200,000 women and children are estimated to be trafficked to the Middle East in the last two decades. 200–400 women and children are estimated to be smuggled out each month to Pakistan and around 19,000 Pakistani children have been trafficked to the United Arab Emirates. Around 160,000 Nepalese women are in Indian brothels (Sinha 2013). Nepal is a source country for men, women and children Trafficking takes place for the purpose of organ transplant to India and to Korea and Hong Kong for the purpose of marriage. Every year between 5000 and 7000 Nepalese girls are trafficked. The Chinese district of Khasa on the border with Nepal is an emerging sex trafficking destination for Nepali women and girls (Trafficking in Persons Report 2012).

Around 13,220 children are reported as being trafficked out of the country and it was possible to rescue only 4700 of them within the 5 years in Bangladesh. The United Nations High Commissioner for Refugees reported that in the 2 years following the outbreak of violence (June 2012–2014), 87,000 people embarked on irregular maritime journeys across the Bay of Bengal from ports in Myanmar and Bangladesh. The number of maritime migrants on this route tripled between 2012 and 2014, reaching 63,000 in 2014 and 25,000 in the first quarter of 2015 (UNHCR et al. 2015). Some Sri Lankan women are promised jobs or began jobs as domestic workers, mainly in Singapore or Jordan, but were forced into prostitution. A small number of Sri Lankan women are forced into prostitution in the Maldives (Country Narratives: Countries N and Through Z 2012). The number of cases of trafficking investigated in India, Pakistan, Bangladesh, Nepal, Sri Lanka and Maldives are 3554 in 2012, 4000 in 2011, 209 in 2012, 118 in 2010–2011, 56 in 2011 and 18 in 2012 respectively (Global Report Trafficking in persons 2014).

3.1 Migration Trap

Migration trap is a spiralling mechanism which forces poor household to remain poor although at least one of family members has migrated. It is very difficult for some household to escape poverty through migration. Migration trap can be broken by planned, appropriate and legal migration. But if the plan fails, household will

become dependent on migration again or other program forever and may even go deeper down in the poverty spiral. Migrants need to more aware, at least short time training, language knowledge of destination country etc. in order to earn enough money to escape poverty through migration.

Poverty and underdevelopment as a driver of migration. A significant number of migrants and their families is going to under the poverty or acute poverty for migration means migration as cause of poverty or poverty as a result of migration. Migration is not free and whatever the reason for moving, migrants need a certain minimum level of resources in order to finance their move. We cannot say that migration for short or medium time is always beneficial from the South Asian region. Many factors affect the benefit of migration from one country to another country. In many cases, economic costs of migration even outweigh economic benefit. This is because migrants pay a huge amount of cash to migrate, which is often untouchable within the limited contract period (Ishida and Hassan 2000). Before their departure, many migrant workers go into debt to pay high recruitment fees imposed by unscrupulous licensed labour recruitment agencies and their unlicensed sub-agents. These agencies and agents also commit recruitment fraud by engaging in contract switching defined as the promising of one type of job and conditions but then changing the job, employer, conditions, or salary after arrival (Trafficking in Persons Report-Sri Lanka 2012). For example, an unskilled worker migrate to the Middle East from Bangladesh. Worker gets a salary of US$80–1002 per month working 60 hours a week. In addition, he/she has to pay a huge service charge and does not enjoy the annual month long holiday with pay and travel expenses paid for. The workers have also become subjects of arbitrary dismissals and transfers (Siddiqui 2001). Recently, a migrant worker needs to spend roughly US$6000–8000 for Korea, US$2000–3000 for Malaysia, and US$2000–2500 for the Middle East and SG$7000 for Singapore for a 2-year contract from Bangladesh and approximately $1400 in fees to recruitment agents before their departure to Middle East from Nepal it is almost three times the average annual income for Nepalese (William 2008). From the above data, we can easily conclude that a migrant worker hardly gets back even their economic financial cost of migration by working for 2 years. Now more migrants and their families are worried about the economic outcome of labour migration than ever before (Rahman 2006).

In addition, migration has some invisible cost such as take loan with interest rate, sell or mortgage land property or other fixed or capital asset, livestock, or even the gold ornaments. The migration cost often loss the economic foundation of families leading to the further deterioration of the income or investment opportunity of household. While migrant household back home wait for remittances expectant that it will improve the economic situation of household but the poor inflow of remittances or premature deportation is vanished their expectations. Unsuccessful migrants return home in debt, unable to repay the loans initially taken for their migration and fall into further difficulties. If a migrant raises funds for migration by selling land and small business or capital asset, they already became dispossession of their land and other economically valuable goods and lost the earnings from land and small business. Semi and low skilled migrants may also face poor living and

health standards whilst abroad and home bound domestic workers are situated in the most unprotected positions. As a result, many of the migrants end up in a worse position even death than when they start, leading to the emergence of a return migrant poverty class (Rahman 2006).

Migrant of the landless and near landless peasant's households cannot bear the high costs of legal migration but they think that migration legally or illegally is short cut way to development. Most of the unskilled, less aware and low educated labourers become victims of private recruitment agencies or criminal gangs or trafficking. These victims may also experience false promises of employment or marriage (for women), restrictions on their movements, non-payment of wages, work long hours without day off, poor working environment, little food, no access to medical care, threats, and physical or sexual abuse, only bodily trauma, hijack, disease, death etc. At least 5417 migrants died or went missing during migration in 2015, 15% more than in 2014 (IOM 2016). Trauma associated with human trafficking can be devastating and lasting, as many victims suffer psychological and physical abuse at the hands of traffickers. The signs of vicarious trauma resemble post-traumatic stress disorder, and can include emotional, behavioural, and physical symptoms, such as anxiety, depression, disturbed sleep, change in appetite, irritability, nightmares, loss of empathy, and numbness (Trafficking in Persons Report 2016). Some households also spent considerable amounts of money for their health care and for the loss of labour at home, and in some cases families have split up. Many migrants cross the border legally and then overstay and work illegally due to financial crisis. Finally a significant number of migrants or households cannot escape the poverty and deteriorate their economic and social condition and migration can lead directly to live with poverty in the society.

4 Link Between Poverty and Migration

South Asia is one of the fastest growing economic region in the world although it is home to the largest concentration of people living in languish poverty. The migrants remittances significantly contribute to increase the income of poorer and poverty reduction in South Asia. Concepts, measurements and relationship between remittances and poverty are complex and highly country-specific. Migration may cause poverty or vice-versa. A leading scholar of migration-poverty debate, identified three major types of interrelationships between migration and poverty (Skeldon 2002): (a) poverty as a root cause of migration; (b) migration as the result of poverty; and (c) migration as a cause of poverty.

There is a lot of content in the literature with reference to the impact of migration on poverty in the developing economies. The remittances are sufficient to recover the cost of migration and to provide the remittance receiving households with the resources necessary to keep them out of poverty. Their consumption expenditures had more than doubled from the time before their family member went abroad (IOM 2010). Evidence shows that migrant households are usually economically better off than non-migrant households because of the inflow of foreign remittances

(Oda 2007). At the micro economic level, remittances have reduced levels of poverty and raised standards of living through consumption and investment in human capital (Adhikari 2011). Evidently, it is sensible to assume that the money transfer by the migrants to their family members back home have certain some inclusive effect on poverty alleviation because remittances are directly received by the poor people (Azam et al. 2016). In (Siddique et al. 2016; Adams and Page 2005), the researchers have concluded that international migration expressively reduces the poverty rate in the developing countries and on average, a 10% rise in the share of international migrants in country's population will lead to a 2.1% decline in extreme poverty. Notwithstanding this example, broader trends indicate that international remittances may have the greatest impact in reducing the severity of poverty rather than its scale (MPI 2013).

Literature reveals that in the poor countries remittances can greatly help in the reduction of poverty in Asian developing countries, the result being stronger in those countries where remittances are above 5% of GDP (UNCTAD 2011). A study on the impact of remittances on poverty and economic growth in Asia shows that the impact of remittances on growth is positive, the impact on poverty is negative. A 10% increase in remittances (as a percentage of GDP) decreases the poverty gap by about 0.7–1.4% (Silva et al. 2009). Similarly, the study finds that on average, a 10% increase in the share of remittances in a country's GDP is associated with about a 1.5% fall in headcount poverty and 1.1% fall in poverty gap. The results of cross-country regression analyses suggest that a 10% increase in remittances leads to a 3.0–4.0% rise in real GDP per capita. The results also show that remittances exert a negative impact on aggregate poverty in Asia (ADB 2012). Results from a series of ADB research studies on the role of remittances at the global level and in key Asian countries such as Bangladesh, Pakistan, Vietnam, confirm this notion by showing that remittances have significantly increased household income and supported consumption, and therefore have reduced poverty. Azam (2015) finds a significantly positive relationship between workers remittances and economic growth in four developing Asian countries namely Bangladesh, India, Pakistan and Sri Lanka during 1976–2012. Accordingly, Asia has become the major recipient of remittances and for some countries the remittance inflows have been instrumental in helping stabilize their domestic economies and reduce poverty.

Remittances play a critical role in Bangladesh. Findings from an earlier ADB study show that 1.7 of the 9% points of poverty reduction in Bangladesh during 2000–2005 was due to the inflows of remittances, and that the probability of a household becoming poor decreased by 5.9% if it received remittances (Raihan et al. 2009). Household survey data show that remittances have reduced the poverty headcount ratio significantly. For example, the Global Economic Perspective Report in 2006 notes that remittance inflow has made it possible for Bangladesh to cut poverty by 6% (World Bank 2006). In Nepal, a study done by the Nepal Living Standard Survey found that the contribution of remittances in reducing poverty between 1996 and 2003 was 11%. Other research conducted in Nepal showed that a dramatic increase in remittances was responsible for one-third to one-half of the overall reduction in headcount poverty rate in the country which

declined from 42% in 1995–1996 to 31% in 2003–2004 (World Bank 2006). Remittances not only help to reduce poverty, but also reduce the depth and severity of poverty in Nepal and other countries (Khatri 2007). Some similar studies include (Lokshin et al. 2010) in Nepal found that international remittances diminish poverty. Likewise, Hatemi and Sallahuddin (2014) empirical findings suggested that causality nexus of poverty and remittances is bi-directional for Bangladesh over the period 1976–2010. In Sri Lanka, compared to the national average, a higher percentage of urban households and richer households receives remittances from abroad (Kelegama 2011).

In contrast, some studies explicitly address the inverse results. A study reported that compared to their situation before they migrated, the income of migrants often increases significantly. It is important to note, however, that this is not the case for all migrants, some find themselves in serious debt, which they are unable to repay and causes them to fall into further difficulties (Siddiqui 2012). Although remittances role for poverty alleviation is undisputed, but analysts continue to argue that remittance income received is rarely used for 'productive purposes' but is rather spent on debt maintenance and everyday expenses creating inflationary pressure on the local economy (Newland 2003). Most recent observations suggest that Bangladeshi labour migration does not always yield a positive economic return for the migrants and their families (Rahman 2000). But remittances may also raise inequality because rich (workers) are better able to pay the high fixed costs associated with international travel (Ratha 2003).

5 Conclusion

South Asia is a remittance economy where remittances have been gradually becoming a sole share of GDP which leads economic and social development. The development of economy of this region highly depends on the flow of remittances and its utilization and investment patter. The dynamics of international migration and remittances has attracted the attention of policy makers and academics around the world although it is relatively new concept. Migration should be promoted and motivate the migrants and their family members to invest the remittance more economic and wise way and take part more effectively to the labour market. Absence of adequate out migration policies, poor governance and investment environment are major obstruct for expansion of this rising sector and achievement of SDGs. Increasing international and domestic pressure on governments for migrant friendly policy to focus on safe migration and investment which will fuel the future development. Public attitudes have a great impact upon the status and wellbeing of migrant workers.

Through precise anti trafficking and legally money transfer friendly policy design and effective implementation will encourage adoption and enforcement of anti-trafficking and legal channels frameworks that are more comprehensive, realistic, user friendly and transparent. It will be created migrant and remittance friendly environment and bridging the gap between origin and destination countries

which will be enhance the development and poverty alleviation. Governments should provide resources for training, technical assistance for further improvement of resiliency of migrant workers and auditing to ensure that trafficking is fully eliminated from this region. Special attention is needed on legal, social, physical and psychological protection of people who are victim by trafficking or migration related crime or hazard. Migrants often prefer to use non-bank transfer methods because it is cheaper and faster than bank transfers. It is important to take initiative to enhance transfer of remittances through formal channels by using the quick and cheaper methods to minimize the cost and maximize the benefit that provide a historic opportunity to accelerate human development and galvanize the progress on the SDGs for poverty free South Asia.

References

Adams RH (2002) Precautionary saving from different sources of income: evidence from rural Pakistan. Policy Research Working Paper 2761. World Bank, Washington, DC

Adams RH (2005) Remittances, poverty, and investment in Guatemala. Chapter 2. Part 1 Migration and remittances, pp 53–80. http://siteresources.worldbank.org/INTINTERNATIONAL/Resources/1572846-1155572147157/Chapter2.pdf. Accessed 20 June 2016

Adams RH, Page J (2005) Do international migration and remittances reduce poverty in developing countries? World Dev 33(10):1645–1669

ADB (2012) Global crisis, remittances and poverty in Asia. Asia Development Bank, Manila. http://www.adb.org/sites/default/files/publication/29831/global-crisis-asia.pdf. Accessed 2 July 2016

Adhikari J (2011) Impact of internal and international migration in Nepal. Unpublished paper prepared for the Research Programme Consortium (RPC) on Migrating out of Poverty. University of Sussex, Brighton

Azam M (2015) The role of migrant workers remittances in fostering economic growth: the four Asian developing country's experiences. Int J Soc Econ 42(8):690–705

Azam M, Haseeb M, Samsudin S (2016) The impact of foreign remittances on poverty alleviation. Global evidence. Econ Soc 9(1):264–281

Bodvarsson ÖB, Van den Berg H (2013) The economics of immigration theory and policy. Springer, Berlin

Country Narratives: Countries N Through Z (2012) Trafficking in Persons Report 2012. US Department of State. http://www.state.gov/documents/organization/210738.pdf. Accessed 5 July 2016

Cuc M, Lundbäck E, Ruggiero E (2006) Migration and remittances in Moldova. International Monetary Fund, Washington, DC

Dannecker P (2009) Migration visions of development: a gender approach. Popul Space Place 15, pp. 119–132. http://www.diva-portal.org/smash/get/diva2:359288/FULLTEXT02. Accessed 2 July 2016

Gautam TR (2005) Causes and impact of migration: a sociological study of emigration from Kandebash, Baglung, Nepal. J Soc Anthropol 1:146–163

Ghosh B (2009) Trafficking in women and children in India: nature, dimensions and strategies for prevention. Int J Hum Rights 13(5):716–738

Global Report Trafficking in persons (2014) South Asia. https://www.unodc.org/documents/data-and-analysis/glotip/GLOTIP14_Country_profiles_South_Asia.pdf. Accessed 5 July 2016

Gubert F, Nordman CJ (2011) Return migration and small enterprise development in the Maghreb. In: Plaza S, Ratha D (eds) Diaspora for development in Africa. Chapter 3. The World Bank, Washington DC, pp 103–126

Hatemi J, Sallahuddin G (2014) On the causal nexus of remittances and poverty reduction in Bangladesh. Appl Econ 46(4):374–392
Hildebrandt N, McKenzie DJ (2005) The effects of migration on child health in Mexico. World Bank Policy Research Paper No. 3573. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2005/04/29/000012009_20050429125802/Rendered/PDF/wps3573.pdf. Accessed 20 June 2016
Huda S (2006) Sex trafficking in South Asia. Int J Gynecol Obstet 94(3):374–381
Human Development Report 2015 (2016) United nations development programme. New York, USA. http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf. Accessed 5 July 2016
ILO (2005) A global alliance against forced labour. International Labour Organization, Geneva
IOM (2010) Economic and social impacts of remittances on households: the case of Pakistani migrants working in Saudi Arabia. http://www.egypt.iom.int/Doc/IOM %20study %20on %20Economic %20and %20Social %20Impacts %20of %20Remittances %20on %20Households %20-%20the %20Case %20of %20Pakistani %20Migrant %20Workers %20in %20Saudi %20Arabia.pdf. Accessed 5 July 2016
IOM (2016) Global migration trends factsheet 2015. Global Migration Data Analysis Centre, International Organization for Migration, Berlin. https://publications.iom.int/system/files/pdf/global_migration_trends_2015_factsheet.pdf. Accessed 5 July 2016
Ishida A, Hassan S (2000) Why do migrant workers intend to extend their stay in host countries? The case of Bangladeshi workers in Malaysia's manufacturing sector. Int Migr 38(5):100–115
Kelegama S (2011) Migration, remittances and development in South Asia. Institute of Policy Studies of Sri Lanka. SAGA, London, pp 112–140
Khatri SK (2007) Labour migration, employment, and poverty alleviation. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.557.6733&rep=rep1&type=pdf. Accessed 5 July 2016
Kumar C (2015) Human trafficking in the South Asian Region: SAARC's response and initiatives. J Soc Sci Humanit 1(1):14–31
Lokshin M, Bontch-Osmolovski M, Glinskaya E (2010) Work-elated migration and poverty reduction in Nepal. Rev Dev Econ 14:323–332
Martin P, Martin S, Weil P (2002) Best practice options: Mali. Int Migr 40(3):87–99
MPI (2013) The impact of remittances on economic growth poverty reduction. Policy Brief No. 8. Migration Policy Institute, Washington DC. http://www.migrationpolicy.org/research/impact-remittances-economic-growth-and-poverty-reduction. Accessed 5 July 2016
Murison S (2005) Evaluation of DFID development assistance: gender equality and women's empowerment. Phase II. Thematic evaluation: migration and development. DFID, Glasgow
Nawaz SMN, Masood U, Abeer M (2012) Human trafficking situation in the Saarc region: bridging the gaps. SAARC Human Resource Development Centre, Islamabad. www.shrdc.org/doc/research/cp/Human %20Traficking %202012.pdf. Accessed 5 July 2016
Newland K (2003) Migration as a factor in development and poverty reduction. Migration Policy Institute, San Diego. http://www.migrationpolicy.org/article/migration-factor-development-and-poverty-reduction/. Accessed 5 July 2016
Oda H (2007) Dynamics of internal and international migration in rural Pakistan: evidence of development and underdevelopment. Asian Popul Stud 3(2):169–179
OPHI (2016) Multidimensional poverty index 2016. University of Oxford, Oxford. www.ophi.org.uk/multidimensional-poverty-index. Accessed 16 June 2016
Orozco M (2000) Remittances and markets: new players and practices. Working Paper InterAmerican Dialogue and the Tomás Rivera Policy Institute (June), Washington, DC
Phouxay K (2010) Patterns of migration and socio-economic change in Lao PDR. Department of Social and Economic Geography, Umea University, Umea
Plaza S, Ratha D (2011) Diaspora for development in Africa. World Bank. http://siteresources.worldbank.org/EXTDECPROSPECTS/Resources/476882-1157133580628/DfD_FullReport.pdf. Accessed 30 June 2016

Premaratne D, Mel D (2009) Migration and remittances in South Asia. Briefing Paper No. 12. SAWTEE, Nepal. http://www.sawtee.org/publications/Briefing-Paper-22.pdf. Accessed 20 June 2016

Rahman M (2000) Emigration and development: the case of a Bangladeshi village. Int Migr 38 (4):109–130

Rahman M (2006) Migration and poverty in Bangladesh: ironies and paradoxes. http://www.ide-jetro.jp/English/Publish/Download/Asedp/pdf/70_06.pdf. Accessed 5 July 2016

Raihan S, Khondker BH, Jha H (2009) Remittances and household welfare: a case study of Bangladesh. ADB Economics Working Paper Series No. 189. http://www.adb.org/sites/default/files/publication/28402/economics-wp189.pdf. Accessed 5 July 2016

Rajan SI (2014) India migration report 2014: diaspora and development. Routledge, New Delhi. https://www.routledge.com/India-Migration-Report-2014-Diaspora-and-Development/Rajan/p/book/9781138788190. Accessed 5 July 2016

Ratha D (2003) Workers' remittances: an important and stable source of external development finance. http://siteresources.worldbank.org/INTRGDF/Resources/GDF2003-Chapter7.pdf. Accessed 5 July 2016

Shamim I (2010) State of trafficking in women and children and their sexual exploitation in Bangladesh. Centre for Women and Children Studies (CWCS), Dhaka

Siddique MA, Shehzadi I, Manzoor MR, Majeed MT (2016) Sci Int (Lahore) 28(2):1519–1524

Siddiqui T (2001) Transcending boundaries: labour migration of women from Bangladesh. University Press Limited, Dhaka

Siddiqui T (2012) Impact of migration on poverty and development. Working Paper 2. The UK Department for International Development (DFID). http://www.solutionexchange-un-gen-gym.net/wp-content/uploads/2015/11/Impact_of_Migration_on_Poverty_and_Development.pdf. Accessed 5 July 2016

Silva CV, Jha S, Sugiyarto G (2009) Remittances in Asia: implications for the fight against poverty and the pursuit of economic growth. ADB Economics Working Paper Series No. 182. Asian Development Bank, Manila

Sinha I (2013) Globalization & human rights. Sanlaap, Kolkata

Sintov R, Cojocaru N (2013) Assessment of links between education, training and labour migration in Moldova. International labour organization, decent work technical support team and country office for Central and Eastern Europe (DWT/CO-Budapest). ILO, Budapest, p 88

Skeldon R (2002) Migration and poverty. Asia-Pac Popul J 17(4):67–82

Sørensen NN, Hear NV, Pedersen PE (2003) Migration, development and conflict: state of the art overview. In: Van Hear N, Sørensen NN (eds) The migration-development nexus. The United Nations and IOM, Geneva

Taylor JE (1999) The new economics of labour migration and the role of remittances. Int Migr 37 (1):63–86

Trafficking in Persons Report (2012) Department of states. United States of America. www.state.gov/g/tip. Accessed 5 July 2016

Trafficking in Persons Report (2016) Department of States. United States of America. https://www.state.gov/documents/organization/258876.pdf. Accessed 5 July 2016

Trafficking in Persons Report-India (2012) USDOS – US Department of State: report on human trafficking. Covering March 2011 to February 2012. http://www.ecoi.net/local_link/220011/327092_en.html. Accessed 5 July 2016

Trafficking in Persons Report-Pakistan (2012) USDOS – US Department of State. http://www.ecoi.net/local_link/220069/341401_de.html. Accessed 5 July 2016

Trafficking in Persons Report-Sri Lanka (2012) USDOS – US Department of State: report on human trafficking. http://photos.state.gov/libraries/sri-lanka/5/pdfs/Trafficking_in_Persons_Report_2012.pdf. Accessed 5 July 2016

Uddin MB (2014) Human trafficking in South Asia: issues of corruption and human security. Int J Soc Work Hum Serv Pract 2(1):18–27

UNCTAD (2011) Impact of remittances on poverty in developing countries. United Nations, Geneva. http://unctad.org/en/docs/ditctncd20108_en.pdf. Accessed 5 July 2016

UNDP (2007) Human trafficking and HIV: exploring vulnerabilities and responses in South Asia. Colombo. https://www.unodc.org/documents/hiv-aids/publications/human_traffick_hiv_undp2007.pdf. Accessed 5 July 2016

UNESCAP (2016) Asia-Pacific migration report 2015: migrants' contributions to development. United Nations ESCAP, Bangkok. http://www.unescap.org/sites/default/files/SDD %20AP %20Migration %20Report %20report %20v6-1-E.pdf. Accessed 2 July 2016

United Nations (2016) International migration report 2015: highlights. New York. http://www.un.org/en/development/desa/population/migration/publications/migrationreport/docs/MigrationReport2015_Highlights.pdf. Accessed 20 June 2016

United Nations High Commissioner for Refugees (UNHCR) (2015) International Organization for Migration (IOM). United Nations Office on Drugs and Crime (UNODC) Bay of Bengal and Andaman Sea: proposals for action. Geneva and Vienna. www.unhcr.org/55682d3b6.html. Accessed 5 July 2016

William AT (2008) Child trafficking: an unconscious phenomenon. Kanishka Publishers, Distributors, New Delhi

World Bank (2006) Global economic perspective report: economic implications of remittances and migration. http://pubdocs.worldbank.org/en/3461214434697276l4/Global-Economic-Prospects-2006-Economic-implications-of-remittances-and-migration.pdf. Accessed 5 July 2016

World Bank (2015a) Migration and development brief 25. Migration and remittances recent developments and outlook. World Bank, Washington, DC. http://apmigration.ilo.org/resources/world-bank-migration-and-development-brief-25. Accessed 20 June 2016

World Bank (2015b) Addressing inequality in South Asia, Washington, DC. https://openknowledge.worldbank.org/handle/10986/20395.Accessed 5 July 2016

World Bank (2015c) Ending extreme poverty and sharing prosperity: progress and policies. World Bank, Washington, DC. http://www.worldbank.org/en/research/brief/policy-research-note-03-ending-extreme-poverty-and-sharing-prosperity-progress-and-policies. Accessed 16 June 2016

World Bank (2016a) Migration and remittances factbook 2016, Washington, DC. http://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/migration-remittances-data. Accessed 16 June 2016

World Bank (2016b) Migration and remittances recent developments and outlook. Migration and development brief 26. World Bank, Washington, DC. http://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/migration-and-remittances-publications. Accessed 5 July 2016

World Bank (2016c) South Asia economic focus. Fading tailwinds. World Bank, Washington, DC. https://openknowledge.worldbank.org/bitstream/handle/10986/24016/9781464809156.pdf. Accessed 2 July 2016

Part II

Channels and Adapted Spaces of South Asia

Some Aspects of Connectivity in South Asia: Issues and Way Forward

Ram Upendra Das

1 Introduction

Connectivity is not just infrastructure. It is a multidimensional concept, of which physical and digital connectivity is crucial along with trade facilitation infrastructure. These constitute enabling conditions for greater and smoother economic activities and linkages, in turn, contributing to employment generation and more peaceful pursuits of productive engagements. The level of integration of a region is well elucidated by its infrastructure facilities. A well connected and developed infrastructure network, wherein a seamless flow of not only goods and services but information and movement of people could take place, is what defines the development and growth of a region. Infrastructure, being a regional public good in a dynamic sense, could have its spill-over effects through the movement of factors of production within a region, thereby helping the region to tread on the path of higher productivity and growth.

While examining the existing infrastructure network in South Asia, the huge infrastructure deficit that the region is grappling with becomes glaringly obvious. Even though efforts have been made in this direction by the respective governments, there seems to be a paradox where those who have the resources, i.e. the private sector, does not go for infrastructure financing because of low rates of capital returns, whereas on the other hand, the public sector wants to invest but lacks the funds to do so. Therefore, financing mechanisms are the backbone of relieving the bottlenecks in the realms of hard connectivity. This chapter throws light upon this issue in the context of South Asia and discusses the possible infrastructure financing alternatives.

R.U. Das (✉)
Research and Information System for Developing Countries (RIS), New Delhi, India
e-mail: upendra@ris.org.in; upendra900@gmail.com

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_5

2 Conceptual Contours of Connectivity

The issue of connectivity has to be situated in a broader context. As is evident, it has an external or regional dimension but it is also linked to developing the domestic connectivity. In other words, the domestic and regional are interlinked. While improvements in domestic connectivity would contribute to better productivity in different sectors of the economy, including the manufacturing sector, it would also help bridge not only the supply-demand gaps within the domestic economy but also in the external context by way of trade-augmentation.

But for domestic connectivity to be improved we need regional cooperation, for example, through FDI from extra-SAARC region, most notably Japan and other countries in the ASEAN like Singapore or Malaysia to name a few, given that these countries have well-developed connectivity and expertise that could be shared with the region. Again, the domestic and external get intertwined. Then there is the issue of regional connectivity, by itself. This requires more strengthened and cohesive regional cooperation as these regional connectivity projects would involve addressing varied regulatory and legal systems in several countries simultaneously.

While these open up a plethora of opportunities, they are challenging propositions, too. One of the ways forward is to have a blueprint of converting the challenges into opportunities. Some efforts have been made but they have not yielded the desired results at a pace that would be warranted. We need to identify the reasons for the lack of adequate progress in several of the connectivity projects recommended.

It must also be mentioned that a broad approach towards connectivity is needed. Connectivity is a multidimensional term. It may include physical connectivity like transportation, including a multimodal framework of air, road, rail, river, and ocean—the hard infrastructural connectivity. The soft connectivity has come to be known as areas that facilitate trade and business links through improved ease of doing business including customs procedures, IT-enabled processes, among others.

However, even trade itself is a form of connectivity between suppliers and consumers of two countries. Similarly, connectivity could be viewed in an even larger perspective. For instance, we could focus on electricity and energy connectivity through investing in regional grids. Telecommunication, mobile networks, internet, etc. are all different modes of connectivity.

3 Theoretical Perspective

There exists a vast literature on the importance of transport infrastructure not only from a policy perspective but also from the point of view of economic theory. In addition, the vitality of infrastructure investment has been stressed upon in the literature. In the traditional sense, public capital and infrastructure have been considered as "'unpaid factor(s) of production' which directly encourage increased output; 'augmenting factors' which enhance the general productivity of private capital and labour inputs; and in a more dynamic sense incentives for firm and

household (re)location and long term economic growth" (Lewis 1998). Transport infrastructure also leads to generation of considerable multiplier effects in investment flows as seamless movement of goods reduce transaction costs, the competitiveness effect, and time, the temporal effect (Kessides 1993).

One of the important determinants of economic performance of a region is the level of infrastructure development. In order to provide an impetus to economic activities, in particular international trade, the availability of transport infrastructure assumes great importance. Adoption of a regional approach for enhancing intra-regional trade and development activities acts as a precondition since quite often the imperatives for developing transport infrastructure calls for transcending geographical confinements.

Analytically, there are two prime effects, among others, of transport infrastructure on intra-regional trade. First, its development could be viewed as a trade facilitation mechanism in terms of movement of tradable among the members of a regional grouping. Secondly, the evolution of an efficient and low-cost transport infrastructure could contribute towards improving export competitiveness, resulting in trade-creation on a regional basis. Adequacy of infrastructure helps determine one region's success and another's failure—in diversifying production, expanding trade, coping with population growth, reducing poverty, and improving quality of life. Such effects need to be viewed in a broad perspective of a two-way causality running between trade and economic growth on one hand and income and infrastructure, on the other (RIS 2004).

As per the literature, infrastructure can affect aggregate GDP levels and growth in a number of ways. The differences of stock of public infrastructure tend to determine the differences in productivity, national output and, ultimately, levels of development (Aschauer 1989). Since infrastructure involves large flows of expenditure, it leads to job creation. Similar views have been shared by Munnell (1990), Biehl (1991), Batten and Karlsson (1996), Fedderke et al. (2006) and Kohsaka (2007). All suggest that infrastructure can have a significant impact on output, income, employment, international trade, and quality of life.

However, contrasting views have been presented by Vanhoudt et al. (2000) suggesting that public investment "can hardly be considered as an engine for long-run structural growth". Basically, the direction of causality of Aschauer's regressions has been criticised (Gramlich 1994) along with doubts on the consistency of results due to use of various concepts of infrastructure. Different studies undertook micro-level impact analyses contrasting Aschauer's view and suggesting that intraregional trade could bring about convergence or divergence at different levels (e.g. Munnell 1990; Evans and Karras 1994; Button 1998; Vanhoudt et al. 2000).

It has been argued that investment can be at two levels, viz. regional and national. However, there continue to be disparities among regions and nations in terms of quality and delivery of infrastructure services. For instance, the infrastructure investment has failed to have a long term impact on the quality and extent of utility and transport services in some Asian countries (Jones 2006). On the other

hand, studies show positive impacts of private provisioning of infrastructure services in some countries (Levy 2007).

The New Economic Geography (NEG) (Krugman 1991; Fujita et al. 1999; Puga 2002) adds a new facet to this apparently contradictory evidence. Considering increasing returns to scale under monopolistic competition and horizontal differentiation of goods, it shows that infrastructure investments lead to reduction in transaction costs between agents which provide less protection from distant competitors, while internal product market competition from other markets increases.

Since there is no perfect competition, it becomes all the more important to have regional cooperation. This is ensured by economic geographic continuity between nations which also helps in achieving coordinated manufacturing and boosts intraregional trade. High transaction costs are caused by infrastructural bottlenecks. In other words, the NEG propagates that cooperation is an antidote to competition. In order to reduce transaction costs to realize the merits of regional economic cooperation, which would lead to new avenues of trade, infrastructural linkages become crucial.

Another aspect that has been discussed in the literature is the impact of infrastructure on regional integration. It is argued that if there is lack of efficient infrastructure facilities in a region, then regional integration is bound to suffer (Brooks and Menon 2008). Thus, regional infrastructure is one of the key facets of the economic integration process as suggested by many studies (Kuroda et al. 2007; Francois et al. 2009).

4 Infrastructure Deficits in South Asia: Impact and Beyond

Even though South Asia inherited an integrated transport infrastructure from the British, this was splintered later and now demands serious attention (SAARC Secretariat 2006). Countries in South Asia have poor quality roads, ports, hospitals, schools and waste treatment facilities. Despite having an average GDP growth rate of 6.7%, second highest in comparison to other regions in the world, South Asia lags behind all other regions except Sub-Saharan Africa in access to all infrastructure services except in the case of internet users where South Asia lags behind even Sub-Saharan Africa. This just highlights that South Asia's infrastructure gap is huge as compared to other regions and there is an urgent need to address the same (Table 1).

In addition to this, there exists a difference in the access rates to infrastructure even within the South Asian region which is discernible from Table 2. The following features stand out: Firstly, Sri Lanka and Maldives have the highest access rates in the region. In terms of telecom access, Maldives and Sri Lanka lead the way with 173 and 104 telephone lines per person respectively.

In addition, even in terms of percentage of paved roads, these two countries top the charts. In terms of internet users per 100 people, Maldives has the best numbers among SAARC followed by Sri Lanka and Bhutan.

Table 1 Some infrastructural indicators: region-wise co-operation

	Average GDP growth (2000–2012)[a] (%)	Urbanization rate (2012) (%)	Electricity access (% of population) (2010)[c]	Telecom access (per 100 people) (2011)[b]	Internet users (per 100 people) (2013)
East Asia and Pacific	8.90	50	92	98	44.27
Europe and Central Asia	4.40	60	100	157	65.39
Latin America and the Caribbean	3.10	79	94	125	46.72
Middle East and North Africa	4.20	60	94	105	39.11
South Asia Region	6.70	31	71	72	13.74
Sub-Saharan Africa	4.70	37	35	54	16.91
World	2.50	53	78	103	38.13

Source: World Bank, World Development Indicators Online Database (http://data.worldbank.org/data-catalog/world-development-indicators)

Notes: [a]The average GDP growth for MNA is for the period 2000–2009; [b]Telecom access is defined as the number of fixed and mobile lines; [c]World Energy Outlook 2010 by International Energy Association

Secondly, Afghanistan, Bangladesh and Nepal have the worst access rates in the region. In terms of electricity access, Afghanistan has the minimum access. Bangladesh has the lowest access to a road network with only 100 meter of road per 1000 people. Almost 50 people per 100 people in Nepal do not have telephone lines.

There is no doubt that this infrastructure deficit (as illustrated in Box 1) hampers South Asia's growth. However, the problem is often not in terms of resource-constraints but also resource-allocation.

Table 2 Intra-SAARC comparison of some infrastructural indicators

Country	Telecom access (per 100 people) (2011)[a]	Internet users (per 100 people) (2013)	Electricity access (% of population) (2010)[b]	Total road network (km per 1000 people)[c]	% of paved roads[d]
Afghanistan (AFG)	54	5.9	30	1.6	29
Bangladesh (BGD)	58	6.5	47	0.1	10
Bhutan (BTN)	69	29.9	65	9.7	40
India (IND)	75	15.1	75	3.5	50
Maldives (MDL)	173	44.1	95	0.3	100
Nepal (NPL)	47	15.3	76	0.8	54
Pakistan (PAK)	65	10.9	67	1.5	72
Sri Lanka (LKA)	104	29.9	77	5.5	81

Source: World Bank, World development indicators online database (http://data.worldbank.org/data-catalog/world-development-indicators)

Notes: [a]Telecom access is defined as the number of fixed and mobile lines; [b] World Energy Outlook 2010 by International Energy Association, except BTN and MDV, which are based on RIS' estimations; [c] Varying data years: 2005 (MDV), 2006 (AFG), 2008 (IND, NPL), 2010 (BGD, BTN, PAK, LKA); [d]Varying data years: 2003 (LKA), 2005 (MDV), 2006 (AFG), 2008 (IND, NPL), 2010 (BGD, BTN, PAK)

Box 1: South Asia's US $2.5 Trillion Infrastructure Deficit

The South Asian countries will have to invest as much as US$ 2.5 trillion on transport, electricity, water supply and sanitation, solid waste management, telecommunications, and irrigation to bridge its infrastructure gap.

What is the Gap?

In recent years, the South Asian economies have seen tremendous growth to the tune of 6.7% annually during 2000–2012. However, the region's growing demands for infrastructure has enlarged the already existing infrastructure gap. This gap is defined as the difference between South Asia's development goals and its actual capability to obtain those goals. Addressing it will require investing as much as US$ 2.5 trillion over the next 10 years: one third to be spent on transport, one third on electricity, and the remainder on water supply and sanitation, solid waste management, telecommunications, and irrigation. This estimate does not include the expenditure on trade facilitation infrastructure. Quite clearly, the major portion is

(continued)

Box 1 (continued)
on account of India's infrastructural needs and the estimate does not bifurcate estimates towards regional infrastructure linkages.

Effect of the Infrastructure Gap

These gaps not only take a toll on the region's growth, but also on households. Only two in five people in South Asia have access to improved sanitation. Only 71% of people in South Asia have access to electricity versus 92% in East Asia. And the effects can be intertwined. For example, inadequate power supply, poor health, and difficult transport conditions have impeded South Asia's manufacturing sector from growing as fast as desired. This, in turn, has meant lesser and unpredictable employment. Women, the poor and marginalized social groups, are particularly affected by the region's infrastructure gap.

Bridging the Gap

These estimates point towards huge infrastructural investment needs and it may not be possible for South Asia to undertake all the necessary projects at once and at the national level. Regional level efforts by the South Asian governments would be needed for prioritizing infrastructure projects based on identifying and quantifying the factors that affect infrastructure investment decisions. This exercise can help decision makers assign priorities between numerous sectors or infrastructure portfolios. It is an improvement on existing decision-making frameworks, which are mostly designed for prioritizing individual projects. It may be reiterated that the deficit in infrastructure is not just a problem of a lack of financial resources but allocation of capital between the public and private sectors towards bridging the infrastructural deficits.

Source: World Bank (2014)

According to Thapar (2013), the transport links in South Asia have fallen prey to the geographical and political environment with maximum effect on rail transport especially in Bangladesh and Pakistan. In addition, the region suffers from restricted movement of goods via land routes even for the commodities that do not belong to the negative list. Indian railways, one of the largest rail networks in the world, is undergoing huge losses apart from having a reputation of poor quality. Bangladesh, on the other hand, has been characterized as a land-locked country owing to inefficiencies of Chittagong port. Integration of the transport network in South Asia is crucial for landlocked and semi-locked countries and regions in South Asia. In this context, the recent efforts to conclude the SAARC agreements relating to motor vehicles and transit as well as railways need to be lauded (see Box 2). However, the BBIN agreement on motor vehicle does have several problems of implementation that are to be addressed.

Box 2: Regional Policy Steps to Connect South Asian Countries Through Roads and Railways

All South Asian capitals are set to be directly connected by road transport and railways, for which eight South Asian countries were to sign three separate agreements during the 18th summit meeting of the South Asian Association for Regional Cooperation (SAARC) held in Kathmandu on 26–27 November 2014.

'SAARC Motor Vehicle Agreement', 'SAARC Railway Agreement' and 'SAARC Energy Sector Development Agreement' were to be signed during the summit with the objective of building direct connectivity and providing better access to economic activities among the SAARC countries and people. The proposed SAARC Motor Vehicle Agreement has wider scope for movement of all types of vehicles across the SAARC member States and will be a path breaking endeavour. The agreements are being signed in line with the decision made during the 17th SAARC summit held in Maldives 2 years ago that sought a new mechanism to develop regional railways and road connectivity in South Asia.

India is doing its bit to support the development of infrastructure in Nepal, particularly for connectivity and people-to-people contact. To take forward the efforts to reach an Agreement for the Regulation of Passenger Traffic between the two countries, an official delegation from India recently met a Nepalese Delegation which was led by Secretary, Ministry of Physical Infrastructure and Transport (MOPIT) and included officers of MOPIT and Ministry of Foreign Affairs, Government of Nepal. Both sides agreed on adopting the SAARC Motor Vehicle Agreement which was approved by both the Technical Level as well as by the Expert Group Meeting during September 2014, which was suitably amended to confine it to movement of passenger vehicles between India and Nepal.

This agreement would facilitate Nepal–India bus services on reciprocal basis and a seamless movement of people from the two countries. It would promote tourism and people-to-people interaction. The following three routes have been identified for the bus service in the first instance:

(i) Kathmandu–Bhairahawa–Sunauli–Gorakhpur–Lucknow–New Delhi
(ii) Kathmandu–Bhairahawa–Sunauli–Azamgarh–Varanasi–New Delhi
(iii) Pokhara–Bharahawa–Sunauli–Gorakhpur–Lucknow–New Delhi

In addition to the regular bus service along the three routes, the Motor Vehicle Agreement also provides for movement of private vehicles and non-regular passenger vehicles across the border. Such private and non-regular passenger vehicles would be entitled to use all established entry and exit points in the agreed upon framework envisaged under the Draft

(continued)

Box 2 (continued)

Agreement. On the side-lines of the proposed SAARC Summit and signing of the SAARC/Bilateral Agreement, efforts should be made to flag-off the first bus from Kathmandu to New Delhi. Efforts would also be made to prevail upon any leading Indian transporter to simultaneously commence a regular bus service on the same day, from Delhi to Kathmandu.

BBIN: SAARC nations—Bhutan, Bangladesh, India and Nepal signed (BBIN) Motor Vehicle Agreement (MVA) on 15 June 2015. The agreement is aimed to enable seamless transit of passenger and cargo vehicles among them facilitating trade and investment in the sub-region. This has been developed with the support of the Asian Development Bank (ADB), under its South Asia Sub-regional Economic Cooperation programme. The agreement stipulates a 3-year deadline within which this has to become operational. The BBIN MVA is aimed to reduce transport costs and foster development of multi-modal transport and transit facilities, enabling increased connectivity greater people-to-people contact and promotion of greater trade between the four countries. The MVA allows motor vehicles of all categories registered in the four countries to move freely in the region. This step endorses the commitment of our national leaders to deepen regional integration for peace, stability and prosperity.

Challenges of Implementation: Despite of high hopes from the MVA agreement, there are several challenges that will be a barrier to the success of the agreement. The modalities to kick-start seamless cargo movement are yet to be negotiated. The identification of authorized routes and permits are still in discussion and signing of the protocols will remain a key challenge for the BBIN MVA agreement. Still other four member countries of SAARC are yet to sign the agreement; negotiations with them can resolve the challenges.

The container traffic will be required to move only through a specific BBIN corridor having authorized routes through stipulated immigration check points and land customs stations as notified by the contracting parties. Specific customs stations are recognized for the entry of containers from neighbouring countries and any deviation from the route will be treated as violation of the permit conditions and of the relevant customs laws. Negotiations are also pending for identification of route maps, location of permitted rest or recreation places, tolls and check-posts. The dispute settlement clause is also unclear. The BBIN MVA agreement stipulates that each party bear its own costs arising from implementation of this agreement and the countries will have to bilaterally fix the rate of fees, service charge and administrative costs, which are not finalized.

Source: PTI and other news reports

4.1 From Land-Locked to Land-Linked: Regional Transit Arrangements

The development of a sound regional transit arrangement is necessary in order to enhance the scope for tapping trade and development opportunities. A regional connectivity system is important for South Asia in order to boost intra-regional trade, to improve access to sub-regional markets, to further attract the Foreign Direct Investment and also to achieve competitiveness over the other regions of the world.

So far a regional transit arrangement does not exist in South Asia, instead bilateral transit arrangements are in place (Box 3). For instance, an agreement was signed between Bangladesh and Nepal in order to review the status of bilateral relations and devise ways for further promotion of bilateral trade and investments.

Box 3: Progress in Transit Cooperation in South Asia During 2008–2013

2008, August 01: The establishment of new air links between Sri Lanka and Dhaka was discussed between the Head of State and Chief Advisor of Bangladesh Dr. Fakhruddin Ahmed and Sri Lankan President Mahinda Rajapaksa. These new air links between the two countries would increase connectivity in many aspects, promote greater trade, investment and cultural exchanges between Sri Lanka and Bangladesh.

2009, May 16: MoUs between the Governments of the Islamic Republic of Afghanistan and the Islamic Republic of Pakistan regarding Afghan transit trade that will allow India to use the Pakistani land route for trade with Afghanistan to improve trade and accession facilitation signed and the Jirga Process for dialogue and development by Pakistan and Afghanistan revived.

2009, September 7–10: India and Bangladesh discussed designating Ashuganj as a new port of call under Article-23 of the Inland Water Transit and Trade Agreement as well as the use of Chittagong port by India. Both agreed on the re-opening Sabroom-Ramgarh trade point as well as opening a land route at Demagiri–Thegamukh on the Mizoram border for bilateral trade.

2010, January: India has agreed to provide transit facilities to Nepal by road and rail. Meanwhile, the Bangladesh Railway is working to find the most convenient route for rail transit to Nepal after India's positive response, according to Bangladesh Railway officials.

2010, October: Afghanistan and Pakistan concluded the Afghanistan Pakistan Transit Trade Agreement (APTTA) negotiations and signed the agreement. APTTA will provide Afghanistan with four additional transit routes to India, China and Pakistan and thus will ensure the security of transit goods, simplify and harmonize procedures and allow greater market access.

(continued)

Box 3 (continued)

2011, July 15: Maldives is keen to introduce a direct shipping link between Chittagong and Male to enhance trade relations with Bangladesh. They also plan to introduce direct air link between Bangladesh and Maldives under public or private initiatives.

2012, January 03: It was noted that Bangladesh had already offered Nepal and Bhutan access to Mongla and Chittagong ports. Several small initiatives including upgrading of facilities at Land Ports/Land Customs Stations and signing of a Standard Operating Procedure (SOP) between Bangladesh and India that allows Nepalese cargo vehicles to enter up to 200 meters from Zero Point at Banglabandha would help to facilitate bilateral trade between Bangladesh and Nepal. An MoU between Bangladesh and India granting Rohanpur–Singabad as an additional route for rail transit to Nepal was also signed. 50,000 MT of fertilizer has already been transported through this route as a onetime case. Bangladesh's government also plans to complete multi-gauge conversion of Birol–Radhikapur railway sector by 2012, which would greatly facilitate passage of Nepalese cargo.

2012, August 28: The Government of Bangladesh is working on a fee-based formula to give permanent transit for Bhutan in line with a framework agreement suggested by a panel.

2013, January: India and Bangladesh, signed Extradition Treaty and Revised Travel Arrangements (RTA) agreements in Dhaka. These agreements will improve ties in the areas of security and people-to-people connectivity between these two countries. Extradition treaty, on one hand, will increase the cooperation between law enforcing agency and Revised Travel Arrangements, on the other hand, will promote people-to-people exchanges between the two countries.

Source: RIS, various documents

Cost of trade logistics are the reason behind restricted trade relations between India and Bangladesh. In addition, Bangladesh separates a part of North East India from the rest, apart from a narrow transport corridor known as 'chicken-neck'. These separated states of North East India are denied access to the sea ports except via Kolkata which involves passage through the round-about chicken neck. Besides, transit access for trade to North Eastern states is denied to India by Bangladesh. For instance, the distance between Agartala (India) and Kolkata is over 1600 km whereas between Agartala and the nearest seaport in Bangladesh (Chittagong) is less than 100 km showing high transport costs for these North Eastern states. Nepal and Bhutan, the two landlocked LDCs, have also not had transit services through India to access Bangladeshi ports Mongla and Chittagong (IGC 2014).

In July 2012, Bangladesh and Nepal also signed an agreement to boost bilateral relations. In order to boost road connectivity, recently two highway projects in

North Bengal, India, have been announced which will connect Bangladesh with Nepal and Bhutan, as illustrated in Box 4.

As development becomes the focus in the region, transit and transportation connectivity may be a way forward. In this respect, Bangladesh can serve as the connectivity link for South Asia and South East Asia through its sea port, land ports and rail connectivity. As land transportation plays the role in India-Bangladesh trade relations, surface transport infrastructure network in Bangladesh could create enormous transport opportunities in the region (IPCS 2012). Likewise, reconnecting and reopening the old routes will enhance the economies and boost the regional cooperation in South Asia. For example, old trade routes through Nepal connecting India–China and Nepal–Tibet can be the prospect of economic integration of this region. Further, it will enhance the economic development of Nepal specifically and the region as a whole.

Box 4: To Boost SAARC Ties, Two Highway Projects Cleared

The Chief Minister of West Bengal, an eastern state in India, announced two road projects in north Bengal that will connect Bangladesh with Nepal and Bhutan. The total cost of the project will be US$ 232.75 million and will be funded by the Asian Development Bank. "Once completed, the projects will boost ties among the SAARC countries of India, Nepal, Bhutan and Bangladesh. It's a path-breaking step and we are keen on completing this project soon," CM said.

Of the two, work on Asian Highway 2 will begin from Panitanki at Nepal border and crossing Bagdogra will reach Fulbari at Bangladesh border. The total cost of this portion has been estimated at US$ 97.71 million. The second, Asian Highway 48, will start from Joygaon near Bhutan border and end at Changrabandha bordering Bangladesh, with the cost expected to be around US$ 135.04 million.

The highways will be constructed by National Highway Authority of India with help from the state government's Public Works Department, Department of Urban Development and the Department of North Bengal Development. Land will not be a problem. There is just a 2-km stretch along the Jaldapara wildlife sanctuary and we need clearance from the Ministry of Environments and Forests for that. Gautam Deb, minister for North Bengal Development, explains the economic viability the projects would lend. "More than India, it will benefit Bangladesh as they will have easy access to Nepal and Bhutan. It will boost both trade and tourism among all SAARC nations."

Source: Based on Bandopadhyay (2014)

4.2 Initiatives for Trade Facilitation and Improving Soft Infrastructure

There is a need for going beyond physical infrastructure and towards soft and digital connectivity. The capacity of nations to deliver goods and services in time and at low expense is a key determinant of their cooperation in the global economy. Easier movement of goods and services requires reduction of transaction costs involved with customs, banks, ministries and other authorities. The main aim of trade facilitation is to lower business costs by eradicating impediments linked with cross-border trade and simplifying the procedures.

In other words, it targets towards attaining seamless movement of goods and people. It is expected that trade facilitation will have a favourable impact on trade expansion and result in better economic development. South Asian economies recognize the importance of seamless connectivity in today's world; however, there are barriers they face to achieve it. This is elaborated in Box 5.

Box 5: Trade Facilitation—A South Asian Perspective

South Asian countries acknowledge that existing inefficiencies in trade facilitation measures need to be tackled if they are to become more competitive in the international markets. Efficiency and capacity constraints in South Asia consist of common factors, such as low port efficiency and less competitiveness, poor port infrastructure, lack of cross border transit points and road connections across the region, high cost of road transport, licensing restrictions, poor railway facilities, poor management at customs with high monetary and time costs, administrative problems, non-transparent trade procedures, lack of technical equipment used in customs administration, restrictions on information technology and service sector infrastructure, lack of modern infrastructure networks and problems in meeting standards and technical regulations. In addition, the political will to implement trade facilitation measures seems to be lacking in some countries.

One of the barriers to trade facilitation in these countries is widespread bureaucratic practices at customs and other key government institutions where officials have become accustomed to the existing systems. Furthermore, the pressure from stakeholders to implement trade facilitation measures in most of the South Asian countries is lacking, partly because the business community is not fully conversant with the potential benefits of trade facilitation. However, a key factor inhibiting most developing countries from implementing trade facilitation measures is the costs associated with large-scale improvements in trade infrastructure. Negotiations on trade facilitation with binding rules are not viewed with enthusiasm, with a preference for more general incentive-based reform commitments and autonomous implementation.

(continued)

Box 5 (continued)

South Asia nevertheless faces formidable challenges in actually being able and having the capacity to contribute to the actual negotiations. Negotiating strength obviously differs across South Asia. The smaller economies are likely to face numerous difficulties, including the ability to follow and participate in the negotiations; the ability to analyse and synthesize proposals and submissions made by other WTO member countries and evaluate the implications of those proposals; the capacity and ability to develop negotiating proposals, which take into account concerns of individual countries and their development aspects; and, finally, the capacity and ability to be able to assess the cost implications of taking on board new commitments and obligations associated with a possible multilateral framework on trade facilitation. The priority areas in improving trade facilitation for many South Asian countries are improving customs procedures and formalities, harmonization of standards, removing constraints on transit procedures, etc. The countries are, therefore, likely to call for the scope of current negotiations on trade facilitation under the WTO to be limited to Articles V, VIII and X of GATT 1994. Despite the recognized potential benefit of trade facilitation, concerns regarding additional costs associated with new commitments and implementation capacities will mean that the importance of providing Special Differential Treatment (S&DT) and technical assistance and capacity building for developing countries and LDCs at both the negotiation stage and implementation stage needs to be highlighted in future negotiations.

Source: Weerakoon et al. (2007)

In recent years, a number of measures have been adopted by South Asian economies to increase the efficiency of soft infrastructure. India joined the Electronic Data Interchange (EDI) movement in early 1992, when it obtained the observer status in the Asia Pacific Council for Facilitation of Procedures and Practices for Administration, Commerce and Transport (AFACT) known as Asia EDIFACT Board (ASEB) earlier. India became a member of ASEB in August 1992. In order to promote the use of EDI in India, the Department of Commerce has taken various initiatives to develop EDI.[1]

4.3 Indian Customs EDI Gateway: A New Regional Trade Facilitating Resource

One such initiative for streamlining procedures and regulations and reducing the cumbersome and lengthy paperwork requirements by the Indian government has

[1] See http://commerce.nic.in/ecedimain.htm

been an e-commerce portal of central board of excise and customs called Indian Customs EDI Gateway (ICEGATE) which provides online services for trade and cargo carriers and other custom related transactions. At present, about 24,000 users are registered with ICEGATE who are serving about 6.72 lakhs importers/exporters. ICEGATE links about 15 broad types' partners with Customs EDI through message exchanges empowering speedier Customs clearance and thus facilitating EXIM Trade.

Besides e-commerce, ICEGATE also offers host of other services like e-payment, on- line registration for IPR, Document Tracking status at Customs EDI, online verification of Duty Entitlement Pass Book (DEPB) licenses, IE code status, PAN based CHA data and links to various other vital websites and information pertaining to the Customs business (ICEGATE 2014).

Afghanistan, Bhutan and Nepal have adopted UNCTAD's Automated System for Customs Data (ASYCUDA) for reforming the customs clearance process. However, even though ASYCUDA is functioning, it is not effective. The system is mainly used for storage of data whereas the custom procedures are still done manually as it is yet to be connected to the border gates from the central server (Mirza and Bacani 2013).

Therefore, the South Asian economies should use India's successful and cost effective solution for creating regional trade facilitating infrastructure. It may be mentioned in this context that one of the elements of South Asian failure is often depicted as failure in terms of ease of doing business. However, as evident in Box 6, the ease of doing business is essentially flawed in terms of methodology, emphasis and results/rankings.

Box 6: World Bank's Ease of Doing Business Index

World Bank's Ease of Doing Business Index rates countries higher if they have fewer restrictions on hours of work and on requirements for laying-off workers. It also gives high marks to fewer restrictions on permits for construction, ignoring safety and environment concerns. This index is widely used to improve business conditions around the world as its underlying premise is that less regulation is better. Even though, labour provisions in the Index are consistent with the letter of ILO regulations, they are in sheer contrast to its spirit as the index gives lower rank to countries that provide better job protection. In 2013, the World Bank dropped labour regulations completely from the Ease of Doing Business Index and this cannot be a true reflection of the existing business conditions in a country.

Two cases require special attention that questions the aptness of this Index as a measure of the conduciveness of the business environment in a country.

Case 1: India's 134th rank on ease of doing business has been questioned and holes have been picked in the report citing inconsistencies and amplification of costs. As per the report, nine mandatory documents are required for

(continued)

Box 6 (continued)
exports from India. However, only five out of these nine have been cited as necessary by Indian officials. Similarly, in case of imports, only seven documents are mandatory instead of the 11 listed in the report as per a review conducted. Various steps have been taken up by the Ministry of Commerce and Industry, Government of India in its policy formulations towards easing procedures for doing business. A lot of discrepancy has been found in the documents that the report has listed and also the average cost of export from India, as per Ajay Sahai, director general and CEO of the Federation of Indian Export Organisations.

In the past, China has also complained about the World Bank's report, saying that it was heavily biased in favour of developed countries and wanted an outright ban of the report. Department of Industrial Policy and Promotion Secretary Amitabh Kant had recently said the World Bank study on Ease of Doing Business was flawed as it is conducted only in Mumbai city, where "there is no manufacturing and industrialization".

Case 2: Bangladesh's tragic factory collapse in 2013, the second most deadly industrial accident in history after the gas leak in the Union Carbide factory in Bhopal, India, shows the ugly side of globalization. Even though low restrictions and poor regulations might lead a country to top the charts in the Index, this tragedy shows that how costly it is to ignore safety and working conditions standards, when thousands are packed into unsafe building in order to reduce costs and increase profits.

Pushing less regulation through instruments like this Index is good when it attacks too much regulation. But when it helps avoid important labour, safety and environmental regulations it can lead to more disasters like the one seen in Bangladesh. Having a higher place on this index cannot be a true reflection of a country's business setting and the need of the hour is a revamp of the influential Ease of Doing Business Index.

Source: Based on Seth (2014) and Chibber (2013)

5 Infrastructure and Private Investment in South Asia Compared to Other Regions

In the recent years, the economic growth of the region has been improving. However, high GDP growth is not sustainable given the infrastructure bottlenecks. Owing to low rates of return present in infrastructure, the private sector shies away from investment. As a result, public sector has to bear the burden to provide infrastructure in South Asian economies. But due to lack of financing and budgetary constraints faced by this region, one has to find alternative solutions. This section attempts to not only bring forward the importance of private sector participation in infrastructure investment in South Asia but also builds up a case for Public Private

Table 3 Private investors favour energy and telecom (1990–2012) (US$ million)

Country	Water supply and sanitation	Transport	Energy[a]	Telecom	Total	% of total PPI[b]
Afghanistan	0	0	2	1683	1685	0.47
Bangladesh	0	0	3285	6855	10,140	2.83
Bhutan	0	0	201	18	219	0.06
India	470	81,098	135,703	89,054	306,325	85.49
Maldives	0	478	0	84	562	0.16
Nepal	0	0	997	135	1132	0.32
Pakistan	0	2555	13,416	17,090	33,061	9.23
Sri Lanka	0	740	1438	3003	5181	1.45
SAR	470	84,871	155,042	117,922	358,305	100

Source: World Bank, private participation in infrastructure database (http://ppi.worldbank.org/)
Note: [a]Energy entails a combination of electricity and natural gas. [b]PPI: Private Participation in Infrastructure

Partnerships (PPP) along with lessons which South Asia can learn from success stories of ASEAN, Brazil and South Africa.

Conventionally, infrastructure investment across the world and in South Asia has been dominated by public sector. However, burgeoning fiscal deficits and lack of resources have constrained government's capacity to fund large scale infrastructure projects. There seems to be a paradox where those who have the resources, i.e. the private sector, do not go for infrastructure financing because of low rates of capital returns, whereas on the other hand, the public sector wants to invest but lacks the funds to do so. Therefore, infrastructure fi is the backbone of relieving the bottlenecks in the realms of hard connectivity as substantiated in the previous sections.

There is no denying the fact that in the years to come, the private sector will have to play a major role in infrastructure investments to boost the growth of South Asia as a region. A feeling of realization has struck many that the private participation is the way to move forward especially for developing countries. But the recent trend shows that in South Asia, only sectors such as Energy and Telecommunication have attracted more private attention whereas others such as Transport and Water Supply and Sanitation remain in dire need of the private sector's attention (Table 3). Except for India, these sectors have not attracted any private investment since the past several years. In fact, it seems that the total investment in the region by the private sector is explained by India's contribution.

According to the World Bank Private Participation in Infrastructure Database, in spite of more than 400 power plants and seaports in the region, there exist less than 1000 active projects which are either public private partnerships (PPPs) or wholly private thereby reflecting a huge room for investment. In the light of this consideration, there is a need to look for alternative solutions of fixing. Among them, the Public–Private Partnership seems to be one of the viable solutions to meet the immense infrastructure requirements of the region.

6 Public Private Partnerships (PPP)

The role of Public–Private Partnership as a tool of investment has not been new. There has been a rapid increase in PPPs around the world and many developed and developing countries have taken this route. Even though there have been varying definitions of the PPP among different stakeholders, its importance has been felt by all. There are views that PPP involves only private investment, while others contend that PPPs include all forms of connections between the public sector and the private sector.

The Department of Economic Affairs, Ministry of Finance, Government of India defines PPP as "an arrangement between a government or statutory entity or government owned entity on one side and private sector entity on the other, for the provision of public assets and/or related services for public benefit through investments being made by and/or management undertaken by the private sector entity for a specific time period, where there is a substantial risk sharing with the private sector and the private sector receives performance linked payments that conform (or are benchmarked) to specifically pre-determined and measurable performance standards".[2]

According to World Bank, PPP offers certain key advantages such as a provision of a strong motivation to private developers to attain not only efficiency in operations, but also minimize the costs of the project and thus the optimal role of PPP is vital (see Box 7). In addition, they are a key to infrastructure financing problems in the region. PPPs can act as a shoulder for the government to shift the responsibilities of financial arrangements. This also helps quicken the delivery of projects, improves the transparency and accountability of the projects and thus results in better quality outcomes. In other words, PPPs act as insurance for both public and private, wherein the risks are pooled and thus it is the most viable solution for sustainable infrastructure development.

India has already trod the path of several PPP projects especially in the transport sector including roads, ports, and airports. Taking India's initiative as a cue, other economies in the region are gearing up to harness the potential of PPP in order to seek improvement in infrastructure.

However, even though it seems that PPPs have the ability to tackle the infrastructural deficiencies of the region, a deeper scrutiny reveals its shortcomings. PPP projects have the tendency to get stalled and delayed along with the issuing of authority, i.e. power struggle between public and private, being one of the biggest threats in the way of its success. In addition, poor preparations, flawed risk-sharing, inappropriate business models, fiscal uncertainties and vested interests are among the many shortcomings of this model (Singh 2013). For instance, the case of Chennai airport in India highlights one of the failures of PPP model. Not only did the project fail to meet its many deadlines, there has also been a struggle between the private players and the Airports Authority of India (AAI) over controlling rights (Chaudhary 2013).

[2]See http://www.pppinindia.com/pdf/ppp_definition_approach_paper.pdf

Box 7: Optimal Roles for the Public and Private Sectors

There is no single service provision approach that is better than the alternatives for all infrastructure services and under all degrees of institutional development. In this report, we examine four possible organizational forms—with varying levels of public and private participation:

(i) Traditional provision, (ii) PPP, (iii) regulated privatization, and (iv) liberalization (deregulated privatization). Following Engel et al. (2009), we assume that private firms build, operate, and maintain the infrastructure under all of these forms, and hence, the benefits of each form stem from the incentive structure—not the degree of private participation. Depending on the features of each infrastructure service, one of the four organizational forms bring the highest social welfare.

When market liberalization is optimal

Power generation is an example of an infrastructure service that is produced under constant or decreasing returns to scale, and for which user fees can be charged. In cases like this, the optimal organizational form is market liberalization (that is, privatization plus price deregulation).

Competition together with private ownership induces firms to select optimal life-cycle cost saving investments and provide the optimal service quality, thereby solving the trade-off between productive efficiency and quality considerations.

When traditional provision is optimal

In the case of flood control, which is a non-excludable service, it is not possible for the government to set service standards that are enforceable.

Furthermore, quality considerations dominate productive efficiency, making traditional provision the optimal organizational form. If the costs of quality reduction were not as important as the benefits of reducing life-cycle cost, then a PPP would be preferred over traditional provision.

Similarly, if it were not possible to charge fees for the use of a service, but service standards could be designed and enforced, then a PPP would be the optimal organizational form.

When PPPs are optimal

This occurs when the service is produced under increasing returns to scale (i.e., natural monopoly) or there are technical aspects that create barriers to entry (e.g., the scarcity of radio spectrum for wireless communications), conditions that would rule out market liberalization. So in a case like power transmission which is a natural monopoly and where expansion requires significant network planning, PPPs would dominate over regulated privatization. PPPs have the advantage of leaving the government with the authority to decide on future expansions. The same applies for most transport services.

When regulated privatization is optimal

(continued)

Box 7 (continued)

This occurs when competition is not feasible (e.g. because of increasing returns to scale or technical and/or legal entry barriers), user fees can be collected, the government can design and enforce service standards, and planning is best done at the firm level. Hence, regulated privatization is optimal for power distribution, and ICT services (fixed and mobile). In the latter case, network externalities are important, creating the need to regulate interconnection charges. Regulated privatization is also optimal for sanitation and water services, particularly at the distribution level in the latter case. An issue of planning and coordination in the use of a natural resource that is beyond the project level, arises in water production or catchment, which makes PPPs the optimal organizational form in water production.

Source: Excerpted from Luis et al. (2013)

7 Lessons from Success Stories

Infrastructure development is the key for sustainable growth. In case of South Asia, the problem is often not in terms of resource-constraints but efficient resource-allocation. This is where the region needs to draw lessons from success stories around the world and aim for innovative infrastructure funding options.

ASEAN Infrastructure Development: The Association of South East Asian Nations (ASEAN) is among the fastest-growing regions of the world. With abundant foreign exchange reserves in its pocket, the region faces the problem of mobilizing these resources for fulfilling its infrastructural deficits. With an estimated US$ 60 billion per annum infrastructure requirement for roads, railways, ports, water and sanitation and energy, ASEAN in collaboration with Asian Development Bank (ADB) came up with an ASEAN Infrastructure Fund (AIF) in 2012. The main objective of this fund is to finance the infrastructure projects in order to help ensure continued economic growth, employment generation and poverty alleviation in the region.

AIF is an innovative ASEAN initiative to channelize the region's resources for its infrastructure development needs. The financing mechanism of AIF is such that ADB's initial equity will be US$150 million and US$ 335 million will be the initial equity commitment of ASEAN countries. Recently, US$ 100 million loan to a power transmission project for Vietnam was approved by the board of AIF, the first single biggest financing under AIF (Reuters 2014). South Asian region, following in ASEAN's footsteps, could possibly think of collaborating with the upcoming Asian Infrastructure Investment Bank (AIIB) in order to fund its vast infrastructural deficit.

Another alternative to mobilize private capital is through an infrastructure bond market. Malaysia and Indonesia are two countries who have successfully adopted this method. This method offers various benefits in terms of deep and liquid market

which has the potential to attract foreign investors along with adding diversity to investor base. In addition, political pressure can be ensured by having institutional investors as bondholders which, in turn, improves transparency and accountability. The infrastructure bond market also offers the benefit of insulating the projects in question from the global market fluctuations. For instance, Malaysia's Sukuk bond market remained resilient when the financial crisis of 2008 hit the world markets (Rowter 2014).

7.1 South Africa

To cure the distorted implementation of infrastructure, South Africa has followed a development drive by involving both its government as well as private sector. The government follows a policy of Broad-Based Black Economic Empowerment (BBBEE), requiring foreign companies to enter into a partnership with local businesses, thus, and shifting company ownership patterns (Media Club South Africa 2014). In addition, there exists an Infrastructure Investment Programme for South Africa (IIPSA) under the Development Bank of South Africa (DBSA), the main purpose of which is to provide the funding for infrastructure development. It also assists the government in implementation of infrastructure related programmes and addresses the challenges associated with infrastructure development in South Africa and in the Southern African Development Community (SADC) Region. The programme involves co-funding of EU grants along with loans from participating Development Finance Institutions to provide innovative financing and support national as well as regional infrastructure projects (DBSA 2011).

7.2 Mercosur: The Latin American Success Story

Mercosur has become famous as one of the most successful integration mechanisms in Latin America. In order to increase regional integration, the bloc created the Structural Convergence Fund of Mercosur (FOCEM) in 2005. The fund aims at improving the regional infrastructure, for which US$ 1.1 billion has been distributed among the members for the implementation of 37 projects. All the member countries contribute to fund FOCEM with Brazil being the largest contributor (70%). This fund also seeks to promote lesser developed regions and improve competitiveness, with the primary goal of strengthening the union (MercoPress 2011).

Such experiences, where the presence of cross-border infrastructure is comparatively high, suggest that regional cooperation promotes greater prosperity and stability for member countries. Their ability to build regional initiatives that are

based on a shared strategic vision is the main reason behind their success (Carciofi 2008).

8 Role of Multilateral Institutions in Infrastructure Development

Multilateral institutions assume great relevance in infrastructure financing especially in the context of developing countries. Institutions such as World Bank, Asian Development Bank (ADB), etc., are entrusted with an important task of financing projects but have failed miserably. A case in point is the success story of Hong Kong and Singapore who have managed to grow without relying on World Bank aid as discussed in Box 8. Even in case of India, World Bank itself, had admitted failure in its coal project in the year 2000 (Corpwatch 2000). In addition, even ADB has its own failures in the context of a "slow-moving bureaucracy", i.e. it gives loans too late and with too many conditionality's.

Box 8: Hong Kong and Singapore: Models of Growth without World Bank Aid
The poor record of the World Bank in delivering on its promise of economic development can be demonstrated not only by listing its many failures, but also by examining some development successes that occurred without the Bank's help. Hong Kong and Singapore are the most successful of the so called Asian Tigers, running up phenomenon economic growth rates that are the envy of the developed world. They did this largely without loans from the World Bank. Even though they were as poor 30 years ago as other countries that took World Bank Loan. They eschewed World Bank Loans and embarked instead on successful programs of economic liberalization. The evidence shows that there is a direct correlation between the economic freedom these countries enjoy. They showed tremendous economic growth over the past 30 years. Of one thing there can be absolutely no doubt i.e. the World Bank assistance was in no way responsible for creating the best developed success stories the world has seen during this 30-year period.

Source: Johnson (1996)

In the case of South Asia, despite the presence of these multilateral agencies, a strong need has been felt for another bank which can cater to this region's developmental requirements. There has been a proposal for the establishment of a SAARC Development Bank. The bank is expected to finance infrastructure development in the region, which is grappling with poor infrastructure. In addition, a readily financing SAARC Development Bank can be a key player in stimulating intra-regional trade in the region by extending concessional financing to SAARC member countries.

However, one needs to look for the complementarities between existing institutions such as SAARC Development Fund and the proposed one. The new institutions' objective and governance structure should not conflict with the existing one. While India, being the largest economy in South Asia, will have to be a major contributor of funds to the bank, there are concerns regarding other economies having the requisite foreign exchange. Also technical realities such as where and how will this new bank leverage the funds, gearing ratio, pricing of the loans, length of the project appraisal need to be considered before welcoming the bank.

Against this backdrop, setting up of Asian Infrastructure Investment Bank (AIIB), recently is a welcome step for augmenting the exiting funding sources for development of infrastructure (see Box 9).

Box 9: Recent Institutional Responses to Financing Infrastructure

Asian Infrastructure Investment Bank (AIIB)

A new US$ 50 billion Asian Infrastructure Investment Bank (AIIB), led by China, to help build regional infrastructure in the Asian region is an important initiative of emerging countries to complement their own development agendas and programmes. The rise of China and India, the new economic powers of the world, is not reflected in the development agenda of multilateral institutions like IMF and World Bank. China, which is keen to extend its influence in the region, has limited voting power over these existing banks despite being the world's second-largest economy. AIIB could not only undermine the Asian Development Bank but also marginalise American and Japanese influence in the region.

The AIIB, launched in Beijing, at a ceremony attended by Chinese finance minister Lou Jiwei and delegates from 21 countries including India, Thailand and Malaysia, aims to give project loans to developing nations. China is set to be its largest shareholder with a stake of up to 50%.

As per the Asian Development Bank's (ADB) assessment, Asia–Pacific countries are faced with infrastructure investment needs of around US$ 800 billion annually between now and 2020. Against this, the ADB, dominated by Japan, which is also a founding member, lends no more than US$ 10 billion a year for infrastructure. In addition, ADB is often accused of a "slow-moving bureaucracy", i.e. gives loans too late and with too many strings attached. The time taken by ADB for one project appraisal has been as high as 10 years (Mr. Karma, CEO, and SDF). With the American-dominated World Bank and the Europe-led IMF also remaining hamstrung, the need for a multilateral body to finance the growth region of the world was real.

AIIB makes up for a fresh source of funding for developing economies without solely depending on Bretton Woods institutions, which generally put rigid conditions for market reforms. In addition, it can also work as a

(continued)

Box 9 (continued)
counterbalance in the emerging multipolar world to the dominance of existing multilateral institutions like the IMF, World Bank and the Asian Development Bank (ADB).

India, with its participation, has lent heft to the AIIB, which would otherwise have been seen as a Chinese bank backed by membership from lightweight countries of the region. Being the second largest shareholder in the bank, India should work with China to ensure the right governance structure and best practices being followed in projects for lending, procurement and materials and in terms of labour and environmental standards. While there is without a doubt, a geo-political angle to the founding of the bank which is natural, given that the economic balance of power is shifting to Asia, care should be taken to ensure that it does not become the driving factor in the bank's functioning. The bank should do what it has been founded for, i.e. fund Asia's infrastructure. Even though there are risks attached with AIIB in terms of China's predominance in the region, lack of transparency and ambiguous objectives, it is a welcome step for augmenting the existing funding sources for infrastructure development in Asia given the huge financial need of the region.

New Development Bank

BRICS Nations (Brazil, Russia, China, India and South Africa) had agreed to create a new multilateral development bank to fund the unmet infrastructure needs. The bank is scheduled to start lending by 2016. The bank will begin with a $50 billion divided equally between its founder members, with an initial total of US$ 10 billion in cash put over 7 years and $40 billion in guarantees. Another US$ 50 billion is expected to come from other members who join it later. The bank launched along with the setting up of a US$ 100 billion crisis fund to contain currency volatility. The member governments are its clients as well as shareholders. The bank is aimed at funding infrastructure projects in developing nations.

Source: Based on The Hindu (2014), Sahoo (2014), Hindustan Times (2015) and other sources

9 Way Forward

This chapter has assessed the infrastructural deficit in the region and identified the problems with possible options to address them. In doing so, some of the policy steps that could be considered include:

- Effective and efficient implementation of SAARC Motor Vehicle Agreement, SAARC Railway Agreement and SAARC Energy Sector Development Agreement. These agreements will be a path breaking endeavour in boosting connectivity and providing better access to economic activities among SAARC and the

focus should be placed on their effective implementation to ensure seamless connectivity and people to people movement.

- In the presence of market failure characteristics in infrastructure services in the region, there is a strong need for the establishment and strengthening of legal, policy and regulatory framework. Since these services are often public goods, ability to pay for access by different economies in the region should not be considered as the only mechanism to determine its provision.
- The need of the hour is not only to have strong physical infrastructure linkages but also go beyond, i.e. focus on soft as well as digital connectivity in the sense of having a seamless network within the region. For instance, South Asian economies should take India's successful and cost effective implementation of Electronic Data Interchange and ICEGATE as a starting point and try to follow.
- Besides building the trading facilities, their modernization and constant upgradation also become crucial in order to improve cross-border logistics procedure. This could be another arena where PPPs could prove beneficial.
- In the context of South Asia, decentralization of administrative power functions assumes a key role as the region has to reconsider its infrastructure service paradigm so as to bring in the private sector.
- In order to bring in a better developed and well managed regional transit system, South Asia should pay attention to all the sectors individually. There is a need to build a Trans-South Asian Railway Network, strengthening the inland waterways, ports and shipping and civil aviation. South Asia needs an active approach towards infrastructure development at the regional level and a South Asian Common Transport Policy (SACTP) for optimum utilization of its existing utilities.
- South Asian region, taking a lesson from ASEAN infrastructure development, should possibly think of collaborating with the upcoming Asian Infrastructure Investment Bank (AIIB) in order to fund its vast infrastructural deficit.
- Another initiative should be aimed in the direction of reducing the vast inequality within South Asia in terms of access to infrastructural services. The policies should be framed in such a manner that the country specific deficiencies come down and the region as a whole can prosper.
- Focus on creating: (a) SAARC East–West Economic Corridor between Dhaka and Kabul via Kolkata, with intersection in Kolkata, Nepal and Bhutan also get linked along with Bangladesh, India, Pakistan and Afghanistan and (b) SAARC South–North Economic Corridor linking the Maldives, Sri Lanka, India, Pakistan and Afghanistan.
- Connectivity through railways from Kabul to Dhaka via Delhi railway service should be considered.

Acknowledgment The author is thankful to Prof. Sachin Chaturvedi, Director General, RIS for stimulating discussions on this subject. The author is also thankful to Ms. Disha Mendiratta for providing research support. Usual disclaimers apply.

References

Aschauer DA (1989) Is public expenditure productive? J Monet Econ 23(2):177–200

Bandopadhyay S (2014) To boost SAARC ties, Mamata clears two highway projects. The Indian Express. http://indianexpress.com/article/cities/kolkata/to-boost-saarc-ties-mamata-clears-two-highway-projects/. Accessed 18 Aug 2016

Batten DF, Karlsson C (eds) (1996) Infrastructure and the complexity of economic development. Springer, Berlin

Biehl D (1991) The role of infrastructure in regional development. In: Vickerman RW (ed) Infrastructure and regional development. Pion, London

Brooks D, Menon J (2008) Infrastructure and trade in Asia. Edward Elgar, Cheltanham

Button K (1998) Infrastructure investment, endogenous growth and economic convergence. Ann Reg Sci 32(1):145–162

Carciofi R (2008) Cooperation and provision of regional public goods: the IIRSA case. Integr Trade 12(28):51–82

Chaudhary A (2013) Why the public–private partnership model has failed in India. The Sunday Indian, 7 Feb. http://www.thesundayindian.com/en/story/why-the-public-private-partnership-model-has-failed-in-india/46608/. Accessed 18 Aug 2016

Chibber A (2013) Guest post: Bangladesh exposes flaws in World Bank's doing business index. Beyond Brics, 16 May. http://blogs.ft.com/beyond-brics/2013/05/16/guest-post-bangladesh-shows-its-time-to-revamp-world-banks-doing-business-index-hold/. Accessed 18 Aug 2016

CorpWatch (2000) India: World Bank admits failure of coal project. CorpWatch. http://www.corpwatch.org/article.php?id=657. Accessed 11 Nov 2015

Development Bank of Southern Africa (2011). The role of South African DFIs in regional infrastructural development in South Africa. Policy brief no 2

Engel E, Fischer R, Galetovic A (2009) Soft budgets and renegotiations in public–private partnerships. Technical report 15300. National Bureau of Economic Research, Cambridge, MA

Evans P, Karras G (1994) Are government activities productive? Evidence from a panel of United States. Rev Econ Stat 76(1):1–11

Fedderke JW, Perkins P, Luis JM (2006) Infrastructural investment in long-run economic growth: South Africa 1875–2001. World Dev 34(6):1037–1059

Francois J, Manchin M, Balaoing AP (2009) Regional integration in Asia: the role of infrastructure. In: Francois J, Rana PB, Wignaraja G (eds) Pan-Asian integration: linking East and South Asia. Palgrave MacMillan, Basingstoke

Fujita M, Krugman P, Venables A (1999) The spatial economy. MIT Press, Cambridge, MA

Gramlich E (1994) Infrastructure investment: a review essay. J Econ Lit 32(3):1176–1196

Hindustan Times (2015) The World Bank is like a 'slow' old ship http://www.hindustantimes.com/analysis/the-world-bank-is-like-a-slow-old-ship/story-IxMP6TzsFzOKMl62eXFdUI.html. Accessed 6 Sept 2016

ICEGATE (2014) About us. e COMMERCE portal central board of excise and customs. Government of India. https://www.icegate.gov.in/about_icegate.html. Accessed 18 Aug 2016

Institute of Peace and Conflict Studies (IPCS) (2012) Building bridges: strengthening physical, emotional and economic linkages in south asia conference report 42, May

International Growth Centre (IGC) (2014) Transit arrangements for Indian trade through Bangladesh. http://www.theigc.org/project/transit-arrangements-for-indian-trade-through-bangladesh/. Accessed 18 Aug 2016

Johnson BT (1996) The World Bank and economic growth: 50 years of failure. The Heritage Foundation. http://www.heritage.org/research/reports/1996/05/bg1082nbsp-the-world-bank-and-economic-growth. Accessed 18 Aug 2016

Jones S (2006) Infrastructure challenges in East and South Asia. Overseas Development Institute, London

Kessides C (1993) The contributions of infrastructure to economic development: a review of experience and policy implications, vol 213. The World Bank, Washington, DC

Kohsaka A (ed) (2007) Infrastructure development in the Pacific region. Routledge, London
Krugman P (1991) Increasing returns and economic geography. J Polit Econ 99:484–499
Kuroda H, Kawai M, Nangia R (2007) Infrastructure and regional cooperation. In: Bourguignon F, Pleskovic B (eds) Rethinking infrastructure for development. World Bank, Washington, DC
Levy B (2007) Governance reform: bridging monitoring and action. World Bank, Washington, DC
Lewis BD (1998) The impact of public infrastructure on municipal economic development: empirical results from Kenya. Rev Urban Reg Dev Stud 10(2):142–155
Luis A, Biller D, Dappe MH (2013) Reducing poverty by closing South Asia's infrastructure gap. World Bank, Washington, DC
Media Club South Africa (2014) Infrastructure development in South Africa. Media Club South Africa. http://www.mediaclubsouthafrica.com/component/content/article?id=125:South. Accessed 18 Aug 2016
MercoPress (2011) Mercosur 'structural convergence fund' has distributed 1.1bn US$ in 37 projects. MercoPress, 29 June 2011. http://en.mercopress.com/2011/06/29/mercosur-structural-convergence-fund-has-distributed-1.1bn-US$-in-37-projects. Accessed 18 Aug 2016
Mirza T, Bacani E (2013) Addressing hard and soft infrastructure barriers to trade in South Asia. ADB working paper no 16. Asian Development Bank, Mandaluyong
Munnell AH (1990) How does public infrastructure affect regional economic performance? N Engl Econ Rev September, pp. 11–32
Puga D (2002) European regional policies in the light of recent location theories. J Econ Geogr 2 (4):373–406
Research and Information Systems for Developing Countries (RIS) (2004) South Asia development cooperation report. RIS, New Delhi
Reuters (2014) Vietnam to get biggest loan from ASEAN infrastructure fund. Reuters. http://www.reuters.com/article/2014/05/23/philippines-asean-infrastructure-idUSL3N0O92NC20140523. Accessed 18 Aug 2016
Rowter K (2014) Lessons from Asian infrastructure development. Nikkei Asian review, 4 June. http://asia.nikkei.com/Politics-Economy/Economy/Lessons-from-Asean-Infrastructure-development. Accessed 18 Aug 2016
SAARC Secretariat (2006) SAARC multimodal regional transport corporation. SAARC Secretariat, Kathmandu
Sahoo P (2014) AIIB important step forward for much-needed Asian infrastructure. Global Times, 17 Nov. http://www.globaltimes.cn/content/892218.shtml. Accessed 20 Nov 2014
Seth D (2014). Government rebuts World Bank's report which places India at 134th place on ease of doing business. The Economic Times, India. http://articles.economictimes.indiatimes.com/2014-09-03/news/53522672_1_inspection-report-documents-transaction-cost. Accessed 18 Aug 2016
Singh SP (2013) What is wrong with PPP in India? Business standard. http://www.business-standard.com/article/economy-policy/what-is-wrong-with-ppp-in-india-113070600510_1.html. Accessed 18 Aug 2016
Thapar KL (2013) Potential and prospects of strengthening transport connectivity in South and Southwest Asia. Presentation at regional conference on strengthening transport connectivity and trade facilitation in South and South-West Asia. 9–10 December, UNESCAP
The Hindu (2014) A new bank for Asia. The Hindu. http://www.thehindu.com/opinion/editorial/editorial-a-new-bank-for-asia/article6545463.ece. Accessed 18 Aug 2016
Vanhoudt P, Mathä T, Smid B (2000) How productive are capital investments in Europe? EIB Pap 5(2):81–106
Weerakoon D, Thennakoon J, Weeraratne B (2007) Multilateral agreement on trade facilitation important but complex agenda for South Asia. CUTS South Asia position in the WTO Doha round, ADB
World Bank (2014) South Asia's $2.5 trillion infrastructure gap. World Bank. http://www.worldbank.org/en/news/feature/2014/04/02/south-asia-trillion-infrastructure-gap. Accessed 18 Aug 2016

China-Pakistan Economic Corridor and Its Impact on Regionalisation in South Asia

Siegfried O. Wolf

1 Introduction

Regional Cooperation in South Asia has focused on collective efforts to overcome mostly weak, congeneric economies, political fragmentation, socio-religious cleavages and the deep-rooted conflicts that exist among its member states and societies. To enhance spatial interaction in South Asia, the *idea* of an Economic Corridor (EC) is finding its way into foreign policy strategies as it becomes a buzzword in plans for stimulating economic growth and deepening integration of Asia's sub-regions (Safitri 2012). This idea has taken root early on in South East Asia, spearheaded by the Greater Mekong Subregion (GMS) initiative in 1992. In South Asia, prominence of economic corridors is a more recent phenomenon, currently the most advanced example is that of the China-Pakistan Economic Corridor (CPEC) (Mahar 2015).

Against this backdrop, this chapter will focus on following questions: Firstly, what are the perceptions, expectations, interests, and challenges regarding CPEC in the larger context of China's major development strategy of 'One Belt, One Road' (OBOR) on both the provincial and central level in Pakistan? Secondly, can we expect CPEC to become a pioneer project and gateway to further regional economic cooperation and integration beyond the Pakistan-China nexus? In other words, will this bilateral endeavour be an impetus or rather another hindrance for regional cooperation?

S.O. Wolf (✉)
Department of Political Science, South Asia Institute, Heidelberg, Germany
e-mail: siegfried.wolf@sadf.eu

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_6

2 The Overarching Idea of the CPEC: China's 'One Belt and One Road' Initiative

The China-Pakistan Economic Corridor (CPEC) represents a significant part of a bigger regional initiative led by China, known as 'One Belt, One Road' (OBOR) or New Silk Road Economic Development Corridor (Allem-Ebrahhimian 2015; Ranjan 2015). Basically, the OBOR plan aims to revive ancient trade routes connecting Asia with Europe and Africa, a vision that was announced by the Chinese President Xi Jinping in 2013. Since then Xi's notion is making headway and is proving to be a major focus of Chinese diplomacy. Led by Beijing, the OBOR concept refers to two ambitious development proposals—the Silk Road Economic Belt (SREB) and the twenty-first Century Maritime Silk Route Economic Belt (CMSR) (Tiezzi 2015; Ze 2014). The SREB is a vision to revive the ancient Silk Road that once connected China with Europe by land via high speed railroads, highways, energy and distribution networks, as well as fibre optic networks (OHK 2015). The basic notion of the SREB consists of the establishment of three separate corridors: Firstly, the *Northern Corridor* to Moscow and Germany that starts from Beijing, passes through Russia, and links it to European cities (Rana 2015a; Sahgal 2015). Secondly, the *Central Corridor* to Europe via Iran that starts in Shanghai and links the country to Tashkent, Tehran and onwards to Bandar Imam Khomeini Port of Iran by the Persian Gulf. One of this Iranian port branches also stretches up towards Europe. This last route is the longer one and could provide an alternative in case the CPEC is not implemented in time by Pakistan; or CPEC appears unachievable because of security risks (Rana 2015a) and/or lack of management capacities. Lastly, the *Southern Corridor* begins from Guangzhou, the third largest city of the People's Republic in South Central China. This trail moves towards western parts of the country (Xinjiang province) and connects the city of Kashgar with Pakistan at Kunjarab pass. From this mountain saddle at the northern border of Pakistan's Gilgit–Baltistan Hunza-Nagar District, China looks to link its Southern Corridor to Gwadar port, a gateway to the Indian Ocean, Arabian Sea and Persian Gulf (Rana 2015a; Sahgal 2015). This further (southward orientated) extension of the Southern Corridor will be implemented through the CPEC.

The CMSR—a sea based path through the South China Sea, South Pacific Ocean and Indian Ocean—complements the SREB. It is the modern-day equivalent of old sea lanes and aims to link China with the Mediterranean Sea via the Persian Gulf (OHK 2015).

Both projects (SREB and CMSR) mark the completion of two fundamental in China's economic: The 'bringing-in' (or hitching a ride) period and the 'bringing out' phase. During the first period, Beijing was primarily opening up to receive international assistance, foreign investment and technology; during the second phase, China pushed its enterprises and companies to get engaged outside the country and to 'Go Global'. Ever since the 'Go Global'-policy was launched in 2001, various economic reforms have been introduced, like the relaxation of its foreign exchange controls, investment restrictions and approval procedures (Bhattacharjee 2015). In 2003, Beijing allowed privately held companies to apply

for permission to invest internationally (Buckley et al. 2008). Now, with the OBOR, the Peoples Republic is entering a new phase of domestic economic development and international cooperation by combining and extending the original two development strategies of 'bringing in' and 'bringing out'. Another innovation is the introduction of the new concept of 'mutual benefit'. In this context, Beijing's development strategy is aiming for win-win cooperation with partners and neighbouring countries, ensuring they are also benefitting from China's economic growth to assure their 'mutual and equal pace of development' (Ze 2014). In order to make the OBOR work, Beijing is funding the bulk of the New Silk Road Projects. Chinese analysts are careful to emphasise that this sponsoring policy is guided by the concept of the 'Three No's': First, China will not interfere in the internal affairs of other nations; second, China does not seek to increase its so called 'sphere of influence'; and third, China does not strive for hegemony or dominance (Ze 2014). Compared to other projects, China has signalled that CPEC is a priority because it provides China with a direct connection (the shortest possible land route), to the Strait of Hormuz and the Arabian Sea (Ze 2015). As such, the CPEC is a 'flagship project' and is essential insofar it provides a link between the overland SREB and the CMSR (Tiezzi 2015). Originally, the idea of a corridor was proposed by Chinese Premier Li Keqiang, during a visit to Pakistan in May 2013. However, it really started to pick up steam in the months thereafter as Beijing unveiled its much more ambitious plans for an inter-continental Silk Road. Shortly thereafter, China and Pakistan signed a Memorandum of Understanding (MoU) on China-Pakistan Economic Corridor on July 5, 2013 during Prime Minister Nawaz Sharif's visit to China (Rana 2015b; Tiezzi 2015). However, the most important step towards the actualisation of the CPEC project was the April 2015 visit of Chinese President Xi Jinping to Pakistan; during this visit he announced a $46 billion commitment for the implementation of this multi-faceted network (Vandewalle 2015). This far-reaching financial promise was accompanied by 51 agreements (MoUs) for projects totalling $28 billion (Haider and Haider 2015; Khan 2015c; Ranjan 2015). Despite several bouts of criticism and concern with regards to Pakistan's ability to implement such a mega-development measure, construction works have started and several projects are currently underway (Khan 2015c).

3 The China-Pakistan Economic Corridor: The Implementation

As indicated above, the CPEC must be understood as a crucial part of the China's OBOR initiative and its aims to establish the SREB and the CMSR through Pakistani port facilities. Praised as a new economic lifeline (Daily Capital 2015; Fazil 2016; Khan 2015b; Sahgal 2015), the CPEC is the essential link between the belt and road. In order to provide this connection, the CPEC should connect Kashgar in China's Xinjiang Uygur Autonomous Region with Gwadar port on the

Balochistan coast in Pakistan's south-western region (Aamir 2015). According to the plan, the CPEC will be implemented through a '1+4 cooperation structure' (Khan 2015c): the Economic Corridor at the centre and Gwadar Port, energy, infrastructure and industrialisation as its four key areas of collaboration. In order to operationalise this endeavour, the corridor combines several cross-sectional components such as infrastructure, trade, connectivity, transport, energy and services. More concretely, it consists of different infrastructure measures. First and foremost: roads, railways (supposed to complement the road network) and pipelines for oil and gas. For example, the upgrade and expansion of Gwadar port includes the construction of an international airport and a hospital. In this context, in addition to building completely new supporting infrastructure to create connectivity, several major upgrades of existing outdated infrastructure systems are required. Besides infrastructure, the major focus will be on the increase of energy capacities—both renewable and non-renewable—such as solar, wind, hydro-power energy (dams) and coal. The planned pipeline projects are also expected to improve the imports of gas and oil. Additionally, all the projects are flanked by substantial security measures to guarantee a secure environment for the CPEC development (BBC 2015b; Haider 2015).

Essentially, the CPEC encompasses three routes through Pakistan, plus a northern extension: First, the so called *Eastern Alignment:* This route mainly passes through central Punjab and Sindh, connecting the cities Thakot-Mansehra-Islamabad-Lahore and Multan. From Multan, the trail will link up at Hyderabad through Rohri and Dadu. The Hyderabad-Karachi part will be linked through the M-9 super highway and finally Karachi will then be linked to Gwadar on the Arabian Sea through N-10 Coastal East Bay Express Highway along the coastline (Rana 2015a). Second, the *Central Route* passes partly through Khyber-Pakhtunkhwa (KPK), and hitherto unconnected parts of Punjab and Sindh. The third route—the *Western Alignment*—passes through the relatively underdeveloped areas of KPK and Balochistan.[1] This route will most likely run through Dera Ismail Khan and Fort Sandeman—or Dera Ghazi Khan and Zhob to Quetta and onward to the Makran coast in order to connect with Gwadar (Zingel 2015). Finally, there is the so called *Northern route*, which will connect all the three Pakistani alignments with the Pakistani-China border at Kunjarab and continues on Chinese territory.

[1]The largest of Pakistan's provinces, Balochistan covers 347,190 km^2, around 42% of Pakistan's total area. An extreme, arid terrain and scarcity of water in the region contributes to the harsh living conditions there. Basic development indicators in Balochistan are among the lowest in Pakistan. Balochistan became part of Pakistan in 1948. Armed uprisings by separatist forces have been a continuous phenomenon in this region, in 1948 itself and again in 1968 and 1973–77, but they have repeatedly been suppressed by the Pakistan military (Mitra et al. 2006; Rana 2015a).

4 Pakistan's and China's Interests in Developing an Economic Corridor

A multi-faceted development project like the CPEC influences many aspects of state and society, it relates to the economic, political, and social spheres as well as foreign policy objectives and geopolitics.

4.1 Pakistan's Interests

From an economic point of view, Pakistan's main interest is to attract foreign capital (Chang 2014). Islamabad hopes that with the successful implementation of respective CPEC projects the infrastructure and energy situation will improve, leading to positive spill-over effects in all other economic sectors. By identifying economics nodes in established industrialised-urban centres as well as disadvantaged rural areas, the government hopes to generate a nationwide economic boost that reaches Pakistan's poorer provinces (Rafi 2015). Islamabad hopes that this addresses the problems of unemployment, lack of knowhow, and lacking trade capabilities. Keeping these goals in mind, CPEC might also initiate an impetus to reverse negative processes of brain drain and capital flight that are reaching alarmingly high levels at the moment (Wolf 2016). If the projects proves successful, CPEC could have a positive impact on the population's overall mind set: On the one hand attracting educated youths abroad as well as getting those who were planning to leave the country (re-)engaged in Pakistan's future. On the other hand it could convince non-state investors to provide venture capital. In the context of Pakistan's overall financial indicators, one is hopeful that foreign exchange reserves will significantly increase as CPEC progresses.

The increase in trade and transit activities will also diversify Pakistan's foreign aid- and investment portfolio. Traditionally, US financial support was a major source for inflow of financial assets, however, provision of capital by the US (and Europeans) is usually linked to political conditions or prerequisites. After the cool-down in US-Pakistan relations, Washington reduced its engagement in the region and left Islamabad looking to replace 'unreliable' US support (Iqbal 2015).

There are no doubts that the above mentioned economic opportunities will have significant political and social impact. One may expect: Firstly, improving relations between different provinces as well as better centre-state relations. Secondly, the notion that a successful (complete) implementation of the CPEC will improve the credibility and capacities of the (civilian) government and as such strengthen processes of (good) governance. Thirdly, all this could potentially lead to a new international status and improved regional standing for Pakistan (Rafi 2015) based on the emergence of a "new economic self-confidence". With this in mind, Islamabad's decision-makers aim to overcome the country's regional 'diplomatic isolation' (Fazil 2015) and to subsequently improve the economic and political cooperation with Afghanistan, Iran, Central Asian States and Russia (Barber 2014). Finally, extraordinary growth predictions will generate positive results for the

common people. In this context, there is great hope that the subsequent improvement of the living conditions will also help contain political radicalization, Islamisation, militancy, and jihadism. In brief, the CPEC might help to eradicate terrorism in Pakistan (Fazil 2015).

4.2 China's Interests

Beijing is convinced that in the light of its many security problems, Pakistan is in need of major development projects to bring stability to the country (Small 2015a, b; Tiezzi 2015). From Beijing's point of view, this will protect Chinese economic interests and reduce the terrorist threat coming from Pakistan. It believes that sustainable economic prosperity in Pakistan will help to contain the terrorism that challenges Chinese economic interests, territory and security (Domínguez 2015). In other words, it aims secure a win-win situation by eradicating the threat within Pakistan and protect its economic interests in the country (Fullerton 2015). Therefore, China demands a clear commitment from Pakistan accompanied by clear and concrete actions to protect the sovereignty and territorial integrity of the People's Republic and Chinese citizens on Pakistani soil (Daily Times 2015; The New York Times 2015). Namely, to undermine all efforts from Pakistan based terrorists and separatists to destabilize 'mainland China', especially Xinjiang province. Furthermore, Beijing expects that Pakistan continues its diplomatic support for the 'One-China policy' (Xinhua 2016).

Additionally, the land-based CPEC provides China with another access route to the Indian Ocean and allows it to by-pass the Malacca straits to reach Africa and the Middle East. Strategists have long perceived the corridor as a strategic liability; they look to insulate China from a potential blockade (BBC 2015b; Chang 2014; Dawn 2013; Pillalamarri 2015; Joshi 2013). The current increasing tensions in the South China Sea are an indicator for the likelihood of such a scenario. This so called 'Malacca-Dilemma' further gains significance if one takes into account that around 80% of Chinese energy imports flow through the Malacca route (Sahgal 2015).

China hopes that the CPEC can also provide a boost to China's slacking economy, especially in the western, landlocked province of Xinjiang (Tharoor 2015). The project should help bridge the development imbalance between the prosperous eastern and underdeveloped western parts of the country (Weihong 2015; Ze 2014). China similarly expects to stabilise the region by improving the economic conditions in the western periphery, the region currently constitutes one of Beijing's top domestic security concerns (Domínguez 2015). Overall, China expects that improving economic conditions in Xinjiang will bring socio-politically stability and subsequently help undermine the 'three evils': Separatism, terrorism, religious fundamentalism (Davis 2008).

4.3 Challenges Towards CPEC Implementation and Improvement of Regional Connectivity

Other than the tense relationship between Afghanistan and Pakistan and problematic Iran-Pakistan ties, there is one more major challenge: the Indian objections.

4.4 Indian Objections

The Indian government has expressed severe concerns with regard to Chinese development projects in Pakistan in general and with CPEC in particular.

Firstly, for a long time now China has been investing significantly in Gilgit-Baltistan and in an area known in Pakistan as 'Azad Kashmir', both regions are the subject of territorial disputes between Pakistan and India. Islamabad claims de facto autonomous control over both regions but Gilgit-Baltistan and 'Azad Kashmir' are parts of the former princely state of Jammu and Kashmir on which India also lays claim (Fazil 2016; Qadir 2015). In this context, it is worrying for New Delhi that Pakistan is considering to upgrade the constitutional status of Gilgit-Baltistan as it indicates a significant step towards formally absorbing Gilgit-Baltistan as the fifth province of Pakistan (The Express Tribune 2016). Additionally, the fact that these major projects involve several thousand Chinese workers of the construction corps of the People's Liberation Army (PLA), indicates another threat to those concerned with India's security, it suggests Beijing is planning to build-up military presence in the disputed areas (Chang 2014; Chansoria 2015).

Secondly, the prospect that Gwadar may one day become a Chinese naval base and the increasing Pakistan-China security cooperation alongside the CPEC rattles the Indian government (Ashraf 2015; Talwar 2015; Wolf 2013). This also means that CPEC will help Beijing to expand its maritime capabilities, particularly in the Indian Ocean Region, increasing its influence and control over key maritime trade routes, improving access to energy sources, and massively extending its influence in central and south Asia (BBC 2015b; CFI 2015; Sahgal 2015). Overall, China's maritime expansionism is fostering fears in New Delhi of a Chinese encirclement of India by a so called 'string of pearls' or 'pincer strategy', understood as a series of strategic naval ports (Barber 2014; Rahman 2012).

Thirdly, CPEC plans fuel assumptions that the Sino-Pakistani partnership poses a challenge to India's regional standing. As mentioned earlier, Pakistan and China will also increase its collaboration in strategic and security matters in order to ensure the safety of CPEC and related projects (Daily Times 2015; Tiezzi 2015). To deepen the security-military cooperation, Islamabad and Beijing agreed to intensify collaboration in defence, counter-terrorism, and space and maritime technology; New Delhi perceives these moves as a serious threat to its own national security (Daily Times 2015; Syed 2015).

5 Final Thoughts: Impacts of CPEC on Regional Cooperation

Insofar as CPEC may have positive impacts on regional cooperation depends on its ability to increase regional connectivity as much as possible. Therefore, it is most important that the CPEC will be integrated in transport, energy and trade infrastructure networks beyond the Pakistan-China nexus. As CPEC is linked with Kashgar and its growing special economic zone (Abrar 2012), a successful entrenchment into the northern networks is ensured, connecting the CPEC with Central Asian States, Russia and Europe (Barber 2014). However, it will be most important that Pakistan includes its neighbours as they would greatly benefit from this project if it succeeds (Ians 2015; The New York Times 2015). Subsequently, Pakistan should open up the CPEC to the West (Iran and Afghanistan) and to the East (India); only then can it make a significant impact on regional connectivity and may become a game changer for regional cooperation in South Asia. For any real change to occur, a normalisation of Pakistan-India relations and a constructive Pakistan-Iran relationship are essential preconditions. Furthermore, a fundamental reassessment of Pakistan's predominantly-security based approach towards Afghanistan and India is needed (Malik and Naseer 2015a, b; Wolf 2012a). However, this requires a decisive change in the mind-set of regional decision-makers, especially in Islamabad and New Delhi; the tensions in the India-Pakistan relationship continue to obstruct any noteworthy regional collaboration. Regarding Afghanistan, Pakistan must finally drop the vision of 'strategic depth' and/or similar notions and adopt a nonpartisan policy approach towards Afghanistan's internal affairs (Rizvi 2013).

Therefore, Pakistan should redefine its regional profile and normalize economic and diplomatic relations with its neighbours (Rizvi 2013; Khan 2015a). With the formulation of its 'Vision 2025',[2] Islamabad took the first step, at least in theory; however, Pakistan must also develop a foreign policy free from ideological parameters that will allow rational behaviour in its bilateral relations. More concretely, Pakistan needs the put greater emphasis on trade and economic cooperation rather than putting the focus on security (Barber 2014). Until now, the country's military and intelligence services, as well as some Islamic fundamentalist elements, undermine any sustainable rapprochement between Islamabad and New Delhi and Kabul. On this matter China sides with Pakistan on several issues (for example in the territorial dispute over Gilgit-Baltistan), nevertheless it does not want to deepen involvement in India-Pakistan disputes. As such, Beijing could play an essential role as interlocutor and make it clear "that the proposal to open access to the economic corridor for India has credible commitment at the highest levels in China" (Ians 2015). Beijing is most likely the only actor that could encourage a change in Pakistan's mind-set. Only then can regional connectivity be improved and can Pakistan, China and the whole extended region enjoy maximum benefits from the economic corridor.

[2] http://www.pc.gov.pk/wp-content/uploads/2015/05/Pakistan-Vision-2025.pdf

In order to work towards sustainable regional cooperation, peace and stability, the integration of Afghanistan into the CPEC as well as other economic corridors must be ensured. Therefore, China has vested interests in a stable Afghanistan that is no longer under control of the, "who it believes lends sanctuary to the Muslim Uighur separatist groups in the autonomous western region of Xinjiang" (Shams 2015; Wolf 2012a). This raises the questions of how much influence China has on Pakistan's security sector and whether it may be able to extend its influence over Afghan Taliban. And, if this is the case, how far they will still comply with the Pakistani forces. While it may be tempting to assume Chinese influence in this matter, assessing the genesis of foreign influence in Afghanistan shows that Pakistan and China have differing priorities: Beijing primary interest is peace and stability, while Islamabad looks to exercise influence and to keep its rival India out of (Daily Times 2015; Domínguez 2015). In this context, it is interesting to note that in the past "China used to outsource its Afghanistan policy to Pakistan but is now taking a far more active role in the planning for the aftermath of the West's drawdown" (Andrew Small quoted in Domínguez 2015). However, Beijing "expects Pakistan to take Chinese concerns into account" (Andrew Small quoted in Domínguez 2015). This could help to improve relations between Kabul and Islamabad and may boost Pakistan-Afghanistan economic cooperation.

In the wake of the new US-Iran nuclear deal and subsequent removal of sanctions, Iran's newly re-established position in international relations will open up new opportunities for cooperation with Pakistan. A successful eastward orientation would not only help deepen regional cooperation but offers tremendous opportunities for the CPEC in general and the Western alignment of the economic corridor in particular. The cooperation in energy and trade would benefit much from a rapprochement between Islamabad and Tehran. Furthermore, the construction of an Iran-Pakistan pipeline would create another avenue of potential cooperation between India and Pakistan. No doubt that any rapprochement has to take both 'Pakistan's special relations with Saudi Arabia' and subsequently 'Riyadh's sentiments towards Tehran' into account. Riyadh and Islamabad share a long history of cooperation on defence and security, and Saudi Arabia has often helped the Pakistani government with precarious financial situations (Vandewalle 2015). Nevertheless, the CPEC may initiate a gradual shift in Pakistan's regional outlook and its relations with Iran and Saudi Arabia. On the one hand, Pakistan considers Iran a potential partner to help it overcome its dire energy needs, but on the other hand it does not want to offend further Saudi Arabia by getting too close to Tehran (Shams 2016). This will be a difficult balancing act for Islamabad due to the growing Saudi-Iranian hostility in the Middle East. For example, Saudi Arabia was displeased that Pakistan's parliament voted against joining the Saudi-led attacks (Operation Decisive Storm) against Iranian supported Houthi rebels in Yemen (BBC 2015a). Against this backdrop, Pakistan will most likely approach the situation with great caution, to not further alienate Saudi Arabia.

However, the difficult task of balancing its relations with Tehran and Riyadh is only one challenge in the context of the CPEC. At this time it is unclear whether Iran will turn out to be a competitor or an ally. As indicated above, the Chinese

government is concerned with the ongoing political conflicts that obstruct CPEC's implementation, security problems, delays and more. Tehran may offer an alternative economic partnership and corridor; Iran's main argument is that it has the functional port Chabahar, only 36 km from Gwadar that lies in a remote and restive area (Chang 2014). In contrast to Gwadar (Fazl-e-Haider 2014), Chabahar is well connected with the country's infrastructure and Iran can guarantee the security of Chinese investments and its workers. In this context it is interesting to mention that China offered to invest $51 billion in Iran, which is more than it offers Pakistan to implement the CPEC. In sum, there is the imminent threat that a potential Iran-China Corridor turns into competition for the CPEC. However, taking Pakistan's 'strategic location' (Fazil 2015)—which is the country's major asset—and Chinese interests into account, one can state that an 'Iran option' will merely be an additional option for Beijing and is unlikely to substitute CPEC.

In conclusion, the CPEC could be designed as an entity with an inclusive character, open to all actors willing to participate in a constructive manner. Therefore, Pakistan's government could to work towards a national consensus and harmony. In order to do so, it could side-lining and suppressing the interests of the smaller provinces, namely Balochistan and Khyber Pakhtunkhwa (KPK), it could avoid provincial rivalries and introduce an all-inclusive and transparent decision-making process. It is advisable to establish mechanisms that allow for the fair distribution of the profits generated by CPEC and related projects among the provinces. In other words, the federal government should look at the grievances of the local people, especially in Balochistan. Its current policy of zero tolerance and crushing military response to any opposition in Balochistan will likely escalate the situation (Wirsing 2008) and increase the risks for Chinese workers and projects in the provinces. The persistent attacks on Chinese workforce can be seen as proof of this hypothesis. In this context, Islamabad "should keep in mind that development does not bring peace, rather it is peace that brings development" (Fazl-e-Haider 2014). The dream of a fully functional Gwadar port, which could turn the province into an important energy conduit in the region, can only come true if peace and stability return to Balochistan (Fazl-e-Haider 2014; Wirsing 2008). In this context, Gilgit-Baltistan serves also as an important reference. In that case, Islamabad expected that an improvement of the socio-economic conditions would positively impact peace and reconciliation in the conflict driven Gilgit-Baltistan. However, the construction of the Karakoram Highway Tensions has failed resolve tensions between Shia and Sunni communities. To the contrary, the tensions have only increased (Hunzai 2013; Wolf 2012b). On the international level, Pakistan needs a fundamental reassessment of its foreign policy to be able to enter in a constructive relationship with its neighbours. As long as Islamabad gives the impression to be unreliable, it will be unable to obtain their cooperation on CPEC. India also urgently needs to debate and proclaim its stance vis-a-vis CPEC, any discourse should be based on a rational evaluation of policy options, free from emotional arguments. This will be not easy, considering the fact that New Delhi fears that participation in the CPEC might lead to a de-facto legitimisation of Islamabad's claims over disputed territory, making the situation even more complicated difficult

for India. If these issues are not addressed, the CPEC will neither serve as a critical juncture in Pakistan's troubled economic, social and political development nor become as a 'game changer' for regional connectivity, cooperation, and integration.

References

Aamir A (2015) Pak-China economic corridor. Pakistan Today. http://www.pakistantoday.com.pk/2015/02/07/comment/pak-china-economic-corridor/. Accessed 5 June 2016

Abrar M (2012) China–Pakistan economic corridor – a new vista of development in South Asia. Pakistan Today. http://www.pakistantoday.com.pk/2014/12/06/comment/china-pakistan-economic-corridor-a-new-vista-of-development-in-south-asia/. Accessed 5 June 2016

Allem-Ebrahhimian B (2015) China loves Pakistan but most Chinese don't. Foreign Policy (FP). http://foreignpolicy.com/2015/04/22/china-pakistan-relations-trade-deal-friendship/. Accessed 5 June 2016

Ashraf S (2015) China-Pakistan economic corridor, ISAS brief, no. 364, Institute of South Asian Studies National University of Singapore. http://www.isas.nus.edu.sg/isaspapers/Pages/Briefs.aspx. Accessed 5 June 2016

Barber CE (2014) The Pakistan-China corridor: a new project will give Pakistan the tools of globalization. Will it use them? The Diplomat. http://thediplomat.com/2014/02/the-pakistan-china-corridor/. Accessed 5 June 2016

BBC (2015a) Yemen conflict: Pakistan rebuffs Saudi coalition call. http://www.bbc.com/news/world-asia-32246547. Accessed 5 June 2016

BBC (2015b) Is China-Pakistan 'silk road' a game-changer? http://www.bbc.com/news/world-asia-32400091. Accessed 5 June 2016

Bhattacharjee D (2015) China-Pakistan economic corridor (CPEC). Indian Council of World Affairs. Issue Brief. http://www.icwa.in/pdfs/IB/2014/CPECIB12052015.pdf. Accessed 5 June 2016

Buckley PJ, Cross AR, Tan H, Xin L, Voss H (2008) Historic and emergent trends in Chinese outward direct investment. Manag Int Rev 48(6):715–748

CFI (2015) Proposed China Pakistan economic corridor: with a price tag of $46 billion. Capital Finance International (CFI). http://cfi.co/asia-pacific/2015/04/proposed-china-pakistan-economic-corridor-with-a-price-tag-of-46-billion/. Accessed 5 June 2016

Chang GG (2014) China's big plans for Pakistan. The National Interest. http://nationalinterest.org/feature/chinas-big-plans-pakistan-11827. Accessed 5 June 2016

Chansoria M (2015). China makes its presence felt in Pak occupied Kashmir. The Sunday Guardian. http://www.sunday-guardian.com/analysis/china-makes-its-presence-felt-in-pak-occupied-kashmir. Accessed 5 June 2016

Daily Capital (2015) CPEC project a game changer for the region: Nawaz. http://dailycapital.pk/cpec-project-a-game-changer-for-the-region-nawaz/. Accessed 5 June 2016

Daily Times (2015) Pakistan, China launch economic corridor. http://www.dailytimes.com.pk/national/21-Apr-2015/pakistan-china-launch-economic-corridor. Accessed 5 June 2016

Davis EVW (2008) Uyghur Muslim ethnic separatism in Xinjiang, China. Asia-Pacific Center for Security Studies. http://apcss.org/college/publications/uyghur-muslim-ethnic-separatism-in-xinjiang-china/. Accessed 5 June 2016

Dawn (2013) Sino-Pak corridor to bolster regional development. http://www.dawn.com/news/1038901. Accessed 5 June 2016

Domínguez G (2015) Author interview with Andrew small: bilateral relations: the Sino-Pakistani axis: Asia's 'little understood' relationship. Deutsche Welle. http://www.dw.de/the-sino-pakistani-axis-asias-little-understood-relationship/a-18194448. Accessed 5 June 2016

Fazil MD (2015) The China-Pakistan economic corridor: potentials and vulnerabilities, the diplomat http://thediplomat.com/2015/05/the-china-pakistan-economic-corridor-potential-and-vulnerabilities/. Accessed 5 June 2016
Fazil MD (2016) Pakistan: what stands in CPEC's way? http://thediplomat.com/2016/02/pakistan-what-stands-in-cpecs-way/. Accessed 5 June 2016
Fazl-e-Haider S (2014) Insurgency stunts Gwadar progress. Asia Times. http://www.atimes.com/atimes/South_Asia/SOU-01-090514.html. Accessed 5 June 2016
Fullerton J (2015) China unveils £30bn plan to link to Pakistan with 'economic corridor'. The Independent. http://www.independent.co.uk/news/world/asia/china-unveils-30bn-plan-to-link-to-pakistan-with-economic-corridor-10190916.html. Accessed 5 June 2016
Haider M (2015) Operations to continue till Pakistan is terror free, says General Raheel. Dawn. http://www.dawn.com/news/1192103. Accessed 5 June 2016
Haider M, Haider I (2015) Economic corridor in focus as Pakistan, China sign 51 MoUs. Dawn. http://www.dawn.com/news/1177109/economic-corridor-in-focus-as-pakistanchina-sign-51-mous. Accessed 5 June 2016.
Hunzai I (2013) Conflict dynamics in Gilgit-Baltistan. Special report 321. United States Institute of Peace, Washington, DC. http://www.usip.org/sites/default/files/SR321.pdf. Accessed 5 June 2016
Ians (2015) India needs to be part of China-Pakistan economic corridor. The Economic Times. http://economictimes.indiatimes.com/news/politics-and-nation/india-needs-to-be-part-of-china-pakistan-economic-corridor/articleshow/49298727.cms. Accessed 5 June 2016
Iqbal A (2015) Chinese investments dwarf American package: US media. Dawn. http://www.dawn.com/news/1177244. Accessed 5 June 2016
Joshi S (2013) Can India blockade China? The Diplomat. http://thediplomat.com/2013/08/can-india-blockade-china/. Accessed 5 June 2016
Khan AU (2015a) Pak-China economic corridor: the hopes and reality. Spotlight. Institute of Regional Studies: Islamabad, Pakistan. http://irs.org.pk/spotlight/spjan15.pdf. Accessed 5 June 2016
Khan H (2015b) Is China-Pakistan economic corridor really a game changer? Pakistan Today. http://www.pakistantoday.com.pk/2015/06/13/comment/is-china-pakistan-economic-corridor-really-a-game-changer/9. Accessed 5 June 2016
Khan M (2015c) CPEC: we will succeed. Pakistan Observer. http://pakobserver.net/detailnews.asp?id=264996. Accessed 5 June 2016
Mahar A (2015) Why China's 'One Belt, One Road' initiative matters for Asia. Azernews. http://www.ipripak.org/why-chinas-one-belt-one-road-initiative-matters-for-asia/. Accessed 5 June 2016
Malik S, Naseer E (2015a) CPEC politics – part 1. Spearhead Analysis. http://spearheadresearch.org/SR_CMS/index.php/researchopinions/cpec-politics. Accessed 5 June 2016
Malik S, Naseer E (2015b) CPEC politics – part 2. Spearhead Analysis. http://spearheadresearch.org/SR_CMS/index.php/researchopinions/cpec-politics-part-2. Accessed 5 June 2016
Mitra SK, Wolf SO, Schöttli J (2006) A political and economic dictionary of South Asia. Routledge, London
OHK (2015) A silk road for the 21st century: about the impact of China's One Belt. One Road project. Orangefield Hong Kong (OHK). http://www.orangefield.com/blog/a-silk-road-for-the-21st-century-about-the-impact-of-china-s-one-belt-one-road-project. Accessed 5 June 2016
Pillalamarri A (2015) The China-Pakistan economic corridor is easier said. The Diplomat. http://thediplomat.com/2015/04/the-china-pakistan-economic-corridor-is-easier-said-than-done/. Accessed 5 June 2016
Qadir S (2015) Why is India piqued at the China-Pakistan corridor? The National. http://www.thenational.ae/opinion/why-is-india-piqued-at-the-china-pakistan-corridor. Accessed 5 June 2016

Rafi AE (2015) Chinese president visit to Pakistan. IPRI review. Islamabad Policy Research Institute (IPRI), Islamabad. http://www.ipripak.org/chinese-president-visit-to-pakistan/. Accessed 5 June 2016

Rahman M (2012) Chinese plans in Seychelles revive Indian fears of encirclement. The Guardian

Rana S (2015a) China-Pakistan economic corridor: lines of development – not lines of divide. The Express Tribune. http://tribune.com.pk/story/887949/china-pakistan-economic-corridor-lines-of-development-not-lines-of-divide/. Accessed 5 June 2016

Rana S (2015b) Eastern CPEC route unfeasible: report. The Express Tribune. http://tribune.com.pk/story/926582/economic-corridor-eastern-cpec-route-unfeasible/. Accessed 5 June 2016

Ranjan A (2015) The China-Pakistan economic corridor: India's options. ICS occasional paper #10. Institute of Chinese Studies & Research Scholar, South Asian Studies, School of International Studies, Jawaharlal Nehru University, Delhi. http://www.icsin.org/uploads/2015/06/05/31e217cf46cab5bd9f15930569843895.pdf. Accessed 5 June 2016

Rizvi HA (2013) China and Pakistan's economic recovery. Pakistan Today. http://www.pakistantoday.com.pk/2013/07/09/comment/columns/china-and-pakistans-economic-recovery/. Accessed 5 June 2016

Safitri H (2012) Economic corridor policy, land concentration and 'social exclusion' java's economic corridor policy implementation, Indonesia. International Institute of Social Studies, The Hague, Netherlands. http://thesis.eur.nl/pub/13083/. Accessed 5 June 2016

Sahgal A (2015) China–Pakistan economic corridor: changing dynamics of Southern Asia – analysis. Eurasiareview. www.eurasiareview.com/24042015-china-pakistan-economic-corridor-changing-dynamics-of-southern-asia-analysis/. Accessed 5 June 2016

Shams S (2015) China expands influence in 'economic colony' Pakistan. Deutsche Welle

Shams S (2016) Can Iran's Rouhani win over Pakistan? Deutsche Welle. http://www.dw.com/en/can-irans-rouhani-win-over-pakistan/a-19138190. Accessed 5 June 2016

Small A (2015a) The China-Pakistan axis: Asia's new geopolitics. Oxford University Press, New York

Small A (2015b) China-Pakistan economic corridor will change the region. Hardnews. http://www.hardnewsmedia.com/2015/07/chinapakistan-economic-corridor-will-change-region%E2%80%93-andrew-small. Accessed 5 June 2016

Syed BS (2015) Pakistan-China ties' strategic content to be bolstered, Dawn. http://www.dawn.com/news/1177236/pakistan-china-ties-strategiccontent-to-be-bolstered. Accessed 5 June 2016

Talwar S (2015) China-Pakistan economic corridor and its geopolitical implications. CAPS Infocus, Centre for Air Power Studies/Forum for National Security Studies (FNSS), New Delhi. http://capsindia.org/files/documents/CAPS_Infocus_ST.pdf. Accessed 5 June 2016

Tharoor I (2015) What China's and Pakistan's special friendship means. The Washington Post. http://www.washingtonpost.com/blogs/worldviews/wp/2015/04/21/what-china-and-pakistans-special-friendship-means/. Accessed 5 June 2016

The Express Tribune (2016) Chinese pressure sees Pakistan mull constitutional status of Gilgit-Baltistan. http://tribune.com.pk/story/1023523/chinese-pressure-sees-pakistan-mull-constitutional-status-of-gilgit-baltistan/. Accessed 5 June 2016

The New York Times (2015) China's Big Plunge in Pakistan. http://www.nytimes.com/2015/04/23/opinion/chinas-big-plunge-in-pakistan.html?_r=0. Accessed 5 June 2016

Tiezzi S (2015) Can China's investments bring peace to Pakistan? The Diplomat. http://thediplomat.com/2015/04/can-chinas-investments-bring-peace-to-pakistan/. Accessed 5 June 2016

Vandewalle L (2015) Pakistan and China: 'iron brothers' forever? Directorate-general for external policies. Brussels, Belgium, Policy Department. http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/549052/EXPO_IDA(2015)549052_EN.pdf. Accessed 5 June 2016

Weihong X (2015) China-Pakistan economic corridor key to economic upgrading in southern Xinjiang. Global Times. http://www.globaltimes.cn/content/930491.shtml. Accessed 5 June 2016

Wirsing RG (2008) Baloch nationalism and the geopolitics of energy resources: the changing context of separatism in Pakistan. US Strategic Studies Institute (SSI). http://www.strategicstudiesinstitute.army.mil/pubs/summary.cfm?q=853. Accessed 5 June 2016

Wolf SO (2012a) Trapped in old patterns? The future of Pakistan-Afghanistan relations. The Independent (Bangladesh). http://crossasia-repository.ub.uni-heidelberg.de/2820/. Accessed 5 June 2016

Wolf SO (2012b) From bad to worse: Gilgit-Baltistan between sectarian conflict, socio-economic neglect, and political deprivation. The Independent (Bangladesh). http://crossasia-repository.ub.uni-heidelberg.de/2846/. Accessed 5 June 2016

Wolf SO (2013) Gwadar Port – a potential game changer? The Independent (Bangladesh). http://crossasia-repository.ub.uni-heidelberg.de/2851/. Accessed 5 June 2016

Wolf SO (2016) The China-Pakistan economic corridor (CPEC): Feasibility and the need for an assessment of India's role. SADF Comment, Volume 19, South Asia Democratic Forum (SADF). http://sadf.eu/new/blog/comment-nr-19-china-pakistan-economic-corridor-cpec-feasibility-need-assessment-indias-role/. Accessed 5 June 2016

Xinhua (2016) Pakistan reiterates support 'One-China' Policy. http://www.china.org.cn/world/2016-01/20/content_37627112.htm. Accessed 5 June 2016

Ze S (2014) One Road & One Belt & new thinking with regard to concepts and practice. Presentation at the 30th anniversary conference of the Schiller Institute, Frankfurt, Germany. http://newparadigm.schillerinstitute.com/media/one-road-and-one-belt-and-new-thinking-with-regard-to-concepts-and-practice/. Accessed 5 June 2016

Ze S (2015) A look at a new concept and the remarkable practice of China's development through the 'One Belt, One Road'. Presentation at the international conference of the Schiller Institute, Paris, France, 13–14 June 2015. http://newparadigm.schillerinstitute.com/media/pr-shi-ze-regard-sur-le-concept-nouveau-d-une-ceinture-une-route/. Accessed 5 June 2016

Zingel WP (2015) China's Pakistan option: economic and social implications of an 'all-weather relationship'. IIC Quarterly, Indian International Center (IIC): New Delhi, India 42(2): 14–24

Screaming Urbanization and Infrastructural Gap in South Asia: A Critical Analysis

Vijay Pandey

1 Introduction

The infrastructure we build today will shape the way we produce and consume for the decades to come. In an era of rising natural resource scarcity and increasing vulnerability to climate change, infrastructural efficiency has vital implications for both economic and environmental sustainability. In spite of its remarkable economic performance, Asia-Pacific is still faced with significant developmental challenges. The region is home to 2/3 of the world poor, more than 600 million lack access to safe drinking water, 1.5 billion are without proper sanitation and 800 million without electricity, among others.

The need for increased economic growth to overcome these challenges raises the question of how to support the consequential levels of production and consumption. With a lower carrying capacity and a population density 50% higher than world average the region is in fact already living beyond its means. Countries in the region cannot afford to follow the conventional development path of "grow first, clean-up later". Hence, the urgent need to decouple economic activities from environmental pressures. It is necessary to deliver better goods and services with less resources and lower pollution; in other words, to improve the efficiency of our societies and pursue an environmentally sustainable economic growth, or Green Growth.

Currently 1.6 billion people or 40% of Asians live in urban areas. By 2030, a majority (around 2.7 billion) will live in cities and towns. This means adding a new town of roughly 130,000 people every day for the next 21 years. This trend represents a tremendous challenge in delivering cost-effective and affordable services to the population. Considering that cities contribute 67% of world's primary energy demand and are responsible for 71% of global CO_2 emissions, the imperative is to do so in the most environmentally-friendly manner.

V. Pandey (✉)
Delhi School of Economics, University of Delhi, Delhi, India
e-mail: Vijay.dse15@gmail.com

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_7

Infrastructure systems are an integral part of urban development and a deciding factor in determining urban form, delivering services to communities, and supporting economic growth. Infrastructure has also immediate and long-term environmental impacts. Building infrastructure not only disrupts the local ecosystem and often requires intensive use of physical resources and energy; it also locks cities into consumption and production patterns for decades. Buildings alone are estimated to contribute up to 40% of energy use and greenhouse gas emissions over their life span. Traffic congestion costs, which can be as high as 6% of GDP, and poor-quality infrastructure have been found to be the main factors negatively influencing competitiveness of urban areas.

2 Trends and Inception of Urbanization in South Asia

The region is characterized by physical, demographic, socio-economic, and cultural variations. Amongst the countries in the region, India, Pakistan and Bangladesh have populations in excess of 100 million inhabitants (more than a billion in India alone), while the Maldives and Bhutan, each have less than a million inhabitants. However, Maldives, a very small country in terms of population size, is the second most densely populated in the region with density of 1001 persons/km^2 in 2006 being only marginally less than the most densely populated country Bangladesh with a density of 1083 persons/km^2. On the other hand, Iran, Afghanistan and Bhutan are relatively thinly populated with densities of less than 50 persons/km^2.

According to the United Nation's estimates, South Asia's urban population is expected to reach the figure of close to one billion by the year 2030 that is about 120% increase in three decades beginning with the year 2000. Four countries namely India, Pakistan, Bangladesh and Iran would accommodate an overwhelming 95.4% of the region's urban population in 2030 as compared to 97.3% in the year 2000. This marginal decline in the share of urban population of larger countries in the region is because of relatively fast increase in the urban population of the smaller countries like Afghanistan, Bhutan, Maldives and Nepal. However, growth rates of urban population are estimated to decline in successive decades in all the countries of the region, except India and Sri Lanka.

Urbanization level is increasing in all the countries of Southern Asia and this trend is expected to be maintained in future as well at least up to the year 2020. More alarmingly, with the exception of Iran and Nepal, the rate of change in the urbanization level is still increasing. The cities in the region will thus have to be prepared to absorb sharp increases in urban population and resulting pressure on basic infrastructure and livelihood opportunities.

Amongst the countries in the region, there is a trend of population to concentrate in large cities. Number of mega cities (ten million plus population cities) is increasing in the region. In 1995, there were only three mega cities in Southern Asia although Dhaka (8.2 million) and Karachi (8.5 million) were just behind. However, by 2015, the region is projected to have five mega cities and four more cities namely Chennai (8.3 million), Bangalore (7.9 million) and Hyderabad (7.4) in

India. The population of these cities is increasing at a rapid rate except that of Kolkata which is presently stagnating. Contrary to trends in other parts of the world, the fast pace of urbanization and the increasing concentration of population in large cities in this region is a matter of concern for policy makers since the organizations responsible for planning, development and maintenance of cities are not capable enough to deal with the emerging situation even in steadily growing small and medium towns, not to speak of fast expanding mega cities. On the contrary, the corresponding figures for urban agglomerations of fewer than 50,000 persons are likely to decline from 60.1% to 50.8%. The supply of serviced land is falling way behind the demand. Consequently the population pressure on urban land is intensifying. This problem is bound to get far worse in view of rising levels of urbanization in the region.

Driven by hard pursuit of the 'logic of market mechanism, facilitated by the advances in the information and communication technologies and aided by liberalization of policies', globalization appears to have opened windows of opportunities that makes it possible for nations to benefit from increased access to global markets and consequent economic growth. When looking at human settlements around the world today, 'one can observe gains in wealth, made possible by globalization, in such forms as newly constructed luxury apartments, fashionable shopping malls, gleaming office towers, trendy restaurants, stylish department stores, modern airports and high-tech parks. The above is very much true for Southern Asian countries, which can boast of representing some of the fastest growing economies of the world and where the GDP growth rate has accelerated except in Bangladesh. But even in these two countries, though GDP growth rates have declined during the last 5 years, its level still remain comparatively high. However, while counting the benefits attributed to globalization, the fact remains that the benefits have not 'accrued to everyone alike. Indeed, studies indicate that while the condition of many has improved, others have seen their situation deteriorate . . . the cost of living has gone up and number of poor households has grown especially in cities'. Thus globalization process has led to certain negative developments to which there have been some strong reactions. Compared to other countries in Southern Asia, the trends are more strongly observed in India which has emerged as a leader in the globalization scenario in the region.

In this part of the manuscript, an attempt has been made to understand how cities have been positively impacted by the economic gains of globalization. The later part of this section highlights the issues of inequalities, segregation and exclusion that work against the economic up lifting of the poor.

3 Challenges of Urban Infrastructure and Service Delivery in South Asia

This paper reviews the challenges for infrastructure policy and investment in South Asia. The context is one in which the major economies (led by China and more recently India) have enjoyed increasingly rapid growth accompanied by substantial

reductions in poverty. Infrastructure investment has played an important part in this growth, but the increasing demands related to growth have also highlighted shortfalls in the quantity and quality of infrastructure and this is increasingly seen as a binding constraint on accelerating growth further, particularly in India. Infrastructure poses particular policy challenges because of its economic characteristics and these are central to an understanding of the policy options and ways to attract sustainable investment. Key defining features of infrastructure are; First that it is a capital good, so services are produced by combining this with other inputs and tend to have substantial economies of scale. Second, that it generally has network characteristics (so the value of an investment is related to that of complementary investments that develop and complete a network), and Third it is long-lasting and space-specific, implying high sunk costs.

The first is to service and finance the infrastructure needs associated with rapid growth, in a context where the high hopes of the 1990s for the ability of private finance to meet infrastructure needs have largely not been met. This is an issue both about how to mobilize public and private investment to establish and strengthen national networks and how to establish policy frameworks that are attractive for investment and generate flows of revenue to cover investment costs. The second is to address particular challenges associated with structural change in the demand for infrastructure particularly associated with rapid urbanization and environmental problems. The third is to ensure that infrastructure is used effectively to make the pattern of growth that Asian countries have enjoyed (which has tended to be highly concentrated geographically particularly around major cities and zones that provide the bulk of export production) more inclusive.

Geographically, this involves spreading access to networks to lagging or remote areas, and socially to ensure achievement of the Millennium Development Goals (MDGs), where water and sanitation investment is likely to have particularly high returns, and well-targeted physical infrastructure investment can be complementary to measures to invest in human capital. The situation in South Asia differs in some significant respects from that in rest Asian cities. First, the growth performance has been much weaker, and the significant acceleration in India's growth is a very recent phenomenon and levels of investment remain far below those of the faster growing East Asian economies. Second, and related, the pace of urbanization has been slower although rapid urbanization remains a major feature. Third, levels of current infrastructure provision and of human capital are generally much weaker (and probably more unevenly distributed in important respects) than in East Asia.

3.1 Urban Service Delivery: Water Supply, Sanitation, Sewerage and Solid Waste Management

Rapid urbanization is intensifying the municipal infrastructural deficit and urban service delivery gaps across South Asia. Municipal infrastructure, for example, water, sanitation, solid waste management and electricity supply are not only important for a city's liveability, but also for its competitiveness. These have an

important bearing on the productivity and capability of urban dwellers and can prevent them from having an equal opportunity for participating in the city's economic growth.

Many a times, it is the poor urban dwellers living in peripheral urban areas that are excluded from vital urban services. For instance, the brunt of the burden of poor quality of water delivery is borne by the poor. Low income households without access to public networks have to rely typically on market sources to access water at a higher price. Intermittent water supplies force the poor to forgo work on days when water arrives, as they have to stand in line on those days to collect the same. In addition, because most of the urban poor reside in informal, non-notified and squatter settlements, they are conveniently 'not recognized' for purposes of mapping out public service infrastructure grids. Hence, piped water connections, solid waste management and sewerage are hardly found in areas where the urban poor live.

This section of the manuscript aims to present a clear picture of the deficiency and neglect of the state of municipal infrastructure and urban service delivery in countries that house many of South Asia's most important cities:

3.1.1 Case Study of India

With rapid increase in the urban population and the continuing expansion of city limits, ensuring safe, adequate and equitable access to municipal services is becoming difficult. With regard to water supply, only 70.6% of the urban population is covered by individual connections and stand posts. Moreover, the duration of water supply in Indian cities ranges from only 1–6 h. Even when water supply is adequate, poor maintenance and inadequate replacement lead to technical losses in the distribution system. It is estimated that up to 70% of water leakages result from pipes for consumer connection and due to malfunctioning of meters. The low pressure of water in the system encourages wealthy city dwellers to install pressure pumps for residential connections. Those who can afford, invest in storage tanks to ensure continuous water supply. However, most poor urban households do not have the adequate space or finances for such fixes, and thus bear the brunt of the majority of water access, quality and reliability problems.

The problem of sanitation is worse in urban centers than in rural areas in the country. A study estimates that the economic impact of poor sanitary conditions is the greatest for the poorest 20% of the population. In the City Sanitation Study carried out by the Ministry of Urban Development in India, it was found that 4861 out of the 5161 cities and towns in India did not even have a partial sewerage network. Almost 50% of households in cities like Bangalore and Hyderabad do not have sewerage connections. About 18% of urban households do not have access to sanitation facilities and practice open defecation. Cities like Chandigarh, Mysore, Surat and New Delhi fared better in terms of 'health and cleanliness'. Solid waste collection ranges from 70 to 90% in major metropolitan cities in India, but is less than 50% in smaller cities. The proportion of organic waste to total waste is much higher in Indian cities. For instance, New Delhi and Bangalore generate 80 and 72% of their total waste as organic. The fact that a large part (over 60%) of India's waste

is biodegradable provides an opportunity for composting. However, neither households nor municipalities in India practice segregation of biodegradable waste from the rest. Some cities such as Surat and Rajkot have successfully implemented modern techniques for processing of solid waste to the benefit of their urban dwellers. Other cities in India are now experimenting with engaging citizens, especially slum dwellers in collection of solid waste.

3.1.2 Case Study of Pakistan

In Pakistan, the level of urbanization has increased from only 17% in 1951 to 36% in 2010 and its annual average growth rate is 3.1% (1990–2010), which is higher as compared to South Asia's figure of 2.7% during the same period. The rapid pace of urbanization poses significant challenges in terms of governance, urban poverty and public service delivery. Lahore's population, currently about 7 million, will exceed 10 million. Karachi's will exceed 20 million. There are more than 10 cities where the urban population will be more than one million in 2030. These conditions generate various challenges for the availability of public amenities. Most urban households in Pakistan rely on piped water and motor pumps for extracting groundwater for drinking purposes. Similarly, urban areas as a whole tend to fare much better than their rural counterparts in the percentage of population with access to flush toilets (94% versus 51% in rural areas) and underground drains for sanitation (52% versus 5% in rural areas). The disparity in access to water and sanitation within urban areas, especially in the de-notified slums spread across Pakistan's major cities is rather stark and largely goes undocumented.

Solid waste in Pakistan is largely unmanaged. According to the National Conservation Strategy, Pakistan generates an estimated 48,000 tonnes of solid waste per day of which almost 20,000 tonnes is generated in urban areas. The metropolitan governments recover fewer than 60% of the solid waste generated in the cities. In the worst cases, solid waste is left to litter or decompose on streets and empty lots. Even when the municipal authorities collect solid waste, it is dumped and burnt in open areas. While solid waste directorates do exist in most large urban centres, the service offered by the directorates is irregular, inefficient and inadequate. Moreover, the final disposal of waste involves either dumping in non-engineered landfills or the waste is burnt, which further pollutes the environment.

3.1.3 Case Study of Bangladesh

Bangladesh emerges as a clear laggard when compared to the rest of South Asia for improved access to drinking water and sanitation coverage in urban areas. According to the Joint Monitoring Programme of the World Health Organization (WHO) and United Nations Children's Fund (UNICEF), access to improved drinking water sources in urban areas of Bangladesh has declined from 88% in 1990 to 85% in 2008. Access to improved sanitation remains embarrassingly low at 55% in 2011.

In Dhaka alone, more than five million people lack access to a public toilet. Poor access to sanitation costs Bangladesh over BTK295 billion (USD 3.88 billion) a year mostly attributed to health care costs which amounts to 6.3% of Bangladesh's

total GDP. A study by the Center for Urban Studies, Dhaka, estimates that just 47 public toilets are operating with open access, which means that one-third of the city's population is forced to defecate in public, along roadsides, alleyways, rail road tracks or riverbanks. The situation is far worse in slums. In a survey in 2009 about the living conditions of the urban poor in Bangladesh, 58% of all respondents reported water-sanitation-hygiene related diseases in their households during the 3-month period preceding the survey.

In Dhaka, extensive pumping of groundwater has depleted some water sources, calling into question the sustainability of the city's groundwater supply. Surface water as a viable water source is also problematic as it is often polluted by untreated sewage and industrial waste. Sanitation coverage in urban slums is also very low. Only 9% of households in urban slums have access to improved sanitation facilities, compared with a national average of around 55%. Most slum dwellers have no option but to dispose in drains, open fields and river banks. The use of hanging latrines, suspended over ponds and rivers is twice as high in urban slums than the national average. This means that urban water sources are more likely to be contaminated with raw sewage. Community latrines in slums are often dirty, badly maintained and lack privacy. Residents have to wait in line to access them and this sometimes leads to heated exchanges. Communal latrines also pose a security risk to women should they need to use them at night.

3.2 Urban Transportation in South Asia

Urban transport is the single most important component that is instrumental to shaping urban development and urban living. While urban areas may be viewed as engines of growth, urban transport performs the core functionality of these engines. South Asia's urban population has been doubling every 20 years between 1950 and 2010. These trends are placing an enormous strain on transport and mobility in urban areas. Motor vehicle ownership and activity are growing, perhaps more rapidly in South and East Asia than elsewhere.

In India, which accounts for over 80% of South Asia's motor vehicles, the fleet has been doubling every 6–7 years since 1980. This trend is causing a wide range of serious impacts, even as it provides mobility to millions. Increase in the number of private motor vehicles facilitates the movement of motorists, but can reduce the accessibility of others, since spaces given to the vehicles often form obstacles for pedestrians, cyclists and those with disabilities. Transport interventions must serve deprived areas and target low income groups if they are to improve transport equity and accessibility to all urban residents.

Traffic congestion is increasing rapidly in many large and even medium sized cities in South Asia, causing significant time and productivity losses, and severely compromising accessibility, in particular for the majority, who do not own motor vehicles. Motor vehicle activity is an increasingly important contributor to urban air pollution and congestion. But of all its impacts, perhaps the most serious result from road traffic accidents. South Asia alone accounts for about a fifth of global road

fatalities, with India vying with China for the world's worst road safety record. Transport and mobility bottlenecks both vary across countries and in different urban centers within a country. Mega-cities and mid-sized urban centers suffer from bottlenecks in all modes of transport infrastructure and services-poor condition of roads, lack of intra-regional connectivity between national road networks, unreliable and overall costly road transport services, unrealized high potential for rail and inland water freight transport which has led to the excessive use of road transport, inadequate road and rail connectivity of ports with the hinterland and others. Some common transport bottlenecks across cities in South Asia include excessive motorization and lack of public transportation and mass transit systems. Yet each country and within it each city varies with respect to its peculiar urban transportation challenges.

In India, even though urbanization has been growing rapidly, little attention has been paid to urban mass transport systems. Road transport plays a major role in providing passenger mobility in urban India. Although rail-based transport services are available in few mega-cities, they hardly play any role in meeting the transport demand in rest of the million plus cities. The present urban rail services in India are extremely limited. Bus transit is the backbone of urban transport in most metropolitan cities. Over the years, urban transport trends in India reveal a shift away from public and non-motorized transportation, while increasing the use of private motor vehicles and intermediate public transportation (primarily auto rickshaws and taxis). Between 1994 and 2007, public transportation as a mode has experienced a 20–70% decline in different sized Indian cities. This is largely because the available public transport facilities are not only inadequate but also "over crowded, unreliable or involve long waiting periods." Indian cities have also experienced a considerable decline in non-motorized forms of transportation (walking and cycling). The share of cycling as a mode of transportation in cities has come down from an average of 30% in 1994 to less than 11% in 2007, attributed to an increase in average trip lengths as a result of urban sprawl, inadequate facilities for cycling, and growth in private motor vehicle ownership and usage. Moreover, rapid economic growth, rising per capita incomes, ease of consumer financing options and favourable government policies toward the automotive sector will continue to drive an unprecedented increase in private motor vehicle ownership and usage in India. Between the fiscal years 2003–04 and 2009–10, India's private motor vehicle market registered a growth of more than 85%, at an average annual growth rate of close to 11%. The urban transport situation in large cities in India is deteriorating. Heavy dependence on road transportation as the primary means for urban dwellers generates problems of access, accessibility, quality and safety. Commuters in these cities are faced with acute road congestion, rising air pollution and a high rate of accident risk. Each year 135,000 people die in traffic crashes on Indian roads. Currently, India has 120 million vehicles, a number that is steadily growing. In 2010, outdoor air pollution contributed to more than 620,000 premature deaths. Plus, urban transport's energy use and greenhouse gas (GHG) emissions are set to increase almost seven fold in the next 20 years.

Cities in Pakistan are inclined towards using private transportation as opposed to public and non-motorized forms. Unlike mega-cities in India, large urban centers in Pakistan have worked towards the development of road networks despite an inherited railway network as an alternative for intercity transport. Rail-based public transport has the potential to carry large numbers of passengers and also results in urban land development by enhancing development activity. Around rail lines and stations. Fortunately, all Pakistani cities have an infrastructure of railways inherited from British rule. Therefore, rail-based public transport can play a catalytic role in the urban development and regeneration of Pakistani cities. Railways used to be a predominant mode of transportation in the 1950s and 1960s in Pakistan. However, government budget priority towards roads along with the inefficiency of Pakistan Railways due to poor governance has meant a steadily declining share of this important mode of mass transportation for people and freight.

In some cases, urban development policies have a strong bearing on whether a city is able to provide equitable and accessible public transportation for its urban dwellers. Karachi's urban development and land use policies effectively settled lower and middle-income people into cheaper land available in the periphery of the city. Pakistan has had various transport policies to date. However, all policies to provide adequate and reliable public transport in Pakistani cities have failed badly in the presence of continuous demand, high density mixed land use patterns and a long history of private sector involvement in the provision of public transport. Still, "passengers routinely hang out from doors and windows on unreliable, unsafe, and inconvenient modes of public transport."

For Bangladesh, equitable and safe access to transportation is not only essential to provide mobility to its urban dwellers, but this sector is one of the most important in terms of employment. About 80% of the total passenger traffic in the country is carried through roads. Bangladesh Railways, primarily a passenger railway, carries approximately 7% of the national passenger and freight traffic. The majority of rail traffic is carried between Chittagong and Dhaka, which is the country's most important transport corridor. In Dhaka alone the transport sector comprises about 450,000 to 580,000 employees and workers. Dhaka is one of the fastest growing mega-cities in the world. At the same time it is consistently ranked as one of the world's most unliveable cities in the Global Liveability Report.

Traffic congestion and air pollution play a major role in these poor rankings. Since 2000, its population has more than doubled and it is projected to grow from 17 million in 2012 to 25 million in 2025. Dhaka is also one of the most densely populated cities in the world, with 45,508 people/km^2 in the core area. High population density, limited inhabitable land and poor infrastructure result in congestion and constrain the ability of the urban transport system to provide accessible transportation to all urban residents. Car ownership and usage are still low because of lack of disposable income, but these figures are increasing fast with a growing middle class. In 2010, only 150,000 private cars and 500,000 other motorized vehicles were registered in Dhaka.

3.3 Access to Urban Health and Education in South Asia

Most urban areas in South Asia fare better on access to education and health outcomes when compared to rural areas. The typical statistics reported for urban areas average out access for the whole city, thus masking the wide gaps that exist in access to these capability-enhancing services between the urban rich and the urban poor within a city. Urban disparities in health and education also interact with other urban challenges. Urban migrants who tend to live in informal settlements typically lack provision of basic services like water and sanitation. The lack of infrastructure and services can also have indirect effects on education, for instance through sanitation, poor health and the time needed to collect water. The enrolment numbers and health indicators for many of the region's cities clearly show the disparity between slum and non-slum areas within a city.

In Bangladesh, access to education is substantially higher for urban areas than for rural areas and Dhaka has the best record in the country. UNICEF reports that primary net attendance rates were 83.9% in urban areas compared to 80.8% in rural areas and 84.1% in (mostly urban) Dhaka district. However, for urban slums the rate falls dramatically, to 65.1%. At the secondary level, attendance rates were 53% for urban areas, 48% for rural, 49% for Dhaka district and only 18% in slums.

Similar evidence was found in a study on eight of India's cities i.e., Delhi, Meerut, Kolkata, Indore, Mumbai, Nagpur, Hyderabad and Chennai. School attendance for both boys and girls aged 6–17 years was much lower among the urban poor in every city. In Delhi, Meerut, and Kolkata, less than half of poor children aged 6–17 years were attending school. The same study found that the educational level of poor women and women in slums was strikingly low when compared to education levels of the non-slum population for these Indian cities. For some cities these differences were blatantly large with more than three-quarters of poor women in Delhi (82%), Meerut (81%) and Kolkata (77%) having little or no education. Apart from slums, even low income neighbourhoods with poor connections to the city can face deprivation in adequate schooling and health. This is particularly true for many of the sprawling new settlements in the outskirts of cities like Lahore, Delhi and Dhaka. The difficulty in access arises not because of physical accessibility, but also because of the costs and time involved in transportation. In Mumbai, for instance, while 50% of slums have no access to primary schools, this percentage is even higher in the informal areas on the outskirts of the city.

In Lahore and Chittagong, the number of kindergarten schools for relatively well-too households is on the rise, while many children in peripheral low income neighbourhoods have almost no access to education. The high proportion of slum dwellers in South Asia's cities makes a sizable proportion of the urban population vulnerable to diseases. Poverty, overcrowding, malnutrition, insufficient garbage disposal, lack of adequate water drainage and unsafe drinking water and sanitation coalesce around the social organization of marginalized populations in urban slums. The five illnesses at the root of a majority of child deaths in developing countries include pneumonia, diarrhea, malaria, measles and human immunodeficiency virus acquired immunodeficiency syndrome (HIV/AIDS). Each is prevalent in many

urban slums due to substandard living conditions and overcrowding. Inadequate access to clean water and sanitation, in particular, are a direct cause of a substantial proportion of deaths of infants annually. Poor water quality and quantity and inadequate sanitation are linked to a number of waterborne diseases. As with education, health indicators are typically better for urban areas when compared to rural areas in South Asia. However, there exist considerable disparities in health indicators between slum and non-slum populations in urban areas. For most of South Asia, the percentage of malnourished children and children with incidence of diarrhea are higher for slum compared to non-slum households.

Health outcomes are intricately linked to urban poverty and access to other urban services. According to the United Nations Human Settlements Programme (UN-Habitat), in India and Bangladesh, the incidence of malnutrition in poor urban areas is more than twice that in non-slum urban areas: for India, the figures are 54% and 21%, respectively, and for Bangladesh, 51.4% and 24%. The surge in food prices after 2006 has exacerbated the problem of urban food security, especially for slum dwellers and youth and women typically employed in the informal economy. Improving access to urban education and health for the urban poor does not simply translate to building more schools or hospitals. These may be necessary conditions, but they are by no means sufficient.

It is important to understand that removing barriers to human development for urban residents requires a consolidated approach towards urban planning. It starts with recognizing the link between poor access to urban services like water, sanitation, solid waste management and energy and poor education and health outcomes. It involves recognizing the myriad of informal settlements and slums not notified by city governments and extending immunization facilities to them. It involves engaging the urban poor by making them stakeholders of their own human progress. It involves providing an equal opportunity to all urban residents to be able to realize the 'urban dream' that attracted them to the cities in the first place.

3.4 Urban Housing and Spatial Disparity in South Asia

The character of urbanization in most South Asian cities has resulted in spatial divides in South Asia's big and small cities. Poor urban planning, inefficient land and housing markets and ineffective financing options to provide affordable housing for the region's growing urban population have all contributed to increasing spatial segregation and 'urban sprawl'. South Asia's metropolitan areas are growing through scattered and haphazard development of miscellaneous types of land use on the urban periphery. This kind of haphazard growth adds to the urban divide, pushing social segregation along economic lines that result in spatial differences in wealth and quality of life across various parts of cities and metropolitan areas, run-down inner cities and more suburbs.

Most South Asian cities have bypassed the issue of planning at the initial stages of urban growth. This has resulted in perverse consequences of congestion, inequalities, segregation, lack of public space and inadequate street patterns. An

especially divisive aspect of urbanization has been the recent rapid expansion of gated communities and other protected enclaves of wealth. As more and more tracts of land and civic services are monopolized by those with the most resources, urban amenities are systematically denied to residents with lower incomes. On top of spatial segregation, gated communities and protected enclaves of wealth also result in social and economic segregation and even outright social exclusion. In most cases, it is the socially marginalized groups (religious and ethnic minorities) that form a majority of the population in slums. Thus, they suffer most from lack of access to decent shelter and opportunities; this is especially the case when their neighbourhoods are located far away from the city and the long commutes penalize them in terms of cost and time.

In the Indian city of Jaipur, for instance, underprivileged ('scheduled') castes and tribes contribute 61% to the slum population, although they represent only a combined 16.1% of the total city population. The rapid pace of urbanization in South Asia has created a massive shortage of affordable housing especially for low-income families. Household savings have been inadequate to fund housing for a large number of South Asian families. Compounding the housing shortages are high room-density figures (more than 3.5 people per room in India and Pakistan) and the pervasiveness of slum dwelling areas and squatter settlements, sometimes on footpaths or even in abandoned sewage pipes. Nearly half of the major metropolitan areas in the region are taken up by slum dwellings Bangladesh alone has more than 2100 slums, and India over 52,000. There is a shortage of more than 38 million housing units in the South Asian region, not counting housing in need of repair or replacement. Taking into account average household size, this translates into 212.5 million homeless people, 14% of the region's total population of 1.5 billion.

India's urban housing shortage is estimated at nearly 18.78 million households in 2012, according to a report by the Ministry of Housing and Urban Poverty Alleviation (MHUPA). Besides those living in dilapidated houses, 80% of these households are living in congested houses. The report also highlights that nearly one million households are living in non-serviceable *katcha* houses. What is worse is that the urban housing shortage is significant across the economically weaker sections and the low-income groups. The housing backlog in Pakistan was at an estimated 7.57 million units in 2009, 2.5 million of them in urban areas.

In Karachi, an estimated 60% of the population lives in *katchi abadis*. Informal settlements do not fall under the realm of responsibility of city administrations and as such tend to be unserviced or critically under serviced.

For Bangladesh, housing shortages in urban areas are compounded by the temporary nature of most dwellings. As one of the most densely populated countries in the world, land prices are high in Bangladesh, natural disasters are frequent and only 23% of all housing in urban centers is of a permanent nature. Close to half of all housing units in the country are made of temporary materials, which require replacement every 1–5 years.

What is problematic is that urban housing shortages in South Asia are hiding behind squatter settlements and higher persons-per-room densities. The average

persons-per-room count in urban areas is high: 3.5 in India and Pakistan. That density is comparable regionally, but worse than in developed countries: density is 0.5 persons per room in the US and 1.1 in the European Union. South Asian countries share a common need for expansion of housing to accommodate the region's growing urban population. Each country, however, is at a different level of development with regard to its urban housing needs. Key areas which need to be prioritized in improving access to urban housing include efficient land administration and expanding housing finance to low-income groups which are most likely to resort to living in informal housing units and slums.

3.5 Social Exclusion (Urban Poverty, Inequality and Violence) in South Asia

> Urban poverty is a dynamic condition that extends beyond monetary benchmarks to a wide range of vulnerabilities and risks many cities in South Asia have witnessed this coexistence of the informal economy and urban poverty (World Bank 1983).

While some countries in South Asia have experienced an overall decline in absolute poverty, there has been a shift in the geographical occurrence of poverty from rural to urban in line with the increasing urban population. The ratio of urban poor to total poor has been increasing for some key South Asian cities, implying that poverty has become mainly an urban problem. South Asia has the highest urban poverty levels in Asia and the Pacific with countries like Bangladesh (62%), Nepal (58%), Pakistan (47%) and India (29%) reporting high proportions of urban populations living in slums. Urban poverty is a dynamic condition that extends beyond monetary benchmarks (under one USD and two USD per day) to a wide range of vulnerabilities and risks. Some characteristics of the urban poor include lower than average life expectancy, higher rates of infant mortality, chronic malnutrition, a disproportionate amount of household expenditure devoted to food, low school enrolment rates, high rates of illiteracy, weak access to key services and poor public infrastructure. The urban poor are also characterized by a high involvement in informal sector activities, limited security of tenure and increased vulnerability to urban violence. Estimates of urban poverty and inequality in most South Asian countries are incomplete and outdated, often being extrapolated from decade old census information, as in the case of Pakistan. More importantly, urban poverty estimates based on income mask the multidimensional nature of urban poverty. Besides income poverty, inequality in cities arising from overcrowded housing and insecure tenure; inadequate access to safe and affordable water supply, sanitation, electricity and transport services; and limited schools and health care facilities increase the vulnerability of the urban poor. In 2010, while 96% of South Asians living in urban areas had access to improved drinking water through public taps and water points, only 51% had in-house piped connections. Only 64% had access to improved sanitation and 18% used shared facilities. Poor urban women, especially

households headed by women and those in socially excluded groups, are the most vulnerable and negatively impacted in these environments.

Rapid urban growth is considered problematic as it strains the capacities of service provision and labour market absorption, thereby increasing the contest for space and resources. Such a contest for access to urban infrastructure and service provision typically excludes and leaves the 'havenots' behind, relegating many to slums and informal settlements. Although there is no causal relationship between poverty and urban violence in South Asia, there is certainly a confluence of the two phenomena in its major cities. Poverty becomes an important factor when it is coupled with other triggers, such as a lack of opportunity, inequality, exclusion, the availability of drugs and firearms, and a breakdown in various forms of social capital and so on. Understanding the dynamics between poverty, marginalization and crime is complex. Urban residents living without access to basic urban services are more vulnerable to being affected by, and more importantly, contributing to urban violence.

In a study on the state of Maharashtra in India, civil violence in Maharashtra was found deeply rooted in processes of urban vulnerability. Specifically, the study established that violence-prone areas in the state were also the areas consisting mostly of slums. Among violence-prone areas, those where the lack of services, employment opportunities and social capital are most severe are also those most acutely affected by violence; and within these areas, it is the most economically, socially and spatially vulnerable households that suffer from bouts of civil violence. The continued illegality and insecurity of a growing proportion of urban inhabitants in South Asia's cities means that infrastructure and services important for urban safety, such as policing, are absent from a number of communities. Because of absence of mainstream providers of essential services in a large part of the city, parallel structures of authority and security, especially gangs and various types of mafias, such as *mastaans* in Dhaka's informal settlements are emerging. This further reinforces marginality and poverty.

4 Concluding Remarks: Building the Infrastructural Gaps in South Asia for an Inclusive and Sustainable Cities

The urban population of the South Asian region is growing rapidly and will become the core of global urbanization in future. The absolute scale of the urban population is overwhelmingly large and expected to account for 30% of the global urban population by 2030. Urbanization is partly captured by the proportion of urban residents to total population. However, the urbanization in the region is more diverse and the characteristics vary throughout regions.

The process of urbanization in South Asia has been rapid, unplanned and chaotic so far. The question of urban planning has been largely ignored until recently, when the very sustainability and liveability of cities has come under pressure because of urban sprawl, infrastructural decay, spread of informal housing and the myriad ills that burgeon out of urban poverty. South Asia's policy makers have now started to

grapple with the question of how best to manage this inevitable phenomenon of urbanization—how best to harness its potential to bring about growth for the city while ensuring that the benefits of this growth are shared equally; how to plan urbanization so that the majority of urban residents are not excluded from the dream of better opportunity and public services like education and health that attracted them to cities in the first place; how to ensure that the dynamics of urban growth do not exacerbate the urban divide; and how to make our cities conducive to enhancing human capabilities in the form of better education, health, employment and decent housing to achieve better human development indicators for the region's urban residents.

As highlighted in the present manuscript, a large part of urban socio-economic disparity is driven by infrastructural challenges and the service delivery gaps between 'haves' and 'have-nots' in access to affordable transport, housing, education, health, water and sanitation. These disparities in access to key urban services determine the degree of opportunity in access to the urban advantage. For instance young people living in slums without access to health and education facilities are likely to remain unemployed or informally employed and thus not being able to experience the economic opportunities that a city offers.

Many of South Asia's cities are already experiencing the challenges of unsustainable transportation, water scarcity, waste management, proliferation of slums and rising urban poverty levels. As illustrated in the article, there is a complex interplay of these forces that exacerbate the challenges that today's South Asian cities face. Responding to these challenges will be crucial if South Asia wants to develop truly sustainable cities. There is a need for an inclusive and sustainable urban policy to address the issue of infrastructural gaps that have emerged because of unmanaged urbanization, poor infrastructure and unequal service delivery in the regions. Expanding access to water, sanitation and improving solid waste management is an acute challenge for urban policy makers in the region, given that a vast majority of its urban population lives in slums, which by definition are characterized by absence of these services.

Urban poverty often stands neglected in policy-making in the region, given the historical levels of rural poverty. This bias persists even today in many countries, which look at urban poverty as a marginal issue. However, interest in urban poverty issues is increasing as a result of efforts to see poverty beyond income, including the issues of risks and vulnerability, structural inequalities, governance dimensions and the inter-generational transmission of poverty. To tackle the social ills associated with rapid urban poverty, it is necessary to extend municipal services to slums. There are some developments in the region in this regard. For instance in India, the National Urban Housing and Habitat Policy (NUHHP) by the Indian government in 2007 and subsequent launching of the national-level housing programme called Rajiv Awas Yojana (RAY) are significant milestones. As discussed earlier, physical vulnerabilities and lack of security in slums may become the leading cause for urban violence and hence should be endogenized in policy responses. It is also necessary to improve access to education and health opportunities especially for young urban migrants and women, who are found to

be more vulnerable to deprivations presented by the urban environment. Efforts at recognizing informal economic activities will provide necessary protection to the urban poor earning their living off the informal sector.

Most urban policies in the region have been restricted in their approach, aiming to provide merely more infrastructure, not sustainable infrastructure for bridging the urban divide. It is not simply a question of building more roads to ease the traffic congestion or installing more pumps to increase water supply. The traditional approach to urban infrastructure cannot sustain the present, let alone the future demands of emerging cities in South Asia. There is a need to rethink the traditional approach of designing and populating cities in a manner that is equal, sustainable and capability-enhancing for all residents.

For sustainable urban development we must encourage less paved areas, work on urban landscape, restore wetlands, revitalize urban watersheds and restore brown field sites and abandoned waterfronts. Pollution in cities should be closely monitored and pollution information made available for monitoring and control of environmental conditions. Eco-technology, eco-cities and bio-architecture concept need to be implemented more earnestly. Use of non-conventional energy, efficient use of energy and energy audits should become commonplace. There is a need to balance environmental values, quality of life and economic opportunities for making progress.

To reduce urban sprawl, the development of compact cities should be encouraged and dependence on cars as a mode of transportation reduced. Despite the fact that vast numbers of urban commuters are dependent on biking and walking, the role of these modes is not duly emphasized in urban transportation strategies. As discussed earlier in this report, the recent trend is in favour of building transportation infrastructure that benefits relatively few commuters. Bus based public transport system which is less financially demanding and has potential to serve much larger number of commuters has to date played relatively moderate role in urban transportation in Southern Asian cities.

Clearly there is a need for comprehensive schemes that can integrate various transport modes so that all segments of population are able to benefit.

Improving the quality of urban governance is, however, the key to dealing with the issues highlighted above. Some progress has been made in this direction in the recent past. In both India and Pakistan reforms have been carried out to strengthen representative character of local bodies by encouraging decentralized decision making. Advocacy role played by NGOs and CBOs is increasing. Simultaneously, NGOs are taking the route of judicial activism in the form of public interest litigations, though the instances are very few. Citizen consultation groups and citizens' charter for municipal services are possible methodologies for increasing participation of people. These are beginning to happen in few cities in the region.

5 Key Recommendations: An Infrastructural Policy Measures in South Asia

The present study identifies following key policy conclusions for addressing the infrastructure challenge faced by South Asian cities. These are in part generic problems relating to improving the environment for private investment of all kinds, and for making government more effective and accountable. Others relate more specifically to infrastructure priorities. This may be supported by wide ranging reforms as suggested below:

- The primary matters infrastructure demands strong planning and coordination functions, though these should be developed in the context of democratization, decentralization, independent negotiation, private participation and the commercialization of service providers, rather than a return to top-down detailed economic planning.
- Decentralization is important but raises a host of coordination challenges, both vertically and horizontally as the role and capacity of lower tiers of government develops.
- Fiscal space' for infrastructure is critical since the capacity for reliance on private financing is always going to be limited. Cost recovery and measures to improve the policy and institutional frameworks within which public investment occurs are key to maximizing the returns to public infrastructure investment and creating a virtuous circle of investment and growth.
- Subsidies can be justified in some circumstances but they always involve risk of becoming open-ended, and subsidies to use rather than access are likely not to favour the poor. Output- based approaches are one way of fostering an efficient and limited use of subsidies.
- Competition is the best way to strengthen accountability, where institutional and technological innovation is expanding the potential for competition.
- Genuine regulatory independence can only be built over time, and in the short-term rule-based approaches that limit the discretion of regulators may be necessary to provide a predictable and stable environment for investment.
- Civil society has an important role in ensuring accountability and communities can also manage local infrastructure resources.
- Controlling corruption is vital and requires a long, hard struggle though short-term reforms can help remove opportunities for rent-seeking.

References

Ansari JH (1977) Evolution of town planning practice and system of urban government in India. Urban Rural Plann Thought 20(1):9–23

Bharier J (1968) A note on the population of Iran 1900-1966. Popul Stud 22(2):273–279

Census of India (2001) Provisional population totals, rural-urban distribution of population, Paper 2 of 2001, Series – 30. Census of India, New Delhi

Clammer J (2000) The global and the local: gender, class and internationalization of consumption in a Tokyo neighborhood. In: Ashkenazi M, Clammer J (eds) Consumption and material culture in contemporary Japan. Kegan Paul International, London, pp 249–283
Clark BD, Costello V (1973) The urban system and social patterns in Iranian cities. Trans Inst Br Geogr 59:99–128
Friedman J (1986) The world city hypothesis. Dev Chang 17:69–84
Government of India (1993) Report of the expert group on estimation of proportion and number of poor, planning commission, New Delhi
Government of India (2005) Jawaharlal Nehru Urban Renewal Mission Toolkits, Ministry of Urban Employment and Poverty Alleviation and Ministry of Urban Development, New Delhi
Government of India (2007) Rehabilitation and resettlement bill, 2007, Lok Sabha Secretariat and Ministry of Law, New Delhi
King AD (1990) Urbanism, colonialism and world economy: cultural and spatial foundation of the world urban system. Routledge, London
Ministry of Environment and Forest (2002) Initial national communication to the United Nation framework convention on climate change. Government of Bangladesh, Dhaka
Robinson R, Goodman D (eds) (1996) The new rich in Asia: mobile phones, McDonalds and middle class revolution. Routledge, London
United Nations (1993) State of urbanization in Asia and the Pacific, economic and social commission for the Asia and the Pacific, New York
United Nations Center for Human Settlements (UNCHS) (1996) An urbanizing word – global report on human settlements 1996. Oxford University Press, Oxford
UNCHS (2001) Cities in a globalizing world: global report on human settlements 2001. Earthscan, London
United Nations Conference on Trade and Development (2007) World investment report 2006 – FDI from developing and transition economies: implications for development, United Nations, New York. http://www.unctad.org/en/docs/wir2006_en.pdf
United Nations Development Program (UNDP) (2003) Human development report 2003: millennium development goals: a compact among nations to end human poverty. Oxford University Press, New York
United Nations Development Program (UNDP) (2007) Human development report 2007/2008. Palgrave Macmillan, New York
United Nations Human Settlements Program (UN-Habitat) (2003) The challenge of slums: global report on human settlements 2003. Earthscan, London
UN-Habitat (2007) Enhancing urban safety and security: global report on human settlements 2007. Earthscan, London
Urban Resource Center (2000) Facts and figures, an unpublished mimeo, Karachi
Vaidya TR, Manandhara T, Joshi SL (1993) Social history of Nepal. Amol, New Delhi
World Bank (1983) The affordability of land subdivision: urban and water supply division, New Delhi
WCED (1987) Our common future. Oxford University Press, Oxford

Housing Policy in India: Understanding the Missing Links

Kanika Basu and Nila Pandian

1 Introduction

One of the persistent challenges for urban planners and policy makers is the housing shortage in urban centres of developing nations. Adequate housing is considered an important pre-requisite to ensure wellbeing of communities and plays a crucial role in expanding the choice and opportunity for the people at the lower end of the economic pyramid (Coetzer 2010). In fact the human right to adequate housing is enshrined in international law after the Universal Declaration of Human Rights was unanimously adopted by the world community in 1948 (Thiele 2002).

In India, periodic statistics on housing stock and housing amenities reflect that the quantitative increase and qualitative improvement of housing stock over the years have been consistent. Even taking slums as a proxy for housing situation and its improvements gauged in terms of prevalence of slums in Indian urban scape—the conclusion remains the same. The housing situation has changed for better over the years due to policy and planning interventions but the scale of the problem expressed in absolute terms implies that the task at hand is still enormous. In the context of India's commitment towards inclusive development, the current housing shortage in the country is definitely worrisome.

The most recent official estimate of the urban housing shortage in India, the report of the Technical Group on the Urban Housing Shortage (TG-12) (2012), constituted by the Ministry of Housing and Urban Poverty Alleviation, puts the official figure at 18.78 million units and over 95% of this shortage is in the Economically Weaker Section and Low Income Households category. The report acknowledges that 'addressing the problem of mismatch between suppliers of

K. Basu (✉) • N. Pandian
Human Settlement Management Institute, Housing & Urban Development Corporation Ltd, New Delhi, India
e-mail: kanika.urp@gmail.com; nilapandian@gmail.com

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_8

housing and those needing them and bringing down the housing shortage, if not completely eliminate it, would be a major challenge' (MoHUPA and GoI 2012).

Housing and especially urban housing and slums have enjoyed a place of prominence since the First Five Year Plan (1951–1956) of India. The first Housing Policy of India was drafted in 1988, but till then amelioration of housing condition was addressed through various programme interventions with defined eligible beneficiaries, annual allocations and numeric targets as proposed in India's Five Year Plans. In other words, the existing housing crisis cannot be attributed to the government negligence or apathy.

Over the years, the housing policy and the approach to housing delivery have undergone a radical paradigm shift: from housing as 'welfare good and a public responsibility' to 'market dynamics with government as facilitator'. To understand the genesis and evolution of the policy perspectives and the shifts in focus areas in different housing programme in India, the national Five Year Plans are of paramount importance. This paper has examined the Five Year Plans of the Government of India, housing policies and a few selected programme interventions to trace the progression and shifts in the approach to housing delivery over the years. The paper also attempts to comprehend the housing shortage by relating and interpreting the housing programmes and polices vis-a-vis the urbanisation dynamics in India.

2 Approach to Urban Housing Solutions in India: A Chronological Overview

Urban development, housing, urban policy and urban planning in India are now categorically considered state subjects. Historically, the Central Government has played a pivotal role in this sector and urban policy in a state is largely an off shoot of what is outlined in the national five year plans and other programmes of the central government (Ramachandran 1989). Interestingly, **the First Five Year Plan (1951–1956) observes that** "the subject of housing is not specifically mentioned in the seventh schedule of the Constitution of India..... In so far as housing for industrial labour is concerned, item 24 of list III may be said to cover it because it deals comprehensively with welfare of labour. That would bring the matter in the Concurrent List with which both the Union and the State Governments are concerned. The residuary power in relation to subjects not mentioned in the Concurrent List or the State List, however, vests in the Union Legislature. As such the Centre may be said to be directly concerned with the subject of housing in general" (Planning Commission 1951). Arguably, this viewpoint coupled with the inadequate resources available with the state and local governments, has meant that the Central Government has remained largely responsible for housing policy and programmes in the country. The First Plan termed the housing crisis and proliferating slums in Indian cities a 'national problem' and emphatically stated that 'private enterprise is not in a position to do the job so far as low income groups are concerned' and the states are required to assist in the construction of suitable houses for low and middle income groups and the central government has to accept

a large measure of responsibility for financing housing programmes. The First Plan also emphasized the need for supporting institutional framework for adequate housing delivery and recommended setting up of National Building Organization (NBO) and the Housing Boards as implementing agencies for housing programmes.

The Second Five Year Plan (1956–1961) analysing the trend in urban development opined that 'the shortage of housing will continue to be accentuated' and recommended to contextualise the housing crisis/shortage with the wider problem of planning of urban areas and of their economic and other relationships with the regions in which they are situated. It also stated that the aim should be to evolve 'balanced urban- rural regions which would provide stable and diverse employment and, through the provision of the necessary economic and social overheads, achieve development at reasonable social and economic cost' (Planning Commission 1956).

The urban policy and development planning started to take shape in the **Third Five Year Plan (1961–1966).** This period witnessed the preparation of Master Plans for various cities, constitution of para-statal development authorities and a reiteration of the importance of regional planning for balanced and cohesive urban development. It stated that housing policies need to be set in the larger context of economic development and industrialisation and location and dispersal of industries will be of paramount importance in solving the housing problem (Planning Commission 1961).

The Fourth Five Year Plan (1969–1974) observed that "social and economic costs of servicing large concentrations of population are prohibitive" and continued to emphasize the importance of balanced urban growth through spatial planning of economic activities across the country. The Plan articulated the need to limit rising land prices, as well as an urban land policy for ease of supply of land for housing of economically weaker section and also devolved increased responsibility to the state governments (Planning Commission 1969).

The Fifth Five Year Plan (1974–1979) saw the enactment of the Urban Land Ceiling Act (1976) a landmark in the evolution of planning and housing programmes in India. This Plan was mainly concerned with introducing measures to control land prices in cities and providing a framework for the development of small and medium towns (Batra 2009). A Task Force on Planning and Development of Small and Medium Towns was constituted to define required interventions and guidelines for planned growth of small and medium towns (Planning Commission 1974).

The priority of the Sixth Five Year Plan (1980–1985) was an integrated development of small and medium towns based on the premise that a whole range of urban settlements have a role to play in the national development process. It introduced the centrally sponsored scheme of Integrated Development of Small and Medium Towns (IDSMT) in partnership with states and proposed to develop 200 towns during the plan period (Planning Commission 1980).

It also continued its emphasis on basic services, highlighting 'urban development as being inexorably connected with the provision of safe water supply and adequate sanitation. With regard to slums, the Sixth Plan marked a sharp departure from the hitherto practiced programmes by noting that:

> . . .the strategy of attempting massive relocation of slums in urban areas should be given up in the future. Such relocation not only involves substantial hardship to those affected in terms of loss of easy access to employment centres and other amenities, but results in unnecessary destruction of existing housing capital, however substandard it may be. It is, therefore, important that substantially increased investments be made in the environmental improvement of slum areas. Low cost sanitation and drainage are key areas of much needed investment in the slums of our cities.

The Plan proposed 'sites and services' scheme with loan assistance at affordable rates and longer tenure to the Economically Weaker Section households.

The Seventh Five Year Plan (1985–1990) marked a paradigm shift in the urban policy of India by stating that "Government's role in the field of urban housing has per force to be promotional. The major effort will have to come from the private sector, Government's role will have to be restricted to the improvement of slums, direct provision of housing to the weaker sections of the society and encouragement and support of housing finance institutions". However, the Plan clarified that, the shift in government's role is not to minimise the role of the government but to realign its function as a promoter of necessary delivery system in the form of a housing finance market and taking steps to make developed land available at right places and at reasonable prices. Towards building up a robust housing finance system, the Plan recommended setting up of the National Housing Bank (Planning Commission 1985). The IDSMT, introduced in the previous Plan period was continued in the Seventh Plan period. A robust initiative towards regional development manifested in the formation of the National Capital Region Planning Board that aimed to decongest Delhi by dispersing economic activity and thereby the population to urban centres of lower order in and around the national capital—Delhi.

This period witnessed multiple initiatives that were to have far reaching impacts on the urban planning and development process as well as housing scenario in India. In 1988, Government of India drafted the first National Housing Policy (NHP) with a long term goal to eradicate houselessness, improve the housing conditions of the inadequately housed and provide a minimum level of basic services and amenities to all. The policy defined the role of the Government as "a provider for the poorest and vulnerable sections and as a facilitator for other income groups and private sector by the removal of constraints and the increased supply of land and services".

Most importantly, The National Commission on Urbanization (NCU), constituted in 1986 submitted its report in 1988. This was a significant intervention and probably the one and only effort till date towards formulation of policy framework and defining approaches for a productive and manageable urbanization. The report (Volume 1) famously commented, ". . .the urban situation in India is one of deep crisis and calls for measures analogous to those used when a house is on fire, or there is a city wide epidemic". Another noteworthy observation of the NCU, which was also a point of departure from the then existing popular opinion, is that 'while migration from rural to urban areas is a process which seemingly holds out

the greatest danger to our urban settlements, it is in fact one of vital importance for the development of rural areas and thus for the nation as a whole".

The Commission although junked the practiced policy and programme of backward area development for a balanced urban development and regional growth, it strongly recommended development of intermediate level urban centres that would have strong regional ramifications and would assist in strengthening the economy at the regional levels and create a vibrant rural urban continuum. The Commission identified 329 cities called GEMS (Generators of Economic Momentum) and classified them into National Priority Centres (NPCs) and State Priority Centres (SPCs). What is noteworthy in the choice of these cities is that, of the total cities chosen as GEMs, 109 were located in districts where more than ninety percent of the population was rural and from which there is the highest potential of migration to urban areas (Buch 2015).

The Eighth Plan (1992–1997) reflected the on-going liberalization of the Indian economy and the National Housing Policy. It promoted the role of private sectors in housing and delivery of services and projected the role of the government as a supporter and enabler. However, it did reconfirm the concept of regional development with efficient hierarchy of settlements and suggested a review of planning standards and norms. The Eighth Five Year Plan coincided with a watershed intervention in urban planning process in India. In 1992, the 74th Amendment of the constitution was made to empower the urban local bodies (ULBs) and a wide range of important functional responsibilities like land use, economic development, poverty alleviation, water, transport, road, housing and slum improvement were devolved to the urban local body (Planning Commission 1992).

The listed sectoral objectives of the **Ninth Five Year Plan (1997–2002)** included:

(a) Development of urban areas as economically efficient, socially equitable and environmentally sustainable entities.
(b) Accelerated development of housing, particularly for the low income groups and other disadvantaged groups.

The Plan document noted with concern the slowing down of the urbanization rate, increasing gap in the demand and supply of basic services like water and sanitation and concentration of population growth in large cities. It was stated that regional development, strengthening the rural urban continuum and development of new centres of human settlements and economic activities as an alternative to the highly congested metro and mega cities will be among the priority tasks in the Ninth Plan (Planning Commission 1997).

Significantly, for the first time, the Ninth Five Year Plan document explicitly declared that 'Housing is a state subject' and urged the state governments and union territories to play a more pro-active role in formulating plans and programmes suited to local needs and conditions in consultation with the local bodies for achieving the housing for all vision as mandated in the National Housing Policy.

The Plan document clarified that while a thrust on public housing is required for social housing, a policy framework and an effective legislative, fiscal and financial system is equally imperative to put into effect the enabling role of the government in stimulating, supporting and promoting other actors to play direct roles in the housing delivery system. In view, of the above, to create an enabling environment, the Central Government drafted the National Housing and Habitat Policy 1998. The new policy stated that "the situation is doubtless grim and calls for nothing less than a revolution—a housing revolution". The policy declared Housing for All as a priority area and decided to focus on the housing needs in general and that of the poor and the deprived in particular and set an annual target of 2 million houses. It aimed to correct the imbalance in the housing sector created by excessive dependence on public agencies by creating a strong public-private partnership for tackling the housing and habitat issues. One of the most important paradigm shifts articulated in the National Housing and Habitat Policy of 1998 is regarding the role of Housing Boards, Development Authorities and other public agencies. The policy stated that 'the public housing agencies would need to revamp their method of working and redefine their role for facilitating land assembly and development of infrastructure and their role should be to facilitate availability of land. They need to move away from direct construction activity" (MoHUPA and GoI 1998).

Another significant intervention in the period was repealing of the Urban Land Ceiling Act. It is pertinent to mention here that the argument put forth in the Policy describing the Urban Land Ceiling Act of 1976 as one the major deterrent towards ease of housing supply and recommending its repeal to 'ease the availability of land' was in contradiction to the recommendations of the National Commission of Urbanization which had advised the government to plug loopholes in the Act to make its implementation effective (Batra 2009).

The Tenth Five Year Plan (2002–2007) continued with the 'liberalisation' tenets and professed the philosophy of cost recovery, profit orientation and public–private partnership for urban development, delivery of housing as well as infrastructure development. The Plan primarily aimed at the credit worthiness of the ULBs to make them capable of resource mobilization and reducing their dependence on budgetary support for various development programmes (Planning Commission 2002). During this period the central government also pushed for various urban reforms including a Model Municipal Law. The highpoint of the Plan was the launching of the Jawaharlal Nehru Urban Renewal Mission (JNNURM). The stated aim of the Mission was, ". . ..to encourage reforms and fast track planned development of identified cities. 63 cities across India were identified as eligible under JNNURM. Focus is to be on efficiency in urban infrastructure and service delivery mechanisms, community participation, and accountability of ULBs/parastatal agencies towards citizens". The main objectives listed under the Mission included (a) integrated development of infrastructure services, (b) asset-creation and asset-management through extensive reforms (c) Ensuring adequate funds to meet the deficiencies in urban infrastructural services, (d) Planned development of identified cities including peri-urban areas, outgrowths and urban corridors leading to dispersed urbanisation, (e) emphasis on access to utilities and especially for the poor.

JNNURM was complemented by the launch of the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), which was the new *avatar* of erstwhile IDSMT scheme that had drawn flak from many quarters for being a failed effort vis-à-vis its specified objective of balanced regional development.

The JNNURM was probably the first programme in the country that was a 'reform linked incentive programme' and had far reaching consequences and implications for the urban planning process and infrastructure and housing solutions in cities across India. Although limited in geographical spread, the huge financial outlay, highest ever in urban sector since the First Five Year Plan, made JNNURM one of the most significant intervention in the urban planning process in India.

The **National Urban Housing and Habitat Policy** (NUHHP) was introduced in 2007. The policy continued with the liberalization philosophy. It explicitly stated resource constraint of the central and state governments as the reason for urging multiple stakeholders to forge various types of public-private partnerships for realizing the goal of 'Affordable Housing for All'. It proposed pro-active financial intervention expressed through designing of innovative products and reforms to address the resource crunch and ease the supply of investment towards increasing the supply of housing stock. However, it also recommended retaining the Government's role in social housing so that 'affordable housing is made available to Economically Weaker Section (EWS) and Low Income Group (LIG) population as they lack affordability and are hopelessly priced out in the urban land markets". Significantly, this policy of 2007, explicitly recommended regional planning 'as a vital determinant of urban planning'. The policy stated the need for development of integrated green field townships to be located 'at a reasonable distance from medium or large existing towns", so that they serve as generators of economic momentum and also reduce the rate of in-migration to large towns. In its own words, the policy aimed 'to enhance the spotlight on 'habitat' with a 'Regional Planning approach' as well as further deepen the role of government as a 'facilitator' and 'regulator' (MoHUPA and GoI 2007).

The Eleventh Five Year Plan (2007–2012) noted the existing urban plight in terms of housing shortage and access to basic services and probably for the first time in the history of urban planning and development process in India, explicitly stated that, "The time is ripe to formulate a long-term National Urbanization Policy indicating the emerging pattern of urbanization and measures to channelize future urban growth in an equitable and sustainable manner" (Planning Commission 2007). The strategy for urban development recommended: (a) increasing the efficiency and productivity of cities by deregulation and development of land and (b) dismantling public sector monopoly over urban infrastructure and creating a conducive atmosphere for the private sector to invest. This Plan document, contradicting the NUHHP 2007, was scathingly critical of the practice of Master Plan preparation for development of towns and cities. It attributed the inhibited development of housing market and proliferation of slums in Indian cities to the Master Plan that locks supply of land and buildable space. The Plan noted that the performance of IDSMT was 'not satisfactory', but appreciating the importance of dispersed urbanization, the Plan, recommended development of satellite towns in and around the large urban centres.

Analysing the urbanization trend In India, **the Twelfth Five Year Plan (2012–2016)** opined that guiding the process of urbanisation is a serious challenge for India's policy planners and recommended 'adequate policy attention to smaller cities as against the narrow focus of concentrating on large 'Mission Cities' that was followed under JNNURM during the Eleventh Plan Period. Continuing with the criticism of Master Plan practices, the Plan promoted 'strategic densification' inclusionary zoning and providing higher FSI to accommodate future urbanisation needs and make the economics of affordable housing viable (Planning Commission 2012).

Rajiv Awas Yojana was introduced in 2012 with the stated objective of achieving a 'Slum Free India'. This programme required preparation of Slum Free City Plan of Action based on a whole city approach to be eligible for central funding. The distinctive feature of the programme was the proposal of tenability analysis of the existing slums in city, promotion of tenurial rights of the slum dwellers and giving them a 'voice' in scripting the slum redevelopment plan by making participation of affected households and their acceptance of the proposed development interventions to be obligatory. The scheme was discontinued and replaced with the Housing for All Plan of Action—PMAY (urban).

The Government of India launched the **Pradhan Mantri Awas Yojana—Housing for All (Urban)** on June 2015. The overarching objective of this programme is to build 22 million houses in the EWS and LIG category to ensure that in 2022, the year that India celebrates 75 years of independence, every Indian will have adequate housing and essential amenities like water and sanitation.

The mission seeks to address the housing needs of the urban poor including slum dwellers through four programme verticals:

1. Slum rehabilitation of slum dwellers with participation of private developers using land as a resource.
2. Promotion of affordable housing for weaker section through credit linked subsidy.
3. Affordable Housing in Partnership with Public & Private sectors.
4. Subsidy for beneficiary-led individual house construction/enhancement.

All statutory towns as per Census 2011 and towns notified are eligible for coverage under the Mission. The programme redefined the EWS and LIG category, raised the subsidy component and more importantly envisaged a much bigger, pro-active and effective private participation in slum redevelopment projects across the states. The Mission requires the preparation of Housing for All Plan of Action by city authorities, which besides identifying eligible beneficiaries, undertaking demand assessment and estimation of investment requirements is also expected to have an Annual Implementation Plan (AIP) that sets priorities apart from efficiently monitoring the progress of the programme.

The discussion in the preceding paragraphs should not be construed as a comprehensive commentary on the urban planning and housing policy in India. Urban planning process and housing in India is a complex process since it entails government's interventions at various levels from centre to State as well as the

ULB, involves several stakeholders and more importantly operates in divergent legal framework. The discussion here is a broad stroke of urban planning and housing policies, mostly at the national level. However, it can definitely be taken to be indicative, since state programmes and polices mostly take their cue from the national directives.

3 Programme Analysis: In Search of the Missing Link

The estimates of housing shortage in India have differed depending on the methodology and the agency. While the TG-12 estimate stands at 18.78 million units in 2012, the NAREDCO—KPMG study estimates that by 2022, to achieve the vision of Housing for All, India needs to develop 11 crore (110 million) housing units of which about 4.8 crore (48 millions) would be in urban areas.

The government estimates of the housing shortage in India over successive Five Year Plans did not follow a consistent methodology, making temporal comparison difficult. The housing shortage estimated at the beginning of the 11th Five Year Plan was 24.71 million housing units of which 99% were in the EWS and LIG category. The total housing requirement in the Plan period including backlog was estimated to be 26.53 million units. The TG-12 introduced a few modifications in the methodology to refine the projections and accommodate and reflect the changing context in housing but the scope and coverage of components followed the same as was done by the Technical Group of 11th Five Year Plan. The housing shortage of 18.78 million units was less than the estimated shortage of 24.71 million units reported in 2007. More importantly, the report stated that "the housing shortage during the period 2012–2017 may not increase if the rate of growth in the housing stock continues to be higher than the growth in the number of households in the 12th Five Year Plan, as observed in the last decade. Assuming the business as usual scenario and also continuation of the strategic interventions both at state and central level, housing shortage may actually go down". This observation of the TG-12 is a silver lining to the otherwise daunting task of providing housing to 18.78 million households. Addressing the shortage would require not just construction of houses, but construction of houses for those who need them, at a place and price that is suited to their livelihood choices and repayment capacity. The quantum of the shortage expresses the scale of the challenge but the complexity of the problem is expressed by the fact that 'urban India has both a high housing shortage and a massive and rapidly growing stock of vacant houses'. It is estimated that about 11 million houses are lying vacant (Kundu 2016).

The scale of the crisis and the apparent paradox in the housing shortage calls for a close scrutiny of the housing policy and programmes in India. As is evident from the earlier section, housing was given a place of prominence since the very First Five Year Plan. Therefore, the current situation with regard to urban housing cannot be attributed to policy void or apathy but a design defect that reduced and restricted the policy principles to pious objectives (Ganeshwar 1998). The housing shortage has been analysed and explained as an outcome of multiple issues, primarily urban growth, rapid urbanization, imbalanced regional development and poverty. It has

been related to distorted housing market, lack of access to housing finance, constraints in supply of land, inefficient planning norms and standards, inadequate institutional capacities, and insufficient building technologies including design insufficiency. The current crisis has also been related to 'moral and intellectual bankruptcy that is driving contemporary urban development. . ...towards chaos and anarchy rather than towards orderliness and sanity (Verma 2002). The Master Plan approach towards planned urban development has received vociferous criticism in housing research in India as well as Five Year Plan documents. It has been mainly interpreted as being restrictive in supply of land for development and housing, rigid to the changing needs and aspirations of the citizens as well as being biased towards physical planning instead of a holistic planning approach and failing to integrate the spatial and functional linkages with rural hinterland and between settlements of different order within the region. (Nallathiga 2009).

Since the early '50s, the housing sector has witnessed the launch of successive programmes to ameliorate the housing condition of the poor, which seemed to have followed a 'trial and error' method (Wadhwa 1988). The analysis of the Plan recommendations and scrutiny of the programme responses reveal that the interventions, barring a few initial Plan periods, relied primarily on (a) the 'market forces' or increased private participation to accelerate the pace of housing delivery and (b) relaxation in the planning norms and de-densification of urban areas. Attempts have been made to strengthen these interventions through modifications in the institutional structures, legal framework, fiscal incentives and procedural relaxations. The Master Plan criticism has been addressed through advocacy of City Development Plans as was mandated under JNNURM and by recommending higher residential densities and floor area ratio (FAR) and floor space index (FSI) to increase the supply of land. Although it has been argued that higher FAR may not be always positively related to affordable housing and instead, might, lead to vacant, speculative and luxury housing with no relation to the social need and poverty (Jain 2016), this tool has been widely advocated and consequently adopted by the ULBs. Recent government programmes like JNNURM, RAY and currently the PMAY—HFA have consistently recommended public private partnership, increased FAR/FSI and residential density norms to ease supply of land and finance and thereby increase the supply of affordable housing stock. However, the current estimate that 95.62% of the shortage is in the EWS and LIG category is indicative that poor are still and progressively being priced out of the land and formal housing market in urban India. The mounting pressure on urban land has resulted in unprecedented increase in the price of land, making it the single most determining factor in the cost of housing. Consequently, the government move of urging the private sector for affordable housing has met with very limited success—it has mostly benefitted the middle income group—leaving out the most deprived section of the population from the ambit of the desired impact expected out of the incentives extended by the government.

Rapid urbanization and urban growth due to migration from rural hinterland are stated to be the most compelling causes for the rising pressure on limited urban land—consequently for housing shortage as well as inadequate access to essential civic amenities like water supply and sanitation. The urbanization level in India as

per Census 2011 is 31.16, an increase of about 11 percentage points compared to 19.91% in 1971. Although, the urbanization level in India is considerably low compared to other countries like Brazil China, Indonesia and South Africa, according to census estimates, the urban population has increased by 268 million in India between 1971 and 2011, which in absolute terms is a formidable number. Government documents and Plans have persistently described the urbanization and urban growth as 'rapid' and 'fast paced'. An alternate and opposite viewpoint about the urbanization process in India claims that, over the last few decades it is 'decelerating' (Kundu 2013) and more so in districts within the metro cities (Kundu 2011). It has been mostly attributed to the declining migration trend as evident from the analysis of migration data—which also suggests that poverty-induced migration has become a less important component of mobility over time (Kundu and Saraswati 2012).

While urbanization and urban growth rate is debated, the two features of urbanization process that have been observed to be consistent since the last four to five decades is its skewed structure biased towards the Class—I cities and spatial imbalance. Urbanization level has increased at different pace across the states and an analysis of inter-state differential in urbanization level over the years reflects that there is hardly any change in the spatial imbalance over the years (Table 1). The number of states with urbanization level below the national average of the corresponding year has almost been constant. Whereas, the percentage differential between least and most urbanized state has increased.

On similar patterns, the skewed urban structure that was observed in 1971, when Class—I cities accounted for 51% of the total urban population has continued to be lopsided. According to 2011, census data the Class—I cities accounted for 70% of the total urban population in 2011. The importance of distribution of urbanization spatially/regionally balanced urbanization pattern was proclaimed as early as the Second Five Year Plan. There was a growing consciousness, as reflected in the subsequent Five Year plan documents of India and report of the National Commission of Urbanization that sustainable urbanization that entails adequate housing for all and universal access to basic amenities needs spatially balanced urbanization structure. It was essential that the urban structure needs to shed its bias towards big cities and the policy and programme initiatives need to address the development of small and medium towns. The programme response of this particular policy challenge i.e. rectification of the bias in urbanization process and structure in India was the introduction of a scheme called "Integrated Development of Small and Medium Towns (IDSMT)" in 1979. The primary objective of the scheme included 'decentralising economic growth and employment opportunities and promoting dispersed urbanization'. The programme, as is evident in the urbanization statistics and as acknowledged in the Five Year Plan documents, failed to rectify the lopsided urbanization character. An evaluation study conducted by National Institute of Urban Affairs (NIUA) in 1990 observed that, "the process of selecting the towns for accelerated development under this programme has not been proper. It has thus been suggested in the study that IDSMT programme should be continued in the Eighth Plan with suitable restructuring and special emphasis should be given to the strengthening of the economic base of towns and integration of economic and

spatial aspects". In other words, the study acknowledged the importance of the programme in the larger context of sustainable urban development in the country. It continued with amendments and modifications up to 2004–2005 and was subsumed in UIDSSMT scheme in 2005. The total number of towns covered under the scheme till 31st March 2008 is 1854 and the amount of Central Assistance release is Rs. 1069.90 crores implying an average of Rs.0.58 crores/town. Besides, the financial outlay seemingly looking insignificant compared to the desired impact, the release of central assistance was predominantly towards highly urbanised states (Table 3). The first five states in terms of released financial assistance viz. Maharashtra, Uttar Pradesh, Andhra Pradesh, West Bengal and Tamil Nadu accounted for about 50% of the total central assistance. Except, Uttar Pradesh, all the other states have urbanization level higher than the national average.

The National Commission of Urbanization had also emphatically recognised the importance of dispersed urbanization. The Commission identified 329 urban centres as Generators of Economic Momentum (GEM), 49 Spatial Priority Urbanization Regions (SPUR) and recommended appropriate allocation of resources by the Central and State governments. The choice of urban centres may be critiqued for its lack of robust methodology and comprehensive indicators (Kundu 1989) but the Commission categorically reiterated the need to intervene and correct the urbanization process so as to achieve a spatially and structurally balanced urban scenario in the country. The recommendations of NCU that was expected to be translated into a National Urbanization Policy and initiation of comprehensive programmes did not materialise.

In spite of the Commission's observation of balanced and dispersed urbanisation as an important prerequisite for sustainable urban development and especially access to housing and infrastructure, this important aspect did not enjoy a place of prominence in the National Housing and Habitat Policy of 1998. In the section on Sustainability Concerns, the policy stated that growth of cities beyond its capacity can be counterproductive and recommended development of satellite townships linked through transport corridors for decongesting metro and megacities. It also fleetingly mentioned that the location of industrial units should be considered "in the context of the regional planning so as to avoid over-congestion of the large and metro cities". Instead of reinforcing the regional planning and balanced urbanization perspective, the policy intent was towards 'decongestion' of mega and metro cities in contrast to the desired focus on development of vibrant small and medium towns with balanced spatial distribution.

The National Urban Housing and Habitat Policy of 2007, brought the regional planning approach back into perspective and recommended development of rural-urban continuum to ease the pressure on land as well as urban infrastructure. However the performance of JNNURM exposed the obvious inconsistency in policy intent and programme implementation. JNNURM, one of the biggest urban development programme in the country till date, in terms of financial outlay, had four sub-missions- (a) Urban Infrastructure and Governance (UIG) for 65 cities, (b) UIDSSMT scheme which covers 640 towns (c) Basic Services to Urban Poor (BSUP) and (d) Integrated Housing & Slum Development Programme (IHSDP). At the beginning, it was proposed that the allocation of funds of the Mission would be

performance oriented and competitive. In practice, as Sivaramakrishnan explains in his article, in an attempt to appease everyone, two more other criteria were introduced. The two criteria being (a) urban population of the states and its proportion to the urban population in the country and (b) ceiling for the states within which the JNNURM assistance had to be accommodated. Inevitably, these two postulates resulted in the larger states and larger cities getting more of the allocation. States like Maharashtra, Andhra Pradesh and Tamil Nadu were the biggest beneficiaries with their share being as high as 95% (Sivaramakrishnan 2011). Overall progress of the sub-missions BSUP and IHSDP reconfirmed the bias that the JNNURM programme had practised in its implementation. The financial progress data for BSUP and IHSDP in terms of sanction and release of funds shows it is biased towards urbanised and developed states. In case of BSUP, the biggest beneficiaries were the states of Maharashtra, Tamil Nadu, Gujarat, West Bengal and Delhi and accounted for 258 projects out of the total sanctioned projects of 478 (Table 4). The states that got maximum release of funds under IHSDP are Maharashtra, West Bengal, Uttar Pradesh, Rajasthan and Andhra Pradesh. These states accounted for 486 projects out of the total sanctioned projects of 1034 (Table 5).

The Slum Free City Plan of Action under Rajiv Awas Yojana did not prescribe the names of cities to be covered but urged the state Government to make a prudent choice of cities after objectively evaluating its priority in the context of overall urban development in the state. If not by design, but in practical implementation this programme too reinforced the bias towards developed states and big cities. The recently launched Pradhan Mantri Awas Yojana—PMAY (urban), covers all statutory towns in the country irrespective of class size and status—implying its potential to act upon the housing shortage and inadequacies in small and medium towns also, but effective implementation can only be evaluated after execution of considerable number of projects.

A close look at the policy intent and programme response to policy reveals that despite avowed commitment towards spatially and structurally balanced urbanization, historically the programme response has shown an overwhelming bias towards the large cities. Although, evaluation studies of Planning Commission and other ministries did not imply its total futility, the initial approach of dispersed urbanization and balanced regional development through dispersal of industries were abandoned and the development interventions were progressively tuned towards big cities and more urbanised states. Therefore, even in a scenario of decelerated urbanization in the last few decades, lopsided urban structure and unbalanced regional development has been persistent. This has put immense pressure on urban land, which is a finite resource and its supply stressed by the regulatory and legal framework. The price of land across urban centres in India and especially the big cities has seen unprecedented rise and consequently the poor and the low income households have been significantly excluded from the formal land and housing market. Appreciating the urban land crisis, central government recommended repeal of Urban Land Ceiling Act by the states as well as relaxation of planning norms and standards. The recommendations have been vigorously pursued by most states as reflected in repealing of the Land Ceiling Act and progressive increase in residential density norms and relaxation of planning standards and building bye laws. On the other hand,

a balanced urbanization perspective as well as 'carrying capacity' concern for cities has been conspicuous by their absence in recent programmes and the state governments too have been more vigorously engaged with their state capitals and big cities to attract global capital.

The Government's pre-occupation with release/increase of land supply for affordable housing through relaxation in planning norms and enthusiastic advocacy for high rise/high density development in partnership with private sector has little impact to easing the pressure of housing and access to basic amenities in large cities of India. In spite of the fact that big cities received the maximum share of government funding for housing for the poor, the problem of access to adequate housing is more persistent in big cities.

One of the most compelling causes for this situation is the spiralling land cost in India's urban centres, which continues to be the most dominant and expensive component of housing. An appropriate legal and regulatory framework, land use and development controls, institutional mechanism and financial inclusion impacts the affordability quotient but as evident from the Indian housing crisis scenario, is limited in its impact on housing for the poor or social housing. Housing statistics, especially the vacant housing stock of about 11 million units are symptomatic that the created stock has mostly eluded the desired target group and may have provoked a speculative housing market thereby defeating the cause of affordable housing and raising serious apprehensions about sustainability of the Indian cities. Evidently, the current approach to housing solutions is delivering limited impact and may even prove to be counterproductive in the long run. Efforts to increasing supply of affordable housing stock and access to housing for the poor through legal, financial policy and planning reforms is pertinent but a crucial intervention for tackling housing shortage in India would require reversing the current practice of exclusionary urbanization that focuses on selected states and few big cities and addressing the challenge of dispersed and balanced urbanization that has been continuously promulgated in plan documents but have received little or no programme support.

4 Conclusion

Housing for all, and especially for the poor and low income households, continues to be a formidable challenge for Indian policy makers and planners. Consistent efforts over the plan periods to address the supply constraint by implementing crucial legal, financial, institutional and planning reforms have impacted a change for better in the housing scenario in India. However, it has been observed that in the absence of a national urbanization policy and programme support to ensure dispersed and spatially balanced urbanization, the process has continued to be skewed and exclusionary in favour of a few developed states and selected big cities. Consequently, it has stressed the urban land and housing market and steadily priced out the poor and low income households. It is imperative that the development programmes and schemes must acknowledge the importance of spatially well distributed urban growth. To surmount the challenge of housing for all, there is a need for a sensitive approach and a balanced urbanization pattern.

Annexes

Table 1 Interstate differential in urbanization level in India 1971–2011

Sl. No.	State/UT	1971	1981	1991	2001	2011
1	Andaman & Nicobar Islands	22.77	26.30	26.71	32.63	35.67
2	Andhra Pradesh	19.31	23.32	26.89	27.3	33.49
3	Arunachal Pradesh	3.7	6.56	12.80	20.75	22.67
4	Assam	8.87	9.88	11.10	12.9	14.08
5	Bihar	10	12.47	13.14	10.46	11.3
6	Chandigarh	90.55	93.63	89.69	89.77	97.25
7	Chhattisgarh			17.40	20.09	23.24
8	Dadra & Nagar Haveli		6.67	8.47	22.89	46.62
9	Daman & Diu	37.56	36.75	46.80	36.25	75.16
10	Delhi	89.7	92.73	89.93	93.18	97.5
11	Goa	25.56	32.03	41.01	49.76	62.17
12	Gujarat	28.08	31.10	34.49	37.36	42.58
13	Haryana	17.67	21.88	24.63	28.92	34.79
14	Himachal Pradesh	6.99	7.61	8.69	9.8	10.04
15	Jammu & Kashmir	18.59	21.05	22.89	24.81	27.21
16	Jharkhand			21.25	22.24	24.05
17	Karnataka	24.31	28.89	30.92	33.99	38.57
18	Kerala	16.24	18.74	26.39	25.96	47.72
19	Lakhswadeep		46.28	56.31	44.46	78.08
20	Madhya Pradesh	16.29	20.29	23.18	26.46	27.63
21	Maharashtra	31.17	35.03	38.69	42.43	45.23
22	Manipur	13.19	26.42	27.52	25.11	30.21
23	Meghalaya	14.55	18.07	18.60	19.58	20.08
24	Mizoram	11.36	24.67	46.10	49.63	51.51
25	Nagaland	9.95	15.52	17.21	17.23	28.97
26	Odisha	8.41	11.79	13.38	14.99	16.68
27	Puducherry	42.04	52.28	64.00	66.57	68.31
28	Punjab	23.73	27.68	29.55	33.92	37.49
29	Rajasthan	17.63	21.05	22.88	23.39	24.89
30	Sikkim	9.37	16.15	9.10	11.07	24.97
31	Tamil Nadu	30.26	32.95	34.15	44.04	48.45
32	Tripura	10.43	10.99	15.30	17.06	26.18
33	Uttar Pradesh	14.02	17.95	19.84	20.78	22.28
34	Uttarakhand			22.97	25.67	30.55
35	West Bengal	24.75	26.47	27.48	27.97	31.89
	India	19.91	23.70	25.73	27.81	31.16

Source: Census of India

Table 2 Size and class wise urban population distribution in India 1951–1971 (in %)

Class	1961	1971	1981	1991	2001
I	51.42	57.24	60.37	65.20	68.67
II	11.23	10.92	11.63	10.95	9.67
III	16.94	16.01	14.33	13.19	12.23
IV	12.77	10.94	9.54	7.77	6.84
V	6.87	4.45	3.58	2.60	2.36
VI	0.77	0.44	0.55	0.29	0.23

Source: Tiwari and Rao (2016)

Table 3 State wise expenditure under IDSMT from 1979 to September 2008 (in Rs. Lakhs)

Sl. No.	State	Towns covered	Central assistance released	State share released	% Share of CA released	Rank
1	**Andhra Pradesh**	**131**	**9543.06**	**5708.90**	**8.94**	**3**
2	Arunachal Pradesh	16	622.00	354.41	0.58	22
3	Assam	56	2284.36	1360.03	2.14	14
4	Bihar	51	2162.18	1526.00	2.03	15
5	Chhattisgarh	39	3031.70	1484.35	2.84	11
6	Goa	9	220.08	36.45	0.21	29
7	**Gujarat**	**115**	**7587.70**	**4893.88**	**7.11**	**7**
8	Haryana	35	2897.20	1636.49	2.72	13
9	Himachal Pradesh	24	1174.06	997.62	1.10	18
10	Jammu & Kashmir	23	1295.97	782.92	1.21	17
11	Jharkhand	13	493.76	490.97	0.46	25
12	Karnataka	169	8765.00	5585.79	8.22	6
13	Kerala	58	3895.41	2377.09	3.65	10
14	Madhya Pradesh	146	6122.04	4576.73	5.74	8
15	**Maharashtra**	**178**	**12,637.07**	**8483.34**	**11.84**	**1**
16	Manipur	22	894.10	598.83	0.84	19
17	Meghalaya	8	411.50	349.18	0.39	26
18	Mizoram	13	671.40	604.63	0.63	21
19	Nagaland	10	546.09	832.85	0.51	24
20	Orissa	67	2941.68	1895.94	2.76	12
21	Punjab	38	2043.30	1460.99	1.92	16
22	Rajasthan	78	4853.26	2752.72	4.55	9
23	Sikkim	10	250.89	447.44	0.24	28
24	**Tamil Nadu**	**172**	**9164.07**	**5790.12**	**8.59**	**5**
25	Tripura	18	849.06	719.45	0.80	20
26	Uttaranchal	15	613.00	441.32	0.57	23
27	**Uttar Pradesh**	**206**	**10,651.60**	**7229.26**	**9.98**	**2**

(continued)

Table 3 (continued)

Sl. No.	State	Towns covered	Central assistance released	State share released	% Share of CA released	Rank
28	**West Bengal**	**121**	**9512.30**	**6857.62**	**8.92**	**4**
29	Andaman & Nicobar	1	92.00	0.00	0.09	31
30	Dadra & Nagar Haveli	2	112.22	60.00	0.11	30
31	Daman & Diu	1	23.00	6.00	0.02	33
32	Lakhswadeep	1	25.00	0.00	0.02	32
33	Puducherry	8	303.75	440.00	0.28	27
	Total	1854	106,689.81	70,781.32	100.00	NA

Source: NRCDDP (2016)

Table 4 Overall progress of BSUP component of JNNURM (state wise)

Sl. No.	Name of the state	No. of projects approved	No. of cities covered	Financial progress (in Rs. crores)				Rank in terms of total release
				Project cost	Allocation	Committed	Released	
1	A & N Island	0	0	0	0.00	0.00	0.00	33
2	Andhra Pradesh	22	3	1525.27	810.64	723.50	700.32	8
3	Arunachal Pradesh	3	1	60.94	43.95	54.46	54.46	20
4	Assam	2	1	108.44	121.94	97.60	64.19	19
5	Bihar	3	1	11.25	531.54	5.07	78.19	18
6	Chandigarh	4	1	669.02	446.13	300.94	379.03	10
7	Chhattisgarh	9	1	324.71	385.21	254.84	211.21	13
8	D&N Haveli	0	0	0	0.00	0.00	0.00	33
9	Daman & Diu	0	0	0	0.00	0.00	0.00	33
10	**Delhi**	**16**	**1**	**2539.00**	**1481.28**	**1155.44**	**1118.17**	**3**
11	Goa	0	0	0	11.43	0.00	1.15	32
12	**Gujarat**	**27**	**5**	**2033.08**	**1015.56**	**987.30**	**935.69**	**5**
13	Haryana	2	1	57.28	57.31	27.81	31.18	27
14	Himachal Pradesh	1	1	6.42	31.29	5.14	7.37	31
15	Jammu & Kashmir	5	2	162.39	140.18	134.44	52.38	21
16	Jharkhand	7	2	69.60	351.09	52.50	82.18	16
17	Karnataka	18	2	837.80	407.97	405.29	384.03	9
18	Kerala	7	2	313.92	250.00	213.44	213.91	12
19	Lakhswadeep	0	0	0	0.00	0.00	0.00	33
20	Madhya Pradesh	21	4	473.44	351.10	230.75	263.49	11
21	**Maharashtra**	**53**	**5**	**3954.89**	**3372.56**	**1916.54**	**2083.04**	**1**
22	Manipur	1	1	51.23	43.91	43.91	43.91	24
23	Meghalaya	3	1	36.53	40.35	28.51	36.21	26

(continued)

Table 4 (continued)

Sl. No.	Name of the state	No. of projects approved	No. of cities covered	Financial progress (in Rs. crores)				Rank in terms of total release
				Project cost	Allocation	Committed	Released	
24	Mizoram	3	1	91.02	80.11	79.73	79.73	17
25	Nagaland	1	1	133.08	105.60	105.60	105.60	15
26	Orissa	6	2	66.45	78.74	48.18	46.72	23
27	Puducherry	3	1	50.60	83.20	34.41	38.02	25
28	Punjab	3	2	90.97	444.46	45.44	47.49	22
29	Rajasthan	3	2	245.95	383.46	105.25	131.64	14
30	Sikkim	3	1	33.58	29.06	29.06	29.06	28
31	**Tamil Nadu**	**51**	**3**	**2285.16**	**1107.80**	**1022.22**	**1022.00**	**4**
32	Telengana	17	1	1631.81	736.78	680.39	722.36	7
33	Tripura	1	1	16.73	23.66	13.96	13.96	30
34	Uttar Pradesh	67	7	1637.66	1165.22	798.04	876.60	6
35	Uttarakhand	8	3	29.71	97.84	23.03	28.16	29
36	**West Bengal**	**108**	**2**	**3232.49**	**2126.98**	**1594.47**	**1579.49**	**2**
	Total BSUP	478	62	22,780.42	16,356.35	11,217.26	11,460.94	NA

Source: MoHUPA as on 3rd August 2015

Table 5 Overall progress of IHSDP component of JNNURM (state wise)

Sl. No.	Name of the state	No. of projects approved	No. of cities covered	Financial progress (in Rs. crores)				Rank (in terms of release)
				Project cost	Allocation	Committed	Released	
1	A & N Island	1	1	9.88	27.29	8.90	5.53	29
2	**Andhra Pradesh**	**44**	**33**	**636.93**	**496.96**	**414.48**	**425.50**	**5**
3	Arunachal Pradesh	1	1	9.95	24.52	8.96	8.96	28
4	Assam	16	16	57.67	67.25	47.27	46.55	20
5	Bihar	32	28	757.89	168.07	380.79	276.96	7
6	Chandigarh	0	0	0.00	0.00	0.00	0.00	34
7	Chhattisgarh	18	17	197.37	158.83	138.93	158.85	15
8	D&N Haveli	2	1	5.74	20.56	3.34	1.67	31
9	Daman & Diu	1	1	0.60	21.97	0.51	0.29	33
10	Delhi	0	0	0.00	0.00	0.00	0.00	34
11	Goa	0	0	0.00	35.79	0.00	0.70	32
12	Gujarat	39	36	340.65	256.25	204.45	247.00	8
13	Haryana	23	15	252.58	209.7	190.73	188.96	12
14	Himachal Pradesh	8	8	72.51	37.07	48.79	37.94	23
15	Jammu & Kashmir	49	36	145.49	117.34	112.75	109.50	16
16	Jharkhand	10	10	144.15	136.00	86.66	86.98	18
17	Karnataka	34	32	410.30	222.69	222.56	221.77	10
18	Kerala	53	45	188.40	198.83	140.38	165.17	13
19	Lakhswadeep	0	0	0.00	21.03	0.00	0.00	34

(continued)

Table 5 (continued)

Sl. No.	Name of the state	No. of projects approved	No. of cities covered	Financial progress (in Rs. crores)				Rank (in terms of release)
				Project cost	Allocation	Committed	Released	
20	Madhya Pradesh	50	48	235.34	276.64	160.31	194.52	11
21	**Maharashtra**	**122**	**87**	**1772.27**	**1130.6**	**1087.75**	**1163.14**	**1**
22	**Manipur**	**6**	**6**	**43.38**	**32.35**	**32.35**	**32.35**	**24**
23	Meghalaya	2	2	28.86	28.97	14.41	15.70	27
24	Mizoram	8	6	39.27	29.78	29.78	29.78	25
25	Nagaland	2	2	71.86	44.14	41.30	41.30	21
26	Orissa	38	35	280.89	176.33	188.72	163.29	14
27	Puducherry	1	1	8.52	26.95	2.74	2.74	30
28	Punjab	5	4	54.08	172.56	27.19	89.71	17
29	**Rajasthan**	**66**	**57**	**815.93**	**424.56**	**493.92**	**535.50**	**4**
30	Sikkim	1	1	19.91	20.9	17.92	17.92	26
31	Tamil Nadu	94	93	566.11	349.38	400.45	398.77	6
32	Telengana	28	22	302.34	267.61	227.86	232.18	9
33	Tripura	5	5	43.64	28.36	38.05	38.05	22
34	**Uttar Pradesh**	**159**	**136**	**955.86**	**854.41**	**605.75**	**718.18**	**2**
35	Uttarakhand	21	18	106.27	63.58	60.88	73.09	19
36	**West Bengal**	**95**	**81**	**883.58**	**681.04**	**663.06**	**703.23**	**3**
Total BSUP		1034	884	9458.42	6828.31	6101.94	6431.8	NA

Source: MoHUPA as on 3rd August 2015

References

Batra L (2009) A Review of Urbanisation and Urban Policy in Post Independent India, CSRD. Jawaharlal Nehru University, New Delhi

Buch MN (2015) The national commission on urbanization and its present day relevance. http://nchse.org/article-pdf/2015/The%20National%20Commission%20On%20Urbanisation%20and%20Its%20Preasent%20Day%20Relevance.pdf. Accessed 15 August 2016

Coetzer P (2010) Moladi – an affordable housing solution for the poor? United Nations Development Programme, South Africa. http://growinginclusivemarkets.org/media/cases/SouthAfrica_Moladi_2010.pdf. Accessed 15 August 2016

Ganeshwar V (1998) Urban policies in India: paradoxes and predicaments. Habitat Int 19(3):293–316

Jain AK (2016) Housing for all: optimising planning and development controls. Shelter 17(1):2–9

Kundu A (1989) National commission of urbanization. Issues Non-Issues Econ Polit Wkly 24(21):1185–1188

Kundu A (2011) Politics and economics of urban growth. Econ Polit Wkly 46(20):10–12

Kundu A (2016) Affordable housing: challenges for providing shelter to every household. Shelter 17(1):26–30

Kundu A, Saraswati LR (2012) Migration and exclusionary urbanisation in India. Econ Polit Wkly 47(26–27):219–227

Kundu D (2013) Slowdown in urban growth. http://infochangeindia.org/downloads/agenda_27.pdf. Accessed 15 August 2016
Ministry of Housing & Urban Poverty Alleviation (MoHUPA), GOI (1998) National Housing and Habitat Policy, 1998
Ministry of Housing & Urban Poverty Alleviation (MoHUPA), GOI (2007) National Urban Housing and Habitat Policy, 2007. http://mhupa.gov.in/writereaddata/NUHHP_2007.pdf. Accessed 15 August 2016
Ministry of Housing & Urban Poverty Alleviation (MoHUPA), GOI (2012) Report of the Technical Group on Urban Housing Shortage 2012-2017 (TG-12)
Nallathiga R (2009) From master plan to vision plan: the changing role of plans and plan making in city development. With reference to Mumbai, Centre for Good Governance, Hyderabad
NIUA (1990) Integrated development of small and medium towns: an evaluation study. National Institute of Urban Affairs, New Delhi
NRCDDP (2016) Integrated development of small and medium towns. http://www.nrcddp.org/file_upload/Integrated%20Development%20of%20Small%20&%20Medium%20Towns%20Scheme.pdf. Accessed 15 August 2016
Planning Commission, GOI, First Five Year Plan (1951) http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html. Accessed 15 Aug 2016
Planning Commission, GOI, Second Five Year Plan (1956) http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.htm. Accessed 15 Aug 2016
Planning Commission, GOI, Third Five Year Plan (1961) http://planningcommission.nic.in/plans/planrel/fiveyr/3rd/3planch33.html. Accessed 15 Aug 2016
Planning Commission, GOI, Fourth Five Year Plan (1969) http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html. Accessed 15 Aug 2016
Planning Commission, GOI, Fifth Five Year Plan (1974) http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html. Accessed 15 Aug 2016
Planning Commission, GOI, Sixth Five Year Plan (1980) http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html. Accessed 15 Aug 2016
Planning Commission, GOI, Seventh Five Year Plan (1985) http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html. Accessed 15 Aug 2016
Planning Commission, GOI, Eighth Five Year Plan (1992–1997) http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html. Accessed 15 Aug 2016
Planning Commission, GOI, Ninth Five Year Plan (1997) http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html. Accessed 15 Aug 2016
Planning Commission, GOI, Tenth Five Year Plan (2002) http://planningcommission.nic.in/plans/planrel/fiveyr/10th/volume2/10th_vol2.pdf. Accessed 15 Aug 2016
Planning Commission, GOI, Eleventh Five Year Plan (2007) http://planningcommission.nic.in/plans/planrel/fiveyr/11th/11_v2/11th_vol2.pdf. Accessed 15 Aug 2016
Planning Commission, GOI, Twelfth Five Year Plan (2012) http://planningcommission.nic.in/plans/planrel/fiveyr/12th/pdf/12fyp_vol3.pdf. Accessed 15 Aug 2016
Ramachandran R (1989) Urbanization and urban systems in India. New Delhi, Oxford
Sivaramakrishnan KC (2011) Urban development and metro governance. Econ Polit Wkly 46(31):49–55
Thiele B (2002) The human right to adequate housing: a tool for promoting and protecting individual and community health. Am J Public Health 92:712–715
Tiwari P, Rao J (2016) Housing markets and housing policies in India. Asian Development Bank Institute, Japan
Verma GD (2002) Slumming India: a chronicle of slums and their saviours. Penguin Books, New Delhi
Wadhwa K (1988) Housing programme for urban poor: shifting priorities. Econ Polit Wkly 23(34):1762–1766

Part III

Sustainability and Natural Resources

Land Dispossession and Livelihood Adaptation: Challenges, Opportunities and Strategies in Rajarhat and Singur

Chinmoyee Mallik

1 Introduction

Land, one of the most critical ingredients for any project, has emerged as the most contentious element, its acquisition being a sensitive matter of concern for the policy makers. This is particularly true in the south Asian context where land is both a scarce resource and at the same time supports the livelihoods of majority of the population. The issue of land acquisition has assumed particular significance in the state of West Bengal as it is implicative of a substantial shift in the political principles of the Left Front Government (LFG) on the one hand and a drastic transformation of the role of state in the era of globalization on the other hand. This study is organized around the recent episode of agricultural land grab associated with the large scale land acquisition carried out by the West Bengal state government for Rajarhat New Town and the Tata Small Car Project at Singur that posits formidable questions over how the agricultural livelihoods would transform. This paper seeks to look into the various livelihoods strategies adopted and the outcomes experienced by the various factions of the rural population in response to a 'shock' i.e. the land acquisition (henceforth referred as LA) carried out during the last decade by the West Bengal state government in the process of developing a new town (Rajarhat) and industrialization (Singur) along the periphery of Kolkata.

The livelihood approach that evolved from studies on food security, environmental management and poverty analysis refers to "means to a living" and therefore directs attention to "the way in which a living is obtained" and "not just the net results in terms of income received or consumption attained" (Ellis 2000). While ownership of assets continues to remain the crucial precondition for designing livelihood strategies, the overarching prerequisite for the successful attainment of livelihoods are the institutions and social relations that in reality enable access and

C. Mallik (✉)
Department of Geography, Mrinalini Datta Mahavidyapith, Birati, Kolkata, India
e-mail: chinmoyeemallik@gmail.com

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_9

claims to resources. Conclusively, Chambers and Conway (1991) have referred to livelihoods as comprising of "the capabilities, assets (including both material and social resources) and activities required for a means of living". This paper broadly deploys the Sustainable Rural Livelihood framework of DFID that draws heavily from the works of Chambers and Conway (1991), Scoones (1998) and Carney (1998). The main components of the sustainable livelihood framework are 'livelihood assets', 'transforming structures and processes' and 'livelihood strategies and outcomes' (Scoones 1998).

Livelihoods have been observed to be under continual flux and in the process of incessant adjustment to the stresses and shocks emanating from the dynamic socio-economic as well as environmental contexts. The specific manifestation of any livelihood may take the form of short term response in the "shape of safety mechanism called coping strategies" (de Haan 2000) or may "develop into more permanent adaptive strategies" (de Haan 2000, p. 348). In the long run, the adaptive strategies gradually evolve as a normal livelihood strategy till another perturbation disrupts the adjusted way of life.

Within this frame of analysis, this paper firstly tries to account for the various facets of challenges and opportunities that are invoked by the land dispossession episode, and secondly attempts to look into the various livelihoods strategies adopted and the outcomes experienced by the various factions of the rural population in response to a 'shock' i.e. the land acquisition (henceforth referred as LA) carried out during the last decade. The paper is divided into five sections: Sect. 1 discusses the background of the study, Sect. 2 highlights the concerns over data and methodology adopted; Sect. 3 analyses the vulnerability contexts and opportunities; Sect. 4 discusses the different modes of livelihood adjustment; and Sect. 5 concludes the discussion.

2 Data and Methodology

This study is based on the findings of field work in the selected villages in Rajarhat New Town and Singur Tata Motors near Kolkata during 2010–11. The case study is based on a sample of 253 farm households, among whom about 190 households have suffered land dispossession the rest being control group. Sample households are drawn randomly from the different land ownership categories. The chief criterion behind the selection of the sample household has been their substantial dependence upon agriculture during the pre-land acquisition period.

Three villages from among the villages that were demarcated by the West Bengal state government for the Rajarhat New Town Project and one from the Singur Small Car Factory have been selected combining the land acquisition data obtained from the District Collectorate and Census 2001 village directory based on two criteria: (a) where substantial amount of land has been acquired recently, and, (b) where the share of agricultural population has been relatively high in the 2001 Census enumeration from among the villages from where land has been acquired for the said project. Data pertaining to asset ownership and employment have been

collected using structured questionnaire at both the household level as well as individual level. The analysis uses mixed methods: questionnaire survey to collect quantitative data and semi-structured interviews for qualitative information that are combined for holistic understanding.

3 Vulnerability Contexts and Opportunities

Vulnerability refers to the "propensity to suffer some degree of loss from a hazardous event" (Etkin et al. 2004: cited in Berkes 2007). According to Ribot (1995; cited in Hesselberg and Yaro 2006), a vulnerability analysis "provides a basis for tracing social causality in addition to the processes and shows how they are interlinked". It is necessary to ascertain the sources of vulnerabilities for a community and accordingly undertake planning in order to strengthen the resilience of any community. Hence, it is vital to arrive at inventory of the vulnerability contexts and then proceed to affirmative propositions supporting resilience building.

This section is based upon the semi-structured interviews and group discussions that have focused on the changes observable in the socio-political and economic condition in the study region and the status of the natural resource stock. This particular segment has been devoted in identifying the key issues relating to vulnerabilities in the study region (Fig. 1).

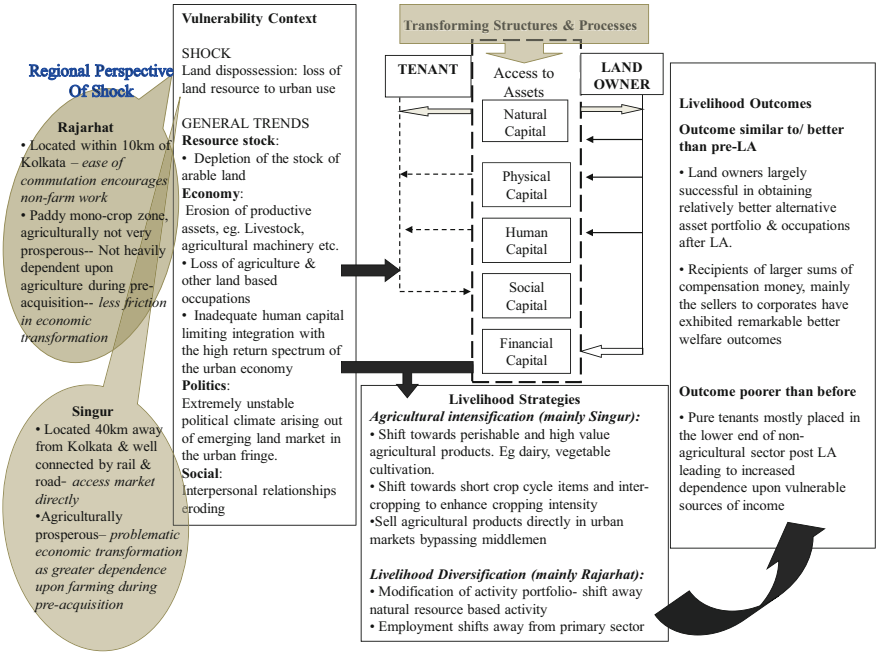

Fig. 1 Kolkata through the Sustainable Rural Livelihood Framework. Source: Modified by the author from SRL Key Guidance sheet

The shock has been in the form of the abrupt large scale land acquisition by the State government that has entailed massive displacement of the farming community from their means of subsistence. Notices had been issued in name of the owners whose plots lay within the project area in accordance with the demands of the RB's (Requiring Body) plan outlay. Though the respective households have the constitutional right to appeal to the high court, it had been only a *de jure* act and did not have much perceptible impact. Hence all those whose land had been notified for acquisition were acquired through HIDCO (2010) in a phased manner since 2003, roads and other infrastructure were developed and handed over to the private developers for initiating housing projects. Such a loss of natural resources to urban uses, besides being a process of alienating the means of production from the farmers, has also exuded a tremor of psychological shock to the land losers. To them such a phenomenon of land alienation symbolized extrication from their cultural ethos, long standing traditions, not to mention an erosion of robustness of livelihoods. The phenomenon of land acquisition has therefore transcended the boundaries of natural resource depletion to encompass the spheres of emotional as well as social life of the affected population.

The trends observed within the economy clearly have manifested decline in the agricultural enterprises in terms of both employment and agricultural capital. Understandably this has been the most direct fallout of land dispossession. However, the chief source of vulnerability amidst this grim scenario appears to be two pronged: firstly, a lack of replacement of agricultural capital by non-agricultural capital which means a dearth of creation of alternate non-agricultural income sources, and, secondly, a clear deficiency of human capital endowments that in effect fail to support successful integration into the emerging non-agricultural sectors of work.[1] This has come out clearly in the words of the respondents:

> With all the compensation money we built big houses (mansions actually) like all others. The land that had been purchased using hard earned money simply got washed out in one go!
>
> (A semi-large farmer in Patharghata, Rajarhat)
>
> These sky- scrapers that are coming up in the New Town offer types of job that does not match our skill. Through generations we know how to plough land and not how to operate computers. So what type of jobs can we expect from this?
>
> (A small farmer in Patharghata, Rajarhat)

The political climate has been another source of vulnerability in the study region. West Bengal, which had always been known for strong rural politics, the contentions in relation to land acquisition emerged as a singular platform that was capitalized by the Opposition party. The radical political bi-polarity within the rural political scenario, while favouring some sections of the farmers, endangered the

[1]Both these issues have been elaborated in the earlier chapters and hence are not detailed here.

existence of the other sections the trajectory being defined by the virtue of their political alignment. Frequent violent strife between the two party's supporters associated with the rampages of party goons transpired as a prominent source of insecurity and threat to the common people's lives. Also, there has been a massive surge in the party affiliation trends among the land losers as they commonly perceived political party protection to be the sole way to protect them. One of the respondents has clearly stated:

> Earlier, people used to meet in the local clubs to gossip, share tears and smiles alike and spend time together. Land dispossession has altered the very nature of the social relations such that even the familial relations have also deteriorated. First reason for such split is over the issue of sharing of compensation money among the siblings; secondly, with the inflow of massive cash in the hands of the hitherto poor farmers they have become arrogant; thirdly, demonstration effect of spending pattern of the compensation money has created rivalry among the members of the community. As a result reciprocity and community solidarity has eroded and none other than political party provide some security."
>
> (A small tenant farmer from Patharghata)

As conveyed by the narrative above it has been very clear that inter-personal relations have also become strained and strewn with mistrust. The character of the social capital has been transformed into 'need-based deliberate creations' to insulate the well-being of the respective households contrary to the earlier horizontal linkages that resembled the traditional Indian village. The chief driver of such a trend has been the sudden flash-flow of liquid cash in the agrarian economy in the form of compensation money which created 'a notion of class consciousness defined by monetary endowment' among the people that segmented and factionalized the relatively homogeneous structure of the hitherto rural economy. The earlier class relations have also been not only disrupted but inverted in certain cases. This has happened particularly when a small farmer who had been a mere victim of the interlocking of agricultural market until land acquisition, has emerged 'rich' owing to receipt of compensation money. Most of the households who have been recipients of larger sums of money have carved out a different niche for their sphere of interaction and have refrained from interacting with their earlier peers. In this way monetary receipts have come to define the social relations and the norms of socialization. Some of the respondents have therefore reported:

> There was homogeneity of economic status. With inflow of cash there has been a lot of disparity.
>
> (A small owner cultivator, Akandakesari, Rajarhat)
>
> Both family peace as well as neighbourhood peace has been disrupted. General credibility has been affected. We no longer visit the mosque together with our neighbours. ....all this have been triggered by land acquisition.
>
> (Medium tenant cultivator, Chhapna, Rajarhat)

The other driver has been the mounting political unrest and factionalization that have increasingly rendered the lives insecure and vulnerable to the rapidly changing contexts. In the scenario of eroding safety nets in the form of familial and neighbourhood relations, the respondents perceive that political affiliation would in some way protect them from the intense instability that have come to characterize their villages.

Box 1: Transforming Structures and Processes

As mentioned earlier, transforming structures and processes refer to the rules, norms and layers of governance that render access to resources operational and enable the pursuance of any livelihood activity. In this study region, political links have been identified by the respondents as the sole means conditioning both access to assets (material or immaterial) and for the attainment of sustained livelihood. As one of the respondents have stated:

Government had promised that it would enable the land dispossessed households to incorporate themselves into some business enterprise. The building material supply syndicates that came up subsequent to land acquisition are the only officially offered opportunity for business enterprise. However, although initially promised that these syndicates would exclusively comprise of land dispossessed people, about 20% of each syndicate constitute of non- land acquisition households!! Further, allocation of business and distribution of syndicates per village are guided by political affiliation. When the Left was in power, specific group of syndicates usurped all the business and profits. Now, they are marginalized and Trinamool Congress affiliated ones dominate the business. There is no place for the commoners. . . (a small tenant farmer from Patharghata).

It has been very explicit that access to alternative sources of livelihood, irrespective of whether they have been offered by the government or otherwise, have deep roots in the political ethos.

There have been some opportunities for sustaining livelihoods in both the study regions. As they are located at varying distances from Kolkata besides their distinct attributes, the prospects have been also somewhat different. The villages in Singur had been already well connected to Kolkata through the Kona Expressway and local trains. The initiatives related to the Tata Motors Factory did very little to create additional connectivity or livelihood options. Whatever little alternative opening had arisen in the form of manual labouring work in the ensuing factory or construction work during the initial phases of the industrial development, had evaporated very soon firstly because the small scale of the enterprise and secondly its non-continuance owing to politically motivated uprising of the villagers. There had been some initiatives on the part of the Tatas to impart training which the respondents claim as ‘irrelevant’ and ‘politically biased’. Hence, the Singur region did not have many opportunities for pursuing alternative livelihood options. The

only way they have been adjusting has been by modifying their agriculture in accordance to the demands of high value goods in Kolkata. Many have begun selling their agricultural products directly at the Kolkata whole sale market bypassing the middlemen that have ensured relatively higher returns.

The scenario in the Rajarhat villages has been quite different. The diminishing distance of the Rajarhat study villages from Kolkata by way of remarkable improvements in road and transport network facilitates access to some opportunities of livelihood as well as faster and easier commuting. Many respondents from the Rajarhat villages have started working as janitors and joined the security guard jobs created by the high rise estates in Kolkata, Salt Lake and the New Town. Although the respondents do not consider them as respectable jobs, there has been no ambivalence in the existence of livelihood prospect in these places. Also, there has been massive extension of electricity connection in the Rajarhat region adjoining the New Town. As a consequence, most parts of the affected villages have been electrified during the course of the past few years. It needs to be pointed out here that the unique feature of the Rajarhat new town plan is that it was targeted towards the creation of alternate livelihood opportunities. It has been outlined in the Jyoti Basu Nagar- Right to Information, Volume- I (2010):

- 'Land losers' cooperatives were encouraged to be formed and engaged in certain works of project construction.
- For the land losers special provision has been made in the allotment of land as well as shops built in the new town.
- A vocational training centre is under construction at the project cost where members of the land loser families will get special preference for training" (p. Ch- VI_P-21)

However the commitments made by the HIDCO regarding economic rehabilitation of the land losers have been thoroughly rampaged by the politically factionalized under-currents that have effectively de-barred opportunities for the political non-affiliates irrespective of any experience of land loss. Hence, the respondents do not perceive these schemes of the HIDCO as any fair livelihood possibility.

4 Livelihood Strategies and Outcomes

Scoones (1998) along with the other scholars have broadly identified three main clusters of livelihood strategies that are commonly available to the rural population:

- Agricultural intensification/extensification
- Livelihood diversification or change in the activity profile
- Migration[2]

[2]This study has not encountered any incidents of land dispossession induced migration of the land losers.

The relative significance of each varies contingent upon the context. Scoones (1998) have also suggested a schema for the assessment of livelihood outcomes in terms of creation of additional working days, poverty reduction, enhanced well-being and capabilities, livelihood adaptation-vulnerability and resilience and finally in terms of natural resource base sustainability. These indicators of sustainable livelihoods have been remarkably diverse in scope and method and hence the author has suggested that "no neat, simple algorithm for objectively measuring sustainable livelihoods emerges from this definition. . ." (p. 7).

This section is directed to the accounting of the various livelihood strategies adopted by the farmers after land dispossession and an evaluation of the livelihood outcomes in terms of their monthly per capita expenditure.

4.1 Agricultural Transformation: Intensification and Transformation of Cropping Pattern

Agriculture related adaptations may be manifested in the form of either intensification or extensification of agriculture such that a household aims at larger gains from agriculture. Intensification may be manifested in the form of "more output per unit area through capital investment or increases in labour inputs" (Scoones 1998). On the other hand, processes of agricultural extensification entails bringing of "more land under cultivation" (Scoones 1998). According to Scoones (1998), it is important to identify the nature of transformation that the agriculture has been experiencing by distinguishing between ways that are "capital-led (supported often by external inputs and policy-led) and labour-led (based on own labour and social resources and a more autonomous process) intensification" (p. 9) as it furnishes useful insights relating to the underlying processes as well as the macro structures that induce the observed nature of transformation.

This section attempts to look into the nature of changes observable in the practice of agriculture that has survived in spite of massive land acquisition in both the study areas. The objective is to unearth whether or not land scarcity have induced the farmers to adopt intensified land utilization and strategies to modify cropping pattern to achieve positive livelihood outcomes. Analysis pertaining to this section concerns all those land dispossessed farmers who have been continuing with agriculture in the remnant farmlands even after land loss. However, this section suffers from the major drawback of non-reporting of detailed agricultural data and hence the number of observations has been extremely skewed thereby limiting the breadth of analysis. Also, the analysis concerning changes in the nature of agricultural enterprise have been executed within the "with-without framework", i.e., a comparison between the land lost farmers and control samples in order to offset the influence of forces that have naturally modified agriculture.

Access to irrigation, the most important input to agriculture has been significantly reduced following land acquisition such that the mean share of the

Table 1 Difference of mean area of operational holding irrigated before and after LA

Share of operational holding irrigated	Land lost to NTP (N = 82)		Land sold to corporate house directly (N = 50)		Land lost to TATA project (N = 60)	
	Mean	Mean diff.	Mean	Mean diff.	Mean	Mean diff.
Before LA	100.00	Significant at 1%	84.64	Significant at 1%	82.07	Significant at 1%
After LA	23.17		36.72		50.17	

Source: Field work 2010–11

Table 2 Change in cropping intensity

Category of cultivators		N	Mean	Mean diff.
Partially lost land	Before LA	69	159	Significant at 1%
	After LA		205	
Current cropping intensity	SINGUR			
	Never lost land	30	206	Significant at 1%
	Partially lost land	37	257	
	RAJARHAT			
	Never lost land	31	172	Not significant
	Partially lost land	39	171	

Source: Field work 2010–11

operational holding irrigated have also reduced significantly (Table 1). The decline in the share of irrigated holdings has been primarily due to the withdrawal of the public irrigation systems: the River Lift Irrigation (RLI) scheme in the Rajarhat region and the deep tube-wells in the Singur region. Much of this withdrawal of public irrigation system has been a political play. The communist party then in power had deliberately rampaged the RLI pump houses and deep tube-wells to render agriculture unviable. Where ever private investments in irrigation occurred, farming continued. The trend itself has been self-exclusionary as it pushes the small and marginal farmers either out of agriculture owing to higher costs of farming or forces them towards rain-fed agriculture only. At this point it must be noted that the two study regions reviewed in this study correspond to two different agricultural zones. While the Rajarhat region had been dominated by paddy, the Singur region had been traditionally part of the paddy-potato-jute belt of West Bengal. Hence, the analysis of the strategies related to agricultural enterprise have been dealt separately for both the regions as aggregates have been found to conceal critical regional trends.

The land lost households who are currently continuing with agriculture have been noted with significantly higher cropping intensity compared to their pre-land acquisition levels (Table 2). However, compared to the control samples, their

cropping intensity have not been significantly high and therefore may be interpreted as part of the larger regional pattern. There have been regional differences in the pattern of cropping intensity. While in the Rajarhat region the land lost households do not differ from their control sample counterparts, in Singur the land-lost households have been noted with significantly higher cropping intensity compared to their control sample counterparts.

The cropping pattern for the sample aggregates display remarkable departure from trends noted before LA among those households who have been continuing with agriculture. Share of area under total food-grains have declined significantly while the share of area under vegetables and horticultural crops have registered significant increases. The share of area under total non-food crops has remained un-altered. A disaggregated analysis reveal that the partially land dispossessed farmers in the Rajarhat region have exhibited the tendency to shift to rice mono-crop system and have allocated more than 90% of their cropped area to it. This has been an attempt to ensure the minimum subsistence needs by way of provisioning of food-grain requirements of the household. The cash crop cultivation has been observed to have declined and instances of diversification towards high value crops have not taken place. The share of completely land lost households being larger in Rajarhat region coupled with its location within a distance of about 10 km from Kolkata have rather discouraged the pursuance of agricultural enterprises. The respondents have stated three major reasons behind such withdrawal from agriculture: firstly, the soil does not suit any other crop except paddy and jute; secondly, the construction activity in the New Town has spoilt the fertility of the soils along with ground water depletion owing to water reservoirs constructed for the New Town; thirdly, being exposed to the consumerist urban culture the current generation do not want to continue with agriculture as it cannot support luxurious living on one hand and that agriculture entails drudgery.

Box 2: Modification of Agricultural Strategy Including Crop Combinations and Labour Arrangements: The Singur Region

It has come as a surprise that in-spite of reduction in access to irrigation, the Singur farmers have been noted with significant increase in cropping intensity after land dispossession. Therefore, it calls for a reconciliation of the anti-thetical pattern of discordance between declining irrigation access and increasing cropping intensity in the Singur region.

The farmers have manifested two related modifications in the agricultural system in an explicit attempt to maintain pre-land dispossession levels of agricultural incomes. There has been a clear transformation of the crops raised: a shift away from the traditional paddy-potato-jute cropping cycle to the rearing of additional vegetables with shorter crop cycles and profuse inter-cropping. This strategy of vegetable based agricultural system has led to the second related modification of dependence upon family labour rather

(continued)

Box 2 (continued)
than hired labour thereby both reducing the cost of cultivation and also ensuring a continuous stream of income and output through regular marketing of vegetables. Not that vegetable cultivation had been non-existent and that land dispossession triggered the new agricultural system. It has been that farmers who had been earlier satisfied with their paddy-potato-jute crop combinations felt the urge to intensify their remnant farm enterprise in order to maintain a decent living. Commonly, ladies finger, bottle gourd and brinjal, potato and cauliflower/cabbage, cauliflower and pumpkin have emerged as common inter-crop combinations where no additional fertilizer, pesticide or irrigation is required for the second crop which ripens subsequent to the first crop. Often, several varieties of spinach and other leafy vegetables have been raised without additional fertilizer input and the crop thrives on the remnant fertilizer and moisture of the previous crop. Also, vegetable cultivation has been traditionally labour intensive and households generally depend upon family labour. Thus, through a judicious management of the crop cycles and crop combinations the inputs used have been optimized.

Before LA	After LA
Major Crops: Paddy (monsoon & summer), Potato, Jute.	**Major Crops:** Paddy (only monsoon and hence no irrigation required), Potato + cauliflower + cabbage + gourd, Jute, ladies finger + jhinga, bottle gourd + brinjal, spinach, beans, cucumber (no fertilizer/ pesticide required)
Minor Crops: Brinjal, beans, bittergourd, chilli, tomato, onion, cabbage, cauliflower, gourd, ladies finger etc.	**Minor crops:** beans, bitter-gourd, chili, tomato, onion, turmeric, groundnut etc.

Source: Field work 2010–11

The other related fallout of the transformed cropping system has been the labour relations. Traditionally, in West Bengal, the cultivation of paddy-potato-jute has been heavily dependent upon hired labour. The Singur region had been the destination for large scale seasonal in-migrant agricultural labour from Bihar prior to land acquisition in order to cater to the needs of the paddy-potato-jute cultivation. A shift in the cropping pattern (Table 3) following land acquisition entailed a massive reduction in the demand for hired labour that perceptibly reduced the inflow of seasonal in-migrant rural labour. Also, local contracted agricultural labour syndicates emerged post LA replacing the migrant labour.

Table 3 Change in the cropping pattern

Item		Rajarhat land lost		Rajarhat control		Singur control		Singur land- lost	
		N	%	N	%	N	%	N	%
Total food- grain	Before LA	77	79.7	0	–	0		39	74.3
	Currently	14	90.4	31	97.1	30	53.0	37	41.7
Total non- food crops	Before LA	77	17.1	0	–	0		39	10.3
	Currently	14	8.6	31	2.7	30	14.4	37	18.9
Vegetables and horticultural crops	Before LA	77	3.2	0	–	0		39	16.2
	Currently	14	1.0	31	0.2	30	32.5	37	39.4

Source: Field work 2010–11

Box 3: Singur: Case Study of Adapting Agriculture After Land Dispossession

Joydev Baag, a medium farmer in the village Beraberi of Singur had owned 3.4 Bighas of multi- cropped land and leased in another 4.3 Bighas to cultivate total 7.7 Bighas. He used to cultivate two paddy crops and four to five vegetable crops in an agricultural year. He used to sell his vegetables regularly in the wholesale market in Kolkata and had constructed a pucca house from the profits. Although himself unmarried, he supported the family of his brother who was married and also had two kids. In 2007, 6.75 Bigha from his operational holding had been acquired and he was ultimately left with access to only 0.9 bighas of land which he owned. He was an active member of the Trinamool Congress Party and refused to accept compensation money as a token of non- acceptance of the Tata Small car project related land acquisition. The basis of livelihood being truncated, the experienced and skilled agriculturalist devised strategies to modify his approach to agriculture and intensified cultivation to match the previous level of income. Presently he raises six to seven types of vegetables, potato and the monsoon paddy dividing his plot into small parcels. He has explained:

"To increase income from the remaining plot of land I have done the following: firstly, increased intensity of farming through profuse intercropping, secondly, have planned crops in such a manner in the inter-cropping that while one crop is in the process of ripening, the other is ready for harvest thereby ensuring continued output, and thirdly, have planned the crop mix in such a way that the fertilizer and water requirements of the crops have been optimized."

On the other hand, the Singur region has revealed instances of intensification of farming as attempts to maintain the pre-land acquisition income levels. The share of

land devoted to vegetables and horticultural crops have been more than doubled and that devoted to non-food cash crops have also been doubled. Their crop cycles have also been modified in order to optimize the cost of cultivation and maximize profits. There have been profuse inter-cropping, shift towards crops with shorter cycles to enable enhancement of cropping intensity, greater shift towards vegetable cultivation that enable a shift from dependence upon hired labour to family labour and transformation of crop cycles to optimize input use (Boxes 2 and 3).

The adaptations related to agriculture have therefore displayed two diverging trends in the two study regions. On one hand there have been significant agricultural intensification in case of the land lost households in Singur although there have not been any significant change in cropping pattern. On the other hand in Rajarhat, agriculture has been reduced to a truncated subsistence activity the source of livelihood shifting away from natural resource base. Perhaps the differences in their respective distance from Kolkata coupled with their pre-existing differences in cropping pattern have led to the adoption of different agricultural strategies following land dispossession. It succinctly indicates the significance of the pre-existing regional character in determining the array of strategies adopted by any community to tide-over stress. The well-being of the Singur economy traditionally being deeply rooted in the agricultural ethos prior to land acquisition, manifested tendencies to re-entrench itself within the agrarian economy following the land dispossession shock. The Rajarhat land dispossessed farmers who already had sustained paddy mono-cropping prior to land acquisition shifted further away from agriculture in their attempts to get integrated into the emergent urban economy. Here, the distinctive physical distance of the two regions has also impacted the pattern of strategies adopted by the land dispossessed farmers of the two regions. It points out tersely the enormous relevance of land as a factor of production to those who heavily depend upon farming enterprise for their livelihood (besides subsistence needs) and rightly justifies the new clause in the LARR 2011 proclaiming restriction upon the acquisition of multi-cropped land.

4.2 Dynamics of the Activity Profile and Related Outcomes

This section attempts to look into two things: firstly, the emerging patterns of activity portfolio apart from the principal and subsidiary occupations of the land lost households,[3] and secondly, the livelihood outcomes related to the nature of occupational changes that have been experienced by the land lost households.

4.2.1 Additional Sources of Income/Livelihood

Within a typical village setting often crop farming has been found to coexist with animal rearing and poultry where the residue of one feeds into the other system.

[3]The change in employment structure with respect to principal and subsidiary occupations is discussed in Chinmoyee (2014).

Table 4 Mean number of total activities pursued currently and MPCE

MPCE quartiles	Control	Land lost
Very low MPCE	1.85	1.12
Low MPCE	2.00	1.86
Medium MPCE	3.50	2.45
High MPCE	3.30	2.56

Source: Field work 2010–11

Most commonly the animals sustain upon the crop residue and their waste products serve as fertilizer in the farming system. Further, the farm machineries have been found to fetch rental income. Recently, selling water from the private boring has also emerged as an additional source of income within the rural economy that contributes to the total household income. Therefore, there have been a multitude of income sources that in essence impart resilience through risk spreading by way of complementarity. In consonance with the observation regarding any typical rural household, the study region had been dominated by a multiplicity of activities both related and unrelated to agriculture prior to land dispossession. This section attempts to analyse the dynamics of the multiplicity of income earning activities undertaken by the different categories of households and any transformation of the same owing to land dispossession and its implications for livelihoods.

The relationship between the total number of livelihood activities pursued and its implication has been a somewhat baffling issue. Deshingkar et al. (2006) have outlined the broad livelihood strategies that range from a correspondence between specializations in single high return activity as a strategy to accumulate adopted by the rich on one hand to dependence upon diverse activity portfolio of the poor as an attempt to spread risk and control vulnerability on the other hand. In this study area the correspondence between larger number of livelihood activities pursued and higher quartile class of the MPCE[4] may be interpreted as reflection of a positive relation between the two (Table 4).

From Table 5 it may be observed that the mean of total number of livelihood activities for the government acquisition sample (both land owning and the landless) have declined significantly after land dispossession from that recorded before land loss. Comparing the land lost households with their respective control samples it may be observed that the former has significantly lower mean values in case of both the land owning as well as the pure tenant cultivator households. Intriguing has been the fact that the pure tenant households from among those losing land to government acquisition have been noted with significantly lower number of activities compared to their land owning counterpart. Such a trend may be suggestive of eroding livelihood security of the households who have lost land to Government acquisition, more so in case of the pure tenants.

The internal dynamics of the activity profile revealed the following. Firstly, agriculture and allied activities broadly comprising of dairy, poultry, fishing and goat rearing that was undertaken by most of the farm households prior to land loss,

[4]Monthly per capita consumption expenditure.

Table 5 Mean number of livelihood activities (excluding principal and subsidiary occupations)

Category of cultivator		N	Mean	Mean diff.
Total government acquisition	Before LA	142	2.394	Significant at 1%
	After LA		1.697	
	After LA		2.760	
Land owner	Before LA	97	2.588	Significant at 1%
	After LA		1.948	
Pure tenants	Before LA	45	1.98	Significant at 1%
	After LA		1.16	
Total government acquisition	Control	61	2.738	Significant at 1%
	Land lost	142	1.697	
Farmers owning some land (government acquisition)	Control	46	2.957	Significant at 1%
	Land lost	97	1.948	
Pure Tenant Cultivators (government acquisition)	Control	15	2.067	Significant at 5%
	Land lost	45	1.156	
Total government acquisition	Households owning some land	97	1.948	Significant at 1%
	Pure tenant cultivators	45	1.156	
Government acquisition in Rajarhat		67	1.925	Significant at 1%

Source: Field work 2010–11

reduced considerably following land dispossession primarily owing to inability to provide feed to the livestock. Secondly, activities that have not been directly related to agriculture comprising of hiring out agricultural implements (e.g. thresher, water lifting pumps, power tillers, etc.), selling water and selling excess agricultural output declined considerably as such implements were sold off following land loss. Thirdly, income comprising of house rent, interest earning from money lending and land rent along with interest returns from monetary investments came to existence only after LA when considerable investments went into housing stock. Additionally demands for rented housing developed in the study regions to meet the shelter needs of the migratory labourers who arrived to work in the construction sites. The increase in the share of non-cultivating land owning households who leased-out their land and themselves depended on other sources of livelihood emerged as a prominent phenomenon. Lastly, policy investments in the form of monthly income scheme, Alchemist policy[5] and investment in the construction material supply syndicates emerged in the study region after LA However, the landless households are entirely excluded from the ambit of this means of sustenance owing to their pre-existing resource constrains re-enforced by land alienation. The general decline in the total number of livelihood activities and

[5]Local investment policy akin to LIC.

Table 6 Difference of mean MPCE between those continuing with agriculture and those shifting sector of work

Nature of sectoral change	Government acquisition		
	N	Mean	Mean diff.
Continuing with primary sector work	56	1193	–
Shifted from primary sector work to secondary sector work	64	1211	18
Shifted from primary sector work to tertiary sector work	65	1397	204**

Source: Field work 2010–11
**Significant at 1%

the transitory nature of these professed by the respondents through informal discussions do convey the rising vulnerability of the livelihoods.

4.3 Change in Employment and the Outcomes

4.3.1 Sectoral Change and Livelihood Outcome

This section specifically attempts to look into the welfare outcomes related to the nature of occupational shifts (with respect to the principal occupations) experienced by the various categories of the study population.

Persons shifting from primary sector to secondary sector have revealed marginally higher MPCE compared to those who are continuing with agriculture although the difference has not been statistically significant (Table 6). However, persons who have shifted into the tertiary sector have exhibited significantly higher MPCE compared to those who have been continuing with agriculture as principal occupation. Those who have shifted in favour of the tertiary sector have been largely better placed compared to those who have shifted to either secondary sector or have been continuing with previous agricultural work.

4.3.2 Nature of Current Work and Livelihood Outcome

Papola and Alakh (1997) has argued that increasing casualization may not necessarily imply a deterioration of work and livelihood. According to him, if shift takes place from the low return subsistence agriculture to relatively better remunerated casual work, it does not represent a case of deterioration. That is to say, within the rural economy, a switch over from self-employed to casual work may entail movement to relatively higher return work and therefore may not be labelled as deterioration without qualification. This section seeks to look into the livelihood implications that have been associated with the transformation of nature of work undertaken following land dispossession and related outcomes.

It may be noted that the self-employed workers have revealed significantly higher levels of MPCE compared to the casual labourers in case of both land owning as well as the pure tenant households. Again, within the casual as well as the self-employed categories, the pure tenant households have exhibited significantly lower MPCE compared to the land owning counterparts (Table 7). Also,

Table 7 MPCE and current nature of work

Nature of worker		N	Mean	Mean diff.
All casual workers		192	1144	Significant at 1%
All self-employed workers		229	1676	
Households owning some land	Casual labourer	121	1227	Significant at 1%
	Self employed	184	1767	
Pure tenant cultivators	Casual labourer	71	1002	Significant at 1%
	Self employed	45	1304	
Self employed				
Households owning some land		184	1767	Significant at 1%
Pure tenant cultivators		45	1304	
Casual workers				
Households owning some land		121	1227	Significant at 1%
Pure tenant cultivators		71	1002	
Primary sector		28	1084	Not significant
Secondary sector		113	1130	
Secondary sector		113	1130	Not significant
Tertiary sector		51	1209	
Primary sector		28	1084	Not significant
Tertiary sector		51	1209	

Source: Field work 2010–11

there has not been any significant difference in the mean MPCE among those casual workers currently located in any of the primary, secondary or tertiary sectors of work. Such a phenomenon has been clearly indicative of two elements: firstly, the casual workers have been placed worse-off compared to the self-employed workers irrespective of the employment sector; and secondly, even after working as casual labourers the land owners enjoy a slightly better life condition compared to the landless casual workers even after suffering land dispossession. The fact that the households depending primarily upon casual labour are placed worse-off compared to the self- employed workers irrespective of the sector of work suggests that the type of casual employment that has been profusely replacing self-employed agriculture have been far from being capable of ensuring robust livelihoods. Unmistakably, it points to a worsening labour market situation marked by increasing job insecurity and vulnerability. Nonetheless, the nature of access to land prior to LA, which has also been positively associated with the overall asset position of the households, have professed some tacit influence upon the current status of well-being even in case of the casual workers such that the land owning households have been relatively better placed.

Table 8 Monthly per capita expenditure (Rs)

Type of cultivators		N	Mean	Mean diff.
Government acquisition	Control	61	1646	Significant at 1%
	Land lost	142	1332	
Households owning some land	Control	46	1803	Not Significant
	Land lost	97	1436	
Pure tenant cultivators	Control	15	1163	Not Significant
	Land lost	45	1109	
Small land owning cultivators	Control	25	1535	Not Significant
	Land lost	38	1374	
Semi-large and medium land owners combined	Control	21	2123	Significant at 5%
	Land lost	59	1476	
Households owning some land		97	1436	Significant at 1%
Pure tenant cultivators		45	1109	

Source: Field work 2010–11

4.4 Livelihood Outcome

Attempting to summarize the livelihood outcomes, it may be observed that MPCE has been higher for all control samples compared to the land lost counterparts irrespective of land owned or not owned. However, the differences of means have been statistically significant only in case of the Government acquisition samples taken together. Again, from among those households who have lost land to Government acquisition, the mean MPCE of the land owners has been significantly higher than that of the pure tenant households (Table 8). Interestingly, the mean MPCE of the land-lost households of the semi-large and medium land owners combined has been significantly lower compared to their control sample counterparts.

5 Conclusion

The study has indicated that the implications of vulnerability contexts, the effective livelihood options and the connotation of asset ownership have come to be defined through the emergent political climate. There has also been a clustering of capitals including political capital and hence a correspondence between land owning households and better livelihood outcomes relative to the landless (pure tenant cultivator) counterparts.

Table 9 summarizes the livelihood outcomes and the major correlates. There have been, on the outset, some fallouts of land acquisition which have affected all resident population and have been largely non-negotiable. Elements like withdrawal of public

Table 9 Summary of livelihood outcomes and the correlates

Non-negotiable outcome	
Affected all sections irrespective of resilience of household	*Decline in the mean no. of livelihood activities* leading to eroding of livelihood security accelerated through attrition of assets: Cultivators under government acquisition, especially the pure tenants worst hit and the households selling land to private players relatively un-affected.
Partly-negotiable outcomes	
Correlates	Outcome
Regional context	
Economy prior to LA:	*Pattern of adjustment following LA*
Rajarhat: Location near Kolkata and paddy mono-cropping and therefore less dependence on agriculture	Rajarhat: agriculture reduced to merely a subsistence activity post LA—the basis of livelihood shifting away from natural resource base
Singur: Very well connected to Kolkata and agriculturally developed—heavily dependent on agriculture	Singur: significant agricultural intensification in case of the land lost households—tendencies to re-entrench itself within the agrarian economy following the land dispossession shock
Access to Assets	*MPCE outcome:*
Size of asset pentagon:	
(a) Control samples > land lost	Control samples have been better placed compared to the land- lost households irrespective of whether they own land or not;
(b) Land owning cultivators > pure tenant	Within the relatively larger land owners (semi-large & medium combined), control samples have better livelihood outcomes compared to land-lost counterparts;
(c) Semi-large & Medium land owners combined: control> land-lost	In-spite of losing access to land, the land owners have been better placed compared to their landless tenant cultivator counterparts;

Source: Compiled by author from this study

irrigation schemes and loss of additional livelihood activities that had been indirectly related to agricultural enterprise have been the major outcomes. The conspicuous loss of livelihood security of the land dispossessed households in the form of decreasing number of livelihood activities and their increasing dependence upon vulnerable sources of income have been evident. There is another set of livelihood outcomes that have been partly negotiable depending upon the regional context, asset endowment of the households and the extent of compensation receipt. The specificities of the regional context have created diverging adjustment paths between the Rajarhat and Singur regions. The Singur region, that already had been deeply rooted into the agriculture-based economic order, manifested tendencies to re-entrench itself within the agrarian economy following land dispossession shock through intensified farming

practices. Although there had been some diversification of the Singur economy prior to LA, it was heavily agriculture-led and agriculture dependent. On the other hand, the Rajarhat land dispossessed farmers who already had sustained paddy mono-cropping prior to land acquisition shifted further away from agriculture in their attempts to get integrated into the emergent urban economy owing to firstly, its pre-existing inclination towards partial dependence on agriculture, and, secondly, its proximity and decreasing physical exclusion encouraging the adoption of urban-related activities.

The preceding analysis has clearly indicated the following: firstly, the control households have been better placed compared to the land lost households irrespective of whether they own land or not; secondly, within the relatively larger land owners (semi-large and medium combined), control samples have better livelihood outcomes compared to land-lost counterparts; thirdly, in-spite of losing access to land, the land owners have been better placed compared to their landless tenant cultivator counterparts.

Acknowledgments I thank *Dr. Sucharita Sen* of Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi for critical comments and guidance and Dr. *Tanusree Paul* of Visva Bharati for extending support for the work.

References

Berkes F (2007) Understanding uncertainty and reducing vulnerability: lessons from resilience thinking. Nat Hazards 41(2):283–295

Carney D (1998) Implementing the sustainable rural livelihoods approach. In: Carney D (ed) Sustainable rural livelihoods: what contribution can we make? Department for International Development

Chambers R, Conway GR (1991) Sustainable rural livelihoods: practical concepts for the 21st century. IDS Discussion Paper 296

Deshingkar P, Start D, Farrington J (2006) Changing livelihood contexts in the study locations. In: Farrington J, Deshingkar P, Johnson C, Start D (eds) Policy windows and livelihood futures: prospects for poverty reduction in rural India. Oxford University Press, New Delhi

Ellis F (2000) Rural livelihoods and diversity in developing countries. Oxford University Press, Oxford

Etkin D, Haque E, Bellisario L, Burton I (2004) An assessment of natural hazards and disasters in Canada. The Canadian Natural Hazards Assessment Project, Public Safety and Emergency Preparedness Canada and Environment Canada, Ottawa

de Haan LJ (2000) Globalization, localization and sustainable livelihood. Sociol Rural 40 (3):339–365

Hesselberg J, Yaro JA (2006) An assessment of the extent and causes of food insecurity in Northern Ghana using a livelihood vulnerability framework. GeoJournal 67:41–55

HIDCO (2010) Jyoti Basu Nagar – right to information (First volume)

Chinmoyee M (2014) Land dispossession and rural transformation: the case of fringe villages of Kolkata. J Rural Dev 33(1):51–71

Papola TS, Alakh NS (1997) Employment of women in India: some research and policy issues. Indian J Labor Econ 40(2):347–355

Ribot J (1995) The causal structure of vulnerability: it's application to climate impact analysis. GeoJournal 35(2):119–122

Scoones I (1998) Sustainable rural livelihoods: a framework for analysis. IDS Working Paper 72

Inter-State Conflicts within the Indian National River Linking Project: A Case Study of the Polavaram Dam

Klara Feldes

1 Introduction

Existing literature on inter-state water conflicts in India identifies the multiple, often overlapping, layers of governance in water management, that are "embedded in a formal constitutional framework of federalism" (Singh 2011, p. 2). Institutions at the local level include the traditional *panchayats*. At the state-level there are state water departments to be found, whereas at the national level institutions such as the Ministry of Water Resources (MoWR) are at work (Singh 2011). The constitution of India declares water management a state task, however it also includes that in case of inter-state rivers and river valleys the central government can take control and act in the public interest (Iyer 1994, p. 192). The central government could therefore play an important role in negotiating river disputes, but as Singh point out its "past role has often been little more than a referee or mediator in inter-state disputes as they have arisen" (Singh 2011, p. 2). Research in the field largely agrees that in India the management of water disputes is insufficient and calls for better mechanisms (Iyer 1994; Shah 1994; Swain 1998; Maitra 2007; Singh 2011). How the current mechanisms work and in what way they are insufficient this chapter aims at analysing by means of the case study of the Polavaram dam dispute.

Shah identifies several types of inter-state water conflicts including disputes on "(a) equitable allocation of waters of a river basin among co-basin States [. . .] (b) problems of submergence in an upper state due to construction of a dam of a particular height in a lower state [. . .] (c) riparian rights of a lower state, vis-&-vis subsequent developments and utilization in an upper co-basin state [. . .] (d) inequitable operation of common facilities at control points [. . .] (e) sharing of benefits by different states in a specific project" (Shah 1994, p. 177). The

K. Feldes (✉)
Department of Asian and African Studies, Faculty of Humanities and Social Sciences, Humboldt-Universität zu Berlin, Berlin, Germany
e-mail: feldeskl@hu-berlin.de

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_10

world's largest water project, the National River Linking Project (NRLP), reflects all the above types of disputes. In the debate since decades, constructions started in 2004. Under the current Bharatiya Janata Party (BJP) government, steps are taken in the direction of speedy implementation. It is highly visible in current media coverage, especially to inter-state conflicts arising from it. As the conflicts are manifold, voices have become loud for the nationalization of water resources, going against the idea of federalism and decentralization of the Indian state (Down to Earth 2016). With most states objecting the idea, the proposal is still a far step from implementation. In the meantime, inter-state disputes continue. One such example is the envisaged connection of Pampa, Achankovil and Vaipar rivers in the southern states of Kerala and Tamil Nadu. Kerala is strongly opposing it for its ecological consequences, whereas Tamil Nadu on the other hand pushes for a speedy implementation as the state would benefit from the water for irrigation purposes (The New Indian Express 2014). Other examples for disputes that could arise from the scheme are those with neighbouring countries such as Bangladesh (Iyer 2014). How these conflicts will be addressed in future remains to be seen. However, there is one example that can already give us indications on how water disputes are managed in the context of the NRLP: the interstate dispute between the states of Andhra Pradesh, Odisha, and Chhattisgarh, where construction is already taking place. According to Shah's classification this is a dispute in the category (b) as it focuses on the submergence of land in the neighbouring states through the construction of a dam.

This chapter aims at analysing the dispute with regard to the following two research questions: How is the inter-state dispute, arising from the construction of the Polavaram dam under the NRLP scheme, being managed? What are the lessons that can be learned from it with regard to regional cooperation? To answer these questions this chapter will draw upon government reports, and current Indian English language newspaper articles, as well as qualitative expert interviews conducted in Andhra Pradesh in 2012 with scientists, lawyers, and NGO workers dealing with the Polavaram issue. After an introduction to the NRLP, including its history, current status, and the debates on its advantages and disadvantages, the case study of the Polavaram dam will be presented. Subsequently the inter-state dispute will be analysed and possible conclusions for regional cooperation will be drawn.

2 History of the National River Linking Project

Involving the creation of several dams and canals, the NRLP is today the largest water project in the making worldwide. The 168 Billion Dollar project aims to connect the majority of the Indian rivers to a huge water grid in order to transfer surplus water from areas rich in water to areas with a water deficit across the country. The general understanding is that if floods mostly take place in the North, whereas the South is a highly drought prone area, it should be possible to shift water from one place to the other and thereby bring relief to both areas. The project builds upon the assumption that there are surplus rivers that could function as donor rivers to those rivers with water deficits.

Going back in time and looking at the archives of the Times of India, as a major English-speaking newspaper publication in India, we can see that the first reports on the idea of creating a national water grid can already be found in 1878 when the idea was first presented by Sir Arthur Cotton (The Times of India 1878, July 29). The British general and irrigation engineer recommended the linking of rivers as a means of transport as an alternative to railways. A canal system should be established which would enable navigation. In the following decades until 1913, several articles point to canal linking plans as a matter of railway versus canals as means of transportation (Macdonnell 1899, January 27). Reporting paused after 1913 and the idea only came back after India's independence under Nehru's rule in the 1950s. The period of large scale infrastructure projects started. 4500 dams were built since independence and 33 million people have been displaced by these dams (Ziai 2006). Even though Nehru himself later critically reflected on his focus on large scale dams and spoke of a 'disease of gigantism' (Roy 1999, p. 104), the politics of building large scale dams continue and are closely linked to the idea of using technology to bring 'modernity' to India. These monuments should not only demonstrate power and the technological abilities of the nation, but they can also be seen as a means of spreading a 'scientific temper' across the country. As Pablo Bose points out, the idea of catching up with neighbouring states and also with 'Western' countries was a leading one in Nehru's development model and a constituent in the vision of the postcolonial Indian state (Bose 2007). Technology took on a major role in this venture.

In this context, it is not surprising that also the idea of an NRLP returned into the spotlight. At the time the main reasons given for implementing the project were still navigation and transport opportunities. In 1956 a "master plan for developing inland waterways in the country in order to provide adequate cheap transport in a developing economy" was presented by the Central Water Commission of the Government of India (CWS) (The Times of India 1956, September 23). Part of this plan was the possibility of creating a west-east connection and thereby linking Kolkata in West-Bengal to Kochi in Kerala. The idea however disappeared again for some years, until Union Minister of Irrigation and Power K.L. Rao pushed forward with the plan of a national water grid in the 1970s. Part of his proposal was the 2600 km long Ganga-Cauvery link, which is also included in the current NRLP project plans. From the 1970s on, the narratives of the benefits of river interlinking were no longer focusing on enabling transportation on the rivers, but rather on solving drought and flood problems as well as food shortages, providing irrigation facilities and ensuring domestic water supply (The Times of India 1972a, September 21; The Times of India 1972b, December 27). In 1982 the government of India set up the National Water Development Agency (NWDA) with the task of carrying out pre-feasibility studies (The Times of India 1981b, October 1; Stewart and Rao 2006). Other proposed benefits such as hydro-electricity entered the scene (The Times of India 1981a, March 14). The heavy political focus on using technology to achieve development remained. Today's plan of making the NRLP become reality is closely linked to the BJP prime minister Atal Bihari Vajpayee (in office 1998–2004), who made the advancement of the project essential to his politics and

was strongly advocating for it. In line with Vajpayee, the then president of India Abdul Kalam mentioned the NRLP as a project of major importance in his Independence Day speech in 2002 (Chandra 2003, May 19). In 2012 the movement toward implementing the NRLP was foster by a controversial Supreme Court judgement. It reads:

> We not only express a pious hope of speedy implementation but also do hereby issue a mandamus to the Central and the State Governments concerned to comply with the directions contained in this judgement effectively and expeditiously and without default. This is a matter of national benefit and progress. We see no reason why any State should lag behind in contributing its bit to bring the Inter-linking River Program to a success, thus saving the people living in drought-prone zones from hunger and people living in flood-prone areas from the destruction caused by floods (The Supreme Court of India 2012, p. 62.).

It also addressed the possible disputes arising from the fact that water is an issue of the federal states and that not all of them are in favour of the NRLP:

> We have no hesitation in observing that the national interest must take precedence over the interest of the individual States. The State Governments are expected to view national problems with a greater objectivity, rationality and spirit of service to the nation and ill-founded objections may result in greater harm, not only to the neighbouring States but also to the nation at large (The Supreme Court of India 2012, p. 47).

With today's water crisis in India and the worst drought in decades, the call for the grand project has become loud again (Vira 2016). With another BJP government in place, implementation has started and the project is advancing with high speed. However, lots of unsolved issues remain, especially in regard to the inter-state disputes.

3 Current Status

The current National Perspective Plan (NPP) developed by the NWDA envisages two parts of the project: one northern Himalayan and one southern peninsular river development component; whereby the former includes 14 river links and the later 16 (Figs. 1 and 2). Through these links 37 Himalayan and Peninsular rivers will be connected. 3000 water storages will be built (Amarasinghe 2012).

After the first link was completed with the opening of the canal between Godavari and Krishna River in Andhra Pradesh in 2015, the next project in the line is the Ken-Betwa link, linking the Ken in Madhya Pradesh to the Betwa in Uttar Pradesh. The environmental impact assessment has been completed (National Water Development Agency 2015), however the environment clearance, forest clearance, and wildlife clearance are still pending and are expected by the end of 2016 (Ghanekhar 2016).

The benefits created through the implementation of the NPP, as stated by the NWDA, are:

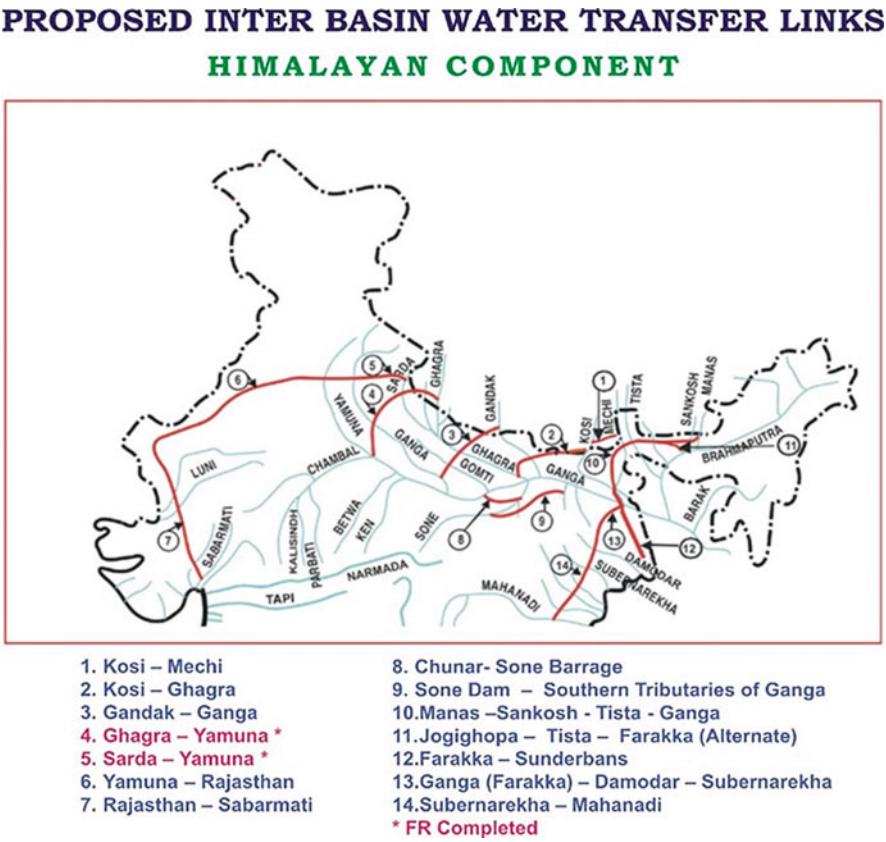

Fig. 1 Proposed inter basin water transfer links: Himalayan component. Reprinted with permission of the Indian National Water Development Agency (NDWA). Source: National Water Development Agency (2016b)

25 million hectares of irrigation from surface waters, 10 million hectares by increased use of ground water, totalling to 35 million hectares and 34,000 MW of hydro-power generation. In addition the likely incidental benefits are: Mitigation of Droughts, Flood Control, Domestic & Industrial Water Supply, Navigational Facilities, Employment Generation, Fisheries, Salinity Control, Pollution Control, Recreation Facilities, Infrastructural Development, Socio-Economic Development (National Water Development Agency 2016a).

Critics however question the project from several angles. One argument is that the same (or more benefits) could be reached by smaller-scale projects with substantially less economic costs. Also the technical feasibility of the project is questioned (Rao 2005). Furthermore, the ecological consequences are often pointed out, referring for example to the vast areas of forest land that will be submerged, including national parks and wild life reservoirs. Another angle considers the social costs of the project: about 5.5 million people will be displaced and resettlement plans are insufficient (Swain 2015). As often the case with development-induced

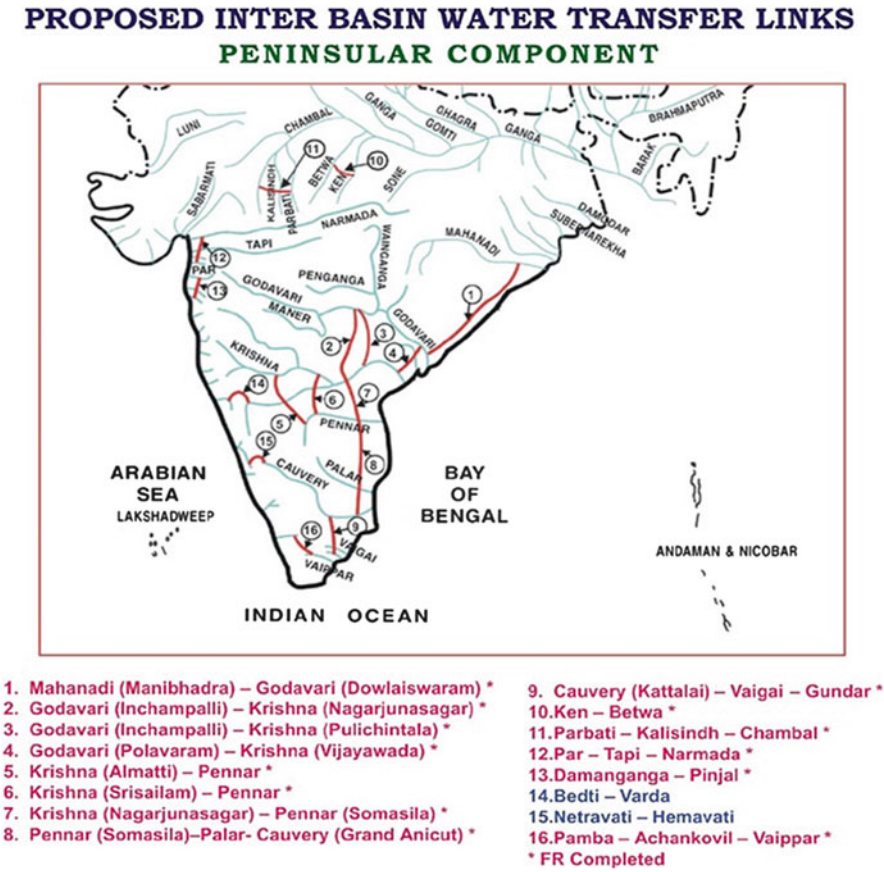

Fig. 2 Proposed inter basin water transfer links: Peninsular component. Reprinted with permission of the Indian National Water Development Agency (NDWA). Source: National Water Development Agency (2016c)

displacement in India, it is mainly Scheduled Tribe (ST) and Scheduled Caste (SC) communities which will be affected. Those benefiting are often not those who will suffer from its construction. Further highlighted are the immense amounts of energy needed in order to pump water through canals—revoking the alleged gain of energy through hydro-power. Referring to D. Raghunandan, associate of the All India People's Science Network and the Delhi Science forum, Frontline, an Indian English language fortnightly magazine, wrote on the issue that shifting of water goes "against gravity and requires huge amounts of energy. The northern rivers will have to be lifted high above the Vindhyas in order to reach the southern States" (Rajlakshmi 2012). To summarize these many-faceted concerns with the words of the environmental activist Himanshu Thakkar: Interlinking of rivers "is costly, environmentally destructive, socially disruptive and a non-optimum option, particularly in view of the changing climate" (Phadnis 2016).

4 Case Study: The Polavaram Dam

In the following part the Polavaram dam, located on the Godavari River in Andhra Pradesh, will be introduced and the inter-state disputes arising from its construction will be analysed. Within the NRLP, the Polavaram dam (Indirasagar) project is one of the components of the Peninsular River Development Scheme, particularly of the interlinking of the Mahanadi—Godavari—Krishna—Pennar—Cauvery—Vaigai Rivers (Water Resource Information System of India 2012). It involves the construction of two canals, one of which has already been built. The Polavaram left canal will be transferring water to the city of Visakhapatnam. The Polavaram right canal, opened in September 2015, is designed as a link between Godavari and Krishna River and flows through the West Godavari and the Krishna districts of Andhra Pradesh. From the reservoir the canal traverses 174 km until it falls into the river Budameru. From there on it is let into the Budameru Diversion Channel to join the river Krishna 8 km upstream of the already existing Prakasam dam at Vijayawada (Water Resource Information System of India 2012). From the transported water, less than half will arrive at the Krishna delta. From the other half, the largest amount of water will be used for en-route irrigation, which is supposed to water an area of 345,305 acre (139,740 ha), whereas a smaller portion will be used for en-route domestic and industrial requirements (Water Resource Information System of India 2012). The height of the dam wall itself lies at 46 m (151 feet) (Tata 2010). Apart from offering water to the fast growing city of Visakhapatnam, creating irrigation possibilities, ensuring the supply of water for industrial purposes as well as the general networking of rivers, the Andhra Pradesh government emphasizes the hydro-power scheme, generating 960 MW, as a benefit of the dam (Stewart and Rao 2006; Tata 2010).

The site clearance for the construction of the dam was given by the Ministry of Environment and Forest (MoEF) was given in September 2005; the environmental clearances in October 2005 (Stewart and Rao 2006; Tata 2010). Although other clearances such as the forest clearance were not given at that time, constructions already started the same year. The government's perspective on the early start without all the necessary clearances in 2006 was:

> Some clearances have already come and others are awaited. Our intention is to continue project work and ensure that the farmers are benefited at the earliest. At the same time, we have not violated any law, including the forest laws, as we have not commenced any work on the forest land because forest clearance is still to come. Though the centre has instructed states not to take up works even on non-forest lands, before getting forest clearances, we have taken up works on non-forest lands, and this is not a major violation of the law (Chandra 2006, p. 37).

Today, the Polavaram dam works are moving on with high speed. Forest clearances were given in 2010. In 2014 it was assigned national status and therefore is now a project handled by the central government (Odisha Sun Times 2014). The first phase of construction is expected to be completed by the year 2018 (The Hindu 2016).

5 Opposition to the Dam Construction

Apart from the general critique applied to the NRLP, there are some specific issues linked to the Polavaram dam that are pointed out by critics. One of the major concerns is the displacement of a large number of people through the dam. The actual number is hard to know, some assume that around 400,000 people will be displaced (Down to Earth 2011). Nearly 70% of those affected by displacement are Scheduled Caste and Scheduled Tribe population (Bhushan and Murali 1994). It will thereby be the largest displacement for the construction of a dam in India's history. And with that, many issues regarding the resettlement, arise. Many voices have also been raised in concern of the calculation of the actual submergence area: not only Godavari River, but also rivers flowing into Godavari will be strongly affected by the backlog of the water. Government calculations are thought to be unrealistic and the extent of submergence is considered to be greater than the Andhra Pradesh government declares (Interview #1, #4, #32). It is also stated that especially during monsoon season the area under submergence will be much larger (Interview #4). Furthermore, a dam break analysis reveals that in case of an earthquake—the dam is constructed on a high risk earthquake prone area—the dam is likely to break. If this were to happen, millions of people could drown, including the population of the city of Rajahmundry (Interview #1, #32, #33).

Also the irrigation scheme of the dam project is highly disputed as even according to the government's official data, 71% of the command area under the right canal is already under irrigation since 1999 (Down to Earth 2011). Many more canals have been built in the area since that time. A study from the International Water Management Institute in Sri Lanka found that 95% of the area is already under irrigation, and the remaining 5% are not under cultivation (Down to Earth 2011). Even though the major and defining purpose of the project is the irrigation of the cultivable command area there seems to be little known need for further irrigation (Stewart and Rao 2006; Down to Earth 2011).

Another aspect is the problem of sedimentation. The Godavari carries a great amount of sand. Dam opponents expect the dam to be sanded very quickly. Sedimentation is foreseen to lead to a radical reduction of the dam's proposed benefits in a few years (Interview #9). Likewise, in terms of energy production, sedimentation would render the dam ineffective in a short period of time. Stewart and Rao point to the sedimentation rates of Indian dams: on average they are "three to five times greater than predicted" (Stewart and Rao 2006, p. 21). For dams in the Godavari Basin they foresee that they: "are always going to silt up quickly and probably much faster than envisaged. It is unlikely that actual irrigation command area values achieved in the first few years will be repeated in future years—and in 50 years the dam will most likely be almost useless because of sedimentation." (Stewart and Rao 2006). Through the sanding the submergence area will grow year by year. Furthermore, deforestation will contribute to increasing siltation. With the displacement of the communities, uphill migration will start. Not only will forest be submerged, but deforestation could continue uphill as land might be cleared for new settlements (Bhushan and Murali 1994).

Furthermore, critics question the underlying assumption that there is no benefit in letting the water flow into the sea 'unused', a notion that is very often used in justifying also the NRLP in general. As the engineer Hanumatha Rao notes, the construction of the Sir Arthur Cotton barrage, 42 km downstream of the planned Polavaram dam, already had an enormous impact on the environment. While in rainy seasons water is still flowing into the sea, in non-rainy periods and during summer, the water is totally diverted to the canals. Flows to the sea prior to the construction of the barrage resulted in healthy mangroves along the coast and the river mouth. Since the construction of the barrage the mangroves have suffered immensely. Salt-water intrusion adds to the problem. Through the lack of out-flowing water, salinization of inland groundwater occurs. Some villages on the coast therefore nowadays need to be provided with freshwater by tankers (Rao 2005, p. 33). Even though Rao warns against the aggravation of this situation, he also points out that the construction of the Polavaram dam could be an opportunity if a steady flow of water into the sea also in summer and non-rainy season months would be provided (Rao 2005).

6 Inter-State Disputes on the Polavaram Dam Issue

An important part of the discussion on the construction of the Polavaram dam resolves around the dispute with the affected neighbouring states: Odisha and Chhattisgarh. Disputes on the construction also exist between Andhra Pradesh and the newly formed state of Telangana as well as with the downstream neighbours that will be affected. However, this chapter will focus on the management of the dispute between Andhra Pradesh, Odisha, and Chhattisgarh as well as the central government's role within it.

In 1956 the government of India introduced a tool to handle inter-state water conflicts. The Inter-State Water Disputes Act provides state governments with the possibility of requesting the central government to constitute a Water Disputes Tribunal (Government of India 1956). In the case of the Godavari water dispute, such a tribunal was constituted already at the end of the 1960s: The Godavari Water Disputes Tribunal (GWDT). Also the Polavaram dam was discussed at that time between the states of Andhra Pradesh, (of which since 2014 parts belong to the newly formed state of Telangana), Orissa (since 2011 Odisha) and Madhya Pradesh (which included Chhattisgarh, now an independent state, until 2000). As the tribunals are known for taking a very long period of time to reach agreements (Singh 2011; Shah 1994; Iyer 1994), also the final report in the GWDT case, the GWDT Award, was given only in 1980. It sums up the agreement on the issue of the Polavaram dam:

> The construction of the Polavaram Dam at FRL/MWL +150 feet involved submergence of lands of three States, namely, Andhra Pradesh, Madhya Pradesh and Orissa. On the 7th August, 1978 the State of Andhra Pradesh entered into an Agreement [. . .] with the State of Madhya Pradesh which permitted submergence of the lands of the state of Madhya Pradesh

> at Konta due to all effects including backwater effect of the Polavaram Project up to R.L. 150 feet but not beyond that limit [. . .]. A similar Agreement [. . .] was entered into by the State of Andhra Pradesh with the State of Orissa on the 15th December, 1978 [. . .]. The Tribunal examined all these Agreements and it appeared that there was some difficulty in regard to maintaining FRL/MWL at +150 feet at the dam site and at the same time ensuring that the maximum submergence in the States of Orissa and Madhya Pradesh at Motu/Konta should not exceed R.L. +150 feet due to all effects including backwater effect of the Polavaram Project. The Tribunal took the view that this difficulty was capable of solution by taking proper safeguards to avoid excess submergence of the lands in the States of Madhya Pradesh and Orissa due to the construction of the Polavaram Dam. (Water Resource Department, Government of Andhra Pradesh 1980, p. 3).

The solution presented within the GWDT Award was the construction of embankments. Constructed within the states of Madhya Pradesh and Orissa these were meant to ensure that submergence does not exceed the given 150 feet (Water Resource Department, Government of Andhra Pradesh 1980, p. 4). Initiated at a very early stage of construction planning, the GWDT, though a lengthy procedure, at the first sight seems to be a useful tool to seek solutions to disputes that could otherwise arise in future. Looking at the current situation, as the states of Odisha and Chhattisgarh reject the construction of the dam massively, its utility can however be questioned. In 2007 the Government of Odisha filed a case in the Indian Supreme Court against:

> Clearances granted by various Central Agencies including MoWR and against proceeding with the construction of Polavaram project by Andhra Pradesh Government and making defendant no. 1 to Govt. of Andhra Pradesh, defendant no. 2 to Ministry of Water Resources (MoWR), Government of India, defendant No. 3 to Ministry of Environment and Forest (MoEF) and defendant No.4 to Ministry of Tribal Affairs (MoTA). (MoWR 2014).

Odisha's arguments for reproaching the construction are (1) that the necessary clearances for the construction of the project, although sought for the Andhra Pradesh and now Telangana region, where never sought in Odisha and Chhattisgarh and (2) the mandatory public hearing was not held in Odisha and Chhattisgarh (Sethi 2015). "Instead, the public hearing was conducted in Khammam district of Andhra Pradesh", Odisha's chief minister Naveen Paitnak claims (The Times of India 2013). To Odisha's request the Supreme Court in 2011 ordered an inspection of the Polavaram dam project by members of the CWC to find out if the dam is "carried out in terms of the GWDR Award". Those reports state "that the planning of Polavaram project and limited construction activities seen so far by the team at the Polavaram dam site are in tune with approved project and GWDT provisions" (Sethi 2015). In 2011 the government of Chhattisgarh joined Odisha by filing a Supreme Court case itself "against clearances granted by various Central Agencies including MoWR and against proceeding with the construction of Polavaram project by [the] Andhra Pradesh Government" (MoWR 2014). In the same year the MoEF acknowledge the demand to public hearings and stated:

> [The] government of Andhra Pradesh has so far not conducted the requisite public hearings in Orissa and Chhattisgarh. Due to noncompliance of this environment clearance condition, the MoEF has issued stop work order for the project on 8th February, 2011 [...]. Since public hearings in both the states are still pending, the stop work order for the project continues. A final decision in this regard shall be taken after the orders of the Hon'ble Supreme Court (MoWR 2014).

Construction stopped for some time, however in April 2013 it was "decided to keep the stop work order in abeyance for a period of 6 months during which efforts be made to get the public hearings done in the States of Odisha and Chhattisgarh for the protective embankments" (MoWR 2014). The current plans for the embankment include the construction of a 29 km long wall. The height will be between 10 and 30 m. But, as the Indian fortnightly environment magazine Down to Earth pointed out in 2011:

> There have been no assessments to gauge the maximum flood level that would impact the embankments. [...] The forest clearance to the Polavaram project was given on the condition that Andhra Pradesh will construct embankments to avoid submergence. But for these forestland will have to be diverted. There has been no attempt to assess the forestland that will be diverted for the embankments (Down to Earth 2011).

Down to Earth also points to the fact that the forest clearances that Andhra Pradesh received for the construction of the project in 2010 were only given under the condition that Odisha and Chhattisgarh will not be affected by resettlement and submergence. The environmental clearance from 2005 did not include the embankments either (Down to Earth 2011). As constructions were taken up again, Patnaik remarked in 2013 that "as the matter is sub judice in the apex court, it will be prudent to wait till the judgement is given as the project parameter and estimates may change" (The Times of India 2013, June 1). The Supreme Court case is still pending until today. However it does not seem to stop the construction work in a long run. After periods of construction freezes, the constructions were taken on time and again.

In 2015 after a period of construction freeze in which once again the government of Andhra Pradesh made no attempts to conduct hearings, the Environment, Forest and Climate Change Minister Prakash Javadekar allowed Andhra Pradesh to proceed with the construction works. According to the Indian English and Hindi language daily newspaper Business Standard "he did so at the personal request of Andhra Pradesh Chief Minister Chandrababu Naidu, an ally of the Bharatiya Janata Party (BJP), and without informing Odisha and Chhattisgarh. Also, the orders of the environment ministry have not been put in the public domain" (Sethi 2015). A letter from Javadekar to Naidu published by the Business Standard reads that "with the anticipation that the pending public hearing will be resolved through discussions and persistent engagement with Odisha and Chhattisgarh, my ministry has taken the decision to keep the 'stop-work order' in abeyance for a period of a year" (Sethi 2015). In response to this Baijendra Kumar, secretary to the Chhattisgarh chief minister, was cited in the article with the following words:

> We have not been informed of this order. We have filed a plea in the Supreme Court against the project. Mandatory public hearings have not been conducted in the state. Sometimes, they say four villages in our state will be submerged and sometimes they say 40. How can we know the exact situation till studies are done and public hearings are carried out in our state as well? We are surprised how the Centre keeps permitting work be carried out like this. The project has been almost completed like this, illegally (Sethi 2015).

The way neither the Supreme Court nor the state takes action goes hand in hand with Sulagna Maitra's findings, that.

> Once an award [. . .] is handed over, it is almost never implemented [. . .]. The ball keeps rolling from the Centre's 'court' to the judicial 'court' but hardly any action is taken on the ground. Both the Legislature as well as the Executive at the Centre has failed to act in a decisive manner [. . .]. The Executive in most cases has chosen to be more a mute spectator than an actor (Maitra 2007, p. 221).

From fieldwork in the Polavaram affected areas, the author can say that even in Andhra Pradesh, where public hearings did take place, these can be seen as highly controversial and not taking place in accordance with the laws. According to one interview partner who tried to attend the meeting, most people were denied access to it. People from non-submergence zones that were pro-dam were presented as locals, whereas the local population was kept away from the meetings with police force. Furthermore the hearing was held only in English, which most of the affected people do not speak (Interview #7).

As illustrated in this chapter, the management of the dispute started off on a at first sight stable foundation by initiating the GWDT and reaching the GWDT Award. However, as constructions have started it proofs to be a less useful tool in regard to satisfying the parties involved. Although laws are being broken and Odisha and Chhattisgarh have called for a procedure in accordance with the existing regulations, the Supreme Court and the central government have only intervened to a very limited extend.

7 Implications for Regional Cooperation

Looking at the conflict there are several things to point out that might also be useful in a broader perspective of regional cooperation. The GWDT Award reached in 1980 suggests that state mechanisms are in place to find adequate solutions in dealing with the sharing of river water. However as the actual construction has begun, it shows that the agreement is not sufficient. As already the chapter on the Polavaram dam rendered visible, laws are bend. Especially the remark already cited above saying that "though the centre has instructed states not to take up works even on non-forest lands, before getting forest clearances, we have taken up works on non-forest lands, and this is not a major violation of the law" (Chandra 2006, p. 37), shows how this 'bending of rules' is played out. The way laws are being ignored also becomes visible in the way that construction freezes that are constituted

because of the non-conduction of hearings still do not lead to the hearings actually taking place. Though given a time frame to do so, the hearings have again and again been postponed. By continuing the work, a *fait accompli* is created. At some stage, and it has most probably already been reached, there will be no turning back from the dam, as too much time, money and work has already been put into it.

Why the GWDT Award is so limited in its impact on solving disputes, can be explained by the lack of law enforcement. It is especially revealing how the central government deals with the issue. Although now a national project, the dispute is not taken on by the central government but it is rather left for the federal states to deal with. In cases where involvement did take place, the central government mostly ruled for a continuation of the construction. Construction freezes were overridden and little effort of adhering to the laws can be seen. Similarly, the role of the Supreme Court is a dubious one. As an independent authority it should be the one institution promoting the rule of law. However, in the light of its very controversial judgment promoting the construction of the NRLP and in the context of the lack of reaction to the trials initiated by Odisha and Chhattisgarh that continue to be pending, it is questionable in how far it functions as a neutral judicial institution. A possible conclusion from the case for regional cooperation could therefore be the necessity of a strong law enforcement. Only if law enforcement is in place it can be ensured that constructions are implemented in accordance with the agreements and also in accordance with the existing laws.

8 Conclusion

This chapter considered the Indian National River Linking Project (NRLP) and disputes arising from it. As a case study it analysed the ongoing dispute between the states of Andhra Pradesh, Odisha, and Chhattisgarh on the construction of the Polavaram dam. It showed that although the states came together at an early state of planning and an agreement on the construction of the dam was reached, the dispute continues. This is explained by the lack of law enforcement as the construction in parts is conducted illegally. Clearances are missing and public hearings did not take place. Tensions are further fuelled by the way both the central government and the Supreme Court seem to be tolerating this breaking of law and restrain from further intervention. The construction, though stopped time and again, on the whole continues and a *fait accompli* is created. Therefore the chapter argued that a possible solution to the dispute, with a satisfying outcome for all projects partners involved, could be a stronger law enforcement.

References

Amarasinghe U (2012) The National River Linking Project of India – Some Contentious Issues. 16. Water Policy Research Highlight. Mangalpura: IWMI-TATA Water Policy Program

Bhushan B, Murali R (1994) Myth & Reality of Multi Purpose Polavaram Project. Hyderabad, Aranyika

Bose P (2007) Dams, development, and displacement: The Narmada Valley Development Projects. In: Vandergeest P, Idahosa P, Bose P (eds) Development's displacements – ecologies, economies, and cultures at risk. Vancouver/Toronto, UBC Press, pp 187–205

Chandra P (2003, May 19) Kalam criticised for endorsing river-link plan. The Times of India, p 5

Chandra S (2006) Doubts unfounded. In: Gujja B, Ramakrishna S, Goud V, Sivaramakrishna (eds) Perspectives on Polavaram – A Major Irrigation Project on Godavari. Academic Foundation, New Delhi

Down to Earth (2011) Why Polavarm is a pointless project. http://www.downtoearth.org.in/content/why-polavaram-pointless-project. Accessed 1 August 2012

Down to Earth (2016) Debate: Should water be brought under Centre's control to settle inter-state disputes? http://www.downtoearth.org.in/news/a-question-of-control-54519. Accessed 3 August 2016

Ghanekhar NM (2016) Linking of Ken-Betwa may take off only by year end. Daily News and Analysis. http://www.dnaindia.com/india/report-linking-of-ken-betwa-may-take-off-only-by-year-end-2173364. Accessed 4 August 2016

Government of India (1956) The inter-state river water disputes act. www.cwc.nic.in/main/downloads/1956.pdf. Accessed 3 August 2016

Iyer RR (1994) Indian federalism and water resources. Int J Water Resour Dev 10(2):191–202. doi:10.1080/07900629408722622

Iyer RR (2014) Interlinking of Rivers. Econ Polit Wkly 49(50):16–18

Macdonnell A (1899, January 27) Gogra River Bridge: Railways vs. Canals – Defence of the Government. The Times of India, p 5

Maitra S (2007) Inter-State River Water Disputes in India: institutions and mechanisms. Jpn J Polit Sci 8:209–231. doi:10.1017/S1468109907002630

MoWR (2014) Indirasagar (Polavaram) Project, A.P. http://wrmin.nic.in/forms/list.aspx?Lid=380. Accessed 2 August 2015

National Water Development Agency (2015) Ken-Betwa Link Project (Phase I) environmental impact assessment and environmental management plan. www.environmentclearance.nic.in/writereaddata/EIA/22072015KSBJEZILEIA.pdf. Accessed 4 August 2016

National Water Development Agency (2016a) Benefits of NPP. http://nwda.gov.in/index2.asp?slid=7&sublinkid=13&langid=1. Accessed 1 June 2016

National Water Development Agency (2016b) Himalayan rivers development component. http://www.nwda.gov.in/writereaddata/linkimages/5148938660.JPG. Accessed 1 April 2016

National Water Development Agency (2016c) Peninsular Rivers development component. http://www.nwda.gov.in/writereaddata/linkimages/4773523665.JPG. Accessed 1 April 2016

Nehru J (1958) Jawaharlal Nehru's Speeches, Volume III, 1953–1957, vol 3 (5 vols). Delhi: Publications Division, Ministry of Information and Broadcasting, Government of India

Odisha Sun Times (2014) National status to Polavaram project: What's Odisha govt's stand now? http://odishasuntimes.com/2014/05/30/polavaram-odisha-govts-stand-now/. Accessed 03 August 2016

Phadnis A (2016) India facing its worst water crisis ever: Himanshu Thakkar interview with environmental activist and water expert. Business Standard. http://www.business-standard.com/article/opinion/india-facing-its-worst-water-crisis-ever-himanshu-thakkar-116051400704_1.html. Accessed 20 June 2016

Rajlakshmi TK (2012) Building on sand. Frontline 29(07):07–20

Rao TH (2005) Polavaram Project. The present thinking and possible alternatives. Secunderabad, Centre for World Solidarity (CWS)

Roy A (1999) The cost of living: the greater common good and the end of imagination. HarperCollins, London

Sethi N (2015) Centre bypasses law to restart work on Polavaram project. Business Standard. http://www.business-standard.com/article/economy-policy/centre-allows-ap-to-restart-work-on-polavaram-project-115072800055_1.html. Accessed 3 August 2016

Shah RBS (1994) Inter-state river water disputes: a historical review. Int J Water Resour Dev 10 (2):175–189. doi:10.1080/07900629408722621
Singh N (2011) Federalism and water management in India. http://www.mumbaidp24seven.in/reference/federalism_and_water_management_in_india.pdf. Accessed 3 August 2016
Stewart T, Rao VR (2006) India's Dam Shame – Why Polavaram must not be built. Secuderabad, Gramya Resource Centre for Women
Swain A (1998) Fight for the last drop: inter-state river disputes in India. Contemporary South Asia 7(2):167–180. doi:10.1080/09584939808719837
Swain A (2015) Modi's Grand Plan to Divert Himalayan Rivers Faces Obstacles. https://www.newsecuritybeat.org/2015/12/modis-grand-plan-divert-himalayan-rivers-faces-obstacles/. Accessed 15 February 2016
Tata M (2010) Godavari: The New Narmada? Outlook India Magazine
The Hindu (2016) Polavaram project work on track: Uma. http://www.thehindu.com/news/national/andhra-pradesh/polavaram-project-work-on-track-uma/article8315976.ece. Accessed 5 August 2016
The New Indian Express (2014) Govt to oppose proposal to interlink rivers. The New Indian Express. http://www.newindianexpress.com/states/kerala/Govt-to-Oppose-Proposal-to-Interlink-Rivers/2014/07/18/article2336089.ece. Accessed 1 August 2016
The Supreme Court of India (2012) Civil Original Jurisdiction, Writ Petition (Civil) No. 512 of 2002 "In Re: Networking of Rivers" with Writ Petition (Civil) No. 668 of 2002, Judgment. http://judis.nic.in/supremecourt/chejudis.asp. Accessed 5 May 2016
The Times of India (1878, July 29) Indian Public Works Parliamentary Committee: Special Report for the Times of India, p 3
The Times of India (1956, September 23) Network of Canals to Link Major Rivers, p 1
The Times of India (1972a, September 21) River Grid, p 8
The Times of India (1972b, December 27) K.L. Rao explains salient features of proposed national water grid, p 8
The Times of India (1981a, March 14) A national water grid?, p 8
The Times of India (1981b, October 1) Water development agency soon, p 10
The Times of India (2013) Odisha opposes construction of Polavaram dam. http://timesofindia.indiatimes.com/city/bhubaneswar/Odisha-opposes-construction-of-Polavaram-dam/articleshow/20384153.cms. Accessed 04 August 2016
Vira B (2016) Droughts and floods: India's water crises demand more than grand projects. https://theconversation.com/droughts-and-floods-indias-water-crises-demand-more-than-grand-projects-60206. Accessed 20 June 2016
Water Resource Department, Government of Andhra Pradesh (1980) Godavari water dispute tribunal. http://irrigationap.cgg.gov.in/img/tribunaryDisputes/GWDT%20AWARD.pdf. Accessed 2 August 2016
Water Resource Information System of India (2012) Polavaram-Vijayawada Link. http://india-wris.nrsc.gov.in/wrpinfo/index.php?title=PolavaramVijayawada_Link. Accessed 29 April 2013
Ziai A (2006) Zwischen Global Governance und Post-Development: Entwicklungspolitik aus diskursanalytischer Perspektive. Münster, Westfälisches Dampfboot

Interviews

#1: 11/09/2012, Secunderabad, Andhra Pradesh. Regional Andhra Pradesh coordinator of an Indian NGO
#4: 12/09/2012, Hyderabad, Andhra Pradesh. Sociologist, anthropologist, and author working on Polavaram issue
#7: 13/09/2012 and 14/09/2012: Sathupally, Khammam District, Andhra Pradesh. Social worker and representative of a regional NGO

#9: 14/09/2012: Satupally, Khammam District, Andhra Pradesh. Representative of a regional NGO
#32: 20/09/2012: Rajahmundry, East Godavari, District, Andhra Pradesh. Representative of an NGO, part of the Adivasi Rakshana Samithi (ARS)
#33: 23/09/2012: Rajahmundry, East Godavari, District, Andhra Pradesh. Lawyer

Sharing Water Across Indo-Bangladesh Border

Kalyan Rudra

Fierce national competition over water resources has prompted fears that water issues contain the seeds of violent conflicts. If all the world's people work together, a secure and sustainable water future can be ours.
Kofi Annan (2002) Secretary General, UNO.

1 Introduction

The flow of water is governed by the law of Nature. The riparian right ensures a person to access water not by the virtue of ownership and the flowing water cannot be included in subject matter of property (Ramana 1992). The political boundaries in Asia and also in many parts of the world were drawn without any regard water courses and their basins. The trans-boundary rivers have the potential for both conflicts and co-operation as they create hydrological, social and economic interdependencies between countries (Actionaid 2015). The Helsinki Rules of the International Law Association (1966), under article II, described '*the international drainage basin as the geographical area extending over two or more States determined by watershed limits of the system of waters, including surface and underground water, flowing into common terminus*' (Subedi 2005). Worldwide, there are more than 276 rivers and lakes which are shared by two or more riparian states and that poses ample scope for conflicts over the sharing of water resources. It is reported that there are 148 nations falling within international basins which cover 46% of earth's land surface. Transboundary water accounts for 60% of global river flow. About 40% of the humanity rely on its neighbour to meet their daily use of water (Braga 2014). The factors which contribute to ever increasing stress on water

K. Rudra (✉)
Pollution Control Board, Government of West Bengal, Kolkata, India
e-mail: rudra.kalyan@gmail.com

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_11

resources are uninterrupted population growth, economic development, and expansion of irrigated agriculture, climate change, threatened ecosystem and increasing demand for non-fossil fuel energy. The rivers are not only over exploited but also being polluted by the mixing of wastewater and consequently more than one-half of the world's major rivers are being seriously depleted and polluted, degrading and poisoning the surrounding eco-system, thus threatening the health and livelihood of people who depend upon them for irrigation, drinking and industrial water (WCD 2000). Earlier, when there was hardly any guideline to govern the rational use of flowing water; many upper riparian states had faith on the *doctrine of absolute sovereignty* in support of their claim to use and divert water unilaterally. Some people came forward with an opposing idea what was called the *doctrine of territorial integrity*. This ensured fair share of water for the lower riparian states. Subsequently, the *principles of equitable utilization* ventured to address the conflicts between States over the sharing of trans-boundary water. In fact that was the beginning of the current law on international watercourses. The law on international water course was formulated about a century back in 1910 under the aegis of the International Law Institute and its work was further elaborated by International Law Association which adopted famous Helsinki Rules in 1966 (Subedi 2005).

1.1 Provisions in the International Rules

The Helsinki Rule (article IV) declared that *'each basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin'*. The reasonable and equitable share may be determined in the light of the following factors in each particular case:

- The geography of the basin, including the extent of the drainage area in the territory of each basin State;
- The hydrology of the basin, including the contribution of water by each basin State;
- The climate affecting the basin;
- The past utilization of the waters of the basin, including existing utilization;
- The economic and social needs of each basin State;
- The population dependent on the waters of the basin in each basin State;
- The comparative costs of alternative means of satisfying the economic and social needs of each basin State;
- The availability of other resources;
- The avoidance of unnecessary waste in the utilization of waters of the basin;
- The practicability of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses; and
- The degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State.

The article VII is intended to protect the interest of lower riparian states. It proclaimed that a basin State may not be denied the present reasonable use of the waters of an international drainage basin. The article X is dedicated for abatement of pollution and declared that a State: (a) must prevent any new form of water pollution or any increase in the degree of existing water pollution in an international drainage basin which would cause substantial injury in the territory of a co-basin State, and (b) should take all reasonable measures to abate existing water pollution in an international drainage basin to such an extent that no substantial damage is caused in the territory of a co-basin State.

A narrow interpretation of factors (i) and (ii) mentioned above may create confusion and even lead to absurd conclusions. For example, if a basin is shared by two countries and use of water by the two states are in proportion of their respective drainage areas, then an exactly proportional sharing of the water resources would entail zero discharge flowing from the upstream state to the downstream state! This amounts to fragmentation of the river basin along the state boundary, which may be in line with the now-abandoned doctrine of absolute sovereignty, but in contradiction with the other accepted norms of determining reasonable and equitable share.

The UN convention on the law of the Non-Navigational Uses of International Watercourses (1997) adopted ten general principles for the mutual and sustainable use of transboundary water. It takes into account many other issues that were not paid proper heed in Helsinki Rules, and also removed some confusing elements. The article V advises that States shall not only utilize an international watercourse in an equitable and reasonable manner but also participate in protection of the same. The factors relevant to equitable and reasonable utilization of a transboundary river are:

- Geographic, hydrographic, hydrological, climatic, ecological and other factors of natural character;
- The social and economic needs of the watercourse States concerned;
- The population dependent on the watercourse in each watercourse State;
- The effects of the use or uses of the watercourses in one watercourse State on other watercourse States;
- Existing and potential uses of the watercourses;
- Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken into that effect;
- The availability of alternatives, of comparable value, to a particular plan of existing use.

It may be noted that the potentially confusing considerations of *the extent of the drainage area in the territory of each basin State* and *the contribution of water by each basin State* mentioned in the Helsinki Rules have been *completely omitted* from this list.

Under the UN convention, it is obligatory for a State (vide article VII and VIII) not to cause significant harm to watercourses and also to cooperate on the basis of

sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse. The article IX proclaims that the States shall on a regular basis exchange readily available data and information on the condition of a watercourse, in particular that of a hydrological, meteorological, hydro-geological and ecological nature and related to the water quality as well as related forecasts.

Since effluents discharged in a river flows downstream with water, the article XXI is formulated for prevention, reduction and control of pollution. It says that watercourse State shall, individually and, where appropriate, jointly, prevent, reduce and control the pollution of an international watercourse that may cause significant harm to other watercourse States or to their environment, including harm to human health or safety, to the use of waters for any beneficial purpose or to the living resources of watercourse. Watercourse States shall take steps to harmonize their policies in this connection. The article XXIV declares that States shall take all appropriate measures to ensure flows adequate to protect the ecological integrity of a drainage basin, including estuarine waters.

1.2 Indo-Bangladesh Transboundary Rivers

The partition on Bengal was executed on the 15th August 1947 when India and Pakistan achieved independence. It was declared by the Bengal Boundary Commission, "*that the Province of Bengal as, constituted under the Government of India act 1935 should cease to exist and there should be constituted in lieu thereof two new Provinces to be known respectively as East Bengal and West Bengal.*" Cyril Radcliff who was the Chairman of the Bengal Boundary commission formed on the 30th June 1947, found it extremely difficult to delineate a boundary which could distinctly divide the areas of Muslim and non-Muslim majorities (Bagge 1950). The commission wanted to eliminate any avoidable cutting of communications and of river systems and found it quite impossible to draw a boundary without causing some interruptions in both rail and river ways. The line was drawn in such a way that it crossed over 54 rivers creating chance for conflicts over the sharing of transboundary water resources. The first conflict on the issue of the sharing of the Ganga water started with the commissioning of the Farakka Barrage Project. The second in row is the conflict over the sharing of the Teesta water.

Radcliffe himself realized that the international boundary was drawn without any regard to holistic eco-hydrology of the Bengal. In divided Bengal, the Ganga-Brahmaputra-Meghna system continues to flow cutting across geography, cultures and borders. The extreme seasonal variability of flows in rivers is governed by the geographical conditions of this subcontinent. Flood, changing geometry of meandering rivers, tendency of avulsion, sedimentation and decay of channels are among the various inherent characteristics of rivers in this region. The challenge for society is to cope with these hydro-geomorphic phenomena coupled with a better understanding of the fluvial system.

2 Dispute Over Sharing of Water

Unfortunately rivers are often treated as political entities, and there is a tendency to consider them as the stock of water which can be tamed, extracted and transported to meet the ever increasing demands for irrigation, power generation and other needs. It has been hardly understood that maintaining ecological flow of rivers is critical to the sustenance of biodiversity along with the well-being of millions of people who depend on the rivers. We need to explore a rational meeting point between the volume of water that may be extracted from the rivers and the flow to be maintained in the rivers to sustain the ecosystem, of which humans are only a part.

The Indo-Bangladesh (erstwhile East Pakistan) relationship has been stressed over the sharing of the Ganga water since the partition of Bengal. Recently, the stress is deepened over the sharing of the Teesta water. Since the proposal of constructing a barrage at Farakka came in, the Ganga turned into a river of contention, initially between India and Pakistan and subsequently between India and Bangladesh. In 1962 Dr. A.T. Ippen and C.E. Wicker, the eminent hydraulic engineer of USA were invited by the government of Pakistan to assess the possible impacts of Farakka Barrage Project. They opined that "*the diversion of freshwater into the Hooghly river through the construction of the Farakka Barrage, will not contribute to the solution of, but is likely to accentuate the serious shoaling problems in river and to the preservation of the port of Calcutta*" (Crow 1986). After the partition of Pakistan and emergence of Bangladesh in 1971, the latter inherited the old controversy over the sharing of the Ganga water. Bangladesh raised constant voice against the Farakka Barrage Project with the allegations that withdrawal of 40,000 cusec of water at Farakka would invite many problems in Bangladesh. The possible impacts as presumed by Bangladesh were:

1. Withdrawal of water at Farakka would jeopardise the Ganga-Kobadak irrigation project, the Dhaka northwest project, Pabna project and Faridpur-Barisal project.
2. The navigation in the distributaries would be seriously affected.
3. The ingress of salinity in groundwater pool would affect agriculture, industry and domestic water supply.
4. The underground water table would be lowered causing diminution of moisture content in soil.

The demand of Bangladesh for equal share of the Ganga water, i.e. 40,000 cusec put the matter in insoluble state as the minimum flow in the Ganga at Farakka in the month of April was observed to be often less than 55,000 cusec. Four agreements have so far been signed on sharing of the Ganga water. The first Indo-Bangladesh agreement signed on the 18th April, 1975, allowed India to withdraw 11,000–16,000 cusec of water for the period 21st April to 31st May, which was treated as the driest period of the year. After assassination of Mr. Mujiboor Rahaman, the first Prime Minister of Bangladesh that agreement was unilaterally nullified by the then Government of Bangladesh and subsequently a new agreement

Table 1 Rivers which cross Indo-Bangladesh border

The Ganga basin	The Brahmaputra basin	The Meghna/Barak basin	
1. Raimangal	15. Atrayee	26. Bandra/Chillakhali	40. Juri
2. Ichhamati-Kalindi	16. Karatoya	27. Bugi/Bhogai	41. Manu
3. Betna-Kodalia	17. Talma	28. Dereng/Nitai	42. Dhali
4. Bhairab	18. Ghoramara	29. Simsang/Someswari	43. Longla/Lungla
5. Mathabhanga	19. Deonai-Jamuneswari	30. Kynshi/Jadukata	44. Khowai
6. Ganga	20. Buri Teesta	31. Umngi/Jalokhali-Dhamalia	45. Sutang
7. Pagla	21. Teesta	32. Khasimara/Nawagang	46. Sonai
8. Punarbhaba	22. Jaldhaka/Dharla	33. Umiew/Umium	47. Haora
9. Tulai/Tentulia	23. Torsa/Raidak/Dhudhkumar	34. Umsohryngkew/Dhala	48. Sinai/Bijni
10. Tangan	24. Brahmaputra/Jamuna	35. Umngot/Piyan	49. Bijoya/Salda
11. Kulik	25. Jinjram	36. Myntdu/Sari-Gowain	50. Gumti
12. Nagar		37. Barak/Surma	51. Kakri-Dakatia
13. Mahananda		38. Barak/Kushiyara	52. Selonia
14. Dahuk		39. Sonai/Bardal	53. Muhuri
			54. Fenni/Feni

Source: IUCN (2014)

was signed on the 5th May 1977. The available water was estimated on the basis of 75% assured flow of the Ganga at Farakka and while estimating the flow, the period taken into account was 1948–1973. The subsequent agreement of the 7th October, 1982 was virtually a renewal of former agreement. The Table 1 describes Indo-Bangladesh sharing of the Ganga water as agreed in 1977.

In 1996, India and Bangladesh signed a long standing agreement that would remain valid for three decades. This agreement was based on the average discharge of the river during preceding four decades (1949–1988). While the agreement of 1977 was based on 75% assured discharge at Farakka, the agreement of 1996 took into account long term average flow. There was little compatibility between computed flow in 1977 and the actually available flow at Farakka after that. The reason is simple as the lean season's flow in the Ganga during earlier decades was much higher than it is now. So the computed average discharge at Farakka leads us to a mythical figure that is far away from the reality. The problem was not beyond apprehension during the treaty of 1996 and it was decided that if the discharge at Farakka dwindles below 70,000 cusec, the two countries would share the available water equally.

The treaty of 1996 continues to remain valid till 2026. This was decided without any regard to the projected demand of water in the Ganga basin in the ensuing decades. The Table 2 shows that the available water dwindles below 80,000 cusec

Table 2 Indo-Bangladesh Agreement (1977) on sharing of the Ganga

Month	Date	75% assured flow at Farakka (cusec)	Share of India (cusec)	Share of Bangladesh (cusec)
January	1–10	98,500	40,000	98,500
	11–20	89,750	38,500	51,250
	21–31	82,500	35,000	47,500
February	1–10	79,250	33,000	46,250
	11–20	74,000	31,500	42,500
	21–28/29	70,000	30,750	39,250
March	1–10	65,250	26,750	38,500
	11–20	63,500	25,500	38,000
	21–31	61,000	25,000	36,000
April	1–10	59,000	24,000	35,000
	11–20	55,500	20,750	34,750
	21–30	55,000	20,500	34,500
May	1–10	56,500	21,500	35,000
	11–20	59,250	24,000	35,250
	21–31	65,500	26,750	38,750

Source: Rao (1979)

in the last week of February and continues to decline further till the end of April, when both the countries suffer from acute shortage of water.

The volume of water in the Ganga increases from the month of May when the Himalayan glaciers melt and add some discharge into the rivers. It is important to note that the actual induced flow during the period 1977–1996 in the Bhagirathi-Hugli, had rarely been of the order of the recommended flow. The available flow dwindled to 16,000 cusec in the first week of April (Dasgupta 1996) and the port of Kolkata continued to face the problem of declining navigability. Bangladesh also suffered from shortage of water in the Ganga.

3 Proposal to Augment the Flow

Since the Indo-Bangladesh summit of October, 1982 between General Ershad, the then President of Bangladesh and Mrs. Indira Gandhi, the then Prime Minister of India, the Joint River Valley Commission was entrusted with the task of finding a mutually acceptable solution of the Ganga water dispute. The bone of contention was that the volume of water in the Ganga at Farakka during lean months fell far below the threshold limit to satisfy the demand of two neighbouring countries. Both the countries agreed that lean months' flow in the Ganga should be augmented but opinions differed on the measures to be adopted for the purpose.

Bangladesh proposed to construct some reservoirs on rivers like the Kosi, the Gandak and the Karnali which drain the Nepal Himalaya. The storage of water during the monsoon would replenish flow of the Ganga in dry season. It was said

that storage of monsoon water might put an end to this water dispute of the subcontinent. But storage of such huge volume of water would require reservoirs some 25 times larger than the size of mighty Bhakra dam and if those were built, the possibility of earthquake in tectonically unstable Himalaya could not be ruled out. Above all, involvement of a third party in a bilateral dispute was neither desirable nor permissible-said the Government of India.

India proposed to excavate link canal to induce 25,000 cusec of water from the Brahmaputra to the Ganga. The discharge of Brahmaputra at Bhadurbad of Bangladesh never falls below 120,000 cusec; while the minimum flow of the Ganga at Farakka is less than 55,000 cusec. When the Ganga suffers from acute shortage of water in summer months, the Brahmaputra carries as much as 133,000 to 182,000 cusec. Hence withdrawal of 25,000 cusec of water would not make any perceptible difference in flow of the Brahmaputra-said India. But Bangladesh denied to accept this proposal.

3.1 Sharing the Teesta Water

The Indo-Bangladesh conflict over sharing of Teesta water has added a new dimension in the hydro-politics. In the second half of the twentieth century, both India and Bangladesh embarked on water diversion projects on the Teesta River, through networks of canals and barrages built at Gajaldoba (India) and Duani (Bangladesh). Both the projects were created with unrealistic expectations, and they were inevitably faced with water shortage. The crux of the problem is that while minimum flow in Teesta dwindles to less than 200 cumec (7066 cusec) in the month of February and the two canals taking off from Gajaldoba barrage (India) and the one from Duani barrage (Bangladesh) were designed to withdraw 520 cumec (18,372 cusec) and 283 cumec (9998 cusec) respectively. Neither project has any provision of storing monsoon water for use in the dry season.

4 The Teesta Basin

The Teesta is a trans-boundary river having its source at the snout of Kangse glacier in North Sikkim. It flows southwards through Sikkim for a length of about 151 km. and then 19 km. along the border of West Bengal and Sikkim. Further south it flows for 123 km. in the Jalpaiguri and Koch Bihar districts of West Bengal, 121 km. in Bangladesh and ultimately joins Jamuna or Brahmaputra at Chandipur/Chilmari. The total catchment area is 12,370 km^2 and only 16.5% of this area falls in Bangladesh.

The flow of the Teesta River is generated mainly of rain water, though snow-melt water is the dominant component for a few lean months. The flow is temporally skewed. The average flow at Gajaldoba in Jalpaiguri district in the month of August is about fifteen times larger than that in the month of February. The basin hydrology, especially in North Bengal is complex. It includes both surface and

Table 3 Indo-Bangladesh Agreement (1996) on sharing of the Ganga water (in cusec)

Period	Average. flow at Farakka (1949–1988)	Share of India	Share of Bangladesh
Jan 1–10	1,07,516	40,000	67,516
11–20	97,673	40,000	57,673
21–31	90,154	40,000	50,154
Feb 1–10	86,323	40,000	46,323
11–20	82,859	40,000	42,859
21–28	79,106	40,000	39,106
Mar 1–10	74,419	39,419	35,000
11–20	68,931	33,931	35,000
21–31	64,688	35,000	29,688
Apr 1–10	63,180	28,180	35,000
11–20	62,633	35,000	27,633
21–30	60,992	25,990	35,000
May 1–10	67,251	35,000	32,251
11–20	73,590	38,590	35,000
21–31	81,854	40,000	41,854

Source: wrmin.nic.in/writeraddata/ind-bnd-treaty.pdf

subsurface flow of water. The Teesta debouches on the plains at Sevok and spreads laterally to form an intricate network of braided channels. The wide bed of the river, being composed of coarse sand, pebbles, cobbles and boulders allows quick infiltration of water. The ground water pool in the Teesta basin is unconfined and flows south into Bangladesh. No comprehensive study to estimate the ground water resource in the Teesta basin has been done so far.

The lower Teesta basin is densely populated. The population in Sikkim, West Bengal and Bangladesh are shown in Table 3. The population estimates for the Indian part have been obtained by aggregating blocks of different districts falling in the Teesta Basin, while district level official statistics were used for the Bangladesh part (Table 4).

4.1 History of Negotiations

India and Bangladesh had signed an ad-hoc agreement in the 25th meeting of the Joint River Commission held in July 1983. Here, an understanding was reached on sharing of the Teesta water in the ratio of 39 (India): 36 (Bangladesh). The remaining 25% was left unallocated, to be shared on the basis of subsequent scientific studies.

Subsequently, Bangladesh proposed sharing of the Teesta waters during the lean season (October to April) in the ratio of 40% (India): 40% (Bangladesh): and 20% as the river share at the Gajaldoba barrage site. In 2007, the Government of West Bengal agreed to release at most 25% of water available at the Gajaldoba barrage for Bangladesh, including the river share.

Table 4 Teesta basin at a glance

State/Country	Length		Basin area		Population (2011)		Population density
	In km.	In %	In km^2	In %	In count	In %	In number per km^2
Sikkim	151	36.5	7039	56.9	610,577	13.4	87
Sikkim-West Bengal border	19	4.6	–	–	–	–	–
West Bengal	123	29.7	3294	26.6	1,729,899	37.9	525
Bangladesh	121	29.2	2037	16.5	2,221,550	48.7	1091
Entire basin	414	100	12,370	100.0	4,562,026	100	369

Source: GoI (2011) and BBS (2011)

The Government of India argues that if one modifies the ad hoc agreement by allocating the previously unallocated 25% in proportion to the allocated part, then India and Bangladesh might claim 52% and 48% of the total flow of the river, respectively. If this allocation is made on the basis of the total flow at the outfall of Teesta on the Brahmaputra river, then India's share at that point would be about the same as 75% of the flow at Gajaldoba, which the Government of West Bengal claims. Thus, an agreeable formula on the basis of previous commitments may be evolved.

4.2 Sharing Teesta Water: Domestic Considerations

Many of the factors governing equitable and reasonable sharing of water resources, as mentioned in the UN convention (1997), require presentation of detailed position of the different basin states. The Siliguri Municipality (the largest urban local body of North Bengal) currently supplies domestic water to approximately 300,000 persons. According to the guidelines of the Government of India (GoI 1999), 135 L of water per capita per day is regarded as the norm for such cities. This requirement translates to about 40.5 million litres per day (MLD) or 0.47 cumec. Out of this total, the Municipality receives about 26 MLD or 0.30 cumec from the TBP. There is a plan to scale up the supply to 55 MLD or 0.64 cumec. Allocation of 1 cumec of water would leave adequate room for future expansion.

A minimum discharge of about 20 cumec is required at source in TMLC in order to maintain assured supply of 1 cumec in Siliguri. The induction of 20 cumec of water at Teesta Mahananda Link Canal off-take is required to maintain a certain level. Even though supply of water for domestic consumption in Siliguri had not been an objective in any stage of the project, this has become an over-riding obligation. As the supply of municipal water has been going on for a number of years, abrupt discontinuation of this supply would cause much hardship. This would also be in violation of the National Water Policy (GoI 2002), which gives highest priority to the supply of drinking water. However, the need to maintain this supply on continuous basis comes in the way of maintenance/de-silting work at Gajaldoba

and along the route of the TMLC. An alternative source of municipal water supply (e.g., through a pipeline drawn from the barrage pond of the Teesta river to the Fulbari barrage on Mahananda) may be explored, else the TMLC supply line would also crumble. Till such an arrangement is made, the supply of about 20 cumec water through TMLC needs to be continued. The ratio of inflow and outflow could reduce drastically if a pipeline is used for supplying water from the Gajaldoba pond to Siliguri. If this is arranged, the municipal water supply requirement for Siliguri can be met through a modest scale of withdrawal.

4.3 Water for Irrigation

The availability of plenty of water is linked with prosperity of agriculture in North Bengal. It may be noted that a typical *kharif* season crop requires about 500 mm. water over its lifetime of 4 months (Rudra 2009). This approximate amount should be doubled in the case of North Bengal, where the porous (coarse texture) soil allows quicker infiltration of irrigation water. However, all the districts in North Bengal are endowed with heavy precipitation. In particular, the average precipitation per month during the monsoon season is well above 600 mm. Except for the occasional mid-monsoon breaks, the *kharif* cultivation does not require any irrigation through canal network. Thus, TBP may not be very relevant for *kharif* season irrigation.

The miniscule amount of usage of the wet season flow needs to be seen in the backdrop of the vast area (9.22 lakh hectares) targeted for irrigation under TBP, which must have been for the wet season. In fact, irrigation had been the primary objective of Teesta Barrage Project. Less than 5% of the originally envisaged area is actually irrigated now, even though there has been no constraint of a water sharing treaty. It is hard to imagine how the possibility of low demand of water could have escaped the project planners.

Availability of the canal water may have encouraged farmers to switch to *boro* cultivation. However, irrigation requirement of this crop is about three times higher than that of a typical *kharif* season crop (Rudra 2009). It follows from simple calculations that 3 cumec of irrigation water during the field occupancy of the *boro* crop can suffice for about 1000 ha of land (which would be about 1 cumec for most other crops). This is the requirement at the tail end of the canal. According to a report (GoI 1999), the typical water efficiency of a dam-canal network is less than 40%. Even if the efficiency of the TBP dam-canal network is 60%, irrigation to support 1000 ha of *boro* cultivation would require induction of 5 cumec of water at the off-take of TMLC at Gajaldoba. Since the irrigation requirement is almost continuous, irrigation capability would be restricted by the water availability at the driest time of the year. The flow of Teesta at Gajoldoba barrage may be less than 100 cumec in the first week of February. Even if 80% of this amount is diverted for irrigation, disregarding the commitment of urban water supply, only 15,000 ha can be adequately served for *boro* irrigation. If there is no *boro* cultivation, and the entire irrigation is for the *rabi* crop, then at most 45,000 ha can be served. Thus,

while the TBP authority has started catering to additional 8000 ha through the Tessta Jaldhaka Link Canal from January 2012, adequate irrigation coverage to anything more than the currently covered 40,000 ha under the TMLC is an overly ambitious goal. Creating unrealistic expectations would not serve the interests of West Bengal, and living up to expectations that have already been raised (e.g., irrigation to 922,000 ha or even 342,000 ha of land in the first phase is an unwelcome liability.

As stated earlier, the *boro* crop requires almost incessant irrigation, and this requirement may not have been entirely met by irrigation through TMLC. The average withdrawal recorded at the off-take of TMLC would sometimes fall below the total requirement. A farmer who has already invested in a crop would naturally turn to other forms of irrigation in order to avoid crop failure, and groundwater would be the most convenient source of supplementary irrigation. On the other hand, overexploitation of groundwater would cause its depletion. Indeed, depletion of the groundwater table in this area in the months of January and November has been found in the records of the State Water Investigation Department (SWID 2011). A report of the Central Ground Water Board (CGWB 2010) also indicates a decadal fall of the groundwater table in the command area of TMLC. In fact, a decline of groundwater table has been previously observed in most areas of South Bengal, perhaps due to the proliferation of lean season cultivation, and the latest data (CGWB 2010) indicates that this phenomenon has spread to North Bengal also. What needs to be noted is that this has happened even in the blocks enjoying the benefits of canal irrigation. A decline in the groundwater table indicates unsustainability of the current scenario, and needs to be arrested.

Specifically, *boro* cultivation should be discouraged. There should be emphasis on rainwater harvesting as alternative means of lean season cultivation of less water intensive crops. Canal irrigation can at best play a supplementary role, and it should not be looked upon or represented as an assured and exclusive source of irrigation. Even in supplementary capacity, canal irrigation should not be used as incentive for water intensive lean season cultivation, as other sources of irrigation also would directly or indirectly have an adverse impact on the already worsening groundwater situation. Creation of traditional rainwater harvesting structures such as ponds should be encouraged. The large ponds excavated in Koch Bihar during the *Raj* days are functioning well till date. Since the available lean season flow is inadequate even for the existing canal network, further expansion of this network would only create false expectations. This would be a disservice to the people of North Bengal.

4.4 Water for Power Generation

It is learnt from experience that there is a basic conflict between use of water for irrigation and power generation. A hydel power station requires uninterrupted supply of water, while the requirement for irrigation is seasonal. It is said that the use of water for hydel power generation is non-consumptive, and can be

subsequently used for irrigation. However, the seasonal nature of the water requirement for irrigation does not correspond with the continuous operation of a power plant. Thus, water released from a power plant may not always be useful for irrigation.

The three hydel power plants (each with 22.5 MW capacity) are not run-on-the-river projects. These are located along the Mahananda Main Canal, and rely on three canal falls (artificial waterfalls). The canal withdraws water from the right bank of the Mahanada River at Fulbari barrage site. This river virtually dries up during the lean season, and power generation becomes possible only due to inter-basin transfer of water from the Teesta River via TMLC. Running of hydel power plants through inter-basin transfer of water is very unusual, and does not enjoy protection of international law as a matter of right or 'reasonable use'.

Each of the three power plants has three turbines capable of generating 7.5 MW power. In order to run even one of the three turbines at full capacity, about 60 cumec flow is required at the site. Somewhat higher discharge is required to be diverted through TMLC at Gajaldoba, and no withdrawal in between canal off-take and the power plant can be permitted. This quantity amounts more than half of the discharge at Gajaldoba at the leanest time of the year (1–10 February), and corresponds to the *rabi* irrigation requirement of about 40,000 ha. Thus, lean season running of the power plant is difficult to justify.

Data published by the Ministry of Power (GoI 2007) indicate that actual generation of power has been surprisingly small even for the wet season. The aggregate output of the three plants during the year 2006–07 was only 34 million units. This corresponds to about 21 days' production at full capacity during the entire year. Far from recovering capital costs, the revenues earned from the production would have hardly covered the operating expenses. The production target for this period was also a paltry 97 million units (about 60 day's production in 1 year). This modest target, in the absence of constraints of any international treaty, is in stark contrast with the expectations that had been set by the project planners. The production targets might have been moderated by excessive demand of lean season water for irrigation in the command area of TMLC, and lack of demand for the water released by the plants into the Mahananda Main Canal during the wet season. With 6% average utilization of the installed capacity of 67.5 MW, it is clear today that generating 1000 MW of hydel power had always been an impossible dream.

4.5 Maintaining Ecological Flow

It is widely admitted that any structural intervention and withdrawal from a river impairs downstream ecology (McCully 2001; WCD 2000). In the present hydro-geomorphology of the Teesta River, the Gajaldoba barrage is a reality whose ecological impact in the downstream section cannot be totally undone. However, there is scope for reducing the adverse impact by judiciously controlling the flow. The downstream ecological services include preservation of biodiversity, recharge of groundwater, and sediment transport. The society at large is also benefited by

way of maintenance of the groundwater table, fishing, navigation, river lift irrigation, not to mention the aesthetic aspect of a natural watercourse and its surroundings.

The stretch of the Teesta river between Gajaldoba barrage and the Indo-Bangladesh border at Burigram-Mekhliganj in Koch Bihar is no less than 72 km. Apart from rural areas on both banks, the district town of Jalpaiguri and the town of Haldibari are also located on the right bank of the river. The ecological health of the Teesta River and the surrounding ecosystem is crucial to the material well-being of the population living in this area. The groundwater level in the area is an important indicator of that health. The depleting level of groundwater points towards excessive levels of stress that the ecosystem cannot sustain. The issue of ecological flow has hitherto not received adequate consideration in the Indo-Bangladesh negotiations. A room for such considerations had however been made in the ad-hoc agreement signed in July 1983 of the Joint River Valley Commission, which had left 25% of water unallocated.

As far as the understanding of the requirements of a specific river system is concerned, there is no alternative to intense and location-specific study on different aspects of the river and its ecosystem. Such studies have been undertaken in some parts of the world. In a compilation of such studies for the International Union for Conservation of Nature and Natural Resources or IUCN (Dyson et al. 2003), it has been noted that the range of flow required for non-impairment of different ecological factors vary from 65% to 95% of the natural flow, provided the natural pattern of flow is also retained. Until such a study for the Teesta River is undertaken, a cautious and conservative approach to the specification of ecological flow requirement should be taken.

It should be noted that preservation of a river ecosystem does not amount to putting the interest of aquatic life above the interest of human society. The natural world contains an unfathomably wide range of conditions, most of which is unsuitable for human habitation. Human existence is precariously balanced on a narrow range of favourable conditions in terms of temperature, pressure, concentrations of various gases and diverse forms of life. These favourable conditions are not maintained by a Government project. Rather, these are maintained by inter-connected natural systems that we do not fully understand. Even tiny organisms play a major role in maintaining that balance. When the balance is upset by human action, the remedy may be beyond the scope of Government budget or even the scope of human knowledge.

The ecological requirement appears to be at variance with the stated objectives of the TBP, which was primarily meant for irrigation. As explained earlier, the barrage is largely superfluous for wet season cultivation, while it can hardly meet the lean season demand for irrigation, with no upstream reservoir. The TBP lacks the capacity to store and transfer any water from the monsoon season to the lean season. Any withdrawal for lean season irrigation has to be at the expense of the natural flow of the river at that time. The current practice of maximal possible withdrawal during the lean season has resulted in a decline of the groundwater table, indicating unsustainability of this practice. Lives and livelihood of the entire

population living downstream of Gajaldoba is threatened by the current level of diversion, which should not be allowed to continue.

The groundwater scenario on the Indian side of the international border is ultimately inter-linked with that on the other side. So far, there is no indication of any decline of the groundwater table in the Bangladesh part of the Teesta basin (Shamsudduha et al. 2009). However, in the post Teesta Accord scenario, excessive diversion at Duani barrage of Bangladesh may lead to that problem. If this happens, then the groundwater situation on the Indian side would deteriorate further. Therefore, maintenance of an ecological flow throughout the length of the Teesta River, including the stretch within Bangladesh is important in the interest of West Bengal.

It should be noted that the vast majority of the Indian population in the Teesta basin lives downstream of Gajaldoba (i.e., in the Jalpaiguri and Koch Bihar districts). According to the recently published district level census 2011 figures, more than 1.70 million citizens of West Bengal live in the Teesta basin. Out of this total, *over 1.50 million citizens live downstream of Gajadoba* who do not benefit from canal irrigation. The heavy withdrawal at Gajaldoba during the lean season may mean the loss of ecological services of the river, including further worsening of the groundwater situation. This means that the first victims of diversion of water at Gajoldoba are the people of Jalpaiguri district living in the downstream stretch. After balancing the human benefits with human costs, such an event cannot be said to be in the interest of the people of West Bengal.

4.6 Climate Change

District-wise monthly precipitation data from January 1901 to December 2002 are available from a database maintained by the India Water Portal (www.indiawaterportal.org/metdata). This database is built from the publicly available Climate Research Unit (CRU) TS2.1 dataset, out of the Tyndall Centre for Climate Change Research, School of Environmental Sciences, University of East Anglia in Norwich, UK. This published dataset consists of interpolated (on a 0.5 degree latitude-longitude grid) global monthly rainfall, temperature, humidity and cloud cover data, from 1901 to 2002 (Mitchell and Jones 2005). Regression analysis of this monthly precipitation data indicate that the June rainfall in all the districts of Sikkim and West Bengal in the catchment area of the Teesta river has declined during this period. The rate of decline is about 1 mm per year, and is statistically significant at the 5% level. There has also been a decline in the overall monsoon rainfall, though this decline is of a lesser magnitude, and is not statistically significant at that level. On the other hand, predictions based on a detailed climate model (Ashfaq et al. 2009) indicate further decline in monsoon rainfall and further delay in the onset of monsoon in this region. This study is based on a more detailed model than those used by IPCC (Intergovernmental Panel on Climate Change), and takes into account topographic variations in the area. Thus, there are indications of a drier future for the Teesta basin.

4.7 Hydel Power Dams in Upper Teesta Basin

The upper Teesta basin is under enormous stress as the river has been considered as a major source of hydro-power. While five projects (Lower Lagyp, Rammam II, Rajgit III, and Teesta V) are in operation four more (Rammam III, Rolep, Teesta III and IV) are ongoing. Further, 31 hydel power projects with small storage facilities in upper Teesta basin are in the pipeline. These are mostly run-on-the-river projects, and the reservoirs hold up to a single day's water supply for a turbine. These projects could interrupt further the natural flow of water in the downstream section. For example, if several dams impound six hours of flow during the day and release that amount during the evening hours (when the power demand is highest), then there would be substantial shortage of downstream flow at some hours of the day, and excess flow at other times. This could invalidate the flow estimates at Domohani, which are based on daily measurements taken from 8 am to 11 am. Further, the times of shortage may jeopardize schedules of flow diversion for irrigation. It may be possible, through negotiation with the National Hydel Power Corporation and the Government of Sikkim, to coordinate the storage and release of water from these dams and the interception at Gajaldoba, so that brief periods of acute water scarcity are covered, or temporary requirements of diversion are met.

5 Interests of Two Countries: Myth and Reality

The basic contradiction of IndianTBP—primarily an irrigation project for the *kharif* season—is that there is little demand for the vast amount of *kharif* season irrigation that had been originally planned. As a result, only 5% of the originally planned area has been brought under irrigation. Data compiled from government sources, show that the overall impact of this irrigation on the cultivation scenario has been minimal, and the impact on *kharif* cultivation has been negative. As for hydel power generation, less than 7% of the originally planned capacity has been installed. The official records further reveal that the output amounts to utilization of that installed capacity for a total of 21 days (6%) of the year. Returns from the project may not cover the operational costs, even if one does not take into account the capital costs and the human costs (land acquisition, eviction, etc.).

These setbacks can be attributed mostly to faulty planning, and not so much to under-performance. The targets set for the project were never achievable, and performance may have been in line with what had been achievable. In respect of water supply to the Siliguri Municipality, the achievement was more than what had been planned.

While there is shortfall in terms of the expected return on investment for TBP, the unexpected consequences have been worse. Since the canal at Gajaldoba became operational in 1998, the river has virtually dried up during the lean season, as most of the natural flow has been diverted—with no consideration for ecology and the environment. Water intensive lean season agriculture has been encouraged, with canal water provided as incentive. This has led to unrealistic demand for

irrigation water, for which the available flow can never be sufficient. The farmers' quest for alternative source of irrigation has taken its toll on groundwater reserves, which have been depleting. Thus, the basic foundation of the Teesta basin ecosystem has been undermined, threatening the lives and livelihood of over fifteen lakh Indian citizens living downstream of the Gajaldoba barrage. On the other hand, persistent fuelling of unachievable dreams has raised expectations and compounded the costs of the inevitable failure of the project.

It needs to be understood that the interest of North Bengal cannot be served by drying up the Teesta River and allowing the groundwater reserves to deplete. The short term benefits that some farmers may have received since 1998 by way of canal irrigation are not sustainable. For this group, demand management could provide better solutions in the long term than supply side management. On the other hand, the entire downstream population numbering over fifteen lakh, including those farmers, now faces the peril of continued groundwater depletion. This menace cannot be checked without reversal of the policy of indiscriminate diversion of lean season flow of the river. There can be no compensation for a continuing catastrophe faced by fifteen lakh people.

The earlier position of the Government of West Bengal (at most 25% of normal flow to be released through Gajaldoba barrage) must have been taken without considering of the above facts. The stated position of the Government of India (India to keep 52% of the total flow at Teesta outfall on Brahmaputra) is worse. The millennia old river cannot be viewed as a stock of property that can be dismembered, distributed and consumed at will. It is a dynamic entity that is literally the lifeline of the entire ecosystem, which would not survive the amputation.

A term called 'river share' has been used in earlier negotiations on the Teesta issue. The maximum 'river share' that has been proposed is 25%. There is no document anywhere to suggest that 25% of normal flow would suffice to protect the river's interest. In fact, there has been no specific study to determine the ecological flow required for the Teesta basin.

Much has been said about sharing of the Teesta water in proportion to catchment areas of India and Bangladesh. This argument (which may imply almost zero flow across the international border) is not only absurd and against the guideline UN convention 1997, but also against the interest of West Bengal. The diversion of the lean season flow of Teesta has *de facto* been guided by this principle, with disastrous consequences for the people of North Bengal. In the case of many inter-state rivers, West Bengal happens to be the downstream state, and would stand to lose if the same principle is used there. There is a need to dispense with the mind-set that aligns national interest with the dismembering of a river and pushing the nation's citizens towards ecological disaster and groundwater depletion. The real interest of West Bengal would be served by releasing an even greater part of the natural flow through the barrage.

6 The Teesta Barrage Project in Bangladesh

Following the construction of the Gajaldoba barrage on the Indian side of the Teesta River, Bangladesh constructed a barrage at Duani (Lalmonirhat district) in 1990. In this case also, irrigation was dependent on flowing water in the river, as no reservoir was built to store and transfer monsoon water for non-monsoon season. The project in Bangladesh was designed to irrigate 111,406 ha in phase I which was completed in June 1998. The project proponents hope to expand the irrigable area to 749,000 ha in phase II (Islam et al. 2004). As in the case of the Indian TBP, the planners of the Bangladesh TBP hardly took into account the available water at barrage site. Consequently there remained a wide gap between potential command area and area actually irrigated. The project is only able to help in supplementary irrigation to *kharif* crop during mid-monsoon breaks. In fact, the gap between expectations and achievement at the Bangladesh TBP came to be attributed entirely to water diversion at the Indian TBP, adding to the stress in bilateral relationship.

7 Concluding Remarks

The negotiations with Bangladesh should be used as an opportunity to ensure that there is minimal diversion at Duani Barrage, so that there is a healthy ecological flow through the entire length of the river. This would forestall depletion of groundwater on the Bangladesh part of the Teesta basin, and a cascading effect in the border region in India. It is important to explore a rational meeting point between the volume of water that may be extracted from the Teesta and the flow to be left in the river to sustain the ecosystem services. This seems to be the only way to achieve mutually acceptable solution of the Indo-Bangladesh conflict over the sharing of the trans-boundary waters.

References

Actionaid (2015) Blues beyond boundaries; Transboundary water commons/India Report. Natural Resource Knowledge Activist Hub- A knowledge Initiative of Actionaid India. Bhubaneswar

Ashfaq M, Shi Y, Tung W, Trapp RJ, Gao X, Pal JS, Diffenbaugh NS (2009) Suppression of South Asian summer monsoon precipitation in 21st century. Geophys Res Lett 36:L01704. doi:10.1029/2008GL036500

Bagge A (1950) Report of the International Arbitral Awards. Boundary disputes between India and Pakistan relating to the interpretation of report of Bengal Boundary Commission. Part I. Vol XXI, pp. 1–51. http://legal.un.org/riaa/cases/vol_XXI/1-51.pdf

BBS (2011) Bangladesh data sheet, Bangladesh bureau of statistics. http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/SubjectMatterDataIndex/datasheet.xls. Accessed 17 August 2016

Braga B (2014) Water without borders: sharing the flows? In: Pangare G (ed) Hydrodiplomacy. IUCN, New Delhi

CGWB (2010) Ground water scenario of India 2009–10; Central Ground Water Board Ministry of Water Resources Government of India Faridabad 2010. http://www.cgwb.gov.in/documents/Ground%20Water%20Year%20Book%202009-10.pdf. Accessed 17 August 2016

Crow B (1986) Sharing the Ganga. In: Farakka – A Gordian Knot. Ishika, Kolkata, pp 170–171

Dasgupta A (1996) Bharat-Bangladesh Jalbantan Chukti (1996): Ek Eitihasik Sambhabana. In: Bengali, Ganashakti, 16th December, 1996: 4

Dyson M, Bergkemp G, Scanlon J (eds) (2003) The Essentials of environmental flows. Water and Nature Initiative, International Union for Conservation of Nature and Natural Resources. http://moderncms.ecosystemmarketplace.com/repository/moderncms_documents/iucn_the-essentials-of-environmental-flows.pdf. Accessed 30 December 2011

GoI (1999) Report of the National Commission for Integrated Water Resources Development Plan. Ministry of Water Resource New, Govt. of India, Delhi

GoI (2002) National water policy, Government of India. http://wrmin.nic.in/writereaddata/NationalWaterPolicy/NWP2012Eng6495132651.pdf. Accessed 17 August 2016

GoI (2007) Review of performance of hydropower stations 2006–07. Ministry of Power, Central Electricity Authority, Hydropower Planning and Investigation Division

Govt. of West Bengal (2011) Census of India 2011: provisional population totals, West Bengal. Directorate of Census Operations, West Bengal

Islam N, Azam A, Islam QR (2004) Teesta River water sharing: a case study in Teesta Barrage Project. Presented at 2nd Asian Regional Conference of the International Commission on Irrigation and Drainage, 14–17 March, Moama, NSW, Australia. http://watertech.cn/english/islam.pdf. Accessed 17 August 2016

IUCN (2014) Rivers beyond border. India Bangladesh Transboundary River Atlas

McCully P (2001) Silenced River: ecology and politics of large dams. Zed Books

Mitchell TD, Jones PD (2005) An improved method of constructing a database of monthly climate observations and associated high-resolution grids. Int J Climatol 25:693–712

Ramana MVV (1992) Inter-state river water dispute. Orient Longman

Rao KL (1979) India's water wealth. Orient Longman, Kolkata

Rudra K (2009) Water resource and its Quality in West Bengal, WBPCB

Shamsudduha M, Chandler RE, Taylor RG, Ahmed KM (2009) Recent trends in groundwater levels in a highly seasonal hydrological system: the Ganges-Brahmaputra-Meghna Delta. Hydrol Earth Syst Sci 13:2373–2385

Subedi SP (2005) International Watercourses Law for 21st Century. The Case of River Ganges Basin. Ashgate Publishing Limited, UK

SWID (2011) Unpublished records. State Water Investigation Directorate, Government of West Bengal

WCD (2000) Dams and development: a new framework for decision-making. Report of the World Commission on Large Dams. http://www.dams.org/. Accessed 17 August 2016

Seawater Intrusion: Land Degradation and Food Insecurity Among Coastal Communities of Sindh, Pakistan

Habibullah Magsi and M. Javed Sheikh

1 Introduction

The coastline of Pakistan extends 1050 km along the Arabian Sea. Karachi, Ormarah, Pasni and Gwader are some of the important coastal areas. The coast of Pakistan can be divided into coasts of Sindh and Balochistan provinces, because they exhibit large variability in climatic and hydrological resources and physical limitations. Sindh coast is endowed in hydrological terms as Indus River falls to the Arabian Sea and contributes into large Indus River Delta with micro-climate of deltaic region and wide variability of estuaries and mangroves. The Coastal zone of Sindh province (extends over Badin, Sujawal and Thatta districts) is about 350 km long including the Indus Delta. The Indus Delta (approx. 1600 km^2) is the most prominent ecological feature of the Sindh coast covering 85% of the coastal belt in Sindh (Majeed et al. 2010).

Approximately, 300,000 km^2 of the Indus watershed, of which 50% is located outside Pakistan (India, China and Afghanistan), contribute flows to the Indus River. Since the construction of dams and reservoirs at upstream, water flow has significantly been reduced at lower structural system (IUCN 2007; Memon 2004; Kazi 2004). According to Baxamoosa (2007), Indus River used to throw 400 million tons of silt in the sea every year, which has now been reduced to just about 100 million tons a year. This gradual depletion in flow of freshwater and rich silt into sea has not only slowed down delta formation, but accelerated sea intrusion and led to hyper-saline condition in the coastal area that is degrading the natural

H. Magsi (✉)
Department of Agricultural Economics, Sindh Agriculture University Tandojam, Tandojam, Pakistan
e-mail: habib_magsi2000@yahoo.com

M.J. Sheikh
Department of Rural Sociology, Sindh Agriculture University Tandojam, Tandojam, Pakistan

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_12

resources like, land, livestock, vegetation, fish, mangroves, and other edible marine varieties in the sea (Qamar 2009; Ahmed et al. 2013).

Since reduction in fresh water flow into the sea, the district Badin may be turned as a hazard prone coastal district of Sindh, due to seawater intrusion (SCCDP 2012). Shortage of fresh water together with seawater intrusion is consistently changing the geo-morphology of the region (Sheikh et al. 2015a) as well as forcing the coastal communities to shift their livelihoods (Magsi and Atif 2012; Kravtsova et al. 2009; Giosan et al. 2006). Therefore, if risk is not properly managed it may transform into disaster (Amjad et al. 2016), the total destruction of the area and people ultimately.

Located at the coast, Badin faces seawater intrusion, which is a serious issue of the region (GOS 2014). Being the hub of lower Sindh, the district have enjoyed a rich history and economic opulence in the past; while fishing had formed a major part of its livelihood, crop farming was also a key component as each family had access to agricultural lands (IUCN 2007). Moreover, wood cutting and forest product enabled households to meet timber and fuel needs as supplement their incomes (Kazi 2004; Magsi et al. 2014). Where, livestock keeping was an additional resource for supplementing household's consumption and as a key coping mechanism during economic crises and disasters (Memon 2004). Unfortunately, Badin has experienced six natural disasters in recent years; namely, a cyclone in 1999, drought in 2000, earthquake in 2001, drought followed by floods in 2003, super flood of 2010, flash-floods of 2011 and rainfall 2012 (GOP 2015). Reportedly, disasters affected families have never been appropriately assisted through effective recovery primarily because rehabilitation programs, sustainable resource planning and regional development inputs for the Sindh coast have been missing altogether. Poor governance and pilferage of local government funds has caused severe damage to the physical and social infrastructure.

In Badin district, million acres of cultivated land has been vanished due to seawater intrusion (GOS 2014), which certainly has twofold negative impacts in the region, i.e. reduction in local populations' income and food insecurity. It is commonly accepted that both of the above said situations provoke poverty and famine conditions. Moreover, seawater intrusion has affected water quality of the district and increased incidences of waterborne diseases such as malaria, cholera, bacterial diarrhea, etc. (Ahmed et al. 2013). Badin is the one of the poorest districts of Sindh provinces by all socioeconomics measures, including health care, education, infant mortality and income (Oxfam 2009). Resultantly, hundreds of villages from the district have migrated elsewhere in the search of sufficient food and livelihood (Kazi 2004).

Through this we hypothesized that influence of seawater in Badin district has negative impacts on the daily life of the local population. Thus, the specific objectives of this study were finalized: (i) to review the impacts of seawater intrusion on the livelihood and infrastructural damages at the Sindh coast; and (ii) to identify the factors of seawater intrusion on the food security of the local community and socioeconomic status of the study area. The rest of the article is divided into following sections. First, it discloses the context of the study area, data

collection and analytical methods used. The following section gives emphasis upon the main findings; include socioeconomic profile of the respondents, with their earnings and expenditures. This part also puts stress on the seawater intrusion impacts on livelihood and local food supply. Final section concludes the findings and provides suggestions to the stakeholders (federal and provincial) for long-term response to land degradation, sustainability and human welfare among coastal communities.

2 Case Study Selection and Analytical Approaches

This section exposes the geographical location, profile, and land cover area of the district Badin as well as the methods applied for data collection and analyses.

2.1 Profile of the Study area

Sindh coast is comprised over Badin, Sujawal and Thatta districts. Although, Sujawal and Tahtta districts have severely been affected by seawater intrusion, but for this study Badin district has been selected, because the seawater intrusion has largely hit the agricultural lands in this district (GOS 2014). According to IUCN report (2007), about 32,000 ha of agricultural lands have already been affected by seawater intrusion in the district.

Located in the southern part of the Pakistan (e.g. see Fig. 1), Badin district is spread over a geographical area of 6726 km^2, the district derives its name from headquarter town of Badin. Administratively, it is divided into five sub-districts (Badin, Matli, Shaheed Fazil Rahoo, Talhar and Tando Bago) and 46 union councils. Badin district is divided into two distinct economic zones, one is purely agricultural (northern part) and the other is mixed having both fishing as well as agrarian population (southern part) (GOS 2014).

2.2 Methodological Considerations

This sub-section is limited over the methodological approaches and analytical techniques used for this descriptive research. Both primary and secondary data have been exploited.

2.2.1 Sample Size

For primary data collection, the study reviewed a formula developed by Cochran (1963) for shaping the sample size. As the researchers have doubts over available non-published and unauthentic sources to get the exact population size, the formula was reviewed for when the population is either too large or the figure is unknown.

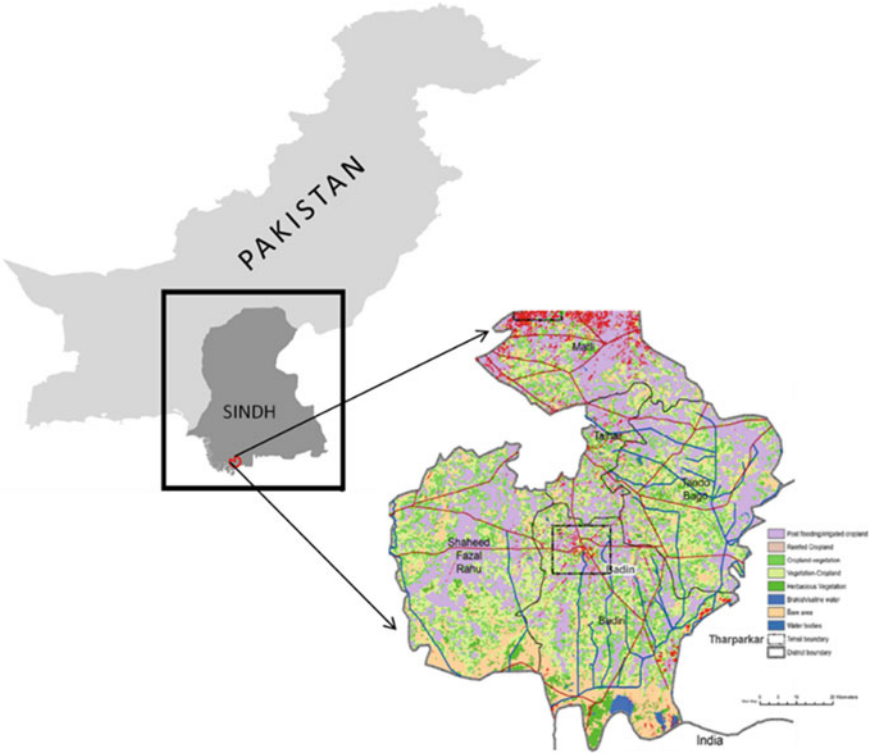

Fig. 1 Study area map

$$n_0 = \frac{Z^2 pq}{e^2} = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2} = 384,$$

where, n_0 = Sample Size; Z^2 = Abscissa of the normal curve that cuts off an area at the 95%. $Z = 1.96$; e = Desired level of precision. $e = 0.05$; p = Estimated proportion of an attribute that is present in the population. $p = 0.5$; $q = 1 - p$, hence $q = 0.5$.

Through this formula it was estimated that the sample size should not be less than 384. Therefore, it was decided to administer 400 questionnaires to conduct a valid and reliable study.

2.2.2 Data Collection

Primary data was collected by using multi-stage cluster sampling technique, where all five sub-districts of the District Badin were considered for data collection. In this regard, 80 respondents from each sub-district were randomly interviewed, thus the data from 400 respondents have been collected on a semi-structured questionnaire (see Appendix 1). Mainly the questions were comprised of indicators like income

and livelihood sources, physical infrastructure and communication systems, institutions and their influences, natural resource uses and miss uses, available basic amenities, issues and options.

On the other hand, secondary information has also been gathered from available literature, published by the relevant departments of government of Sindh and Pakistan as well as non-governmental organizations (NGOs), etc. Moreover, the data was also collected from other locally published literature i.e., books, magazine and newspaper articles, etc. Secondary information is gathered to understand the impact of natural disasters and extreme weather conditions on productive potential and availability of basic amenities in the study area.

3 Results and Discussion

This part is mainly comprised over three sections, demographic and lifestyle of local actors; income, expenditure and budgeting; and the challenges faced by the respondents, caused by seawater intrusion in the study area.

3.1 Socioeconomic Profile of the Respondents

Results show that the average age of randomly interviewed respondents was about 39 years, with minimum 31 and maximum 65 years; the age group normally reflects the maturity level of the interviewees, where the family size is an important tool to measure the human resource and the demands of a household. In fact, in the study area on average each family was comprised on 8 persons including 3.7 males and 4.2 females (e.g. see Table 1). Among this, about 3 persons per family were working in order to support their family. Through this analysis, relatively a greater ratio of female members was noted as compared to male member in the study area. Education is also considered as most important indicator for interpreting the social structure of a society (Mulyanto and Magsi 2014). Thus, the literacy rate in the study area is about 43%, including only 10% graduates (highest qualifications),

Table 1 Socioeconomic characteristics of the respondents

Description	Statistics
Average age of all respondents	38.8
Family size (average)	7.9
Male in Household (average)	3.7
Female in Household (average)	4.2
Working members (average)	3.6
Literacy (percentage)	42.9
Graduates (percentage)	10.7
Wood made houses (Jhopra)	46.9
Pacca houses (cemented)	14.1
Rooms per household (number)	1.6

which is low as compared to the national literacy rate of 58% (GOP 2015). It is also exposed that the majority (46.9%) of the local population lived in wood made houses (*Jhopra*), where only 14% had cemented (*pacca*) houses, while the rest 39% people had semi-cemented (*kacha* pacca) houses made up of bricks and mud, with wooded floors. However, on average 1.6 rooms were allocated to an 8 persons family, was a shocking finding to the researchers.

3.2 Budget and Expenditure and Loaning Facilities

In general, it was found that more than half of the population was engaged in agriculture followed by fishing and livestock activities. This is obvious that being an agricultural country, the majority of the rural population are depending on this sector (GOP 2015). Whereas, about 21.6% people used to cultivate land and raise animals altogether, they fetch almost 50% higher income as compared to those who were just engaged in agriculture farming (e.g. see Table 2). Among those it was also observed that about 24% of respondents were tenant and the rest had their own lands. Beside that about 7.5 of our respondents used to earn daily wages to fulfil the requirement of their families. According to those daily wage labourers, sometimes they couldn't find work for several days; they try to find their way by utilizing social capital. A study conducted by Sheikh et al. (2015b) on the social capital among farming communities in Sindh province was revealed that the rural people are tied with each other in close relationships and try to utilize these relationships during hard time. However, rest of the population was engaged either in government jobs or in small scale self-generated businesses.

While asking the questions related to the available basic facilities at their surroundings, their foremost response was the health care center and long break-down of electricity (almost 14 out of 24 h), followed by the public transportation and poor infrastructure regarding the roads and schools. Almost the same situation also prevails in the other parts of Sindh province (Memon et al. 2015; Magsi et al. 2015).

Anyway, it is the family budget that reveals how a family manages to meet various expenditures from its disposable income. It also helps in determining the level of standard of living of a family is extra agent or incurring expenditure

Table 2 Monthly income and their main sources

Sources	Respondents (Percentage)	Amount (Pak Rupees)
Agriculture	29.0	10,412
Agriculture and Livestock	21.6	15,456
Livestock	11.4	9275
Fishing	22.3	10,437
Wage labor	5.4	6523
Government employee	6.8	13,428
Business (small scale)	3.5	15,267

Table 3 Household's monthly food and non-food expenditures

Particulars	Average (Pak Rupees)	Priorities/ranking
Food	10946.4	1
Ceremonies (social and religious)	1230.3	2
Mobile/communication	1067.8	3
Junky (Cigarette, Pan and Gutka)	982.8	4
Health	958.9	5
Feeding (animals)	950.6	6
Education	512.5	7
Washing/laundry	424.1	8
Utility (electricity + gas)	303.6	9

proportionately on various needs. If a family commands the resources to provide all basic necessities of life to its members, education of the children, maintain of the health of its members and accumulates sufficient funds to meet unforeseen expenses, it may be considered a prosperous family. Therefore, family budget presents a true picture of the socioeconomic activities of a family. The components of family budget of a village family include food, clothing, housing furniture, education, light and fuel, medicines, legal per suits, travels, religious ceremonies, social ceremonies and payment of debt or saving. In this study, it was also investigated that about 68% of a household's income is being consumed in food items (e.g. see Table 3).

On the other hands among non-food expenditures the greater proportion is being used in social and regions festivals, rather than schooling of the kids or taking care of their health, etc. The ceremonies usually they attend including participation in fairs, attending birth and death anniversaries, visiting of *Pirs* (spiritual leaders) and relatives, participation in marriage and other social gatherings. Results show that the past decade had put great impacts even on the rural people expenditure priorities. Therefore, the development in telecommunication led to increase in communication (mobile) expenses and defeated in expenditure to health and education. It was also found that apart from smoking, chewing battle leaf (*Pan*) and *Gutka* (wet and dried) were usual habits of the local people, which may be easily identified through continuous chewing habit like a buffalo. Interestingly, the respondents used to spend more on animal feeding rather on educating their children, when they were asked "why", majority of them has replied that animals are their main sources of income, while after getting education there is no guarantee of employment, than why they should spend more on education.

The expenditures made on the purchase of animals, boats, fishing nets, agricultural inputs and equipment's, etc., are not taken in to account because of twofold reasons. First, not all the respondents were agriculturists, herders or fishermen. Secondly, respondents indicated that for such big investment they usually borrow money from various sources on different terms and conditions. When we look at the income and expenditure tables it is clear that the local populations may not have

sufficient amount to save for next crop cultivation (the agriculturalist), thus they used to borrow an amount of their inputs from relative, friends, local shopkeepers or from landlords on different terms and conditions. Results show that about 64% of respondents take loans from shop-keepers or dealers, as Sheikh et al. (2016) also reported that the majority of the farmers in Sindh rely on dealers in selecting pesticides because they provide those loans on soft terms and conditions. Followed by, 23% household take financial help from landlord, 9% from relatives and 4% households depend on their close friends, where the interest rates were varied from 10% to 50% per year, but in rare cases it may be exempted.

3.3 Seawater Intrusion Impacts and Food Security Challenges

This section is comprised over climate change impacts (in the particular seawater intrusion) on rural life, migration of the local population and food security challenges in the study area.

In general, seawater has intruded due to many reasons, i.e. due to effects of frequent natural disasters and reduction in the flow of the Indus. There are reports that the sea has intruded from 30 to 50 km deep in some coastal areas of Sindh province. According to a survey carried by the Sindh Coastal Development Authority in 2011 that in Badin district about 35,785 acres were fully eroded by seawater, where an area of 44,046 acres were partially affected (SCCDP 2012).

The research findings show that averagely every respondent occupies 27 acres of land (see Table 4) with SD = 9.11, which indicates to unfair distribution of agricultural land (resources) in the study area and needs to introduce land reforms to ensure the justice (Sheikh et al. 2015a). About 67% people had less than 10 acres of agricultural land, about 20% had between 10 to 50 acres and about 13% respondents had more than 50 acres of local population. Likewise, in Pakistan around 80% of agriculture lands hold by 5% (the landlords), while 20% is allocated among 95% of people. It is also estimated that among the agriculturists, about 76% of the respondents had their own lands which was their basic source of income. The results further reveal that around 20% households were tenant and only 4% were sharing their own lands with neighbours on rent as well as on fixed term contracts. Furthermore, it is also estimated that about 67% of their agricultural land was being cultivated while the rest is either left fallow due to shortage of water or was unable to be cultivated due to the seawater intrusion (e.g. see Table 4). In both of the

Table 4 Agricultural land holdings

Description	Average	S.D.
Average farm size	26.76	9.11
Cultivated	17.91	5.86
Fallow land	4.32	1.74
Seawater effected	4.53	1.02

Table 5 Main issues faced by the coastal communities of Badin district

Categories	Frequency	Ranking
Frequent natural disasters (cyclone and flood)	400	1
Seawater intrusion	364	2
Scarcity of irrigation water	321	3
Unemployment	264	4
Illiteracy	255	4
High prices of food items	136	7
Lack of basic infrastructure	136	7

situations, the agricultural productivity is being declined in the region. If there might be a lower production growth rate as compared to the population growth, there will certainly be food insecurity (FAO 2002). According to GOS (2014) about 22% of the cultivated land has been degraded due to seawater in Badin district, which is an alarming situation for the authorities and policymakers.

The seawater intrusion is causing not only the adverse effects on agricultural lands, but the livelihood of the associated households is being damaged (Memon and Thapa 2011). Majority of the respondents (51%) have shared that due to land degradation small farmers have switched their mode of revenue generation from agriculture to sea fishing and/or daily wage labour. About 14% the respondents admitted that their neighbours have migrated to the other parts of the province for a permanent solution. They further told that the migrated family households often visit them, where their current socioeconomic condition is also not much encouraging. This is obvious that rehabilitation often creates conflicts; for example, the emotional attachment with previous dwellings, adjustment in new culture and environment as well as to search the employment (Magsi and Torre 2012).

In order to have more insights regarding the issues faced by the respondents in the study area, we have asked open ended questions that what they think about and how they see different problems in their residential areas. The responses of the interviewees have been summarized and presented in the Table 5.

Results in the Table 5 exposes that natural disasters like cyclones, floods and droughts have affected agricultural and livestock productivity, which further disturbed the food (grain and vegetable) supply. Similarly, an overwhelming majority of the respondents complained that the seawater has affected their income through degrading their land resource and transformed it into barren places. Badin being a part of lower riparian region of the Indus River, faces shortage of irrigation water, which is ranked as 3rd and is pointed by 321 respondents. They have admitted that unemployment has lowered their income, because neither they has education nor the possess skills to get a good job. Few of the households have also highlighted that

food supply is inefficient in the region because of poor infrastructure and high prices of the food items.

4 Conclusion

As noted in this study, coastal communities of (Sindh) Pakistan are residing with poor infrastructure and limited social services. Basically, Sindh coast is consist of Badin, Sujawal and Thatta districts. Although, Sujawal and Tahtta districts have severely been affected by seawater intrusion, but for this study Badin district has been selected, for the reason that the seawater intrusion has affected the agricultural lands largely of the area. The finding of this research revealed that the majority of the respondents were illiterate and lived in wood made houses with about six children; where on average, each family had only 1.6 rooms in their houses and shows a poor living standard. Furthermore, the district Badin has large communities that depend on the delta for their livelihood. The reduction in the irrigation water flow into the delta has affected its agriculture, livestock and inland fisheries production, which were major sources of livelihood of these communities. Thus, under the circumstances, the local people are facing hard time to produce bread and butter for their families. Resultantly, the social, economic, and environmental problems are all on at rise, which have induced many households to migrate or to switch into alternate source of income.

Based on the study findings, it is recommended that there is need to mobilizing the organized proximity to introduce and disseminate salt tolerant crop varieties, to improve infrastructure, to introduce latest soil reclamation technology and to set reverse osmosis plants or salt water desalinization plants along with Sindh coast to enhance social and economic conditions of local population. Besides that the geographical proximity might be mobilized to improve communication system among coastal communities for pre-disaster information, community participation for vocational and technical trainings as well as for dissemination of information regarding income generating sources in the region is also suggested.

Acknowledgments We acknowledge the help of Prof. Dr. Junaid Alam Memon from Pakistan Institute of Development Economics (PIDE), for proof reading and suggestions on the earlier version of this article, we also acknowledge the help of Mr. Ihsan A. Bozdar for his valuable time during data collection.

Appendix: Questionnaire

Seawater intrusion: Land degradati on and Food insecurity among coastal communities of Sindh, Pakistan

Name of the respondent: _____

Date:_____

Deh:_____ ___ Taluka: _____ ____District: _____

1. Personal information

Name of Respondent	Age	Sex	Marital Status	No. of Children	Male child.	Female Child.

2. Education/qualification

PhD/M.Phil	BA/BSc	Intermediate	Matriculation	Primary	Illiterate

3. Primary Source of income

Agriculture	Livestock	Fishing	wage labour	Poultry Form	Others	Others

4. Secondary Source of income

Government Employment	Private Employment	Business	Others if any

5. Monthly Income from which sources

Agriculture	Livestock	Fishing	Wage labour	Poultry Form	Government Employment	Private Employment	Business

6. Land Holding

Total farm size in acre	Cultivated	Uncultivated	Seawater Effected	Tented In	Tented Out	Shared In	Shared Out

7. Tenancy Status, Water and Power Source

Own	Tenant	Owner-Cum-Tenant	Canal	Tube well	Tented Tractor	Bullock	Own Tractor

8. Animal in Household

Sheep/Goat	Buffalo	Cow	Bullock	Camel	Donkey/Horse	Cattle	Others

9. Houses Classification

Kacha	Pacca	Sami Pacca	Temporary	Boats	Wood made	Others

10. Descriptive socioeconomic characteristics of the respondents

Total Family	Male	Female	Total Child	Disable	Total Working Member

11. How much do spend monthly for Food Expenditure?

Flour	Oil/ Ghee	Meet	Sugar/Tea	Fish/Meat	Vegetable	Fruit	Rice	Milk	Pulses	Total

12. How much do spend monthly nonfood Expenditure?

Drinking Water	Education	Feeding	Transport	Social cer-emonies	Health	Mobile	Utility Bill	Junky	Washing	Other

13. Household Variable Expenditure per Year in Rupees

House Con-struction	Animal Purchasing	Agriculture Implements	Fertilizer/Seed/ Insecticide	Appliance	Land Prep-aration	Land Revenue	Clothing /shoes	Zakat/ Ashur

14. Current Household Durable Assets: Quality and Value

Assets	Motorcar	Motorcycle	Tractor	Truck	bicycle	Freezer	Jewelry	Electrical Accessories	Weapons
Quality									
Approx. Value in rupees									

15. Do you have following facilities of life?

Electricity	Yes / No
Road	Yes / No
Water Supply	Yes / No
Sewerage System	Yes / No
School	Yes / No
Health Centre	Yes / No
Public Transport	Yes / No
Shop	Yes / No
Market	Yes / No

16. Do you take any Loan. If YES than from which Source and how much?

Shop Keeper	Yes / No (Rs.____)
Land lard	Yes / No (Rs.____)
Relatives	Yes / No (Rs.____)
Friends	Yes / No (Rs.____)
Bank	Yes / No (Rs.____)
NGO's	Yes / No (Rs.____)

Other source if any: _____

17. What was the commission charges per year in Percentage?

Shop Keeper	(_____%)
Land lard	(_____%)
Relatives	(_____%)
Friends	(_____%)
Bank	(_____%)
NGO's	(_____%)

Other source if any: (_____%)

18: Did you felt any climatic change in past ten years? Yes / No
If YES specify_____.
19. Were your resources affected by Natural Disaster in any of the follo wing year(s)?
Cyclone 1999 Yes / No
If YES specify_____.
Drought 2000 Yes / No
If YES specify_____.
Earthquake 2001 Yes / No
If YES specify_____.
Flood 2003 Yes / No
If YES specify_____.
Super Flood 2010 Yes / No
If YES specify_____.
Flash Flood 2011 Yes / No
If YES specify_____.
Rain 2012 Yes / No
If YES specify_____.
20. How do you notice any change in seawater intrusion in last five years?
Increase Yes / No
Decrease Yes / No
21. How many household migrated from this/your village in last five years?
Ans._____ _____
22. What is/was the reason of their migration?
Ans._____
23. In your perception, what are the most important problem(s)/ issue(s) in your village?
a._____ _____
b._____
c._____
24. In your Perception how government can reduce the effect of seawater intrusion?
a._____ _____
b._____
c._____
25. In your perception most common issue(s) regarding food insecurity?
a._____ _____
b._____
c._____
26. In last 6 months have you felt/found affected from any of the follow ing waterborne disease in your home/surrounding?
Malaria
Dengue
Cholera
Others:_____.

Thanks for your valuable time!

References

Ahmed A, Noonari TM, Magsi H, Mahar A (2013) Risk assessment of total and faecal coliform bacteria from drinking water supply of Badin city, Pakistan. J Environ Prof Sri Lanka 2 (1):52–64

Amjad MI, Qing P, Zou J, Javed MS, Chen T (2016) Risk perception and management strategies of cotton farmers in Pakistan. Sylwan 159(11):93–116

Baxamoosa S (2007) Where the river runs dry: an analysis of the ecological and socioeconomic impacts of Large Dams on the Indus Delta. Senior Thesis, School of Social Sciences, Hampshire College, US, pp 27

Cochran WG (1963) Sampling techniques, 2nd edn. Wiley, New York

FAO (2002) The salt of the earth: Hazardous for food production. World Food Summit Five Years Later. http://www.fao.org/worldfoodsummit/english/newsroom/focus/focus1.htm. Accessed 10 December 2015

Giosan L, Constantinescu S, Clift PD, Tabrez AR, Danish M, Inam A (2006) Recent morphodynamics of the Indus delta shore and shelf. Cont Shelf Res 26:1668–1684

GOP (2015) Pakistan economics survey 2014–15. Economic Advisor's Wing, Ministry of Finance, Islamabad, June 2015

GOS (2014) Badin District summary. http://www.badin.gov.pk. Accessed 12 January 2016

IUCN (2007) Mangroves of Pakistan–Status and management Karachi: International union for conservation of nature–Pakistan. IUCN, Pakistan

Kazi AM (2004) Overview of water resources in Pakistan. National Seminar, University Of Sindh, Jamshoro, January 15–16

Kravtsova V, Mikhailov V, Efremova N (2009) Variations of the hydrological regime, morphological structure, and landscapes of the Indus River delta (Pakistan) under the effect of large-scale water management measures. Water Resour 36:365–379

Magsi H, Atif S (2012) Water management, impacts and conflicts: case of indus water distribution in Sindh, Pakistan. Int J Rural Stud 19(2):7–11

Magsi H, Torre A (2012) Social network legitimacy and Property right loopholes: evidences from an infrastructural water project in Pakistan. J Infrastruct Dev 4(2):59–76

Magsi H, Lohano HD, Mirani Z (2014) Marketing system and structure for agroforestry products in Sindh, Pakistan. Eur Acad Res 2(7):9509–9522

Magsi I, Memon AW, Magsi H, Mirani Z (2015) Socioeconomic conditions of Sindh, Pakistan: case of Kamber Shahdadkot District. Int J Rural Stud 22(1):27–30

Majeed S, Bint-Zaman S, Ali I Ahmad S (2010) Situational analysis of Sindh Coast – Issues and Options. Research Briefings, Vol 2(11). Natural Resources Division, Pakistan Agricultural Research Council, Islamabad, Pakistan

Memon AA (2004) Evaluation of impacts on the lower Indus River basin due to upstream water storage and diversion. Proceedings, World Water & Environmental Resources Congress 2004, American Society of Civil Engineers, Environmental and Water Resources Institute, Salt Lake City, Utah, June 27–July 1, 2004

Memon JA, Thapa GB (2011) The Indus irrigation system, natural resources, and community occupational quality in the delta region of Pakistan. Environ Manag 47:173–187

Memon AW, Magsi I, Magsi H (2015) Prevalence of rural poverty in Sindh, Pakistan: Case of Tando Allahyar. J Eur Acad Res 2(10):13296–13307

Mulyanto M, Magsi H (2014) Approaches to measure quality of human resource development index in the village context: case of Central Java, Indonesia. Macrotheme Rev 3(6):1–17

Oxfam (2009) Climate change, poverty and environmental crisis in the disaster prone areas of Pakistan, pp. 13 and 17. http://www.oxfam.org.uk. Accessed 12 January 2016

Qamar KM (2009) Mangroves of the active Indus Delta: changes and their causes. PhD thesis, National College of Business Administration and Economics, Lahore

SCCDP (2012) Baseline survey of coastal areas, sindh coastal community development project vol 1. Sindh Coastal Development Authority. March, 2012

Sheikh MJ, Redzuan M, AbuSamah A, Mangrio MA, Baloch L (2015a) Quantitative survey of water management issues in rural Sindh. The Government 4(1):101–119
Sheikh MJ, Redzuan M, AbuSamah A, Ahmad N (2015b) Identifying sources of social capital among the farmers of the rural Sindh province of Pakistan. Agric Econ–Czech 61(4):189–195
Sheikh MJ, Magsi H, Qureshi NA (2016) An analysis of extension services in rural Sindh province of Pakistan. Macrotheme Rev 5(2):77–84

Coastal Encroachment, Biodiversity and Distribution of Natural Coastal and Marine Resources in South Asia

Anisah Lee Abdullah

1 Introduction

Climate change is believed to be responsible for massive change in our oceans and human consumptions responsible for the overfishing issue in our oceans. Climate change particularly global warming is induced by several factors and that includes anthropogenic and non-anthropogenic. The non-anthropogenic *i.e*. natural phenomena such as change in earth-sun distance, sun sending more or less energy and volcanic eruption, are factors beyond our control and influence. However, the anthropogenic induced factor is the core factor which we are facing at present. The core factor causes shrinking of global biodiversity, drastic reduction in fish landing tonnage, sea level rise, migration of species, interruption of food chains, food productivity, climate exodus, poverty, climate refugees, ocean acidification, environmental and human health, and the list goes on. The effect of global warming is therefore, multitude and complex. Because the earth system and processes involving lifeforms are inextricably linked, the approach needed will be a complex integration of multiple disciplinary and no one disciplinary is above any other. The biogeochemical process for example interweaves all four systems of the earth and none of these systems may be omitted, changed or altered without interrupting the balance of life's equation. A simple scenario to this would be advancing technology which, in its own term sounds pretty harmless, a forward outlook of a developing era modernizing the lifestyles of humankind. However, advancing technology comes with a price—the industry becomes a pulling factor for migration of people into urban areas causing population rise, increasing population density. Natural resources will be exhausted at a faster rate because demand and supply will increase, and this accelerates pressure and rate of development, increases urban pollution, inflates threats to biodiversity which progresses into over-exploitation

A. Lee Abdullah (✉)
Universiti Sains Malaysia, Gelugor, Penang, Malaysia
e-mail: anisah@usm.my

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_13

and damages to existing natural habitats. The integrity of these habitats and ecosystems are then at risk and productivity will start to dwindle and deteriorate over time and space. It will in turn reduce ecosystem services capacity further and caused a negative feedback to humankind simply because we depend on these ecosystems.

The increase in urban pollution especially carbon dioxide (CO_2) emission at an unprecedented rate *i.e.* business as usual, then it becomes the absolute problem which metamorphose into the footing of global warming. Every country is experiencing the impact of global warming but due to the differences in location geographically, the landscape and size, this impact vary. Some countries experience the impact more significantly and directly than others. Arid land may experience extreme continuous dry spells and become uninhabitable in the long term. Some tropical region may experience other extreme weather conditions such as over-flooding especially in alluvial plains. Low lying islands may be submerged when sea water level rises. Climate change *i.e.* global warming will most impact human wellbeing in low-income countries. South Asia is one of the regions significantly experiencing the force of global warming. The most vulnerable groups are the urban poor, the elderly and children, traditional societies, subsistence farmers and those living on the coast (Confalonieri et al. 2007).

South Asia comprises of eight countries and is sometimes referred to as a subcontinent or the Indian Subcontinent. This chapter considers the five countries sharing maritime resources within the Indian Ocean which are Bangladesh, India, Maldives, Pakistan and Sri Lanka. This chapter discusses the issues and challenges arising from increasing coastal population and the consequences of this upon the biodiversity of coastal and marine ecosystems, the coral reefs.

The South Asian continent alone has about 1.75 billion inhabitants which is about 1/5 of the world's population. Highest density areas with >200 persons per km^2 are mainly at the Indo-Gangetic Plain, Southern Ghats, Ahmadabad-Mumbai and at the higher plains at Lahore-Falsalabad. The metropolitan areas like Delhi and Kolkata within the Indo-Gangetic Plain consist of more than 10 million inhabitants. This typical distribution of population density pattern is exclusively corresponding to the Indus, Ganges and Brahmaputra rivers. They are the three main rivers draining this region. The Indus and Brahmaputra are each 1800 miles long while the Ganges is 1560 miles long. These rivers not only serve as supporting life but also of their sacred beliefs especially the Ganges River.

The Ganges River flowing from a glacier in the Himalayas to the Bay of Bengal is an important water source in India. The Indus and Ganges play a key role in supporting life in South Asia in general. The alluvial plains contain rich deposited soil from overflowed river banks, hence their rich farmlands. This placed the Indo-Gangetic Plain the most heavily populated part of this region. Along the Ganges River alone, about 400 million people called it a home. In Bangladesh, the Feni River flows through low-lying coastal plain that borders the Bay of Bengal and has the largest estuary (dam) in South Asia.

In terms of climate and vegetation, 6 climatic zones can be found in South Asia. This means the inhabitants of this subcontinent must adapt to widely varying

climatic conditions including monsoons with seasonal winds and cyclones. Based on the distribution pattern of human population, majority of the people live within the tropical and subtropical climate and vegetation areas. Naturally, the broad spectrum of climatic zones also translates to the fact that this region has a rich source of natural resources both terrestrial and the coastal-marine ecosystems.

2 Coastal Populations

The type of economic activity in a region depends on various factors like climatic zones and topography. With its vast landmass, long coastlines, huge network of rivers and rich alluvial soils, South Asia relies heavily on these resources to provide food through farming and fishing. Majority of the region is involved in subsistence farming from coastal region to the interiors, while commercial fishing occurs along the coastlines. This economic activity relies heavily on coastal and marine biodiversity. Being developing nations with huge populations, no doubt these economic activities place great pressure onto the ecosystems. In India, intensive farming to provide for the country's supply has stripped much of their farm land from its nutrients resulting in environmental hardships. Demands for resources increase as population increases and supplies need to be met. Nature is such that distribution of resources is unequal and in itself became a driver for humankind to shift and transport themselves to areas with opportunities. This is further exacerbated when environmental hardship sets in.

United Nations reported that there were 3.2 billion urbanites in 2007 and will reach nearly 5 billion in 2030. By that same year 60% live in cities and the biggest increase shall be Asia and Africa with the poorest, least-urbanized and least able to cope. By 2017 nearly 500 cities will have >1 million inhabitants. By 2025 there will be 8 cities with >20 million inhabitants—Tokyo, Mumbai, Manila, Dhaka, Sao Paulo, Mexico City, New York and Kolkata. Three of these cities (India: Mumbai & Kolkata; Bangladesh: Dhaka) are coastal cities from South Asia. Mumbai will be (and already is) one of the global capitals of slum dwelling having 10 to 12 million people, with 1 million living on pavements. Major coastal slum cities in South Asia are Mumbai, Delhi, Kolkata and Chennai in India, Orangi Town in Pakistan, and Chittagong in Bangladesh. The continuous coastal encroachment over time and space has produced slum cities and these 'cities' will exert enormous pressure on all resources available at an unprecedented rate.

3 Coastal Population and the Reefs

Coral reef distribution and its diversity are generally found within 23°N and 23°S (Veron and Smith 2000). Major coral reef regions of the world in Fig. 1 as defined by WRI (2011) are reefs at risks owing to the various continuous environmental pressures. A global, map-based analysis of threats to the world's coral reefs called Reefs at Risk Revisited, a research spearheaded by the World Resources Institute

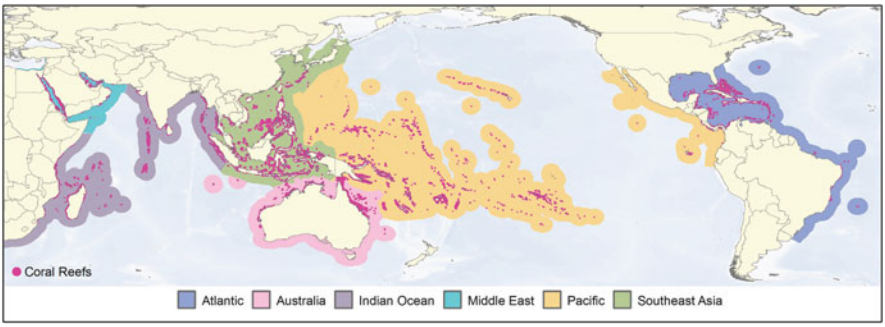

Fig. 1 Major coral reef regions of the world generally found within 23°N and 23°S. Source: WRI (2011)

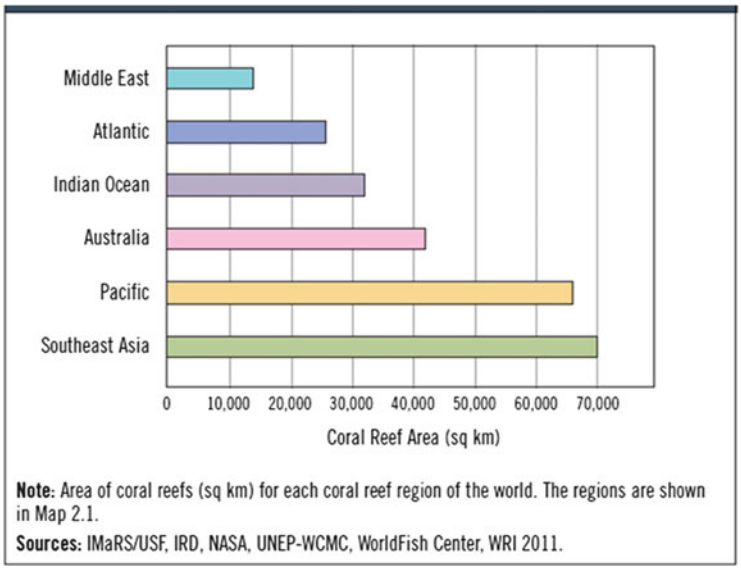

Fig. 2 Distribution of coral reefs by region. Source: WRI (2011)

(WRI) in a broad collaboration with leading conservation organizations and research institutes, reported detailed examination of human pressures on coral reefs, implications for reef condition, and projections of associated impacts in coastal communities in 2011. In this report, the Indian Ocean (of which South Asia is part of), having the third most extensive and diverse coral reefs in the world (after Southeast Asia) makes up about 13% of the global total reef area *i.e.* approximately 31,500 km^2 (Fig. 2). These reefs concentrated around the Andaman and Nicobar Islands, South India-Sri Lanka and the Maldives.

Based on WRI's report (2011), one-eighth of the world's population—at least 850 million people—live within 100 km of a coral reef and are likely to derive some

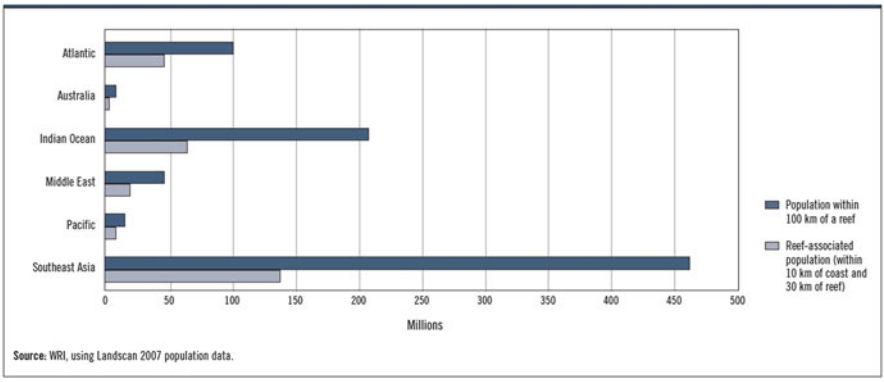

Fig. 3 Number of people living near coral reefs in 2007. Source: WRI (2011)

benefits from the ecosystem services that coral reefs provide. More than 275 million people live very close to reefs (less than 10 km from the coast and within 30 km of reefs.) Many of these people live in developing countries and island nations where dependence on coral reefs for food and livelihoods is high. South Asia (Indian Ocean) has about 70 million people live on the coast within 30 km of a reef and >200 million live within the 100 km of a reef (Fig. 3). Fish, including reef fish, form a major part of the diet even in urban populations. Fish and seafood provide an average of 36% of dietary animal protein across this region.

Logically, population living near reefs or coastal areas will be higher for Southeast Asia. This is because geographically many SE Asian countries comprised of many islands of various sizes (e.g. Indonesia and the Philippines) hence the length of coastlines will be greater accumulatively. Moreover, many islands are less than 100 km in width. Keeping this in perspective, the population living within the coastal region of the Indian Ocean is considered high.

WRI report (2011) stated that more than 65% of coral reefs in the Indian Ocean region are at risk from local threats (i.e., coastal development, overfishing/destructive fishing, marine-based pollution, and/or watershed-based pollution), with one-third rated at high or very high risk (Fig. 4). Closer examination reveals a sharp focus of threatened areas along continental shores where more than 90% of reefs are threatened. The biggest threat is overfishing affecting 60% of the reefs, particularly areas with dense human encroachment at the coastlines of southern India, Sri Lanka and other Indian Ocean countries. A localized problem seemed to be of dynamite fishing. Watershed-based pollution is also a problem where extensive deforestation making way for human encroachment has led to massive erosion and sedimentation in many coastal areas.

Coral reefs are harbingers of change. The degradation of coral reefs is a clear sign that our dangerous overreliance on its natural resources is already changing Earth's climate. If we continue down this path, all corals will likely be threatened by mid-century, with 75% facing high to critical threat levels.

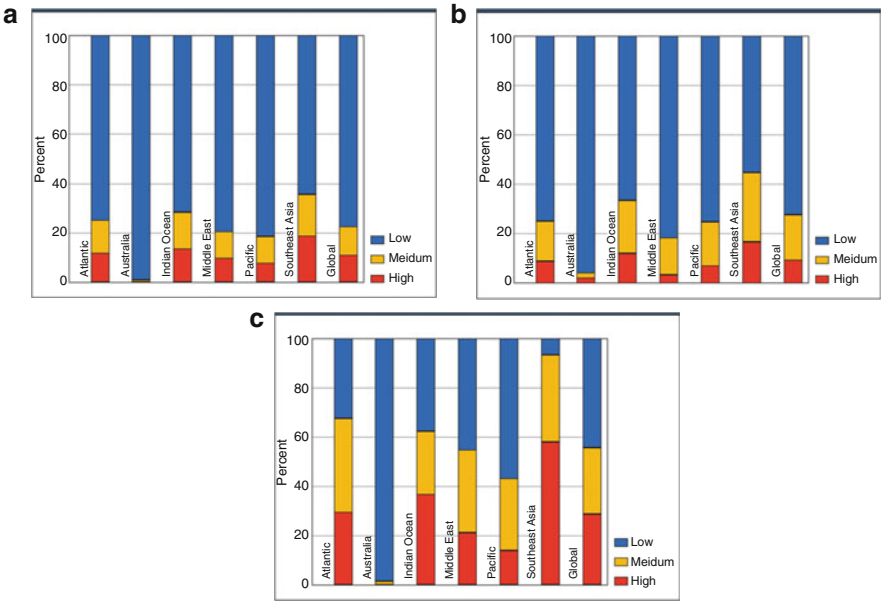

Fig. 4 Reefs at Risk from Coastal development, watershed-based pollution and overfishing/destructive fishing. Source: WRI (2011)

The current deep-rooting issues faced by South Asia and in many parts of the developing nations are environmental problems that lead to economic and social problems. Population explosion becomes a global issue we worry about. With our earth's finite resources, its unequal distribution and diversity of landscapes, the extent and intensity of problems, issues and challenges persistently arise due to these may vary from one region to another but will still be a global concern simply because the interconnectedness made it so. The exponential increase in human population leads to man's encroachment on the environment, especially the coasts. People in general, out of desperation, migrate to coastal urbanized areas seeking opportunities, hopeful of better lives. However, one of the main drivers of migration has to do with climatic change. This is the environmental push and pull factor. The environmental changes occurring in their homes forced people to move to coastal cities after experiencing environmental hardships. Better opportunities, better resources and infrastructure or facilities in the coastal cities became the pulling factor for such internal migration. Another important reason for migration is economic factor. Better job prospects, perhaps economic restructuring too, become the pull factors of the one way flow internal migration from rural interior to the coastal region. This trend has turned into a one way flow. Influx to the coastal cities too creates a never-ending multitude of environmental problems with increasing austerity in time and space. Linking human population-resource use-environmental issues, every increase of human population has a compounding

impact on the elements of land transformation, global biogeochemical cycles, biodiversity and in its effect on climate change (Vitousek et al. 1997).

Based on Global Health Observatory (GHO) Data, World Health Organization (WHO 2016) reported that urban population in 2014 accounted for 54% of the total global population, up from 34% in 1960, and continues to grow. The urban population growth is concentrated in the less developed regions of the world. In terms of trend, global urban population is expected to grow approximately 1.84% per year between 2015 and 2020, 1.63% per year between 2020 and 2025, and 1.44% per year between 2025 and 2030. This placed great pressure on resource distribution and utilization. Human needs and desires, their hunt for space due to the growing population come into increasing conflict with habitats and populations of endangered species both on land and in the sea. Supplies needed to be increased unintermittedly to meet continuous and expanding demands resulting in overexploitation of resources—the loss in biodiversity to be exact.

Edward Osbourne Wilson published his seminal text on 'The Crisis of Biological Diversity" in 1985 and got the world alerted to the threat posed by biodiversity loss. It was then the nation was shot with questions and worries concerning biodiversity—what the crisis is all about, how important it is, or whether we can survive with less biodiversity, whether we are living sustainably enough, what conservation actions or efforts to be taken and the success thus far, and so forth. Apart from our very own lives and the lives of other people may they be far or near, every action we take will affect biodiversity. It is imminent to bring about and to intensify the awareness of the importance of biodiversity through education, on why we should protect it, in order to bring forth a better-informed society, in order to spark the need to change our individual selves positively. Morally biodiversity has the right to exist along with its stewardship; economically they are valuable resources now and in future; ecologically they maintain local to global ecosystem health; and legally we have to by law.

A few years ago, the United Nations designated 2011–2020 as the United Nations Decade on Biodiversity (Resolution 65/161) which serves to support and promote implementation of the objectives of the Strategic Plan for Biodiversity and the Aichi Biodiversity Targets, with the goal of significantly reducing biodiversity loss. Throughout the UN Decade on Biodiversity, governments are encouraged to develop, implement and communicate the results of national strategies for implementation of the Strategic Plan for Biodiversity. It also seeks to promote the involvement of a variety of national and intergovernmental actors and other stakeholders in the goal of mainstreaming biodiversity into broader development planning and economic activities. The aim will be to place special focus on supporting actions that address the underlying causes of biodiversity loss, including production and consumption patterns (CBD 2010, 2011).

3.1 Why Is Biodiversity Important?

Discussions of the value of biodiversity are complicated by the fact that people mean various things when they talk about conservation of diversity. If anyone asks this question, one of the answers is because it represents the almost infinite variety of plant and animal life, and the variety of Earth's ecosystem types that support life as we know it. It enables humans to survive in what would be otherwise some very adverse conditions. People need nature to thrive and our most basic needs and basic conditions are derived from the natural world—to be specific, we need and rely on biodiversity. Biodiversity too is nature's way of strategic defense. Examples of this defense are the mangroves (e.g. a natural sedimentation trap, fish breeding and hiding ground and shore protector of storm and flood surges), the coral reefs (e.g. high productivity zone, fish breeding ground and shore wave breaker zone, dynamic interface of vital gas exchange between atmosphere and the hydrosphere to support life beneath the waves), and diversity in genetic pools (disease resistance, immunity, dispersion). Coral reef is important in providing food source and coastal livelihood for millions of people living along the coasts. Biodiversity also harbours species with medicinal values like cancer, HIV, arthritis etc. Thus, based on major roles it plays, the importance of biodiversity is grouped into four categories: ecological, economical, services and cultural. These categories are inextricably linked to each other.

3.2 Common Threats to Coastal Communities and Resources (Biodiversity)

According to IUCN (2011), there are five main threats to our global biodiversity: (1) Habitat loss and degradation, (2) Introductions of Invasive Alien Species, (3) Over-exploitation of natural resources, (4) Pollution and diseases, and (5) Human-induced climate change. Wilson (1988) categorizes the main threats or causes of species extinction in order of magnitude of impact on biodiversity in the acronym HIPPO: Habitat destruction, Invasive species, Pollution, human over-Population, Overharvesting by hunting and fishing. These threats, if not mitigated, will result in shrinking of our biodiversity (Fig. 5), which in turn will cause significant human problems: economic cost of lost biodiversity, reduced food security, increased contact with disease, more unpredictable weather, loss of livelihoods and losing sight of nature (Fig. 6). This is like a ripple effect. Other than natural causes and processes, most human activities by and large will ultimately provide a returning impact on the human themselves, hence a two-way ripple effect. If we examine in detail all the threats to biodiversity listed in various reliable sources, we will find that the humans are themselves the source of it all. The question now lies in how we can intensify our efforts to make people aware of the crucial importance of biodiversity and take necessary actions as we are approaching the 'tipping point'.

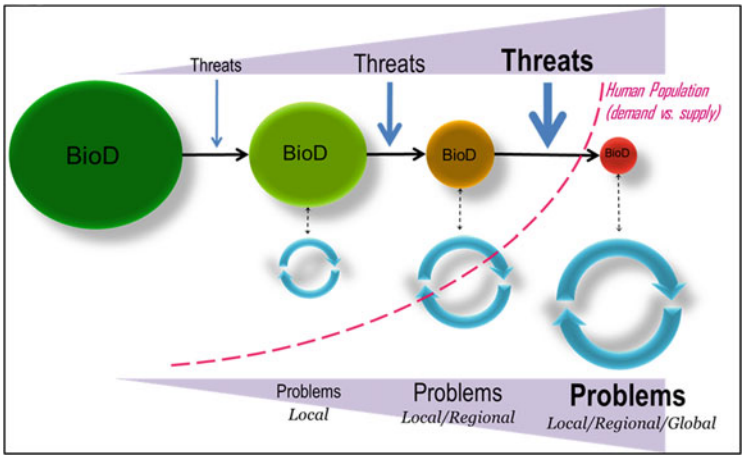

Fig. 5 Magnitude of environmental threats, increasing human population and environmental crisis levels induced from shrinking biodiversity. Source: Modified from Abdullah (2011, 2015)

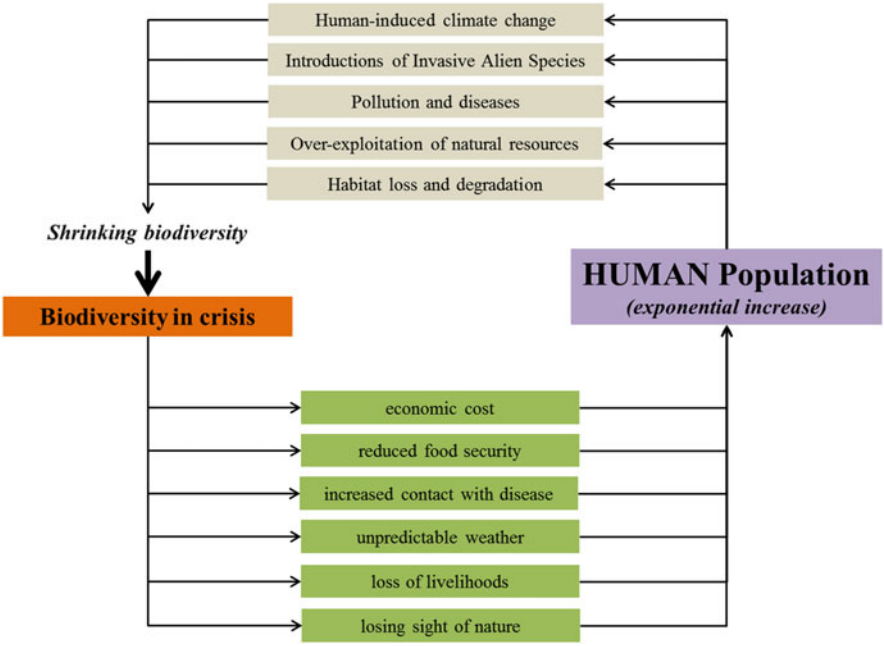

Fig. 6 Cause and effect of shrinking biodiversity. Source: Modified from Abdullah (2011, 2015)

The Millennium Ecosystem Assessment (2005) report on 'Biodiversity and Human Well-being' illustrated the relationship between biodiversity, ecosystem services, human well-being, and poverty where conservation strategies, planning,

and intervention can alter the drivers of change from local, regional, to global scales. From 1950 to 2011, world population increased from 2.5 billion to 7 billion and is forecasted to reach a plateau of more than 9 billion during the 21st century. Based on information from World Population Data Sheet 2012, world population grew to 7.06 billion in mid-2012 after having passed the 7 billion mark in 2011 and developing countries accounted for 97% of this growth. This coupled with the fact that most developing countries are in Asia which is also mostly tropical and subtropical regions where biodiversity is the highest, the massive growth in the human population through the 20th century will have more impact on biodiversity than any other single factor.

3.3 Poverty-Reefs Hotspots

According to reports by ReefBase Organization, South Asia is one of the four identified poverty-reef hotspots. South Asia's poverty and reef statistics of the hotspot is shown in Table 1.

UNDP (2002) reported that Bangladesh being one of the poorest countries in South Asia ranks as a Low Human Development country. Coastal population in Bangladesh is large and a significant number of people were employed in fisheries and aquaculture. However, the numbers associated with coral reef areas and fisheries is small because the coral reefs are limited to a small area surrounding the coast of St. Martin's island.

India is placed in the lower ranking Medium Human Development. The coastal areas are heavily populated. The coral reefs are only the Gulf of Mannar in the south and Gulf of Kutch in the northwest, while the remaining reefs are within the Lakshadweep islands off the west coast and the Andaman and Nicobar Islands off the east coast. Pet-Soede et al. (2000) and White and Rajasuriya (1995) reported reef fisheries in India contributed an estimate of 5–10% of total marine landings. It is also a significant contribution to the subsistence and income of coastal fishing communities in the four reefs of India. According to Rengasamy et al. (2003) and Singh and Andrews (2003) estimates of the numbers of small-scale fishers, amount to 21,000 in the Gulf of Mannar and 20,000 in the Andaman and Nicobar Islands. On the low-lying coralline reefs of Lakshadweep Islands which is also home to about 60,595 people, Hoon (1997) stated that tuna fishing relying on bait fish from the reef constitutes a major part of the local economy and reef harvest is the main source of subsistence for poor households.

The reefs in Maldives is enormous. It has a chain of 22 coral atolls running 800 km north to south including 1200 low coralline islands. Only 199 of these islands are inhabited. This country has the highest ranking in Human Development Index amongst South Asian coastal nations. Coral reefs are the foundation of life on the Maldives, providing land area, construction materials, the source of bait fish for a large tuna fishery, and supporting smaller reef fisheries for limited local consumption and growing exports. The Maldivian economy is dominated by tourism and fishing, meaning this country relies solely on marine biodiversity.

Table 1 South Asia poverty and reef statistics

Country	Reef area (km^2)[1]	Total population (millions)[2]	Human Development Index rank[7]	Population living below IUS$ a day (%)[3]	Population living below national poverty line (%)[4]	GDP per capita (US$)[5]	Number employed in fisheries and aquaculture[6]
Maldives	8920	0.3	Medium	n/a	40	4423	19,108
India	5790	992.7	Medium	44.2	35	2248	5,958,744
Sri Lanka	680	18.7	Medium	6.6	25	3279	146,188
Bangladesh	<50	134.6	Low	29.1	35.6	1483	1,320,480
Pakistan	<50	137.6	Low	31	34	1834	272,273

Source: Whittingham et al. (2003)

Pakistan is another poorer countries in South Asia and ranks as a Low Human development country by UNDP (2002). This country, however, has no known coral reefs but is believed to be small, similar to Bangladesh.

Sri Lanka has densely populated coastline in the west and south of the island. It is categorized as Medium Human Development country by UNDP (2002). Spalding et al. (2001) stated that coral reefs occur along approximately 2% of the coastline in the northwest and east while patchy reefs occur in the southwest and deeper waters off the west coast. About 60% of total landings are near-shore fisheries where 15 to 50% are reef-associated species. Fishing here are predominantly small scale and traditional.

3.4 Marine Biodiversity of South Asia

The coastal marine areas of South Asia are rich in its biodiversity. The statistics and descriptions are provided in Table 2. Most documented data are from the reefs of India, Sri Lanka and the Maldives. Less or rather limited and rather poorly studied coral communities are found around St. Martins Island/Jinjiradwip and Jinjira reefs in Bangladesh and along the Baluchistan coast in Pakistan.

4 Current Issues and Challenges Faced by South Asia

The environmental issues and challenges faced by South Asia are rather intense with its human encroachment problem along the coastlines. However, the key issues and causes can be summarized as in Table 3.

Based on Table 3 above, common environmental problems faced by South Asia in general are:

- Land/coastal land degradation
- Water scarcity and degradation
- Deforestation and biodiversity loss
- Impacts to the marine environment
- Atmospheric pollution
- Natural hazards

The causes of those problems are:

- Population
- Deficient urban infrastructure
- Industries
- Over exploitation
- Green Revolution

Table 2 Statistics and description of marine biodiversity in South Asia

Bangladesh
Coral communities extend to about 200 m offshore of St. Martin's Island with maximum coral cover of 7.6% and colony density of 1.3 m^{-2}. These comprise 66 hard coral species, the most common are Porites, Acropora, Favites, Goniopora, Cyphastrea and Goniastrea. Acropora spp. are the target for coral harvesters, as well as Favites and Goniastrea. There are also many soft corals, sea fans, and sea whips. Other invertebrates are only represented by a few, with molluscs being the most abundant large invertebrates, however, these are declining due to unregulated harvesting. Reef fish diversity is low (86 species) with damselfish (Pomacentridae), surgeonfish (Acanthuridae) and parrotfish (Scaridae) being the most abundant. There are also 5 species of butterflyfish (Chaetodontidae) and one angelfish (*Pomacanthus annularis*). Predator species (groupers, snappers, and emperors) are heavily fished. There are no reports of coral bleaching from St. Martin's Island. *Source:* Rajasuriya et al. (2000) The rocky substrate reefs have a coral cover of 7%, with 66 species of hard corals, dominated by branching (Acroporidae) and massive (Faviidae and Poritidae) species. There are 86 species of reef fish with damselfish, surgeonfish and parrotfish being the most common. The most abundant molluscs e.g. Monodonta, Thais, Cyprea, Conus and Trochusspecies are heavily traded. *Source:* Rajasuriya et al. (2004)
India
In the Gulf of Mannar, approximately 3600 species have been recorded within the three main ecosystems (coral reefs, mangroves and sea grass beds) in the Gulf of Mannar. Biodiversity on the reefs include 117 hard coral species, with the most common corals being Acropora, Montipora and Porites. Other resources in the area include sacred sharks, pearl oysters, sea turtles, dugongs and dolphins. The main seaweeds are Gracilaria, Gelidiella, Hypnea, Sarconema, Hydrodathrus, Caulerpa, Sargassum and Turbinaria. Reef fish diversity and abundance has not been well documented. The bleaching event in 1998 destroyed most shallow water corals in the Gulf of Mannar, with live coral cover reduced by 60–80% and only about 25% of live corals remaining. The most affected species were the branching Acropora spp. and Pocillopora spp. All the Montipora spp. on Pullivasal Island (northeast Gulf of Mannar) were bleached during 1998 (although *Montipora aequituberculata* escaped bleaching in southern Sri Lanka). Massive corals are now dominant in all 3 island groups, with branching corals almost completely wiped out in the Tuticorin group, while only 1–2% survived in the other two island groups. Surveys carried out by the Zoological Survey of India 1 year after the bleaching observed patchy coral recruitment on the mainland coast. In the Andaman and Nicobar Islands, there are 203 coral species, 120 species of algae, 70 species of sponge, 200 species of fish, 8 species of shark, and spiny lobsters on the islands. More than 1200 fish species have been recorded around the Andaman and Nicobar Islands, and recent random surveys have detected 571 species of reef fish. Dugongs, dolphins and sea turtles are also known from the islands. The bleaching event had less impact on the Andaman and Nicobar Islands as compared with other coral reef areas in India. Reports at the time indicated that 80% of live corals were destroyed, however, recent surveys at 5 different sites report an average of only 20% dead coral cover in shallow areas with 56% live coral cover and 11% coral rubble. In the Lakshadweep Islands to date, only 95 hard coral species and 603 fish species (both reef dwelling and oceanic) have been recorded from Lakshadweep, but comprehensive biodiversity studies are lacking. Much of the living coral cover around Lakshadweep was destroyed in the 1998 bleaching event, with estimates ranging from 43% to 87% loss of live coral cover. Cover declined markedly to about 10% live coral in Kadmat Island, but there have been no apparent effects on fish populations. The status of many of the outer coral reefs is known only as anecdotal accounts. In the Gulf of Kutch hard coral species diversity is low with only 37 species and a total absence of ramose growth forms. Reports of bleaching in 1998 vary considerably from about 70% of live

(continued)

Table 2 (continued)

Bangladesh
coral loss, to much lower impacts. This highlights the need for permanent monitoring sites to provide adequate baseline data. *Source:* Rajasuriya et al. (2000)
Maldives
Along with the Chagos Archipelago, the Maldives support the greatest diversity of corals and associated reef organisms in the region, with at least 209 species of stony corals. *Source:* Rajasuriya et al. (2000) The coral reefs of the Maldives support a high diversity of reef animals, with about 250 species of corals and 1200 reef and reef associated fish species. The bleaching in 1998 was most severe in the northern and central parts of the archipelago, and recovery has been variable on reef flats and slopes. *Source:* Rajasuriya et al. (2004)
Pakistan
Detailed information on the biodiversity reef habitats in Pakistan is lacking, although a marine reference collection and resource centre was set up in the University of Karachi in 1969. *Source:* Rajasuriya et al. (2000)
Sri Lanka
In Sri Lanka three major types of reef habitats have been classified based on the dominant forms of substrate. These are coral, sandstone and rock habitats (Rajasuriya and De Silva 1988; Rajasuriya et al. 1995). The most extensive coral reefs in Sri Lanka occur in the north-western coastal and offshore waters. These are patch reefs dominated by Acropora, Montipora and Echinopora. The majority of other coral reef habitats in Sri Lanka are situated close to the shore. Abundant coral growth and large mono-specific stands of common reef building corals are limited to a depth of about 10 m. In these shallow waters the dominant reef building corals belong to the Acroporidae, Pocilloporidae, Faviidae and Poritidae. Also, offshore from both the east and west coasts coralline habitats occur at depths of approximately 20 m. However, because of the depth at which these habitats occur, they support only sparse populations of corals. In addition, sandstone and rocky habitats are extensive and support a diverse coral fauna and many associated species (Rajasuriya and De Silva 1988; Rajasuriya et al. 1995). The diversity of hard corals in Sri Lanka is relatively high, with 183 species from 68 genera recorded (Rajasuriya and De Silva 1988). *Source:* Rajasuriya and Karunarathna (2000)

Source: ReefBase (2016a, b)

All the 5 countries sharing maritime resources have the same problem of human encroachment resulting in population increase in the coastal region. Human encroachment led to deforestation for space which induces land/coastal land degradation, generates erosion which brought about sedimentation problems to the marine waters and damages the existing coastal-marine ecosystems. This inevitably brought about marine biodiversity loss. Increasing population tend to inflate over-exploitation of natural resources faster than its capacity to generate.

Table 3 Key issues and key causes of environmental problems in South Asia

Country	Key issues	Key causes
Bangladesh	Loss of biodiversity Limited access to potable water Water-borne diseases prevalent Water pollution, especially of fishing areas Urban air pollution Soil degradation Deforestation Industrial pollution; import of hazardous waste	High population density and urban primacy Deficits in urban infrastructure Green revolution/agrochemicals and run-off Lack of control on individual effluent Over-exploitation and/or pollution of ground water
India	Deforestation; soil erosion; overgrazing; desertification Loss of biodiversity Air pollution; water pollution Natural disasters such as floods, cyclones and landslides are common	High rates of urbanization and deficits in urban infrastructure Industrial effluents and vehicle emissions. Increases in unmanaged marine based tourism; Green revolution/agrochemicals and run-off
Maldives	Climate change (global warming) Beach erosion Degradation of marine habitats Garbage accumulation	High population densities Increases in marine-based tourism
Sri Lanka	Deforestation; soil erosion Loss of biodiversity; coastal degradation Limited access to potable water Water-borne diseases prevalent	Excessive pressure on forests Deficits in urban infrastructure Water pollution by municipal and industrial waste, and agricultural run-off Excessive mining activities
Pakistan	Water pollution Seasonal limitations on the availability of natural freshwater resources; majority of the population lacks access to potable water Deforestation; soil erosion; coastal habitat loss and degradation of marine environment; desertification Loss of biodiversity	High rates of urbanization and deficits in urban infrastructure Industrial wastes Population increases in coastal areas and rise in tourism Hunting/poaching Green revolution/agrochemicals and run-off

5 Present Measures and Strategies

5.1 Regional Reef Biodiversity Conservation Turns Global

Since the inception of 'sustainable development' (Brundtland Commission) in 1987 and the seminal text by E.O. Wilson on 'The Crisis of Biological Diversity" (1985), all aspects of resources are suddenly placed and viewed in different perspectives. Predictions were made for the sustainable use of our resources, conservation of

biodiversity, living conditions and also livelihoods. The establishment of the Coral Triangle (CT) is one of the efforts made in recognizing the importance of biodiversity. CT was set up in Southeast Asian waters encompassing 6 countries (Indonesia, Malaysia, Papua New Guinea, the Philippines, Solomon Islands and Timor-Leste) where the richest coral biodiversity (>70 genera) and its associated organisms are found (Veron 1993; Veron and Smith 2000). This is one major move taken on a regional scale which is indirectly associated to South Asia but it benefits the people and the environment on a global scale. The CT takes its role as a *global conservation center* because of its geological, dispersion, biogeographic and evolutionary aspects. The two most important ones are its geological and dispersion aspects. Geologically, this area has been tectonically unstable since Eocene creating a constantly changing geography leading to repeated environmental perturbations, habitat complexity and presumably evolutionary changes. Veron et al. (2009) stated that reef distributions in this region have changed beyond recognition over that time, and that fossil record suggests that the corals of CT are the world's youngest which is less than half the mean age of their Caribbean counterparts. Stehli and Wells (1971) and Veron (1995) mentioned that these relatively young genera either evolved in the region of the CT or have survived there since going extinct elsewhere. This has resulted in the high diversity of coral species.

Secondly, in terms of dispersion, the CT acts as a 'catch all' for larvae moving towards the region, entrained in both the South Equatorial Current and the North Equatorial Current (Jokiel and Martinelli 1992; Veron 1995). This suggests that not only the CT act as a 'catch all' but as a concentrated gene pool for dispersion of coral larvae species to other parts of the world where the currents could carry and settle within suitable substratum. Even with coral diversity collapsing in the Indian Ocean where South Asia is, there is always a chance for regeneration and restocking of reef biodiversity because of the existence of CT. Where there is rich coral diversity, the ecosystem is rich and productive resulting in high biodiversity of other associated reef organisms from the vertebrates to the invertebrates, implying a healthy gene pool for other reef associated organisms as well. This would provide a solid base of food chain, hence adequate resources for restocking of fisheries in the region where the primary driver of biomass yields in Large Marine Ecosystems (LME) is fishing. This is true for Bay of Bengal LME (Sherman 2006) where the main economic activity within the coastal areas is either commercial fishing or subsistence farming.

Where the reefs and ocean is concerned, there is absolutely no boundary. This brings about the fact that the issue of marine species, its biodiversity, its abundance, its life cycles, dispersion, and distribution, lacking in marine stock is not a local or regional issue but rather crucially a global one. It is a challenge to be addressed by all nations regardless of whether the particular nation shares maritime boundaries or not. Biodiversity itself provide us with multiple ecosystem services that nature has granted us with.

5.2 India's Ganges River Clean Up

The flow of river water from the three main riverine systems in South Asia posed a huge problem and continuous threat to the coastal and marine ecosystems. The highly polluted water particularly of the Ganges River demonstrated a daunting task. There were many programs, plans and efforts to clean the river but they appear to be unsuccessful till present. Previous cleaning efforts include Ganga Mahasabha which resulted in the Agreement of 1916; the Ganga Action Plan launched in 1995 by the then Prime Minister Rajeev Ghandi to reduce pollution load on the river. The efforts to decrease the pollution level in the river were unsuccessful even after spending Rs 9017 million and the plan was withdrawn on 31 March 2000. The main obstacle to this objective is probably related to the huge population living by the Ganges River and their cultural-spiritual beliefs of the river. Phase 2 of this plan where a million liters of sewage is targeted to be intercepted, diverted and treated is under implementation since 2011. Namami Ganga is one of the latest cleanup efforts (2014), where part of the program is to order shut down of 48 industrial units around Ganges River to primarily reduce toxic chemical waste. Namami Ganga will focus on pollution abatement interventions namely interception, diversion and treatment of waste water flowing through the open drains through bio-remediation/appropriate *in-situ* treatment/use of innovative technologies/sewage treatment plants (STPs)/effluent treatment plant (ETPs); rehabilitation and augmentation of existing STPs and immediate short term measures for arresting pollution at exit points on river front to prevent inflow of sewage etc. (Wikipedia 2016a, b). Cleaning up of Ganges River proves to be too huge a task to be shouldered by India alone. Regional cooperation and common interest in such environmental issue is critical. One apparent regional cooperation for Namami Ganga is the expressed interest of Israel to assist in cleaning up the Ganges River (i24news 2015). This is also an example of knowledge transfer for the benefit of humankind.

5.3 Maldives' Garbage Problem Recycled

The growing carbon emission problem resulting in global warming causing sea level rise which can place the Maldives under water in less than a decade made former president of Maldives, Mohamed Nasheed called for climate change mitigation in 2012. The Maldivians may end up as climate refugees if actions are not taken to slow and reduce the carbon emission. By 2020, Maldives plans to eliminate or offset all of its greenhouse gas emissions.

Maldives may be kept relatively pristine and clean but no good waste disposal sites exist. Most trash from Male and other resorts is simply dumped at Thilafushi, an artificial island created in 1991 as a municipal landfill situated to the west of Male. More than 8 million tourists visit Maldives per year resulting in a single tourist producing 3.5 kg of garbage a day, twice as much as someone from Malé and five times more than anyone from the rest of the Maldives archipelago. Altogether,

that comes to "300 to 400 tons of trash" dumped on the island every day. Today Thilafushi has a landmass of more than 0.43 km^2 (Wikipedia 2016a). In December 2011 the Malé City Council temporarily banned the transporting of waste to Thilafushi because of a surge in waste floating in the island's lagoon and drifting out to sea. In its effort to solve the garbage problem, Maldives started to export its recyclable waste, mostly iron and plastic, to China, Malaysia and neighbouring India since 2012. This made garbage recycling the country's third economic activity; the second export following fishing industry (Le Monde/Worldcrunch 2012).

6 Recommendation of Future Strategies

The main aim is to build communities equipped with knowledge, creativity, highly adaptive and resilient to face the challenge of climate change and as for now the exacerbating pressure from global warming. Apart from the proposed Sustainable Livelihood Enhancement and Diversification (SLED 2008) published by IUCN in 2008, below are some strategies recommended for the issues and challenges faced by South Asia.

6.1 Clean Slum and 'Recycle Homes'

An enormous issue and challenge to be undertaken, cleaning up the slum to put the environment back in order sounds almost impossible but we need to be very positive and again creativity may come into play. There is so much garbage problem around the world and Maldives garbage load is one example. This garbage should be recycled into building materials to help rebuild the home of the slum dwellers, *i.e. recycle homes*. Another alternative is recycling shipping containers into a form of *recycle homes* for the slum dwellers or the poor. If space is the constraint, stacking up of recycled material homes or shipping containers creatively into blocks of 'apartment' is a possible solution. In this way, no further or extremely minimal exploitation of natural resources is required. Construction of these *recycle homes* will definitely provide job opportunities for the poor or slum dwellers. These strategy and effort evidently require regional and global cooperation.

6.2 Self-Sustaining Living

Educating and training the poor in self-sustaining living is one way of reducing poverty and dependency on natural resources. 'Self-sustaining' in this context means the ability of each individual or individual family to produce their own food through family farming. With space as a constraint, small-scale vertical farming is probably a solution. Every family will have their own small yard to start off. With this opportunity made available coupled with their own *recycle*

homes, there will be space left for such farming. This strategy will require regional cooperation in terms of basic provision of starter kits, educating and training of simple basic self-sustaining living. With a proper roof over their heads and the opportunity to plant and harvest their own crops, it's a start off point in creating a happier, healthier community in need; logically along with this social problems will be reduced.

6.3 Education and Engagement

According to The Commonwealth Policy Brief on 'solutions and role of education in adapting to and mitigating climate change', it is vital that countries develop strategies to build resilience against climate change, and education is the key to this. It is not only a matter of mitigating the effects of climate change, but also of addressing, through educational resources, adaptation measures that are country specific.

An excerpt from the Commonwealth Policy Brief states:

> "Under the right environment where their economic and social needs are met (for example through the provision of education and training), the youth population can act as agents of economic growth. However, without this environment, youth may resort to violence which can further destabilise political environments and enhance vulnerability to climate change.
>
> Due to the non-discriminatory and wide-ranging impacts of climate change, education has a crucial role to play in raising awareness about the urgency of addressing climate change programmes, including ways to be more energy efficient. Formal and non-formal education are essential to educate citizens of all ages. For the youngest and future generations who will be most impacted by climate change, positive influences during the stages of an individual's early life can contribute to a society that is equipped with the understanding, values, knowledge and skills to tackle the causes and impact of climate change."

In order to provide the 'right' environment where the economic and social needs are met, shouldn't it be logical to address first the issues of poverty and clean-up of slum areas (e.g. in India)? And there are still issues of space because most migrants arrive at their destinations—the coastal urban for many reasons, and high chances they will not be returning to where they came from. Speaking of South Asia, the migration is mostly one way traffic simply because there is most probably nothing left to return to.

We couldn't agree more with the formal and non-formal education being essential to educate citizens of all ages. However, we are very well aware of the 'environmental awareness' of a lot of people—most know what's happening and what ought to be done but most do not engage themselves in carrying out their responsibilities. The task is perhaps how to intensify this education to the point of it being a 'wake-up call' and not just being aware or being educated.

7 Out of the Box Strategy?

7.1 'Close-off' or 'Time-out'

The reef is a slow growing ecosystem where corals are concerned. Time and space are the essence if recovery is the main circumstance. A seasonal 'close-off' or 'time-out' from all detrimental activities including tourism is one natural response to coral reef recovery. This is considerably true for areas suffering severe localized stress. For instance, in the Maldives, after the 1998 El Nino episode, 30–80% of its reefs was destroyed but was successfully regenerated and nursed after scientific approach was used. This technique may or may not be applied worldwide. In some reef areas within the range of receiving heavy land base input or directly affected by pollution such as raw sewage, chemical pollution and sedimentation, a seasonal closed-off period from tourism influx may help in reducing stress to the reef while mitigation measures are taken to reduce pollution. This closed-off time will enable some regenerative processes to occur amongst the reef organisms. Perhaps the possible timing of coral reproductive season and 'closed-off' period may help. This, however, cannot be applied throughout the region concurrently. Careful strategic planning is required because the population affected needs a diversification of livelihood which is also sustainable at the same time.

7.2 'Virtual Alternative Tourism' and Education

Offering 'Virtual Alternative Tourism' (VAT) (Abdullah 2011) may be a possible solution to countries where tourism industry is one of their main economies. It allows stressed touristic areas to 'rest', regenerate and has time to recover. Having VAT not only support the 'closed-off' or 'time-out' suggested above, it doubles up as educational expose, explore and experience for those underprivileged. VAT is an alternative tourism concept which has not been proposed for education. It is much like sitting in a 3D movie experience we get when visiting one of the attractions in Universal Studio. The concept is making it possible to cater for all (ages, abilities/disabilities and people globally) to experience, explore and learn about the environment *i.e.* places they've never been and may not have the means to go to. It may be on human geography, sensitive environment like the reef, underwater world, polluted areas, all aspects of science, language, and space etc. This concept enables a huge number of 'visitors' and learners being received by any particular environment without actually having them there and at the same time free from actual stress that could cause mass destruction. This will allow time and space critically required by a specific environment for recovery. Furthermore it helps too with the aim of advancing technology to enable every individual to have learning access to the global internet. If we are going to improve on the education policy as one of the Sustainable Development Goals (SDGs), why not consider intensification on education itself by going a step further.

8 Summary

As mentioned earlier, biodiversity is complex because it means different things to different people. For an economist, perhaps biodiversity translates into diversity of economy, to the scientists mean discoveries, to a naturalist or environmentalist it means conservation, to a poet it provides ideas, to the public perhaps its aesthetic values but to a teacher it's a learning classroom and laboratory. For whatever it may be, it always arrives at the fact that we need and depend on biodiversity to exist. We can't build a nation's economy without it. Earth's resources are finite; we need to use it sustainably. Up till now we have to admit that we are unable to drill the importance of biodiversity, the need to conserve it and on how to utilize it into every single human being. It's because only a fraction of the world's population are seriously aware of it. Those living in poverty do not care for it as their primary goal is survival first for now. The daunting task of putting things in order again, to reduce the suffering of the poor especially the children are now on our global shoulders. We cannot choose to ignore because in the context of environment there really is no boundary, every element is interconnected. What does not affect us now will in the future due to this interconnectedness and the two-way ripple effect. Therefore, in tackling the issue of coastal marine biodiversity, it does not rest on regional cooperation alone but rather a global cooperation is urgently and selfishly required as it is indeed a multi-inter-transdisciplinary effort.

The setting up of Coral Triangle in Southeast Asian waters, although not directly associated with South Asia, contributed to the necessary maintenance of a dynamic portfolio of biodiversity to achieve sustainable coastal and marine environment on a global scale. The establishment of Coral Triangle receives strong political support from all six countries involved. This major move broadcasted a strong call to the world by illustrating a multi-inter-transdisciplinary effort in coming together to hopefully and faithfully brings about long term achievement of sustainable environment which will not only benefit Southeast Asia but globally due to the interconnected ecosystems.

The Millennium Ecosystem Assessment (2005) on biodiversity and human well-being illustrating the relationship between biodiversity, ecosystem services, human well-being, and poverty, highlighted areas where conservation strategies, planning, and intervention can alter the drivers of change from local, regional, to global scales. This, perhaps with faith, serves as guidance for the multi-inter-transdisciplinary approach required and, the cautious and conscientious methodology that should be applied in order to bring about massive positive change and at the same time avoiding a secondary ripple effect. In order to make changes, we need to change too; otherwise we end up being at the very same spot with the same problem unsolved.

The natural conditions of the physical geography alone, the unequal distribution of natural resources and the cultural-spiritual beliefs of the local people in many aspects of their lives had forced the population to re-distribute in the present manner, creating continuous impounding pressure on the coastal region. Development has to proceed in order to 'catch up' and at its best level with other developing

nations and to ultimately be a developed nation. However, the current issues need to be addressed, find solutions to, take actions upon to make things happen in reality. Issues and problems cannot be solved by shifting a problem from one sector to another, in other words 'shuffling of problems' don't work. Biodiversity needs plenty of time to recover and it is an element we need to respect. Without it, the basic processes in nature ceased to function; the ecosystem services biodiversity has faithfully provided us with which humankind solely depend on will pause for good, slowly but surely.

References

Abdullah AL (2011) Physical geography: biogeography notes. Unpubl. data

Abdullah AL (2015) Chapter 34: Biodiversity. In: Chan NW, Ao M, Imura H (eds) Manual on sustainable urban development & management. Global Cooperation Institute for Sustainable Cities, Yokohama City University, Water Watch Penang. Publ. Water Watch Penang 2015. 215 p, pp. 200–205. ISBN 978-983-41334-2-9

CBD, Convention on Biological Diversity (2010) The Strategic Plan for the CBD (press brief)

CBD, Convention on Biological Diversity (2011) UN Decade on Biodiversity website. http://www.cbd.int/2011-2020/. Accessed 28 May 2016

Confalonieri U, Menne B, Akhtar R, Ebi KL, Hauengue M, Kovats RS, Revich B, Woodward A (2007) Human health. In: Curto S, McMichael A (eds) Climate Change 2007: impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge

ESSO-Indian National Centre for Ocean Information Services (2016) Coral Reef Mapping and Reef Health Monitoring. http://www.incois.gov.in/portal/CoralReef.jsp. Accessed 12 June 2016

Ganga Action Plan bears no fruit. The Hindu (Chennai, India). http://www.thehindu.com/2004/08/28/stories/2004082807430400.htm. Accessed 19 June 2016

Hoon V (1997) Coral reefs of India: review of their extent, condition, research and management status. Proceedings of the Regional Workshop on the conservation and sustainable management of coral reefs. MS. Swaminathan research and BOBP, Chennai. 15–17 December, 1997. In: Souter D, Obura D, Lindén O (eds) Coral reef degradation in the Indian Ocean: Status report and project presentations 2000. CORDIO Publ. Stockholm, Sweden. 205 p, pp. 1–25. ISBN 91-973959-1-9

i24news (2015) Israel offers to assist in cleaning up India's Ganges River. http://www.i24news.tv/en/news/israel/79063-150720-israel-offers-to-assist-in-cleaning-up-india-s-ganges-river. 20 July 2015. Accessed 16 June 2016

IUCN, International Union for the Conservation of Nature and Natural Resources (2011) The IUCN Red List of Threatened Species™ – Regional Assessment. Publ. IUCN Centre for Mediterranean Cooperation. 61pp

Jokiel P, Martinelli FJ (1992) The vortex model of coral reef biogeography. J Biogeogr 19:449–458

Le Monde/Worldcrunch (2012) Maldives: Idyllic Archipelago's Unprecedented Floating Trash Dump. http://www.worldcrunch.com/maldives-idyllic-archipelagos-unprecedented-floating-trash-dump/culture-society/maldives-idyllic-archipelago-s-unprecedented-floating-trash-dump/c3s5165/. Accessed 22 June 2016

Millennium Ecosystem Assessment (2005) Ecosystems and human well-being: biodiversity synthesis. World Resources Institute, Washington, DC

Owl and Mouse Educational Software (2016) India Map http://www.yourchildlearns.com/online-atlas/images/map-of-india.gif. Assessed 21 May 2016

Pet-Soede L, Wafar M, Venkataraman K, Rajan PT, Wilhelmsson DM (2000) The status of the coral reefs of India following the bleaching event of 1998. In: Souter D, Obura D, Lindén O (eds) Coral reef degradation in the Indian Ocean: Status report and project presentations 2000. CORDIO Publ. Stockholm, Sweden. 205 p, pp. 69–74. ISBN 91-973959-1-9

Rajasuriya A, de Silva MWRN (1988) Stony corals of fringing reefs of the western, south-western and southern coasts of Sri Lanka. In: Choat JH, Barnes D, Borowitzka MA, Coll JC, Davies PJ, Flood P, Hatcher BG, Hopley D, Hutchings PA, Kinsey D, Orme GR, Pichon M, Sale PF, Sammarco P, Wallace CC, Wilkinson C, Wolanski E, Bellwood O (eds) Proceedings of the 6th international coral reef symposium: Vol. 3: Contributed papers. Townsville, Australia, pp 287–296

Rajasuriya A, de Silva MWRN, Ohman MC (1995) Coral reefs of Sri Lanka: human disturbance and management issues. Ambio 24(7–8):428–437

Rajasuriya A, Karunarathna C (2000) Post-bleaching status of the coral reefs of Sri Lanka. In: Souter D, Obura D, Linden O (eds) Coral reef degradation in the Indian Ocean. Status report 2000. CORDIO, SAREC Marine Science Program, Stockholm University, Sweden, pp. 54–63

Rajasuriya A, Zahir H, Muely EV, Subramanian BR, Venkataraman K, Wafar MVM, Munjurul Hannan Khan SM, Whittingham E (2000) Status of coral reefs in South Asia: Bangladesh, India, Maldives and Sri Lanka. In: Wil-kinson C (ed) Status of Coral Reefs of the World: 2000. Australian Institute of Marine Science, pp. 95–116

Rajasuriya A, Zahir H, Venkataraman K, Islam Z, Tamelander J (2004) Status of Coral Reefs in South Asia: Bangladesh, Chagos, India, Maldives and Sri Lanka. In: Wilkinson C (ed) Status of coral reefs of the world: 2004. Volume 1. Australian Institute of Marine Science, Townsville, Queensland, Australia, pp. 213–234

ReefBase (2016a) Resources – Biodiversity. http://reefbase.org/global_database/default.aspx?section=r5. Accessed 9 June 2016

ReefBase (2016b) A global information system for Coral Reefs. http://www.reefbase.org/. Accessed 12 June 2016

Rengasamy S, Devavaram J, Prasad R, Arunodaya E (2003) A case study from the Gulf of Mannar. In: Wittingham E, Campbell J, Townsley P (eds) 2003 Poverty and Reefs: Volume 2 Case Studies, DFID-IMM-IOC/UNESCO. 260pp

Sherman K (2006) The Large Marine Ecosystem network approach to WSSD targets. Ocean Coast Manag 49:640–648

Singh A, Andrews H (2003) A case study from South Andaman Island. In: Wittingham E, Campbell J, Townsley P (eds) 2003 Poverty and Reefs: Volume 2 Case studies, DFID-IMM-IOC/UNESCO. 260pp

Spalding MD, Ravilious C, Green EP (2001) World Atlas of Coral Reefs. Publ. in association with UNEP-WCWC by The University of California Press. 436 p. ISBN 13-978-0-520-23255-6

Stehli FG, Wells JW (1971) Diversity and age patterns in hermatypic corals. Syst Zool 20:115–126

Sustainable Livelihood Enhancement and Diversification (SLED) (2008) A manual for practitioners. http://www.iucn.org/about/work/programmes/marine/marine_our_work/climate_change/publications.cfm. Accessed 3 June 2016

United Nations Development Programme (UNDP) (2002) Human Development Report 2002: Deepening democracy in a fragmented world. Publ. Oxford University Press. 292 p. ISBN 0-19-521915-5

Veron JEN (1993) Corals of Australia and the Indo-Pacific. University of Hawaii Press; 2nd ed (March 1, 1993). ISBN-13: 978-0824815042, pp. 656

Veron JEN (1995) Corals in space and time: the biogeography and evolution of the Scleractinia. Cornell University Press, Ithaca, New York

Veron JEN, Smith M (2000) Corals of the world, Volume 2. Publ. Australian Institute of Marine Science, pp. 489

Veron JEN, Devantier LM, Turak E, Green AL, Kininmonth S, Stafford-Smith M, Peterson N (2009) Delineating the Coral Triangle, Galaxea. J Coral Reef Stud 11:91–100. doi:10.3755/galaxea.11.91

Vitousek PM, Mooney HA, Lubchenco J, Melillo JM (1997) Human domination of Earth's ecosystems. Science 277(5325): 494–499. http://links.jstor.org/sici?sici=0036-8075%2819970725%293%3A277%3A5325%3C494%3AHDOEE%3E2.0.CO%3B2-2. Accessed 19 August 2016

White A, Rajasuriya A (1995) South Asian Regional Report on the issues and activities associated with Coral Reefs and related ecosystems. In: Proceedings of the International Coral reef Initiative – South Asia Workshop – Bandos Island, Republic of Maldives 29 Nov–3 Dec 1995

Whittingham E, Campbell J, Townsley P (2003) Poverty and reefs: a global overview. DFID-IMM-IOC/UNESCO, 260pp. http://www.reefbase.org/images/key_topics/poverty_and_reefs. Accessed 13 June 2016

WHO, World Health Organization (2016) http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/. Accessed 31 May 2016

Wikipedia (2016a) Pollution of the Ganges. https://en.wikipedia.org/wiki/Pollution_of_the_Ganges. Accessed 19 June 2016

Wikipedia (2016b) Maldives. https://en.wikipedia.org/wiki/Maldives. Accessed 19 June 2016

Wilson EO (1988) Biodiversity. National Academy Press, Washington, DC. ISBN: 0-309-56736-X, 538 pp

WRI Fact Sheet. Reefs at Risk Revisited: Indian Ocean. http://www.wri.org/sites/default/files/factsheet_reefs_indian_ocean.pdf. Accessed 02 February 2017

WRI, World Resource Institute (2011) Reefs at Risk Revisited. Compiled by Lauretta Burke, Katie Reytar, Mark Spalding, and Allison Perry. February, 2011. Publ. WRI. 130 pp (Full report can be accessed at http://www.wri.org/sites/default/files/pdf/reefs_at_risk_revisited_hi-res.pdf)

Energy Interdependency in South Asia

Md. Humayun Kabir, Syeda Shahida Maknun, and Md. Jakariya

1 Introduction

The modern human society is often characterized as an energy-fed society, since it is absolutely dependent on different forms of exhaustible energy sources such as coal, fossil fuel, natural gas, petroleum and others. Access to reliable, clean and affordable energy has a very important role in the process of economic development of any society. Human civilizations are now at a modern stage by improving the standard of living rapidly only with the innovations in energy use. Energy use depends on energy demand. With the rapid growth of population and expansion of economy, energy demand is also increasing and these create the problem of energy scarcity. Despite of the undeniable contribution of energy in socio-economic prosperity, there are still many regions struggling to meet the energy demand. Millions of people have no access to power and are still using the traditional fuels to meet their basic energy needs. The questions of energy overuse, increasing energy demand and scarcity have slowly but surely occupied the centre-stage of the national energy demand and scarcity discourse at the turn of the twenty-first century almost in all the countries in the world and South Asian countries are no exception of these.

South Asia (Fig. 1) is at its critical stage today because the entire region is suffering from acute energy crisis. Development is the most important issue for this the region because of the high incidence of poverty but energy is proving to be a critical constraint. South Asia, home to more than 1.5 billion people, has emerged as the fastest growing region with the highest growth rates in the consumption of

Md.H. Kabir (✉) • S.S. Maknun
Department of Geography and Environment, University of Dhaka, Dhaka, Bangladesh
e-mail: mh_kabir@yahoo.com

Md. Jakariya
Department of Environmental Science & Management, North South University, Dhaka, Bangladesh

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_14

Fig. 1 Political Map of South Asia

commercial energy in the recent times. Its Gross Domestic Product (GDP) growth has averaged at 5.2% for the past 20 years, and it is projected to reach about 7.4% in 2016, thus taking a place as the second fastest growing region in the world (World Bank 2014). This populous region is facing the rapid growth of industrialisation but has bracketed itself as low per capita electricity consumption region. According to World Development Indicators database published by World Bank (2014) total energy consumed by the South Asian states has been accounted as 886.3 million tons of oil equivalent (mtoe) (excluding Bhutan and Maldives).Many South Asian countries depend on a single source to provide more than 50% of total electricity generation including Bangladesh (natural gas-91.5%), India (coal-67.9%), Nepal (hydropower-99.9%), and Sri Lanka (oil-50.2%) and such dependence is not sustainable in its nature (Iftikhar et al. 2015).

Like in many other developing countries, biomass in the form of fuel-wood, agricultural waste and animal waste remains one of the primary fuels for domestic energy consumption for a majority of the poor people, particularly in the rural areas. It is important to note that in many countries less than 5% of energy consumed came from renewable sources despite efforts to increase its share. The gap in total energy use and production in the region is calculated as 239.9 mtoe (Iftikhar et al. 2015). With limited domestic energy sources, most South Asian countries are also highly dependent on energy imports, particularly crude oil, from other regions. The mismatch between energy demand and resource endowments in individual countries builds a strong case for energy cooperation.

Key challenges faced by the energy sector include increasing energy deficits, single fuel dominance in the energy mix, rising import dependence and lack of requisite energy infrastructure such as policy, institutional, political challenges operating in regional level; lack of confidence and trust, trade-respective policies and challenges in creating effective regional bodies for cross-border coordination. This region provides a major opportunity for individual countries to address barriers to sustainable inclusive economic growth, especially in the energy sector as expanded energy co-operation can play an important role in long term economic development in this region. This paper will analyse the existing state of energy status and energy interdependency in countries such as Bangladesh, Nepal, India, and Bhutan in South Asian region and consider different opportunities, issues and challenges to increases cross border co-operation and trade.

2 Profile of South Asia with Focus on Bangladesh, Bhutan, India and Nepal

There is a wide variation in the social and economic profile of South Asian regions especially in Bangladesh, Bhutan, India and Nepal. For instance, the population of Bhutan is only approximately 773,460 people, while in India the population is more than 1 billion. Based on the differences in the land areas of these countries, the relevant social indicator is population density, i.e., the population per square kilometres. From the following Table 1 we can see that the population density varies as low as to 20.1 in Bhutan to as high as 1113.67 in Bangladesh based on recent estimation. Increased population density creates increasing pressure on land and national resources. The GDP variation and the HDI ranking can be understood from the following Table 1 showing the socio economic profile of South Asian countries.

From the above Table 1 it can be gleaned that, Human Development Index ratings illustrate that all South Asian countries, lag behind the global average of 0.702 (UNDP 2014).

Access to electricity remains insufficient as an average of 26% of the population is not connected to the grid in 2010 (Portale and de Wit 2014). With a rising projected GDP growth trend, South Asian countries must work to meet the accompanying increased energy demand as they develop their industrial, business, transport, and services sectors (Iftikhar et al. 2015) (Table 2).

3 Energy Situation in South Asia

Energy supply and security is the major issues for the development of South Asian countries. Table 3 summarises total electricity production in 2011 and its sources, and total energy used and its constituents.

Table 3 shows that these countries depend on a single source to provide more than 50% of total electricity generation including Bangladesh (natural gas-91.5%),

Table 1 Key Socio-economic indicators of Bangladesh, Bhutan, India and Nepal

Member states	Mid-year population 2016	Urban population (% of Total population)	Density of population (Persons per km^2) 2016	HDI ranking 2015	HDI index 2015	GDP per unit of Energy use 2013 (kgoe/ capita)	GDP per capita at PPP ($) 2014
Bangladesh	160,366,122	34	1113.67	142	0.570	13.2	3123
Bhutan	773,460	38	20.1	132	0.605	NA	7816
India	1,288,629,000	32	392.01	130	0.609	8.5	5701
Nepal	28,431,500	18	193.2	145	0.548	5.9	2374

Source: Compilation from GoB (2011), UNDP (2014), World Bank (2014)
Notes: GDP = Gross Domestic Product; HDI = Human Development Index, PPP = Purchasing Power Parity; kgoe = Kg of Oil Equivalent

Table 2 Socio-economic indicators

Countries	Access to electricity (% of population) 2010	Access to non-solid fuel (% of population) 2010
Bangladesh	55	9
Bhutan	72	60
India	75	42
Nepal	76	18

Source: Iftikhar et al. (2015)

India (coal-67.9%), and Nepal (hydropower-99.9%). Such dependence is not sustainable. For example, Bangladesh is unlikely to sustain economic activity beyond 2016 if its high consumption of natural gas remains unchanged (GoB 2011). It is important to note that in these countries less than 5% of energy consumed came from renewable sources. The gap in total energy use and production is calculated in the last column.

From Fig. 2, it is clearly understood that the access to electricity varies from 55% in Bangladesh to 76% in Nepal. Access to Non-solid fuels is high in India and very low in Bangladesh. The average electrification rate in the region was 74%, which translated to 417 million people without electricity, constituting more than a third of the world's 1.2 billion people lacking access and access to non-solid fuels is low in the region, averaging at 38% in 2010. Hence, more than 1 billion people used solid fuel for cooking, compared to 2.8 billion world-wide (Iftikhar et al. 2015).

The following Tables 4, 5, 6 and 7 will show the overall Energy sources condition (consumption and production) among the four countries Bangladesh, Bhutan, India and Nepal in South Asia which are compilation of data collected from CIA Factbook from 2007 to 2014 estimations.

From Table 4, it is clear that Bangladesh is high in primary energy consumption and low in production compared to India. Electricity consumption scenario is high in India with respect to its population whereas Bangladesh and Bhutan have the same power consumption per capita (Table 5). Natural gas produced only in Bangladesh and India (Table 6) and in the terms of Oil production and consumption, Bangladesh and India have both production and consumption capabilities but Bhutan and Nepal Have only consumption rates.

From all the statistics, it is very much clear that all countries have energy scarcity problem because of the high energy demand than the energy supply specifically in the case of Bhutan and Nepal it is a major issue in the context of energy import dependency from the other countries. So Energy interdependency between these countries will create opportunities to overcome the energy shortages among national level and it will create a strong region of energy resources among the world.

Table 3 Electricity production and energy use (2011)

Electricity production							
Countries	Electricity production (kWh Billions)	Coal (% of Total)	Natural Gas (% of Total)	Oil (% of Total)	Hydropower (% of Total)	Renewable Sources (% of Total)	Nuclear power (% of Total)
Bangladesh	44.1	5.0	82.0	7.0	5	1	0
Bhutan	. . .	. . .	. . .	. . .	. . .	. . .	. . .
India	1052.3	67.9	10.3	1.2	12.14	5	3.2
Nepal	3.3	0	NA	0.1	99.9	0	0

Energy use and production						
Countries	Energy Consumed (million tons of oil equivalent)	Fossil Fuels* (% of total use)	Combustible renewable and waste** (% of total use)	Alternative and Nuclear energy*** (% of total use)	Energy Produced**** (million tons of oil equivalent)	Energy Use-Energy Production (Mtoe)
Bangladesh	31.3	71.5	28.2	0.2	26.1	5.2
Bhutan	. . .	. . .	. . .	. . .	. . .	. . .
India	749.4	72.3	27.4	3	540.9	208.5
Nepal	. . .	. . .	. . .	. . .	. . .	. . .

Source: Iftikhar et al. (2015), Kabir and Endlicher (2012)

Notes: *Includes coal, petroleum, natural gas, and oil; **Includes solid biomass (such as firewood), liquid biomass, biogas, industrial waste, and municipal waste; ***Refers to clean energy that does not produce CO_2 gas. This includes geothermal, hydropower, solar power, and nuclear, among others; ****Refers to forms of primary energy including petroleum, natural gas, solid fuel, combustible renewables and waste, and primary electricity

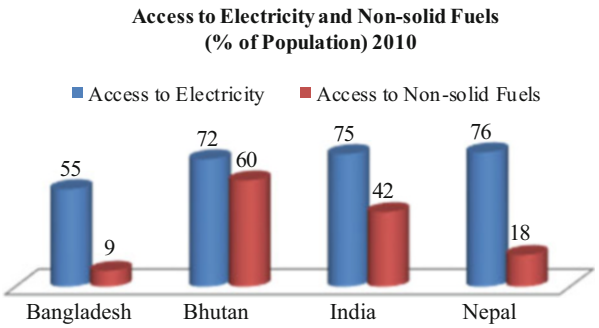

Fig. 2 Access to electricity and non-solid fuels. Source: Iftikhar et al. (2015)

Table 4 Total primary energy consumption and production

Country	Total production per year 2010 (Quadrillion BTU)	Total consumption per year 2007 (Trillion BTU)
Bangladesh	0.763	789.19
Bhutan	0.072	35.19
India	15.294	19,093.68
Nepal	0.031	74.44

Source: Compilation of data collected from CIA Factbook from 2007 to 2014 estimations
Notes: BTU = British Thermal Unit; 1 quadrillion BTU = 293 TW·h = 1055 EJ; 1 quadrillion BTU/year = 1055 EJ/year = 293 TW·h/year

Table 5 Total electricity consumption statistics

Country	Electricity consumption (MW h/year)	Year of data	Population and year	Average power per capita (watts per son)
Bangladesh	39,100,000	2012	161,083,804 (2012)	28
Bhutan	184, 000	2009	742.737 (2012)	28
India	938,823,000	2014	1,242,660,000 (2014)	101
Nepal	4,883,000	2010	26,494,504 (2011)	21

Source: Compilation of data collected from CIA Factbook from 2007 to 2014 estimations

Table 6 Natural gas production and consumption statistics

Country	Annual natural gas production (m^3)	Date of information	Natural gas consumption (m^3/year)	Date of information
Bangladesh	20,110,000,000	2011 est.	15,700,000,000	2007
India	40,380,000,000	2012 est.	61,100,000,000	2011

Source: Compilation of data collected from CIA Factbook from 2007 to 2014 estimations

Table 7 Oil production and consumption statistics

Country	Production (bbl/day)	Date of information	Consumption (bbl/day)	Date of information
Bangladesh	4800	2014 est.	108,900	2011 est.
Bhutan	NA	NA	1719	2011 est.
India	978,000	2014est.	3,509,000	2013 est.
Nepal	NA	NA	18,430	2011 est.

Source: Compilation of data collected from CIA Factbook from 2007 to 2014 estimations
Notes: Bbl = Barrel Unit; NA = Not Applicable

3.1 State of Energy Cooperation

The current energy cooperation scenario has been explained in details in the works of Singh et al. (2015). Energy cooperation in South Asia exists at bilateral as well as regional level. But bilateral energy cooperation has been more successful, particularly between India and Bhutan as India has provided technical and financial assistance to Bhutan in the development of hydro power and that form of energy is Bhutan's main export to India. Bhutan exports about 1000–1200 megawatts (MW) surplus power to India. The first ever Clean Development Mechanism (CDM) benefits were realized by India-Bhutan hydro trade in 2010. Recently, India and Bangladesh have signed a memorandum of understanding (MoU) under which 100 MW power will be exported to Bangladesh. India and Nepal also have engaged in significant energy cooperation. Four hydroelectric schemes with an aggregated installed capacity of about 50 MW have been implemented in Nepal with assistance from India. The two countries have also signed an agreement worth US$ 1.04 billion under which a 900 MW plant will be built on the Arun River. There are possibilities of further expansion of electricity trade between India and Nepal as till date only 600 MW of hydro power has been developed against Nepal's economically feasible hydropower potential of about 40,000 MW. However, tensions between Nepal and India endanger the possibility of greater energy cooperation between them. Further, India has emerged as a significant source of refined petroleum for the region. India currently supplies the entire demand for petroleum products in Nepal and Bhutan. India also exports petroleum products to Bangladesh.

Table 8 will show Existing and some proposed cross-border electricity trade arrangements in South Asia.

3.2 Issues and Challenges Regarding Energy Cooperation in South Asia

There are region-wise variations in the scope and extent of the cross-border energy co-operation (Pineau et al. 2004; Oseni and Pollitt 2014). Regional agreements for power sector cooperation and trade can take time to achieve. This steady progress of

Table 8 Existing and proposed cross-border electricity trade arrangements in South Asia (Bangladesh, Bhutan, India and Nepal)

Participants	Cross-border electricity trade
India-Nepal	Nepal imported 793 GWh electricity in 2013 from India over multiple interconnections
India-Bhutan	Electricity import from Bhutan to India was 5556 GWh in 2013–14 (4627 GWh in 2012–13) from Hydro power stations at Tala, Chukha and Kurichu with a total export led capacity of 1416 MW. As per an umbrella agreement between the two countries, India assures a minimum of 5000 MW electricity import by 2020
India-Bangladesh	In 2013, power systems of India and Bangladesh were interconnected through a HVDC line that can support electricity export of up to 500 MW (expandable to 1000 MW in future) from India to Bangladesh based on negotiated price and market based price

Source: Compilation from Singh et al. (2015, 2013), NTDC (2014), ERLD (2014)

energy co-operation can be attributed to technical, operational, political and commercial issues which vary according to socio-economic and political circumstances in the region. The current state and magnitude of energy cooperation and trade in South Asian region is far less than the potential considering the regional diversity of energy resource endowments and differences in demand patterns across countries in the region (Wijayatunga and Fernando 2013; Singh et al. 2013; Timilsina et al. 2015). This current state is due to the existing challenges or barriers that are decreasing the scope of energy trade and regional co-operation.

In this section some major challenges or barriers and issues will be discussed regarding energy trade and co-operation.

3.3 Energy Trade Barriers

South Asian region is characterized by dynamic and uncertain regional political environment which can be regarded as regional barrier for energy co-operation and trade. Lack of trust between countries has often frustrated the process of regional cooperation in South Asia, including regional power sector cooperation. Though there are encouraging signs but the political rhetoric for power cooperation has not consistently translated into the political will and action for cooperation in South Asia (Paudyal 2013). Internal political conflict as well as the government-to-government model for cross-border trade typically involves lengthy political as well as technical negotiations, diminishing economic gains (Singh et al. 2013). Regional cooperation is perceived by some as a warning to national safety and energy security, as reflected in debates over power trade between India and Pakistan (Mukherji and Chaturvedi 2013). In another scenario, the Bangladeshi government's inability to provide a guaranteed supply of natural gas for a proposed USD 3 billion power project investment in Bangladesh by an Indian company resulted in the latter abandoning the business venture altogether (Rahman et al. 2012). On the other hand, the entry of Chinese investment has encouraged India to

explore electricity cooperation with Sri Lanka and Nepal (Chaturvedi 2013; Mittra 2012).

There are questions on the ability of the cross-border trade of electricity to address public interest, social and environmental concerns (Williams and Ghanadan 2006). For example, significant economic rents will be generated by large-scale development of water resources in Nepal and Bhutan and debates over the distribution of such rents can generate conflicts and opposition to large-scale resource development initiatives and create political problems between countries. So regional political environment acts like a barrier for energy co-operation and trade which is very sensitive matter of concern between the countries.

Absence of a platform for cross-border regulatory coordination is another impediment in the energy trade status in the South Asian region. National regulators should pay more attention to harmonization and coordination of their regulatory practices which is the basic requirement for the increased energy co-operation and trade in the region. Technical aspects such as rules and procedures concerning transmission access and its pricing, congestion management, operational codes and protocols for system operation, energy accounting and payment thereof, and data transfer protocols need to be gradually harmonized for seamless and stable operation of the transmission systems between the countries (Singh et al. 2015).

Tariff and non-tariff market barriers are another important issue for energy trade in South Asian region because trade in energy resources specially electricity is hindered by export tax, import duty and transit tax like all other commodities and services (Singh et al. 2015). Special focus on energy was not given specially in electricity trade, when signed in The South Asian Free Trade Agreement (SAFTA). Although signing in 2014 of the SAARC Framework Agreement for Energy Cooperation (Electricity) during 18th SAARC Summit in Kathmandu has given impetus to expanded regional power trade, more needs to be done for implementation of a regional agreement for free trade of electricity (Singh et al. 2015). For example, electricity import restrictions in India that limit participation to specifically identified (so called nodal) agencies also limit entry in cross-border trade and hinder the development of power exchange (Singh et al. 2013). Power sector trade-related reforms also are inter-dependent with wider reforms, and failure to match inter-sector reforms can direct to power sector reform measures being ineffective (Nepal and Jamasb 2012). For example, India and Sri Lanka are yet to sign a free trade agreement, while India also has been reluctant to waive imports duty for imported construction equipment and materials to Nepal from a third country and similarly, Pakistan is yet to grant Most Favoured Nation (MFN) status to enhance trade with India (Singh et al. 2015).

3.4 Energy Trade Issues

Regional co-operation and energy trade would typically help to overcome the mismatch between energy demand and energy resource endowments among the countries in the South Asian region, especially among neighbouring countries, as

well as enhance energy security through prudent dependence on trade to meet part of the demand by diversifying the forms of energy access and supply sources with possible lowering of the average cost of supply. Energy interdependency through trade will not only enable smaller countries with large natural resources (such as hydropower) to develop that resource exploiting economies of scale but also will help to postpone, reduce, or avoid large and lumpy capital investments in new production facilities and thereby overcome temporal cash flow problems in countries. This will create a stage to promote public-private partnership arrangements and thereby enhancing private sector participation in the energy sector and capture environmental benefits by enabling the substitution of planned higher per electricity unit pollutant emission projects in one power grid with lower per electricity unit pollutant emission projects in an interconnected power grid (Wijayatunga and Fernando 2013). According to Wijayatunga and Fernando, these key issues are: a regional power market; energy supply availability; energy trade infrastructure; and harmonized legal and regulatory frameworks for co-ordination. These issues will be discussed in the following section.

3.5 Regional Power Market

Significant economic benefits can be derived from giving any effort to reduce the power shortages in South Asian countries as these have high opportunity cost. An option available for the region to reduce electricity shortages is to endorse improved electricity trade in any surpluses that the South Asian countries may have either over the course of the day or seasonally (Wijayatunga and Fernando 2013). According to Wijayatunga and Fernando, in this situation, it is important to note that Bhutan has agreed to export around 10,000 MW of hydropower to India by 2020, Sri Lanka is in the process of implementing nearly 2000 MW of coal-fired power plants and considering a 500 MW HVDC power transmission link with India, while India itself is progressing with the implementation of its 2000 MW–4000 MW power plants with coal or LNG firing and on the other hand, predominantly natural gas dependent Bangladesh, and hydropower dependent Nepal, are looking towards early completion of their 500 MW and 1000 MW power interconnections with India, respectively, in order to ease their present power shortages. Pakistan is also seeking power trade opportunities to ease its present power shortages. The present regional trade, which is now bilateral in nature and taking place between India and Bhutan and India and Nepal, to a limited extent, can be enhanced to cover much larger power volumes. So a regional power exchange can facilitate enhanced energy specially electricity trade that would provide centralized control to increase opportunities for cross-border multilateral electricity trade among the South Asian countries, which are already interconnected or likely to have interconnections. India has an important role to play in building a regional electricity market because of its size and its central location and it has already two working national level electricity exchanges, the India Energy Exchange and Power Exchange India Limited, through which bilateral as well as competitive electricity

trade is taking place (Wijayatunga and Fernando 2013). So in the contract based bilateral power exchange any one country can support the net feasible power exchange (based on data from generators, traders, or aggregators) along with the points of power export or import for each scheduling period from that country's perspective and communicate this to the designated regional power exchange for implementation. So India has that ability among south Asian region to create contract bilateral power exchange to facilitate other countries through electricity trade. An enhanced regional power market can be facilitated by regional power exchange process and it is an important issue for overcoming the power shortages of this region.

3.6 Energy Supply Availability

The further development of hydropower resources in Nepal and Bhutan with the bulk and regionally competitive imported coal and LNG based power generation within the region can be of significant scope for creating a strong regional energy trade co-operation. The present power transfer between Bhutan and India and Nepal and India should be more developed parallel with the infrastructure development Bangladesh with India.

Lack of a strong enabling framework including power purchase arrangements for external participation in the development of hydropower utilization opportunity and necessary transmission for power evacuation to an external power market create great issue for energy supply capability between the countries of South Asia. For example, While Bhutan with an economically viable hydropower generation capability of about 24,000 MW, has an installed capacity of nearly 1500 MW which is primarily for electricity export to India and a firm agreement for the export of 10,000 MW to India by 2020, and on the other hand, Nepal with 43,000 MW of economically viable generation capability, still has no firm agreement with India for any time-bound electricity exports from specific large scale export oriented hydropower projects (Timilsina et al. 2015). So Nepal and Bhutan have massive hydropower potential that is only barely being utilized at present—especially in Nepal. So the main issue is, there are available energy resources but no availability and scope of proper utilization and power exchange system between the countries due to lack of technical and infrastructural mechanisms and policies regarding the energy trading system in this regions in order to utilize the huge energy potentials in this region.

3.7 Energy Trade Infrastructure

Energy Trade infrastructure issue is related to energy trade investment, energy costs, tariffs, negotiation problems in energy transfer agreements. This is creating hindrance and delay in energy trade and cross border co-operation system. As mentioned earlier that political environment and institutional management is very

much responsible for creating security issues regarding regional energy co-operation and trade. Besides there is no reliable database based on the power demanding projection, existing systems, consuming trends and operating details which are very important to analysis the energy scarcity situation and future demanding projections. Delayed processes regarding energy transmission system and trade including energy costs and tariffs are the major concerns among the countries. These issues should be solved to create a harmonized environment to overcome the energy related problems in this region.

3.8 Harmonized Legal and Regulatory Frameworks

All the countries have their own legal and regulatory frameworks. The risk of these regulatory frameworks will increase if high costs and institutional problems are related to it. Immaturity in the legal and regulatory frameworks and lack of harmony create trust issues among the countries which directly affect the energy trade system. So establishment of secure legal and regulatory frameworks maintained with proper law enforcement and management should be the first step towards energy co-operation among the countries.

4 Conclusions and Policy Recommendations

This section highlights some recommendations based on the outcome with an aim to provide valuable inputs for the policy makers involved in the development of energy co-operation and trade in South Asian countries.

5 Conclusions

Energy interdependency by the means of energy trade between the South Asian countries is one of the major roads to increase energy access and security in the region. Regional energy trade and cooperation may be advanced by individual national governments. Despite substantial trade potential, South Asia is one of the least connected regions in the world. The pressing matter of addressing energy needs through trade may motivate the countries to engage in multilateral energy trade from bilateral situation. Energy trade may emerge as a cornerstone of regional integration and connectivity. South Asia is also advantageous in terms of its close proximity to natural resource rich Central Asia. There is a need to complete the ongoing energy trade projects expeditiously and initiate dialogue for further potential in this regard. Domestic energy market reforms will play a key role in facilitating energy trade within South Asia and with neighbouring regions and countries.

5.1 Recommendations

This paper analyses the energy situation of South Asian countries specially Bangladesh, Bhutan, India and Nepal, state of their energy cooperation, major issues and barriers behind the energy cooperation and some policy recommendations. However, the following specific recommendations are put forward with an aim to provide valuable inputs (for policy makers), which expect special attention. These recommendations are based on the issues mentioned in the previous sections.

- Development of power system structure is needed here to create an enhanced regional market facilitated by regional power exchange system. Legal and regulatory aspects with power transmission system security and stability and compatibility standards should be maintained between participatory countries in the context of energy trading system. A detailed analysis of the power generation scheduling, energy accounting time and institutional, regulatory and commercial aspects are needed to be managed in order to harmonize the cross-border energy trade issue. As India has the possibilities in this sector so a link should be establish with existing Indian power exchange system in order to facilitate the process with other countries.
- Assistance should be provided to strengthen the hydropower potentials of Nepal and Bhutan in order to utilize these energy potentials to overcome power shortages among the region. Private sector participation should be allowed in Bhutan and Nepal for hydropower development and power transmission facilities. Power transfer system should be more linked to Bangladesh and India with Nepal and Bhutan in order to cope up with the energy supply availability within the South Asian region.
- Development of power system database is required to understand the overall scenario of this region in order to identify possible power transmission interconnection condition within and between the countries for energy trade. Policies should be more concentrated on easier and affordable energy investment and energy costs including tariff s and non-tariffs aspects.
- Harmonization of the legal and regulatory frameworks would be a strong incentive for both public and private sector investment for cross border power trade and such harmonization should primarily address: electricity trading licensing, open access power transmission, coordinated power system operation, transmission planning across interconnected power systems, inclusion of regional electricity trading in country energy policy, and regionally supported mechanisms for dispute resolution.

References

Chaturvedi S (2013) India Signs Pact to Build Power Plant in Sri Lanka, India News, The
CIA, The World Factbook (2007–2014) https://www.cia.gov/library/publications/the-world-factbook/docs/profileguide.html. Accessed 18 August 2016
ERLD (2014) Annual Report 2013–14. Eastern Regional Load Despatch Centre, Kolkata
GoB (2011) Power and Energy Sector Road Map: An Update. Ministry of Finance, Government of Bangladesh. Dhaka. "Human Development Report 2015 – "Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience"". http://hdr.undp.org/en/2015-report. Accessed 14 December 2015
Iftikhar MN, Najeeb F, Mohajjam S, Khan SA (2015) Sustainable energy for all in South Asia: potential, challenges, and solutions. Sustainable Development Policy Institute (SDPI), Working Paper 151
Kabir MH, Endlicher W (2012) Exploitation of renewable energy in Bangladesh: power supply and climate protection perspectives, Dhaka, Bangladesh
Mittra S (2012) Impediments to India-Nepal corporation over hydropower, analysis. Obs Res Found 9(14)
Mukherji B, Chaturvedi S (2013) India plan to export power to Bangladesh to benefit both sides. India News, The Wall Street Journal, September
Nepal R, Jamasb T (2012) Reforming the power sector in transition: do institutions matter? Energy Econ 34(5):1675–1682
NTDC (2014) Power system statistics 2013–2014, 39th ed, Planning (Power), National Transmission and Dispatch Company (NTDC), Lahore
Oseni M O, Pollitt MG (2014) Institutional arrangements for the promotion of regional integration of electricity markets: international experience. World Bank Policy Research Working Paper 6947
Paudyal M (2013) Role of private sector in the growth of power infrastructure in South Asia. Investment Board, Government of Nepal, October
Pineau PO, Hira A, Froschauer K (2004) measuring international electricity integration: a comparative study of the power systems under the Nordic Council, MERCOSUR, and NAFTA. Energy Policy 32:1457–1475
Portale E, de Wit J (2014) Tracking progress toward sustainable energy for all in South Asia. World Bank, Washington, DC
Rahman SH, Khatri S, Brunner HP (2012) Regional integration and economic development in South Asia. Edward Elgar, UK
Singh A, Parikh J, Agrawal KK, Khare D, Panda RR, Mohla P (2013) Prospects for regional cooperation on cross-border electricity trade in South Asia, Integrated Research and Action for Development, New Delhi. http://irade.org/Background %20Paper %20revised, %20Write %20Media, %20Oct18.pdf. Accessed 18 August 2016
Singh A, Jamasb T, Nepal R, Toman M (2015) Cross-border electricity cooperation in South Asia. World Bank Policy Research Working Paper (7328)
Timilsina G, Toman M, Ahmad A, Iqbal M, Shrestha R (2015) How much could South Asia benefit from regional electricity cooperation and trade? Insights from a power sector planning model. World Bank Policy Research Working Paper
UNDP (2014) Human development statistical tables. United Nations Development Programme
Wall Street Journal, October
Wijayatunga P, Fernando PN (2013) An overview of energy cooperation in South Asia
Williams JH, Ghanadan R (2006) Electricity reform in developing and transition countries: a reappraisal. Energy 31(6–7):815–844
World Bank (2014) Doing Business 2014: understanding regulations for small and medium-size enterprises. World Bank, Washington, DC. http://www.doingbusiness.org/reports/global-reports/doing-business-2014. Accessed 18 August 2016

Part IV

Institutions and Democracy

Negotiating Laws: Land Practices in the Process of City-Making in South India

Roxane de Flore

1 Introduction

For over two decades in India, strategic Master plans as well as laws have been created to allow new forms of buildings and to attract private investments. Economic reforms and Land reforms have been launched in order to organize city development.

These public policies in which city growth will bring economic growth, have been studied by different researchers who bring up land as main issues. Land has been converted on a large scale from agricultural to constructible land, from public resource to private resource. This non-fungible good tends to become exchangeable to conquer new markets. Current debates focus on effects resulting from by those in-depth transformations. Displacements and dispossession have been reported by scholars to raise state regulations against local resistances. Very few works describe "What really happened in" these displacements and dispossession mechanisms (cf. Tata implementation in Singur, in Ghatak et al. 2013). Injustice with respect to compensation has also been reported concerning a future Land Acquisition Act such as the Land Acquisition Rehabilitation and Resettlement which is still in debate since 2011 (Menon 2013). Land issues cannot be solved only by looking at land regulations as fixed processes, i.e. if they are applied or not, contested or not, but by examining the use of those regulations by the actors involved. Land transfers are problematic issues for government, but also for entrepreneurs, for local landowners, migrant workers, brokers and elected representatives who could all being part of driving up the price of land.

Focusing on the case of India, in particular the state of Tamil Nadu and the implementation of megaprojects, this paper aims to discuss public land policies in the light of local practices.

R. de Flore (✉)
Lab'Urba, Université de Paris-Est, Marne-la-Vallée, Champs-sur-Marne, France
e-mail: roxanedeflore@hotmail.com

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_15

This paper[1] has two objectives: first, to discuss micro-processes insufficiently describe even unknown, in the literature on land issues such as conversion and acquisition practices. Second, to discuss the research methodology for investigating these issues because practices are not limited by laws, regulations and jurisprudence.

The first part of the paper broaches public land policies in the light of individual strategies to consider the multiplicity of actors involved. The second part reveals local stakes in giving voice to inhabitants concerned by one foreign factory implementation supported by the Tamil Nadu government. The third part opens the debate and point out methological a theorical approaches to analyse these land acquisition processes.

2 The Shortcomings of Land Acquisition Policies

Public programs involving large-scale land acquisition or facilitating private acquisitions for mega-projects run into constrains of local realities: local power around land management, variety of parcel size, their use and their classification, plurality of cultivators status, pressure on land prices. To understand how land is acquired and converted, these situations have to be explained in detail.

2.1 How to Obtain Land or How to Induce Land Availability?

For the past two decades, public institutions have initiated many projects to develop industrial and tertiary economies. Throughout India, Information Technology (IT) parks and Special Economic Zones have been built on large-scale parcels under the Special Economic Zones Act (2005) and The Land Acquisition Act (first established under British government in 1894). When a project is considered as of public interest, governments can requisition lands by expropriating private owners or alienating public properties. In both procedures, these land transfers may give right to compensation. On private lands, when owners justify the size, the location and the use of their property by their title deed, they can usually obtain compensation set by public institutions and based on the guideline value. On public lands, when users can justify their occupation, they can obtain financial compensation or the right to be relocated. But in practice, researchers have shown that ownership and occupation of land are not only attested to title deed or occupation certificate (*free patta* in Tamil Nadu) and even if an individual can prove the relation to the land,

[1]Data mentioned in this paper was collected during a PhD research, which was carried out with the financial support of The Reunion regional council and the European social fund and with the support of the Lab'Urba (Paris-Est Marne-la-Vallée University), The French Institute of Pondicherry. I am grateful to Larry Litzky for his careful proofreading.

that does not systematically lead to compensation. Detail analysis of these procedures reveals that land acquisition is not fully determined by regulations.

Public institutions will implement these procedures to constitute a land bank, which will be giving via a leasing contract to a private company. The Minister of Industry mandates a regional parastatal agency to be an executive partner in the acquisition and manage relations with companies. For a given project, different parastatal agencies could be in competition to manage procedures (Kennedy et al. 2014). Viewed as a "single window" (Tamil Nadu Government) they are the link between companies and public actors, but only when those actors have so decided! Observation of relations between investors, entrepreneurs, foreign developers and the Minister of Industry guidance bureau shows that each Memorandum of Understanding (MoU) can be directly negotiated between those actors and that include the special guarantee required by each actor (de Flore 2016). Specific Regional Departments, competent for natural resource protection such as the Forest Department or the Public Work Department and the Regional Boards which manage public land such as Bhoomidan land[2] have to give authorization clearances to convert and build on their lands. These relationships, once develop, can be more efficient than working through the single window and can accelerate the process as attested to by entrepreneurs who have been able to obtain all the clearances in a single day (*ibid*). Although relationship can short circuit the procedure, the procedure resulting bringing several actors together at the same place. In Tamil Nadu for example, The Tamil Nadu Acquisition of Land for Industrial Purposes Act (TNALIPA 1997) gives to the District Collector officer a large range of competences which empower him to "negotiate, fix the price and acquire the land" (Vijayabaskar 2010, p. 39). This is not the case in the central Land Acquisition Act. The District Collector is able to "acquire the land and use the force as necessary" in the even that people do not want to vacate the land (Tamil Nadu Gazette Order, Chap. II, paragraph 4. (3), p. 116).

To avoid conflicts due to these extensive acquisition and conversion procedures, The Tamil Nadu (TN) government has given priority to building projects and parks on public lands and thus to avoid the acquisition on private lands (interview with a State Industries Promotion Corporation of Tamil Nadu Limited SIPCOT officer, TN, 2013). This solution seems to be more convenient because public land is legally publicly owned (interview with a SIPCOT officer, TN, 2013). Following this logic, in several places in Tamil Nadu, IT parks have been built where the survey map and Revenue Department indicate *poramboke* (public land) (interview with a SIPCOT officer, TN, 2011). But in reality, survey map and parcels details (Field Measurement Books—FMB) and classification registers (*Chitta Adangal*) do

[2]The Bhoomidhan Lands are lands granted to "landless" residents. The granting of these lands begins with The Bhoodan Yagna Movement started by Acharya Vinoba Bhave Sri, who traveled different states of India from the years 1951 to convince the owners to sell part of their land to needy people in their villages. In Tamil Nadu, the donations were established as early as 1956 and this gave rise to regulations to frame transfers and management such as Tamilnadu Bhoodan Yagna Act of 1958 (cf. http://www.lawsofindia.org/pdf/tamil_nadu/1958/1958TN15.pdf).

not provide information on the use and the occupation of these lands. Public land is not necessarily available. These lands could be occupied and cultivated by the inhabitants. In villages I have investigated, some public land was used as private when for example local elected representatives converted public property into private property and, on the other hand, private land was used as if it were public as for example when private landowners allow local residents to cross their land, to using for grazing animals or for storage (de Flore 2015).

In practice, the government is aware of the way of local residents use their land; thus, acquisitions are made according to the law but taking into consideration those uses. Several interviewees indicated that non-cultivated land was acquired before cultivated land; thus the activities of farmers is disrupted as they have to cross though built land to reach their fields.

> Before 2007, they have already had all the land! [...] They started by dry land and non-cultivated land. They know that way they will ruin agriculture [...] Our village is now in the middle of companies.
>
> *President Panchayat* of Oragadam village, Tamil Nadu, 2013.

More than "400 hectares (1000 acres)" were acquired in this way (*President Panchayat* of Oragadam village, 2013), containing farmers in their activity.

> From 2008 to 2012, we have had lots of problems. Companies built all around our lands. People were crossing our fields and it was impossible to cultivate. Two acres remain but I think I will stop. I was growing rice to sell to wholesalers around, and eucalyptus, cereals like Ragi and arachid for our personal consumption.
>
> Mr Chik., resident of Oragadam, Tamil Nadu, 2013

Researchers and students have pointed out these tendencies in land acquisitions which are also made by private developers who build around cultivated land or on dried water reservoirs (Bertin 2010; Denis 2016) (Fig. 1).

A part of the question of availability or the conflict that surround it, there are the modalities of acquisition which are constrained by varieties of representations circumvent or ignore varieties of local representations.

2.2 Social Representations Regarding Land

The future destination of land depends on the vision of the various actors interested in acquisition or conservation of land. This is certainly why in French the word "foncier" (land as a property or an asset) rather than "terre" (land), is used to qualify the multiplicity of stakes around it. For governments, current land at the outskirt of cities has to be used and converted because: land is scarce and land should be a productive good. Behind these arguments, which are not specific to India, researchers have shown that land as a productive piece is only one point of view

Fig. 1 Surrounded. Source: de Flore (2016)

and scarcity of land is the result of the balance of power (Buhot 2012; Guelton and Viallon 2016).

The focus has to be shifted toward users of these lands to understand the consequences of land conversion and transactions.

> Land is a productive resource on which crops can be grown or oil refineries built, but changing ownership arrangements and differential access to this resource fundamentally alters social, cultural and economic structures that constitute people's everyday lives. Accordingly, we understand the ongoing conflict in the region between SEZs and farmers not only in terms of a struggle over physical pieces of quantifiable land (though that certainly is an issue), but also as a conflict rooted in different understandings of what land is.
>
> (Cook et al. 2013, p. 40)

Productivity of public land and particularly on non-cultivated such as *wastelands* (*Uncultivated Common Property Land*, defined by LOCKE, 1680/2011 in Baka (2013)) are identified as empty or useless. Jennifer Baka who studied land conversion into intensive agricultural activities compares these processes to the reasoning of British administrators during colonial period.

> Yet, the concept of Waste Land also contains a moral dimension. Locke posited that natural property is a natural right bestowed by God (Locke 1680/2011): to waste land is thus immoral (Gidwani 1992). Such reasoning permeates Indian colonial records, which portray Indians as inferior to their British colonizers on account of their lack of private property rights (Gidwani 1992). The same concept was used to divide Indians during the process of

> established colonial forest policy (Whitehead 2010). Landowners, who were typically caste members, were considered "civilized" while wasteland users, typically tribal members, were considered "savage" [...] These principles formed the basis of India's wasteland development programme, which started in the colonial era and persists to this day.
> (Baka 2013, pp. 411–412)

The different conceptions regarding land explain the way and which companies and governments perceived displacements and relocation of inhabitants. For Renault company manager, who has settled an automobile factory recently in Oragadam village in TN, the displacement of the inhabitants is an opportunity. Because that project, they have access to a "new modern school, public toilets and houses which are more costly than the previous and could be goods that have value on the market" (interview with Renault company manager, 2013). As Tulsi Charan Bisht points out for the Tehri Dam Project (Uttarakhand state), "if the relocation was only an economic concern, it could be assumed that people would have happily accepted the resettlement package on offer" (Bisht 2011, p. 250). The "involuntary attitude towards displacement" goes beyond the economic question, because whether loosing or gaining money, inhabitants are "attach[ed]" to the place that they see as an "ancestral place (*pitrabhumi*)" and as a "birthplace (*janmabhumi*)" (*ibid*). In some regions, farmers are also constrained by difficulties in agricultural sectors (Vijayabaskar 2010) and selling land could be a way of changing their livelihood or of obtaining resources to accomplish a parental task such as marring a daughter (interview with Mr Ku, inhabitant, Tamil Nadu, 2013).

2.3 Local Strategies and the Variation of Land Prices

Looking at registered sales at the Revenue Office does not provide information on real, local private transaction prices (*registrar records*) or on compensation rates. In private transactions, sellers and buyers usually declare the minimum price of land that is fixed by the government for a given parcel: the guideline value (observation made in Tamil Nadu, 2010–2014). To avoid stamp duties,[3] transactions are not registered and individuals establish what they call a "sale agreement" which is in fact a power of attorney (interviews with land owners and brokers, TN, 2013). In land transactions, oral agreement can mean more than written certificates (de Flore 2015). When the guideline value increases, registered land transactions decrease or land is sold by sale agreements. In this case of numerous unregistered transactions, the same parcels land can be sold several times, often in a short period of time which drives up prices.

[3]Since April 2012 in Tamil Nadu, the government levies a charge of 8% of the property value on each transaction. This rate is half for women and explains why several transactions are registered under women's names.

In Tamil Nadu, the process for determining the minimum value of land remains fairly opaque. Every 5 years, General Inspectors revise the rate upwards to adjust to market price and obtain stamp duties on sales. In each election, this policy is lively debated by politics who promise a stabilization of rates.

Official inspectors justify the revised rate by saying that it will be more representative of the values exchanged on the market and will provide better compensation in cases of expropriation. In expropriation, compensation rates can be reconsidered and sometimes negotiated case by case. In the Government Order Ms No. 885 (1995), the District Collector is competent to increase compensation rates up to "150% of the market price" or according to the "guideline value" (Vijayabaskar 2010, p. 39).

In any acquisition process whether public or private, public officials are aware of the way the land price has been determined. Individuals reproduce these processes and from one project to another, they become standard practices. These practices, as well as the adjustment procedure, play an important role in variation of land price.

The unregistered transactions may have effects on regional policy-making in land prices. The decline in registered transaction coupled with the low price that has been declared in the sales can contribute to an increase in government charges such as stamp duties with the aim of obtaining revenue balancing the budget.

Beyond price variations, it is also relevant to study local actions and how local actors perceive and describe them.

To keep up to date on market values, public officers are informed by "agents", middle-men who are integrated in offices (cf. Landy et al. 2013) or document writers who undertake and check the written procedure for registering a transaction. To observe the ongoing price growth dynamic, officials and developers as well as land brokers, discuss on specific forums on internet like *Skyscraper cities* where all details concerning a project might be available.

For Chakravorty (2013), there are two "structural determinants" for price making: "utility" and "revealed preference". In other words, what individuals have done, do and will do with the land and the amount they are willing to pay (Chakravorty 2013, p. 140). Utility and preferences are created by the specificity of each context. The way individuals have acted and how they understand the concept of land is important for analysing land sales and exchange modalities (Searle 2010; Vijayabaskar 2015).

Individuals anticipate sales and the land transformation they may undertake depend on their own objectives. These will be expressed through the arguments used during the negotiation process (cf. Table 1).

Individual strategies are major variables in determining land prices.

A good sale is not only a sale at a good price, it is a sale in which individuals reach their own aims while respecting their own value criteria.

Searle (2014) shows that Indian developers and foreign investors aim to reach an economic profit in their professional activity, but they do not consider it in the same way. On the one hand, Indian developers are in a better situation when prices increase because selling their land bank is more profitable. On the other hand, foreign investors prefer low land price to obtain investment returns. So the price

Table 1 Negotiating factors in land sales and giving land value to the parcel

Pecuniary value of land	Regional State	Guideline value	Minimum price of land fixed by government. Base to calculate compensations or private transactions
	Local representative of the State	Conversions	Classification of the land (agricultural, residential, commercial, industrial)
	Individuals	Accessibility	Location of the land (geographic constrains, distance to the city center, amenities, facilities, servicing)
Non-pecuniary value of land	Individuals	Behaviour	Before land sale: anticipation logics (rumours, refusal to sell) During sale: competition processes (attractive arguments, typologies of the buyer) After sale: value creation processes (site preparation, conversions to improve land)
		Social role	Political or social status, caste position, devotional meaning of lands, patrimonial property, inheritance

Source: de Flore (2015)

increase dynamic takes place in the context of these tensions between professionals who follow their own valuation processes.

The detail analysis of the variability of land price clarifies the non-linear valuation process. These actors are not always consistent in their profitability strategies and will sometimes revised their goals downwards to be able to better negotiate, as Searle (2014) mentioned concerning Indian developers. In general, the sellers and the investors adapt their price to the future buyer (international group, private owner, politicians) and depending on the alliance they want to build. That is why assembling work reveals the nature of the link between "landlords, farmers, politicians, and *patwaris* (village level land record officials)" (Searle 2014, p. 77).

This process become more complex and more flexible when these professionals meet a diversity of actors and in particular, flexibility specialist such as middle-men (or "courtiers" as mentioned Bierschenk et al. 2000). The pecuniary value of land is determined by a set of behaviours, attitudes and postures adopted by theses intermediaries between seller and buyer. Sud (2014) elaborates a typology of "middle-men" who are active through large-scale acquisition of land in India. Effects on market and chain reactions have been studied to clarify the way in which information circulates in project as they develop. These middle-men are working with intangible resources that enable them to spread rumours (racial scare tactic as blockbusting, cf. USA case, Ouazad 2012).

Public land policies result from individual strategies which include the ways in which land becomes available, social representation and speculative or patrimonial behaviours. Given both the pecuniary and non-pecuniary value of land, these practices of land acquisition coming to play. As a result, the land market is

characterised by destructured prices, non-coordinated strategies and heterogeneous transaction modalities.

3 Land Acquisitions: Unorganized Conflicts

Many conflicts have been reported concerning land acquisition processes (Mathur 2011). There are not much room for manoeuvring in expropriation regulations but that does not mean that citizens are weak, passive and vulnerable (Goldman 2011). Protest does exist and it cannot be explained by dichotomies between states and citizens. Tensions inside local groups involved such as power struggles indicate that resistance is not coordinated.

3.1 New Alliances to Start Resistances

In villages located in the south outskirts of Chennai (capital city of Tamil Nadu), large parcels of land have been acquired for an industrial automobile park led by a parastatal agency: *The State Industries Promotion Corporation of Tamil Nadu Limited* (SIPCOT). The Renault-Nissan automobile factory, a major industrial project qualified as being of public interest (Sect. 2, TNALIPA), was established inside the SIPCOT park. The creation of public interest project authorized ipso facto the government to expropriate the owner or dislodge the occupants. The company rents the land via a 99 year lease, which is renewable. In the procedure, the SIPCOT agency or the "single window" of Tamil Nadu government is in charge of assembling the land and the District Collector is in charge of the negotiation (cf. TNALIPA 1997).

In practice, this procedure can be constrained by owners and farmers. The construction manager of the factory describes a long negotiation process till the inauguration of buildings and even after.

> Acquisition of land was very long...because all of this was plenty of small parcels, hundreds of owners [...] and during all the time I was there, we learn little by little that we have got this parcel, then that parcel. . .
>
> construction manager of Renault, Tamil Nadu, 19/05/2013

All the parcels of land were not available when the construction manager of Renault started to build the factory.

> Men were there in their huts to resist!
>
> We did not interfere in that. It was the Commercial Tax Officer from the District office who was supposed to manage. That did not delay so much the construction plans but incertitude was unbearable! That incertitude stays for all the construction time. . . and even when I have left the project, because there was still a children school on the site. This school was still there when the factory has open! We have got the order to not interfere in that and I think it

> was the only solution for us. After all, it is the government job to provide available lands, so it was their role to solve the issue; I think they get used to deal with these situations.
> construction manager of Renault, Tamil Nadu, 19/05/2013

To understand modalities of these local negotiations, interviews were conducted with landowners and farmers. Mr. Venk is one of these farmers. He is 35 years old and belongs to the *Scheduled Caste* (SC).[4] He is the father of two children. His son is fascinated by sciences and his young daughter is in 8th standard level at the new primary school just built by Renault-Nissan industry. Mr Venk was an agricultural worker on a *Naidu* caste member's land in the village. He was living on a *poramboke* (public land), less than 1 ha that his father himself used to occupy 50 years ago with some 100 goats and 20 cows.

In the village, Mr Venk daily gathered with other SC workers to go to the fields. He is in charge of collecting daily salaries from landowners and distributes them. For SC inhabitants, he is a "*Talaivar*" (head), an intermediary between higher caste members and them. This particular responsibility of guaranteeing the proper organization of agricultural employment in the village gives him a special status.

About a decade ago, Mr Venk had learned that his house and the parcel where he lived would be integrated in the Renault-Nissan factory area. By expropriation and alienation, the government would take the land. In the village, some inhabitants saw the situation as an opportunity to leave agriculture or to find a new job in Renault-Nissan. Others did not understand the government decision and choice of location. Many of the inhabitants did not want to sell their "*poorvigam idam*" (hereditary place) (Mr Lak, inhabitant of *Oragadam*, *Naidu*, 2012) and what makes them "respectable" (Mrs Chik, *Naidu*, 2013).

Mr Lak, this *Naidu* caste member landowner for whom his 5 acres of rice fields was "the only way to have salary and to save money" (Mr Lak, inhabitant of *Oragadam*, *Naidu*, 2012), was hesitant to leave his land to the government. Looking at the letter he received at home to announce the Renault-Nissan project, he realized that it was not simply a question of transferring a few parcels of lands but a measure project which would take all the agricultural land of the village. He decided to meet the other *Naidu* landowners to discuss the situation. Some of the landowners had not received these letters at home and had learned the news through their neighbours. Several persons were in this case, because of the age of property registry which mentioned previous landowners (e.g. petition N°30256, 2007) or landowners who had died (e.g. legal appeal, N°781, 2008). Even if the Field Measurement Book could have been updated regularly by the landowners and the Village Administrative Officer (VAO), data would not necessarily have been

[4]The Scheduled Caste (SC) is also called *Dalits*. With the Scheduled Tribes (ST) they belong to the *Depressed Classes* that the British Government had considered as disadvantaged. In Tamil Nadu, SC is highly present in local political parties such as *Dravida Munnetra Kazhagam (DMK) or All India Anna Dravida Munnetra Kazhagam* (*AIADMK*).

transferred to the Revenue Department where land documents are based for SIPCOT and the District Collector.

Many public land occupants were also not well informed such as individuals who lived on *Bhoomiland* (specific public land) or *natham poramboke* (habitable public lands) without a registered title deed.

With their different level of access information, inhabitants undertook different forms of action: individual case where brought before the Courts or petitions were filled, or private transactions were made. These different actions reveal power groups and local arrangements that were already based in the village but also compromises that these groups were able to make to undertake a common action.

Mr Venk (inhabitant of *Oragadam*, *SC*, 2012) was "proud" that his village had been chosen by foreign companies. His children will certainly work there and become engineers, but leaving a home place was not conceivable. Naidu castes and SC decided to make a march and protest against the government. The common reason, which was chanted, was about better compensation in the hope that the government would find a solution for each of them.

In spite of plurality of representations and the hierarchy of castes, Naidu and SC, together, "blocked the main road" (Mr Venk inhabitant of *Oragadam*, *SC*, 2012) in the village. Thus, compensation was also an argument to have the legitimate right to protest and have an influence in negotiations.

3.2 Retroactions and Modalities of Compensation

After the march which had brought members of higher caste and of SC, around 40 inhabitants were arrested. Mostly SC individuals were in jail for 2 weeks. Even if a social and political division existed in the village, these conflicts were detrimental to the solidarity that could have existed.

Several local public officials from the TN Government came to the village to negotiate with inhabitants the compensation prices. For them, the negotiation provided for in the TNALIPA, way a good way for establishing a dialogue with the owners.

> Revenue officials say that the Act allowed them, in the case of Oragadam, to work out a flexible rate, expedite the process and facilitate better interaction with the land owners. The Collector was guided by the provisions of the Land Acquisition Act. The Guideline value, the last land transaction amount received at the sub-registrar's office and the market value of lands to be acquired were taken into consideration and fair value of the land was arrived at. This also allowed for arriving at differential rates fixed depending on various factors that influence the value of land. (Rao 2008)

The prices declared are mentioned in the Table 2.

These prices are not representative of the real compensation rates which started from 2000 Rs/cent[5] (interview with inhabitants, TN, 2013). For Mr Venk, who was

[5] 1 cent = 40 sq. m.

Table 2 Census of the proposed rates during field expropriations at Oragadam

Land prices—Project for SIPCOT Oragadam and Chennakupam		
Residential land next to an infrastructure (layout approved)	2.5 lakhs Rs per ground	3550 Euro[a] per parcel
Hinterland (layout approved)	2 lakhs Rs per ground	2840 Euro per parcel
Residential land next to an infrastructure (layout unapproved)	1.75 lakhs Rs per ground	2500 Euro per parcel
Hinterland (layout unapproved)	1.5 lakhs Rs per ground	2130 Euro per parcel

Source: Rao (2008), modify by author
[a]2015 rates

part of the march to protest against compensation prices, the flexibility of the law was in reality a daily negotiation and back in forth exchange between the District Collector, Revenue Officers, landowners and the president panchayat (elected representative). The District *Revenue Officer*—DRO came to public meetings in the village to hear the inhabitant's proposal. The initial request of the inhabitants was of 30,000 Rs/cent, then 20,000 Rs/cent. Finally, interviewed inhabitants obtained 14,000 Rs/cent.

The modality of giving compensation was an issue because beyond the financial cost, there was a plurality of local stakes. In 2013, several landowners had not received their compensation yet.

Not all inhabitants were able to prove their ownership or occupation status for the parcels concerned. To justify their presence, inhabitants who lived on public land tried to find old bills such as electricity bills, or at least a B-memo certificates, a fine for illegal occupation of land delivered by local administrations (see Denis (2014, 2016) and Kumaresan's (2013) works on land titling in Tamil Nadu). Mr O. G asked several times the elected bodies and the VAO for a document to prove his 30 year presence on a *poramboke* land without obtaining any certificate. When he consulted the survey map, the VAO informed him that his parcel would be taken soon to make a road inside the SIPCOT area but they did not know when. Several inhabitants reported similar situations to the Court.

> The petitioners came to know about the acquisition when the respondent (SIPCOT) attempted to dispossess their lands by levelling the lands through the government machineries.
>
> Petition, 20/11/2008

Even if the Court decision was not in the landowners and land users favour, these inhabitants have found particular solutions adapted to their situation.

Mr O. G decides to ask an NGO's help in finding a solution before the government took actions.

> [...] We are members of an association that fights for the rights of men [...] We will build a house with bricks. And if you wonder why I build, I can show my card and say I'm fighting for my rights. [...] If I do not have a permanent house, they can send us here. If we have a house, they cannot resist us and get us out of here, we'll see . . .
>
> M. O. G., inhabitants, TN, 11/05/2013

Others decide to build religious edifices (one Hindu temple and one Christian house of worship) to have a chance to keep their parcel because they know that religious edifices are preserved.

Mr Venk accepted to leave his land and benefited from an 80 sq. m. parcel with a house of 10 sq. m. that included one room and one bathroom. He stayed there for 6 months before buying a land in his village at the border of the Renault-Nissan wall which is next to his previous land. Like him, 10 households out of 16 have preferred to leave the houses which are today rented by migrant workers or are vacant.

Mr. Venk had no employment, as public officials had promised. He has reconstituted his network of workers and leads a group specialized in building materials and transport, formalized in a legal entity that he calls a "trade union" to be employable by companies. They are recruited for daily tasks and contribute to the construction of buildings and factories that are built in the village and its surroundings. From his territorial and social integration, Mr Venk has been able to be involved in different local actions and to play a role in this industrial development.

These different stories reveal that beyond the idea of dispossession, there are retroactions (Tsiomis 2007) to constrain the project or to find a way to reach personal objectives. These strategies, elaborated after the announcement of the implementation of the Renault-Nissan project do not result from political parties but from individual initiatives and social networks.

Deconstructing procedures allows bringing to light the details of the negotiations, conflicts and numerous other issues as well as stakes concerned. The analysis of the compensation struggle shows the social relations linked to the land and how individuals mobilize their resources, such as social networks, documents, petitions or associative empowerment, to act.

4 Which Analytic Perspectives?

Land acquisition processes bring out inequalities and power reconfigurations. Showing the diversity of trajectories of individual involved in these processes enable us to understand how these inequalities take shape in space and to get away from classical discourses. Land practices are usually viewed as informal practices and are not quantified, identified and analysed. This gap can be filled by a grounded analysis, which provide information on individual processes and show how they are included in formal procedures. In this way, methodologies may be

elaborated to study these processes: describe ordinary actions by observing everyday life and portraying the trajectory of each actor in detail.

4.1 Everyday Life and Practices

Space is a power-structured area with different uses managed by diverse actors. S. Banerjee has pointed out: "Since place is the arena where social structure and social relations interact, all praxis are grounded in specific places, giving rise to relations of power, domination and resistance" (Banerjee-guha 2011, p. 42). Describing ordinary practices linked to the land is a way of breaking down actor networks and the way in which they are structured.

In terms of methodology, looking at the everyday life of the interviewees enables the researcher to collect data about facts and events concerning the objects observed e.g. parcel of land or a building, but also about norms and practices that could have a structural effect on the project. Representations, religious and social beliefs concerning land are examples of such norms and show that land transaction is not only an economic issue. In that manner, information collected concerns different time periods and cannot be reduced just to the time period of the construction of the project. This methodology of investigating highlights the multiplicity of stakes concerning land.

Studying micro-logics (de Flore 2015) or micro-processes (Raman 2015) leads to calling into question widely accepted commonplaces that have been formulated regarding the issues of high price issues, active speculation and modalities of land acquisition. Scholars have only begun to study and deconstruct inhabitant category in their work on land acquisition procedures, land titling and financialization of the city (Raman et al. 2016). This useful work reveals that inhabitant strategies are not a series of "informal" and marginal "tactics" to avoid paying taxes, to leave a land parcel or to sell it (Denis 2014). If the informal economy is not entirely unregulated (Harriss-White 2003 cited by Sud 2014) and could be validate or tolerate by administration, so why should the term "informal" be used? If corruption does not occur entirely outside of the regulation office (Landy et al. 2013), wouldn't it be more appropriate to speak of "practices" and then, investigate them to study in-depth the reasons?

In reality, the dichotomies formal/informal, corrupted/uncorrupted, have never been useful in understanding a situation in-depth, especially when these terms are not used by the inhabitants themselves. By replacing the term informal for what is exactly done such as unregistered procedure, oral agreement, actor negotiations, researchers will avoid "empty debate" (Sud 2014).

Showing local realities such as difficulties in agricultural sectors or the social meaning of land, reveals how complexed land acquisitions are and also how they are historically, socially and territorially rooted.

4.2 Individual Portraits

In the analysis of displacement resulting from large-scale projects, the Scheduled Caste (SC) or Dalits are always referred to as dispossess and needy. Beyond actor categories, there are individuals, as this fieldwork analysis has shown. Describing in-depth their representation and strategy is essential to deconstructing these inhabitant categories.

Geographers teach us how to shift from one scale to another to observe and analyse situations. In that way, they bring out different levels of power rivalry. To complete that approach, planning grounded theory (Glaser and Strauss 1967) and practical anthropology (de Sardan 2001) are also relevant to point out the heterogeneities at the micro-scale level. This one-level analysis does not mean that the issue is decontextualized. By focusing on one local scale, one situation, one actor, we show the dynamics in-depth and are able to discuss and draw conclusions on land acquisition in general.

For example, Searle does a grounded analysis when she is studying developers and investors in their daily preoccupations. In that way, she is able to show that the private sector of the property market in India is not built on business discourses during meetings (which the author compares to a "courting ritual"), and agreements between partners (such as "perfect marriage") but from "individuals struggling to form fragile partnership over difference" (Searle 2014, p. 68). By this detail work, she is able to illustrate the fragility of relationship and different land values.

Sud (2014) has chosen the same approach and has "let [middle-men] speak" to bring to light the unrecognized action of middlemen in land acquisitions. Her comprehensive approach shows the multiplicity of their role and the different level of action they could have in facilitating or preventing the realization of megaprojects. To continue that unique work, I carry out a detail analysis of land broker practices and behaviours. To complement the typology of middlemen developed by that Sud, I chose to examine one type of middle men, the broker, to describe how he can be part of transactions, integrated or not in these dynamics and the objectives he aims to reach. By following a young man in his daily life, during the transaction process but also outside of it—while working, elaborating plans, with other brokers—I was able to identify and understand what are elements he has to struggle with to work out his strategy such as current bad reputation of broker, new investors, other brokers (de Flore 2013).

Analysis of individual trajectories brings to light the variety of scenario but also shows how the projects, no matter how regulated they are, are negotiated differently from one day to the other, from one actor to another and from one project to another. These political, social and individual negotiations affect the sustainability of projects and the nature of conflicts.

5 Conclusion

Researchers have told me "spending time with people is not a methodology". And yet, yes, it is, as Bertaux (1997) has pointed out. So, what can this Indian case teach us?

This article challenges some assumptions that remain unquestioned in research on land acquisitions. Such research: takes for granted the land acquisition process without defining the terms, presupposes that all players observe and act in relation to the land with the same objectives, assumes that increases in land prices are due *only* to speculative behaviour, analyses inhabitants as if they constitute a class acting in unison and finally, implies that people are conditioned by their caste.

References

Baka J (2013) The political construction of wasteland: governmentality, land acquisition and social inequality in South India. Dev Chang 44(2):409–428

Banerjee-Guha S (2011) Contemporary globalisation and the politics of space. Econ Polit Wkly xlvi(52):40–46

Bertaux D (1997) Les récits de vie. Nathan, Paris

Bertin P (2010) Zones économiques spéciales et nouveaux enjeux fonciers: Le cas de Marg Swarnabhoomi au Tamil Nadu, Inde. Master thesis, University of Bordeaux III

Bierschenk T, Chauveau J-P, de Sardan O (eds) (2000) Courtiers en développement. Les villages africains en quête des projets. Karthala, Paris

Bisht TC (2011) Resettlement in the Tehri dam project: an ethnographic profile. In: Mathur HM (ed) Resettling displaced people, policy and practice in India. Routledge, New Delhi, pp 245–267

Buhot C (2012) Démystifier le foncier. Etat des lieux de la recherche. ADEF, Paris

Chakravorty S (2013) The price of land, acquisition, conflict, consequence. Oxford University Press, New Delhi

Cook I, Bhatta R, Dinker V (2013) The multiple displacements of Mangalore special economic zone. Econ Polit Wkly 48(33):40–46

de Flore R (2013) Incentives, documentary, HD, tamil/english (french subtitle), 14 min. http://www.canal-u.tv/video/cerimes/incentives.13897. Accessed 30 June 2016

de Flore R (2015) A la (con)quête des sols. Micro-logiques et stratégies foncières dans la production des corridors industriels de Chennai, Inde. PhD thesis, Université Paris-Est

de Flore R (2016) Partenariats: de la confiance à la négociation, l'exemple du montage des Grands Projets au Tamil Nadu. In: Colom J (ed) L'Inde et le co-développement dans l'Océan Indien. Presses Universitaires d'Aix-Marseille (PUAM), Aix-en-Provence

de Sardan JPO (2001) Les trois approches en anthropologie du développement. Revue Tiers Monde 42(168):729–754

Denis E (2014) Ville, urbanisation et propriété: Égypte, Sud-Soudan et Inde. Habilitation à Diriger des Recherches, Université Paris 1 – Panthéon-Sorbonne, 3 volumes, 1er Décembre 2014

Denis E (2016) Financiarisation du sol et expansion rapide des villes des pays en forte croissance. Presented at the 3rd conference day of prospective nationale de le recherche urbaine, Paris

Ghatak M, Mitra S, Mookherjee D, Nath A (2013) Land acquisition and compensation, what really happened in Singur? Econ Polit Wkly XLVIII(32):32–44

Gidwani V (1992) "Waste" and the permanent settlement in Bengal. Econ Pol Wkly XXVII(4): 39–46

Glaser B, Strauss A (1967) The discovery of grounded theory. Aldine Publishing Company, Hawthorne, NY

Goldman M (2011) Speculative urbanism and the making of the next world city. Int J Urban Region Res 35:555–581

Government of Tamil Nadu (1997) Tamil Nadu Acquisition of Land for Industrial Purpose Act TNALIPA. http://www.lawsofindia.org/pdf/tamil_nadu/1999/1999TN10.pdf. Accessed 24 Aug 2016

Guelton S, Viallon F-X (2016) La rareté foncière, un débat international. Revue Foncière 10:5–6

Harriss-White B (2003) India working: essays on society and economy. Cambridge University Press, Cambridge

Kennedy L, Varrel A, Denis E, Dupont V, Dhanalakshmi R, Roumeau S, Baud I, Pfeffer K, Sridharan N, Vijayabaskar M, Babu MS, Seifelislam A, Rouanet H, Saharan T (2014) Engaging with sustainability issues in Metropolitan Chennai, City Report, April 2014. www.chance2sustain.eu

Kumaresan R (2013) The mystery of Indian property system. http://nkkumaresanraja.blogspot.fr/2013/08/the-mystery-of-indian-property-system.html. Accessed 4 Apr 2015

Landy F, François T, Ruby D, Sekhsaria P (2013) Gouvernance verticale et corruption en Inde urbaine: la segmentation spatiale de l'aide alimentaire publique. Espace Politique 21(3). doi:10.4000/espacepolitique.2812

Mathur HM (2011) Resettling displaced people, policy and practice in India. Routledge, New Delhi

Menon S (2013) Things you must know about the Land Acquisition Bill, LARR, 2012. The Business Standard

Ouazad A (2012) Blockbusting: real estate brokers and the dynamics of segregation, INSEAD Working Paper

Raman B (2015) Reading into the politics of land. Econ Polit Wkly 51(17):40–46

Raman B, Denis E, Benjamin S (2016) From slum to an ordinary neighborhood in a provincial town of South India: resident-induced practices of participation and co-production. In: Deboulet A (ed) Rethinking precarious neighborhoods. AFD, Paris, pp 211–232

Rao CHG (2008) A flexible land acquisition process. The Hindu. http://www.thehindu.com/thehindu/pp/2008/11/01/stories/2008110150010100.htm. Accessed 5 June 2014

Searle LG (2010) Making space for capital: the production of global landscapes in contemporary India, PhD thesis, University of Pennsylvania

Searle LG (2014) Conflict and commensuration, contested market making in India's private real estate development sector. In: Shatkin G (ed) Contesting the Indian city: global visions and the politics of the local. Wiley, Chichester, pp 65–90

Sud N (2014) The men in the middle: a missing dimension in global land deals. J Peasant Stud 41(4):593–612

Tsiomis Y (2007) Introduction. Actes du Colloque: Echelles et Temporalités des projets urbains, auditorium de la Cité de l'Architecture et du Patrimoine http://www.urbanisme-puca.gouv.fr/IMG/pdf/actes_echelles_tempo2007.pdf. Accessed 30 June 2016

Vijayabaskar M (2010) Saving agricultural labour from agriculture: special economic zones and the politics of silence in Tamil Nadu. Econ Polit Wekly XLV(6):36–43

Vijayabaskar M (2015) Peripheral agriculture? Macro and micro dynamics of land sales and land use changes in the changing 'rural' economy of Kancheepuram. Presented at CEIAS-EHESS seminar, Paris, 6 May 2015

Whitehead J (2010) John Locke and the governance of India's landscape: the category of wasteland in colonial revenue and forest legislation. Econ Pol Wkly XLV(50):83–93

India-EU FTA: Indian Bilateralism vs. South Asian Regionalism?

Wolfgang-Peter Zingel

1 Introduction

Regional cooperation within and across South Asia has been an exercise in hope and frustration for decades. There is no other regional cooperation like the South Asia Association for Regional Development (SAARC) where two members have been either at war or on the brink of war for almost 70 years. Little wonder, regional trade hovers around 5% of total trade and less of India's foreign trade. The World Bank calls South Asia the least integrated region of the world. The European Union is still India's largest trading partner. India's trade with the EU is more than with all her neighbours together, including China, her major individual trading partner. Still, the so called India-EU Free Trade Agreement (FTA), under negotiation since years, is not even mentioned in the External Sector chapter of the latest Economic Survey, other than to the risks of not joining the Trans-Pacific Partnership. One may ask whether India will continue pursuing her policy of exceptionalism (Vickery 2014): Bilateralism and at the same time trying not to be left out of international trade groupings—regional, continental or global. In this context: What would be the role of the India-EU FTA after the Brexit?

2 Partitioning British India, Integrating Independent India and De-linking Her from the World

Until independence (1947) India, as South Asia was simply called, was part of the British Empire (besides small Portuguese and French possessions). Large chunks were controlled only indirectly. The Indian Independence Act, 1947, was 'to make provisions for the setting up in India of two independent Dominions' (IIA 1947). It

W.-P. Zingel (✉)
South Asia Institute of Heidelberg University, Heidelberg, Germany
e-mail: h93@ix.urz.uni-heidelberg.de

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_16

was passed 4 weeks ahead of Independence, when Mr. Radcliffe had not yet drawn his infamous line that separated India from Pakistan. There was no mentioning of the hundreds of so called princely states or the many tribal, leased, protected or excluded areas. With the lapse of paramountcy the princely states became 'in theory independent, but with a strong hint from the departing British that they should associate themselves with one or other of the dominions' (Smith 1994, p. 834).

Not all princes were ready for such association, but in the final instance only the kingdoms of Nepal and Bhutan saved their independence. The nawabs of Junagadh and Manavadar on the Kathiawar Peninsular of Gujarat signed instruments of accession to Pakistan, only to see their states annexed to India. Attempts at independence in Kalat and Hyderabad were met by force, leading to uprising and war. Sikkim joined the Union of India in 1975. Aden was no longer ruled from India since 1947 (IIA 1947, p. 16). Ceylon, now Sri Lanka, as a crown colony always had been ruled separately; the Maldives remained a British protectorate until 1965. Burma already had come under separate administration in 1935, Afghanistan had regained full independence in 1921.

Kashmir shared borders not only with the new dominions, but also with Afghanistan and China. The Hindu Maharaja wanted to develop his state into a 'Switzerland of Asia', an idea popular among his mostly Muslim subjects who also wanted independence, albeit under a democratic government. When Pashtun 'raiders' advanced from the tribal areas of Pakistan towards Srinagar, the capital of Jammu and Kashmir, the Maharaja asked the Indian government for help (Khan 1975). They insisted on his prior accession to India. The ensuing First Kashmir War could be ended with the help of the United Nations. More wars followed in 1965, 1971 and 1999 without much change on the ground. The cease-fire line (Line of Control) still divides the erstwhile princely state as the Indo-Pakistan border splits South Asia.

The colonial power had successfully controlled her 'Jewel of the Crown' with a policy of divide-and-rule that in the last instance brought the break-up of colonial India. Insurgencies in Kashmir and cross–border terrorism are evidence of an 'unfinished partition' (Talbot and Singh 2009).

For most of the last 20 centuries, India and China had been the world's leading economic powers (Maddison 2006). As an effect of colonial rule and trade discrimination, India became de-industrialized and de-urbanized in the eighteenth and nineteenth century (Rothermund 1989; Kumar 1991). The country still has not reclaimed its historic position in world economy. This explains, why India after Independence tried her own 'third way'.

Plans for reconstruction of India's economy had been developed in the last days of British *raj* (Hanson 1966). Jawaharlal Pandit Nehru, the main political leader into independence besides Mahatma Gandhi, and first Prime Minister, was under the influence of Fabian socialism. *Swaraj* (self-rule), self-reliance and de-linking from the world market were the guidelines of the post-colonial era. In other words: India dis-integrated from the world economy while integrating Indian society and economy. Economically, this meant import-substitution and modernizing by industrializing. The first years saw an increasingly autarkist India that at the same

time was a driver of the non-aligned movement. The socialist tilt became stronger with Indira Gandhi's (Nehru's daughter and successor) 'mixed' economy and India's friendship agreement with the Soviet Union.

A fast rising number ('explosion') of population and slow progress in agricultural productivity led to a food crisis, when India was hit by two consecutive poor harvests in the mid-1960s. The country was saved from famine by international (mainly US) food aid and new high yielding varieties, first of wheat, later also of rice. Indira Gandhi, however, took to more nationalization of industry and finance. India became a byword for a 'soft state'. As Myrdal (1970, p. 216) defined: 'Even when laws are enacted, they are not observed and cannot easily be enforced.'

3 Re-integrating India into the World Market

After the first successful years economic growth of GDP was around at 3.5% per year, lamented by Indian economists as the 'Hindu rate of growth'. At annual population growth rates of up to 2.5%, the income per capita grew by as little as 1.0%, certainly too little to lift hundreds of millions of people out of poverty. Expectations that industrialization would create employment for the rapidly increasing manpower were frustrated. Probably as a result of India's caste system with its many restrictions, India had a surprisingly high share of workers in the services sector already in colonial time (Zingel 2015b): Industry never became the 'leading sector' as expected. India's manufacturing production today is only one eighth of China's (WDI 2016; Zingel 2015c). The fact that South Asia is the least urbanized world region despite widespread landlessness and poverty in rural areas has to be interpreted as a lack of prospect: Millions of people living on the street in India's cities are evidence of the difficulty to eke out a living there (Ellis and Roberts 2016).

India's dwindling share in international trade over the first three decades reflected a declining openness. Until the end of the 1980s India's foreign trade contribution (merchandise exports and imports) to GDP were 12% and less (1972: 6%)—among the lowest ratios internationally. India started to open to world trade after the end of the Nehru dynasty. The first years of liberalization of the economy saw only a modest rise in openness that exploded from 2005 onwards: It rose to 20% in 1992, to 32% in 2006, to 42% in 2008 and to 43% in 2012. In 2014 it was 38% (WDI 2016).

For comparison: The Chinese economy showed similar low rates of openness in years after the revolution. However, it started to open its economy earlier (i.e. after Mao's death) and more energetically. The share of foreign trade in GDP rose in China from 9% in 1977 to 44% in 1993. After a peak of 64% in 2006 it has fallen to 42% in 2014 (WDI 2016). India is trailing behind China by about two decades. Whereas China's openness peaked 10 years ago, India already seems to have reached a plateau. She might not reach the maximum level of China that is more characteristic for small economies (for systematic reasons, large economies tend to show smaller ratios of foreign trade to GDP).

As a result of India's policy of self-reliance and decoupling from the world market, her share in world trade declined in the first three decades after independence. From almost 2.0% in 1950 (Fernando 1987) if fell to 0.4% in 1980. Only slowly did India re-integrate into the world market, especially after the so called liberalization of the economy in 1991 (WDI 2016). Still, India's exports and imports are only a fraction of China's: In 2014 India's exports and imports of merchandise goods had a value of US$322 bn and US$463 bn, 1.7% and 2.4% of world trade, meaning 19th and 12th position among traders (shares of 2.1% and 3.0% and 13th and 8th position, if the European Union is counted as one trader). India runs the largest trade deficit after the USA. China, the world's largest exporter and second-largest importer, records a trade surplus; its trade was five times as much as India's with exports of US$2342 bn and US$1959 bn. It is only during the last years that India regained and surpassed its pre-independence position in world trade. Today, at 2.1% of world trade including and 2.6% excluding intra-EU trade, it finally is higher than in the 1950s (ITS 2015, pp. 44–45).

While India managed to integrate the various territories that had not been part of British India, and re-integrated in the world economy, she has been less ambitious to integrate into a regional organization. So before turning to South Asian cooperation we must ask: What does regional cooperation mean? And: Why regional cooperation and for whom?

4 What Does Regional Cooperation and Integration Mean?

Trade economists always considered preferential/free trade areas/agreements only as second best solutions. After years of the Uruguay Round the World Trade Organization (WTO) came into life with effect of January 1995, with India and Pakistan as founder members. The enthusiasm for global solutions faded quickly and a 'spaghetti bowl' of bilateral and multilateral preferences emerged. Regional co-operations had a comeback, heavily criticized by Bhagwati (2008) as 'termites in the global trading system'.

Cornerstone of the WTO is the 'most favoured nation' (MFN) status that requires that concessions granted to any country have also to be granted to the other members. The General Agreement on Tariffs and Trade (GATT) in Article XXIV (4) exempts regional co-operations: 'The contracting parties recognize the desirability of increasing freedom of trade by the development, through voluntary agreements, of closer integration between the economies of the countries parties to such agreements. They also recognize that the purpose of a customs union or of a free-trade area should be to facilitate trade between the constituent territories and not to raise barriers to the trade of other contracting parties with such territories.' (GATT 1994).

The Shorter Oxford English Dictionary (1972) defines integration as 'The making up of a whole by adding together or by combining the separate parts or elements; a making whole or entire'. Joseph N. Nye, a political scientist, defining integration 'as forming parts into a whole or creating interdependence'

recommends them to 'be broken down into economic integration (formation of a transnational economy), social integration (formation of a transnational society), and political integration (formation of transnational political interdependence) (Nye 1968, p. 858). The present paper concentrates on the economic aspects, but the others are as important.

Ernst B. Haas, another political scientist, in his Study of Regional Integration brings out in his seminal article the difficulties to define and describe regional cooperation and integration: 'Often one gets the impression that the study of regional integration is the same as the study of regional cooperation, of regional organizations, of regional systems and subsystems, or of regionalism'. However, 'To limit the field [...], it must be stressed that the study of regional integration is unique [...] because it limits itself to *non-coercive* [emphasis by EBH] efforts.' (Haas 1970, pp. 607–608). Although he emphasizes that his 'main reason for studying regional integration is [...] normative' [. . .] We can discover whether regional common markets are really better for industrialization and effective welfare policies than is a global division of labour, whether they lead to redistribution and the equitable sharing of scarce resources—or to more competition for such spoils.' (Haas 1970, p. 608).

Bela Balassa, an economist, warns that there is no uniformly accepted definition of economic integration: 'In everyday parlance, integration is defined as bringing together of parts into a whole. In the economic literature, the term 'economic integration' does not have such a clear-cut meaning. At one extreme, the mere existence of trade relations between independent national economies is considered as a form of economic integration; at the other, it is taken to mean the complete unification of national economies.' He defines it 'as process and as a state of affairs. Considered as a process, it encompasses measures designed to eliminate discrimination between economic units that belong to different national states; viewed as a state of affairs, it represents the absence of various forms of discrimination between national economics.' (Balassa 1998, p. 43).

5 Winner and Losers, or: Why Regional Integration and for Whom?

More practically, the most popular justifications for regional integration are political (overcoming hostilities; mutual support) and economic. The 'Four Freedoms' of the European Union set a fine example of what integration could mean. The principles are laid down in the Treaty of the Founding of the European Union as amended by the Treaty of Lisbon, 2007 (TFEU, article 26): '1. The Union shall adopt measures with the aim of establishing or ensuring the functioning of the internal market, in accordance with the relevant provisions of the Treaties. 2. The internal market shall comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provisions of the Treaties. 3. The Council, on a proposal from the Commission,

shall determine the guidelines and conditions necessary to ensure balanced progress in all the sectors concerned.' (TFEU 2008; EPC 2016).

Trade is considered to be a win-win game. The idea of easing the exchange of merchandise goods etc. is that an international division of labour allows the use of the economies of scale and specialization, reducing costs and lowering prices, allows a wider range of products and—thanks to competition—better quality.

Alas, the gains from trade on a national level not necessarily reach all individuals. The case of the onion is a perfect example how trade creates winners and losers: Indian housewives have time and again demanded a ban on the export of onions, whenever rising onion prices interfered with their cooking, because the humble onion is an indispensable element of Indian (not only vegetarian) cuisine. As an inferior good (in the economic sense) it has no cheaper substitute (Rekhi and Singh 1998; Bhowmick 2013; Wani 2014; Worstall 2015).

The dilemma: Exports lift GDP and earn foreign exchange while reducing the real income of the consumers. If not compensated, consumers can become losers of trade, because the necessary structural change of the economy that would provide higher incomes takes time. While economists and politicians usually emphasize the gains from trade, they often overlook the negative employment and income effects that may hit especially the 'disadvantaged' parts of the society. Similar caveats apply to regional development.

The so called FTA's are at best preferential trade agreements. Third party discrimination by way of Regional Trade Agreements (RTA's), however, is tolerated by WTO/GATT rules.

In principle, RTAs are inferior solutions as compared to unrestricted trade. As demonstrated above, an immediate removal of trade barriers may not be advisable, because it can destroy industries and deprive people of employment and income. Trade arrangements have to take existing structures into mind. This explains why the Government of India is protecting her services sector: In a society that has a long tradition of division of labour and keeps an oversized and labour intensive retail sector, it is feared that international 'organized' trade (retail chains) would put millions of small traders out of business, work and income.

6 Regional Cooperation in South Asia

There had been various plans for regional cooperation long before the SAARC was founded in 1985. The idea, promoted especially by the Bangladesh President Zia ur Rahman and the King of Nepal Birendra, initially was less popular in India and Pakistan. It was still the time of the Cold War, but SEATO had been dissolved after the Vietnam War in 1977; Iran had pulled out of CENTO and RCD after the revolution of 1979. In the east, the successful Association of South East Asian Nations (ASEAN) was not ready to invite any South Asian countries. This explains, how the unlikely South Asian Association ever could be founded, despite the fact that two of the members already had been at war three times and were readying for further armed, even nuclear conflicts (Behera 2012).

The idea was more popular in the smaller countries of the subcontinent. At times they also sought a larger membership, as a counterweight to an Indian hegemon. Not to forget that 'Middle South Asia', a popular concept in the USA and among international agencies in the final phase of the Cold War, included Iran. At the time, India and Pakistan were ruled by strong governments: The Indian National Congress under Rajiv Gandhi had won a landslide victory in the national elections after the assassination of his mother, Indira Gandhi, while in Pakistan the dictator General Zia ul Haq ruled with almost unlimited powers.

After her victory over Pakistan in the Bangladesh war and with no chance of joining any of the upcoming regional co-operations, India became a founder member of the SAARC in 1985 and later of the South Asian Preferential Trade Arrangement (SAPTA) and the South Asian Free Trade Area (SAFTA) that included her arch-enemy Pakistan. Mainly for political reasons, regional trade in this 'disconnected area' (World Bank 2016b) has been hovering around 5% of total trade since the founding years (Zingel 2004). Most of her neighbourly trade has been with Bangladesh, Nepal and Sri Lanka; only recently Indo-Pakistan trade has grown (ICRIER 2016). Instead, China became India's most important trading partner, despite the fact, that the two neighbours had been at war in 1962 and that China occupies the Aksai Chin that India regards as its own and claims what it calls Southern Tibet, i.e. the Indian state of Arunachal Pradesh.

SAARC was and still is a political project (Rahman et al. 2012). High hopes of an economic uplift through regional trade were never fulfilled. The sorry state of relations between the erstwhile dominions still prevents any marked progress. South Asian states have been and still are members of other regional organizations. India is also founder member of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC, also an acronym of the original members Bangladesh, India, Myanmar, Sri Lanka and Thailand) and has become a member of the Association of South East Asian Nations (ASEAN) and the Shanghai Cooperation Organization (SCO).

BIMSTEC is a SAARC minus Pakistan, Afghanistan and the Maldives, plus Myanmar and Thailand. SAARC and BIMSTEC are not very different by area, population number or GDP (Kelegama 2016; Chowdhury and Neogi 2013). However, keeping out Pakistan, BIMSTEC is less troubled by border problems. Thailand is economically more advanced than Pakistan: Although its number of population is less than half of that of Pakistan, its GDP is almost twice as high (WDI 2016).

More and more, India finds herself surrounded by regional associations: To the west there is the Gulf Cooperation Council (GCC) of the oil exporting countries, the Economic Coordination Organization (ECO) of Muslim countries in Central and South West Asia and the Commonweal of Independent (former Soviet) States (CIS); to the north and east the China dominated Shanghai Cooperation Organization (SCO), the European Union inspired Asia-Europe Meeting (ASEM), the Association of South East Asian Nations (ASEAN) and the US-dominated Trans-Pacific Partnership (TPP).

7 SAARC: What Has Been Achieved?

As a consequence of the difficult setup, regional trade, although growing in absolute terms, remained unimpressive. Still, SAARC can be considered as a success, if only because it provides a forum for discussion. There is also a string of specialized institutes spread among the members, and a SAARC visa for a select number of bureaucrats and specialists.

The SAARC charter lays down the objectives as: 'a) to promote the welfare of the peoples [...] and to improve their quality of life; b) to accelerate economic growth, social progress and cultural development in the region [...]; c) to promote and strengthen collective self-reliance [. . .]; e) to promote active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields; f) to strengthen cooperation with other developing countries; g) to strengthen cooperation among themselves in international forums on matters of common interests; and h) to cooperate with international and regional organisations with similar aims and purposes.' (SAARC 2009).

With regard to regional economic development, collective self-reliance and promoting active collaboration and mutual assistance in economic and other fields appear as the most relevant objectives. The difficult relations between India and Pakistan are the major obstacle and here SAARC cannot be helpful, as the general provisions under article 10 require that decisions 'at all levels' to be taken 'on the basis of unanimity' and exclude '[b]ilateral and contentious issues' from the deliberations (SAARC 2009).

Economically, the success of SAARC has been disappointing. The World Bank calls South Asia the 'least integrated region of the world', because: 'The cost of trading across borders in South Asia is one of the highest in the world; South Asian countries have maintained a higher level of protection within this region than with the rest of the world. Intra-regional trade is less than 2% of GDP, compared to more than 20% for Eat Asia. [...] In the case of India and Pakistan, political tensions virtually closed official international trade between them'. (World Bank 2016a). Little wonder that South Asian countries have been looking elsewhere.

8 ASEAN and CSO

Regional associations in Asia are characterized by overlapping membership. Not only a member of SAARC, SAPTA, SAFTA and BIMSTEC, India became an ASEAN sectoral dialogue partner in 1992 and a full sectoral partner in 1996. The ASEAN-India FTA for goods became effective from January 2010 and the India-ASEAN Investment and Services Agreement in July 2015 (Economic Times 2015). India is also a member of the ASEAN Regional Forum (ARF), the only institutionalized security-related discussion forum in the Asia-Pacific region (Sajjanhar 2016). She is a member of SCO since 2016 and a founder member of the China sponsored Asian Infrastructure Investment Bank (AIIB). Yet, crossing borders between India and Pakistan, China, Bangladesh or Myanmar is difficult, for

people as well as for goods. That should not be too surprising: Even ASEAN, the most successful regional cooperation in Asia, had a difficult start: Malaysia was the object of Indonesia's Greater Indonesia policy. Singapore was expelled from Malaysia in 1965 (Liang 2001, p. 1; Weinstein 1969).

Today ASEAN is seen as a model of regional cooperation. Intra-regional trade has been growing persistently and stood at (2013) 24.2% of total trade of the ASEAN member states, at 53.2% of ASEAN+3 (including China, Japan and DR Korea), 59.0% of ASEAN+6 (including also India, Australia and New Zealand) and 68.0% of the EAS, i.e. the East Asia Summit, including also the Russian Federation and the United States (ASEAN 2014, p. 9).

The SCO was created by the People's Republic of China, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan and Uzbekistan in 2006 as a successor of the Shanghai Five (later Six), founded in 1996. India and other countries joined later; in mid-2016 it covered most of East, North and South Asia.

Pakistan together with Iran and Turkey formed the Regional Cooperation for Development (RCD) in 1964; all three countries were also members of the Central Treaty Organization (CENTO), since 1971 minus the former East Pakistan. The RCD was dissolved in 1979 after the revolution in Iran. As a successor, ECO was founded in 1984. It was joined by Afghanistan, the Central Asian 'stans' (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan) and Azerbaijan after the break-up of the Soviet Union. Joint projects are prominent in the sphere of transport, as all countries come in the path of China's New Silk Road and its One Belt One Road initiative (Zingel 2015a).

As a co-founder of the Non-Aligned Movement, India managed to stay clear from Western and eastern Blocs until 1971, when Indira Gandhi—in need of a strong ally in the East Pakistan crisis—entered the 20-year Indo-Soviet Treaty of Friendship and Cooperation. The USSR rose to become a major trading partner and main source of military hardware, but despite her attempts at a Soviet style command economy, India never became part of the Warsaw Pact or of Comecon and managed to keep out of the ('Russian') war in Afghanistan. When India suffered a serious foreign exchange crisis in 1991, the USSR had collapsed and no longer could help. As a trading partner the Russian Federation never played such an important role.

For South Asia it is remarkable that India and Pakistan always have been looking for association with countries outside of the region. India refused to become part of the western defence system (CENTO, SEATO). Pakistan's membership in RCD and ECO predated its SAARC membership; India co-founded BIMSTEC and joined ASEAN+6. Both countries joined ARF and SCO. In order to open a way to Central Asia, India is helping Iran to develop Chabahar port and build a north-south corridor in eastern Iran. With the Iran embargo lifted in 2016, India could use these facilities as a new sea-and-land route to Europe.

9 Europe and India

In order to align their former colonies, the EEC maintained a system of trade privileges. As dominions of the British Commonwealth, India (and Pakistan) received some help under the Colombo Plan and later EEC/EU economic assistance, but not under such generous conditions that remained reserved for the much smaller ACP (Africa, Caribbean, Pacific) states. The United Kingdom remained India's main trading partner after joining the European Communities (EC; since 1993: European Union). Europe's share in Indian trade has dwindled. China already is India's most important individual trading partner, over the years China might overtake the EU.

For the time being, the European Union is still India's most important trading partner; in 2014–2015 India's trade with the EU was more than with all her neighbours together, including China. China and the United States are India's most important individual trading partner. Contrary to China, India's trade balance with the USA is positive (EIDB 2016).

On the other side, India slowly advanced to become a major trading partner of the EU: In 2015 India stood 11th position for EU exports and at 8th position for EU imports. India's trade surplus was the 19th highest among EU partners, although less than that of Pakistan at 17th, Bangladesh at 5th, Vietnam at 4th and China at 1st position. India has a surplus of exports (2015: €39.4 bn) to the EU over imports (€38.1 bn), whereas India's trade balance with China is highly negative, as imports from China are more than three times as much as exports to China. Indian imports from the EU are almost as much as from China (Eurostat 2016).

Other than most developing countries, India's trade is highly diversified: The EU, China and the USA make up only 30% of India's foreign trade; they take one third of India's exports and contribute a bit more than a fourth to Indian imports, the main reason being India's substantial energy imports from other countries.

How the shares of India's main trading partners changed since the days of Indira Gandhi can be seen from the following figures: In 1970–1971 the EEC had shares of 18.4% in Indian exports and 19.6% in imports, with the UK by far being the major trading partner in Europe and third globally (after the USA and the USSR). Japan accounted for 13.3% and 5.1%, OPEC for 6.4% and 7.7% and developing Asia 10.8% and 3.3%. Eastern Europe was a major trading partner with 21.0% and 13.5% (SOI 1986–1987:97&104–106). Ten years later (1980–1981), the EEC had shares of 21.6% in exports and 21.0% in imports, the UK was losing importance, but still the major European trading partner and now at number 4 internationally, after the USA, the USSR and Japan. Japan accounted for 8.9% and 6.0%, OPEC for 11.1% and 27.8% and developing Asia for 13.4% and 11.4%. Eastern Europe's shares still were 22.1% and 10.3% (SOI 1995–1996:102–104). Another 10 years later (1990–1991), the EU had shares of 27.5% in exports and 29.4% in imports, now Germany being the major European trading partner and at number 4 internationally, after the USA, the USSR and Japan. Japan accounted for 9.3% and 7.5%, OPEC for 5.6% and 16.3% and developing Asia 14.3% and 14.0%. Eastern

Europe's shares fell to 17.9% and 7.8% (SOI 1992–1993:100–102 and SOI 2003–2004:90–92).

At the beginning of the century (2000–2001) the EU had shares of 22.7% in exports and 19.8% in imports, Germany the major European trading partner and now at number 2, after the USA. Japan accounted for 4.0% and 3.6%, OPEC for 10.9% and 5.4% and developing countries 26.7% and 17.5%. Eastern Europe's shares fell to 2.4% and 1.3%. (SOI 2003–2004:90–92). In 2010–2011 EU had shares of 18.7% in exports and 11.5% in imports, Germany the major European trading partner and now at number 2, after the USA. Japan accounted for 2.1% and 2.0%, OPEC for 21.8 and 32.0% and developing countries 42.1% and 31.2%. Eastern Europe's shares fell to 1.2% and 1.5%. (SOI 2012–2013:97–99). In 2013–2014 the EU had shares of 16.5% in exports and 11.5% in imports, Germany the major European trading partner and now at number 2, after the USA. Japan accounted for 2.2% and 2.1%, OPEC for 19.4% and 39.7% and developing countries for 41.4% and 32.3%. Eastern Europe's shares fell to 0.7% and 0.9%. (SOI 2014–2015:102–104).

10 What Can Be Expected from EU-India FTA?

While Europe is losing importance, India's importance for the EU has been rising (Gaens et al. 2009): In 2015 India stood at 11th position for EU exports and 8th position for EU imports. There is room for improvement: The EU's India's trade (2015: €78 bn) is only a seventh of that with China (€521 bn). Easing the rules of trade would certainly bring more trade.

The so called India-EU FAT is under negotiation since 2007 (Casaca 2013; Singh and Priya 2014; GoI 2015). The Joint Statement of the President of the European Council, the President of the European Commission and the Prime Minister of India at the 13th EU-India Summit in Brussels on March 30, 2016 emphasized a 'stronger EU-India Strategic Partnership.' Under item 5 'The leaders welcomed that both sides have re-engaged in discussion with a view to considering how to further the EU-India Broad-based Trade and Investment Agreement (BTIA) negotiations.' Under item 6 'The leaders welcomed the European Investment Bank's (EIB) commitment to supporting long-term investment in infrastructure crucial for environmentally sustainable social and economic development in India.' (EU 2016).

The leaders 'praised the ongoing cooperation on technical and operational issues [...] in the field of Intellectual Property Rights and public procurement [and] noted the importance of geographical indications'. They 'acknowledged that trade in services is important' (#26) and 'encouraged EU and Indian business, including SME [small and medium enterprises] to deepen and support "Skill India" [...] and reaffirmed their commitment to the implementation of the G20 Skills Strategy. [...] They furthermore acknowledged that transparent, fair and ethical trade and investment are generators of sustainable growth' and 'welcomed G20 discussions on issues of social protection and well as occupational safety and health'. They

'recognised the need to address environmental challenges [and] resource efficiency'. More specifically, they 'committed to further strengthen dialogues in [...] pharmaceuticals, trade & industry issues, agriculture, fisheries, food and feed safety' (EU 2016). A large number of pertinent questions were addressed, if only in vague terms, like transparency (read: corruption), environmental challenges (global warming) or social protection (social dumping).

The deliberations might not be followed by a binding agreement any time soon. Too little is known of the process, as trade negotiations have been confidential; no officially published draft is known. The 2009 draft, marked 'restricted', however has been made public by Wikileaks and is available on the internet (EC 2009). A draft of the chapter on intellectual property rights can also be found (Bilaterals 2013).

The whole discussion reminds one of the Uruguay Round that led to the establishing of the WTO, with the EU and India as founder members. India had been driving a hard bargain, even more in the still ongoing Doha Round. Stumbling blocks were trade in services (GATS), intellectual property rights (TRIPS), investment protection (TRIM), textiles and agricultural products. The Doha round followed the first Ministerial Conference in Singapore (1996), where the industrial countries emphasized trade and investment, trade and competition policy, transparency in government procurement, and trade facilitation (WTO 2016a). The developing countries felt short changed, especially in matters of investment; their plea for a more liberal international labour policy was rejected by the rich countries. In the Ninth Ministerial Conference of the World Trade Organization in Bali, 2013, India successfully fought for keeping agricultural subsidies (Mehra 2013). Only after the matter had been shelved for the time being, she ratified the new Trade Facilitation Agreement (TFA) in April 2016 (WTO 2016b).

India has been sitting, so to say, on both sides of the fence, for example in the question of pharmaceuticals: As a major producer and exporter of generic drugs, India protected production processes rather than products. But as India also develops new drugs, it is interested also in the protection of the latter. Pharmaceuticals have become a major object of discontent: In August 2015 Reuters, a news agency, reported that India had suspended trade talks with the European Union after the EU regulators had recommended 'suspending marketing approval for 25 generic drugs on concerns over the quality of data from clinical trials' by an Indian enterprise (EurActive 2015a). In a follow-up contribution that dealt with attempts to resolve the 'trade row over generic drugs', it was feared that India after coming 'close to scuppering the first ever global trade deal in order to win a concession from the WTO on farm subsidies' would repeat the tactics (EurActive 2015b).

A European Commission report on trade and investment barriers faced by EU companies on the markets of the 'EU's six strategic economic partners', i.e. China, India, Japan, Mercosur, Russia and the United States, deals mainly with trade restrictions, especially in the field of domestically manufactured electronic goods in public procurement (important in India because of the large share of state-owned enterprises), India's Bureau of Indian Standards (BIS) certification regime for imported and exported tyres, the interpretation and enforcement of the 2011 Food

Safety Standards Regulation concerning labelling and packaging, cosmetics (ban of animal testing) and labelling requirements for vegetarian and non-vegetarian origin (EC 2015, pp. 6–7).

11 Look East, Act East

There is a marked tendency of a growing importance of Asian partners in India's foreign trade. Whereas in 1997–1998 five European and six Asian countries (including Australia) were among India's top 12 trading partners, there were two and eight in 2014–2015. Given the fact that Switzerland (at number 7 in 1997–1998 and at number 5 in 2014–2015) is not a member of the EU, the number of EU countries fell from four (Germany, UK, Belgium, Italy) to one (Germany).

With falling energy prices, oil exporting countries lose ranks (Malaysia at number 10 fell to number 15 in the first months of 2015–2016), and European countries gain (UK rose from number 18 to number 12), but the loss of Europe's importance is evident: In 1997–1998 the United Kingdom, Europe's top scorer, stood at number 2 (behind the USA), in 2014–2015 Switzerland and Germany, the European toppers, stood at numbers 5 and 6 (EIDB 2016).

After Prime Minister Manmohan Singh's Look East Policy (LEP), PM Narendra Modi, his successor, proclaimed his own Act East Policy (AEP). After a rapid increase of India's trade with ASEAN, 'bilateral economic engagement has languished, partly due to the continuing international financial and economic crisis and subsequent Euro zone sovereign debt crisis and anemic international demand' (Sajjanhar 2016). The new policy extends beyond ASEAN, to include the Pacific rim (Japan, South Korea) and Oceania (Australia, Pacific island states). India has become active in the Regional Comprehensive Economic Partnership (RCEP) of the 16 states, sometimes referred to as ASEAN+6. RCEP trade negotiations are not open to the public, but it has been reported that India has taken a stand against stricter intellectual property rights that could restrict access to affordable medicine (Krishnan 2016).

How little India seems to expect from Europe can be seen from the fact that BITA, the so called India-EU FTA, under negotiation since years, is not even mentioned in the External Sector chapter of the latest Economic Survey (GoI 2016). However, it deals in detail with global and regional trade arrangements. That the Indian government has been disappointed by the slow progress of the global trade order comes out clearly from the section on bilateral and regional trade cooperation: 'Multilateral trade agreements are the first best solutions for deepening global trade and development as they are founded on the core principles of non-discrimination. RTA's are efforts by nations aimed at deepening economic relations, usually with neighbouring countries, and tend to be largely political in nature. With the multilateral trade negotiations process under the WTO being a painfully slow one requiring broad-based consensus, RTAs have progressively assumed greater importance and a growing share in international trade. While RTAs are broadly compliant with WTO mandates and remain broadly supportive

of the WTO process, they remain second-best solutions that are discriminatory in nature against non-members and are inefficient as low cost producing non-members lose out to members. [. . .] India has always stood for an open, equitable, predictable, non-discriminatory and rule-based international trading system and views RTAs as building blocks in the overall objective of trade liberalization as well as complementing the multilateral trading system under the WTO. The [TPP] agreement is one new mega-regional block that has become a reality and has implication for India.' (GoI 2016, II, 75). India's Look East policy, thus, extends even beyond the Pacific Ocean (CFR 2014).

After listing the general risks associated with TPP, special emphasis is given to openness of markets; import competition; state-owned enterprises; intellectual property rights; government procurement; labour and environmental standards (GoI 2016, II, 76–77). 'A gradual approach of widening the process of negotiating 19 FTAs (including review) is under way'. Thailand; New Zealand; the South African Customs Union (SACU); BIMSTEC, Canada, Australia, ASEAN +6 are especially mentioned (GoI 2016, II, 78).

12 Conclusion

As a reaction to the colonial past, when India fell prey to a foreign trading firm, namely the East India Company, and only much later to an imperial power, independent India followed a policy of self-reliance, non-alignment and autarky, de-linking the economy from the world market over the first 30 year. Its 'mixed economy' was more determined by the needs of domestic policy than by ideology.

India managed to keep good relations with the Muslim world as well as with Israel. In its relation with Europe, India seems to prefer a direct dialogue with the member states of European Union rather than with the European Commission. Accordingly, the EU Delegation to India has been less visible in India as compared to other countries of the region.

India started to re-integrate in the world market since the late 1970s and became a hesitant member of SAARC. Regional trade grew in step with global trade, so that the share of India's regional trade in total trade remained small.

India's Look/Act East policies are reflected by the growing importance of trade with Asia, especially China, at the expense of her trade with Europe. The European Union is still India's largest trading partner, with only Germany now ranking among India's top partners. On the other hand, India has gained importance for the European Union, slowly moving up the ranks.

The EU-India trade arrangement is under discussion since 2007. Drafts discussed in the press from time to time seem to be deliberate indiscretions to test the waters. The Joint Statement published after PM Modi's visit in Brussels is on the same lines. Services (retail, finance), intellectual property rights, investment, agricultural products, etc. are still contested. Dispute settlement or arbitration, at the centre of the discussion of EU-Canada (CETA) and EU-USA (TTIP) agreements, could not be found on the material accessible. They certainly will become crucial. It

would be a welcome surprise if the EU-India trade agreement could be concluded in the near future.

It remains the question: What can be expected from the EU-India Broad-based Trade and Investment Agreement (BTIA)? India does want to boost its trade that has been lagging recently (Sharma 2016). With the slogan 'Make it India' the government underlines the high hopes set in manufacturing industry. Despite an economic growth of 7.9% in the first quarter of 2016, India's industrial output, however, fell by 0.8% in April 2016 (EFS 2016, p. 84). A major factor of this development has been the declining prices of petroleum products. Export earnings fell by 17.6% in the year 2015–2016 (April to December); imports declined in the same period by 15.9%, resulting in another substantial trade deficit (GoI 2016, II, 78–79).

The final question is, whether India after self-reliance, bilateralism and regionalism would prefer a global solution? It largely depends on whether the USA, who 20 years ago could bring the world to agree on a global trade agreement, will stick to their policy of trans-oceanic trade agreements that in the end would include India, China and Europe, or will return to global arrangements.

13 Postscript: After the Brexit Referendum

On June 23, 2016, the people of the United Kingdom decided that Britain should withdraw from the European Union. There will be mixed results for India. It is generally expected that the UK will turn to the Commonwealth and decide for a more trade friendly policy. In India there are hopes for trade diversion and an increasing trade surplus (2014–2015: US$4.5 bn), more development aid, easier access to educational institutions and more jobs for Indians. The notion that 'India's trade with Britain [. . .] is more than the rest of Europe put together' (CUTS 2016) is at best wishful thinking and far off the mark. Whether India will first conclude a trade agreement with the UK and only then consider its BITA with the EU has to be seen. What is easily overlooked: Like India, the UK runs a large deficit in its trade in merchandise goods that is funded by the export of services and by capital imports (while there is a net outflow of home remittances). As long as the British Pound keeps falling, British manufacturing industry will become more competitive (especially on the longer run), while (financial) services exports are expected to suffer. This might not necessarily benefit Indian trade. Indian labour has been concentrated in services and Brexit proponents are not held to be especially immigration friendly. Most effects will not show immediately. For the benefit of EU-India relations, more information on the functioning of the EU and the many areas of common interest in India urgently is needed in the whole country.

References

ASEAN (2014) ASEAN in figures. Special edition 2014.ASEAN Secretariat, Jakarta. http://www.asean.org/storage/images/ASEAN_RTK_2014/ACIF_Special_Edition_2014.pdf. Accessed 13 June 2016

Balassa B (1998) Economic integration. In: Eatwell J, Milgate M, Newman P (eds) The new Palgrave: a dictionary of economics, 4 vols. Macmillan, London, 1998 (1987) 2, pp 43–37

Behera NC (2012) SAARC and beyond: civil society and regional integration in South Asia. In: Rahman SH, Khatri S, Brummer H-P (eds) Regional integration and economic development in South Asia. Edward Elgar, Cheltenham, pp 3–42

Bhagwati J (2008) Termites in the trading system. How preferential agreements undermine free trade. Oxford UP, New York, NY

Bhowmick N (2013) How onions could bring down the Indian government. In: Time. New York, 24 October 2013. http://world.time.com/2013/10/24/why-an-onion-crisis-brings-tears-to-indian-eyes/. Accessed 15 June 2016

Bilaterals (2013) EU-India FTA – IP chapter text. Bilaterals.org. 24 March 2013. http://www.bilaterals.org/?eu-india-fta-draft-text-on-ipr&lang=en. Accessed 15 June 2016

Casaca P (2013) How to untangle the EU-India Agreement? South Asia Democratic Forum, Brussels. https://www.youtube.com/watch?v=juO8W4uGuck. Accessed 13 April 2016

CFR (2014) Indian Prime Minister Narendra Modi on India's Economy and U.S.-India relations. Conversation with Narendra Modi. Speaker: Narendra Modi, Prime Minister, India; Presider: Richard N. Haass, President, Council on Foreign Relations. Transcript. Council on Foreign Relations, New York. http://www.cfr.org/india/indian-prime-minister-narendra-modi-indias-economy-us-india-relations/p35724. Accessed 30 Apr 2016

Chowdhury AB, Neogi D (2013) An economic overview of BIMSTEC countries (1997–2011). J Asian Bus Strat. Asian Economic and Social Society, Rahimyar Khan, 2(8):210–223. http://www.aessweb.com/pdf-files/3-90-JABS-3%288%292013,%20210-223.pdf. Accessed 13 June 2016

CUTS (2016) How will Brexit affect India? CUTS International, Jaipur, 24 June. http://www.cuts-international.org/pdf/How_will_Brexit_affect_India_Snap_Analysis.pdf. Accessed 24 June 2015

EC (2009) EU-India FTA negotiations: latest texts on goods, SPS and IPR. European Commission, Directorate-General for Trade, Brussels. Restreint ue (restricted). https://file.wikileaks.org/file/eu-india-fta-feb-2009.pdf. Accessed 30 Apr 2016

EC (2015) Trade and investment barriers report 2015. Report from the Commission to the European Council- COM(2015) 127 final. European Commission, .Brussels. http://trade.ec.europa.eu/doclib/docs/2015/march/tradoc_153259.pdf. Accessed 15 June 2016

Economic Times (2015) India-ASEAN services & investment FTA to be in force from July. The Economic Times, Mumbai, 15 January 2015. http://articles.economictimes.indiatimes.com/2015-01-15/news/58108785_1_malaysian-minister-services-and-investments-rcep. Accessed 17 June 2016

EFS (2016) Economic and financial statistics. The Economist, London, 18 June 2016

EIDB (2016) Export import data bank. Ministry of Commerce, New Delhi. http://www.commerce.nic.in/eidb/. Accessed 13 June 2016

Ellis P, Roberts M (2016) Leveraging urbanization in South Asia. Managing spatial transformation for prosperity and livability. The World Bank, Washington, DC. http://www.ciesin.org/binaries/web/global/news/2016/south-asia-dev-matters_report.pdf. Accessed 12 June 2016

EPC (2016) The four freedoms. European Policy Centre, Belgrade. http://www.europeanpolicy.org/en/european-policies/single-market.html. Accessed 12 June 2016

EU (2016) EU-India summit: joint statement, agenda for action and joint declarations. European Council/Council of the European Union, Brussels. http://www.consilium.europa.eu/en/meetings/international-summit/2016/03/20160330-joint-statement-eu-india_pdf/. Accessed 17 June 2016

EurActive (2015a) India suspends trade talks with the EU over generic drug ban. EurActiv, Brussels, 6 August 2015, updated .17 August 2015. http://www.euractiv.com/section/health-consumers/news/india-suspends-trade-talks-with-the-eu-over-generic-drugs-ban/. Accessed 15 June 2016

EurActive (2015b) EU, India working to resolve trade row over generic drugs. EurActive, Brussels, 17 August 2015. http://www.euractiv.com/section/trade-society/news/eu-india-working-to-resolve-trade-row-over-generic-drugs/. Accessed 15 June 2016

Eurostat (2016) Eurostat database. European Commission, Eurostat, Luxembourg. http://ec.europa.eu/eurostat/data/database. Accessed 13 Apr 2016

Fernando TSN (1987) Regional import substitution as a basis for industrial cooperation in South Asia. In: Waqif AA (ed) South Asian cooperation in industry, energy and technology. SAGE, New Delhi, pp 81–97

Gaens B, Jokela J, Limnsell E (eds) (2009) The role of the European Union in Asia. China and India as strategic partners. Ashgate, Farnham

GATT (1994) General Agreement on Tariffs and Trade 1994, Article XXIV. WTO, Geneva. https://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_09_e.htm. Accessed 17 June 2016

GoI (2015) India-EU relations. Government of India, Ministry of External Affairs, New Delhi. http://www.mea.gov.in/Portal/ForeignRelation/India-EU_Relations_Website_Brief_-July_16__2015.pdf. Accessed 30 Apr 2016

GoI (2016) Economic survey 2015–16, vol 2 vols. Ministry of Finance, New Delhi. http://indiabudget.nic.in/#. Accessed 14 June 2016

Haas EB (1970) The study of regional integration: reflections on the joy and anguish of pretheorizing. In: International organization. The MIT Press, Cambridge, MA, 24(4):607–646. http://www.jstor.org/stable/pdf/2706149.pdf?_=1465989697709. Accessed 15 June 2016

Hanson AH (1966) The process of planning. A study of India's five year plans, 1950–65. Oxford UP, London

ICRIER (2016) India-Pakistan trade. FAQs. ICRIER, New Delhi. http://indiapakistantrade.org/FAQs.html. Accessed 1 May 2016

IIA (1947) India Independence Act, 1947. 10&11 Geo. 6, Ch. 30. http://www.legislation.gov.uk/ukpga/1947/30/pdfs/ukpga_19470030_en.pdf. Accessed 10 June 2016

ITS (2015) International trade statistics. International Trade Organization, Geneva. https://www.wto.org/english/res_e/statis_e/its2015_e/its2015_e.pdf. Accessed 11 June 2016

Kelegama S (2016) BIMSTEC: regional economic integration in the Bay of Bengal. In: Newsletter. BIMSTEC Secretariat, Dhaka, 72(1):4–5. Also printed in: The Daily Star, Dhaka, 25 February 2016. http://www.thedailystar.net/op-ed/economics/regional-economic-integration-the-bay-bengal-660181. Accessed 13 June 2016

Khan A (1975) Raiders in Kashmir, 2nd edn. National Book Foundation, Islamabad

Krishnan V (2016) RECP draft moots tough curbs on cheap medicines. In: The Hindu, Chennai, 23 April 2016. http://www.thehindu.com/sci-tech/health/rcep-draft-moots-tough-curbs-on-cheap-medicines/article8510530.ece. Accessed 17 June 2016

Kumar D (1991) The Cambridge economic history of India, vol 2: c. 1757 – c. 1970. Orient Longman, Hyderabad (Cambridge UP 1982)

Liang TLC (2001) Explaining Indonesia's relations with Singapore during the New Order period: the case of regime maintenance and foreign policy. Institute of Defence and Strategic Studies, Singapore. https://www.rsis.edu.sg/wp-content/uploads/rsis-pubs/WP10.pdf. Accessed 13 June 2016

Maddison A (2006) The world economy, vol 1: A millennial perspective; vol 2: Historical statistics. OECD, Paris

Mehra P (2013) India's stand prevails in Bali. In: The Hindu, Chennai, 5 December 2013. http://www.thehindu.com/news/national/indias-stand-prevails-in-bali/article5430252.ece. Accessed 17 June 2016

Myrdal G (1970) The challenge of world poverty. Pantheon, New York, NY

Nye JS (1968) Comparative regional integration: concepts and measurements. In: International organization. University of Wisconsin Press, Madison, 22(4):855–880. http://www.jstor.org/stable/pdf/2705847.pdf?_=1465993646569. Accessed 15 June 2016

Rahman SH, Khatri S, Brummer H-P (eds) (2012) Regional integration and economic development in South Asia. Edward Elgar, Cheltenham

Rekhi S, Singh KS (1998) The great onion disaster. In: India Today, Mumbai, 9 November 1998. http://indiatoday.intoday.in/story/is-the-government-to-blame-for-skyrocketing-prices-of-onions-or-are-the-shortages-real/1/265683.html. Accessed 15 June 2016

Rothermund D (1989) An economic history of India. Manohar, New Delhi, 1989 (Croom Helm, London, 1988)

SAARC (2009) Charter of the South Asian Association for Regional Cooperation. Kathmandu, SAARC Secretariat. http://saarc-sec.org/SAARC-Charter/5/. Accessed 17 June 2016

Sajjanhar A (2016) 2 Years on, has Modi's 'Act East' policy made a difference for India? The Modi government has opened new vistas for partnership in the Asia-Pacific region. In: The Diplomat, Tokyo, 3 June 2016. http://thediplomat.com/2016/06/2-years-on-has-modis-act-east-policy-made-a-difference-for-india/. Accessed 17 June 2016

Sharma YS (2016) India needs to export rapidly to grow 8–10%: Chief Economic Advisor Arvind Subramanian. In: The Economic Times, Mumbai, 12 March 2016. http://economictimes.indiatimes.com/news/economy/indicators/india-needs-to-export-rapidly-to-grow-8-10-chief-economic-adviser-arvind-subramanian/articleshow/51369360.cms. Accessed 17 June 2016

Shorter Oxford (1972) The shorter Oxford English dictionary on historical principles, 3rd edn. Oxford UP, London (1933)

Singh RK, Priya P (2014) What's holding back the India-EU FTA? In: The Diplomat, Tokyo, 17 June .2014. http://thediplomat.com/2014/06/whats-holding-back-the-india-eu-fta/. Accessed 17 Mar 2016

Smith VA (1994) The Oxford history of India, 4th edn. Edited by Percival Spear. Oxford UP, Delhi (Clarendon, Oxford, 1919)

Talbot I, Singh G (2009) The partition of India. Cambridge University Press, New York, NY

TFEU (2008) Consolidated version of the Treaty on the Functioning of the European Union – Part Three: Union policies and internal actions – Title I: Internal market – Article 26 (ex Article 14 TEC). Publications Office of the European Union, Brussels. http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12008E026&from=EN. Accessed 12 June 2016

Vickery RE Jr (2014) Narendra Modi's American exceptionalism. In: The Diplomat, Tokyo, 9 October .2014. http://thediplomat.com/2014/10/narendra-modis-american-exceptionalism/. Accessed 30 Apr 2016

Wani P (2014) India's onion crisis: shortages after the best-ever harvest. Reuters, .9 July 2014. http://in.reuters.com/article/india-onions-idINKBN0FD2NJ20140708. Accessed 15 June 2016

WDI (2016) World development indicators. The World Bank, Washington, DC. http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators. Accessed 11 June 2016

Weinstein FB (1969) Indonesia abandons confrontation. An inquiry into the functions of Indonesian foreign policy. Cornell University, Ithaca, NY

World Bank (2016a) South Asia. Regional cooperation and integration. Trade opportunity for economic growth. The World Bank, Washington, DC. http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/0,,contentMDK:21525036~pagePK:146736~piPK:146830~theSitePK:223547,00.html. Accessed 17 June 2016

World Bank (2016b) The potential of intra-regional trade for South Asia. Infographic. The World Bank, Washington, DC. http://www.worldbank.org/en/news/infographic/2016/05/24/the-potential-of-intra-regional-trade-for-south-asia. Accessed 17 June 2016

Worstall T (2015) The absurdity of the market for onions in India. In: Forbes, 23 December 2015. http://www.forbes.com/sites/timworstall/2015/12/25/the-absurdity-of-the-market-for-onions-in-india/print/. Accessed 15 June 2015

WTO (2016a) Glossary term: Singapore issues. WTO, Geneva. https://www.wto.org/english/thewto_e/glossary_e/singapore_issues_e.htm. Accessed 13 June 2016
WTO (2016b) India ratifies Trade Facilitation Agreement. WTO, Geneva. https://www.wto.org/english/news_e/news16_e/fac_21apr16_e.htm. Accessed 17 June 2016
Zingel W-P (2004) SAARC. In: Michael Neu, Wolfgang Gieler, Jürgen Bellers (Hrsg.) Handbuch der Außenwirtschaftspolitiken: Staaten und Organisationen. Lit-Verlag, Münster
Zingel W-P (2015a) China's Pakistan option: economic and social implications of an 'all-weather relationship'. In: IIC Quarterly. Indian International Center, New Delhi, 42(2):14–24
Zingel W-P (2015b) Indien als (kommende) Weltmacht, Wirtschaftsmacht, Wissensmacht? In: Geographische Rundschau. Westermann, Braunschweig, 67(1):4–9
Zingel W-P (2015c) When might India rival China as the world's workshop? Talk to the European Parliament's delegation for relations with India. European Parliament, Strasbourg, 8 October 2015. http://www.sai.uni-heidelberg.de/abt/intwep/zingel/Strasbourg2015.pdf. Accessed 15 June 2016

Different Proximities and Conflicts Related to the Setting of Big Infrastructures: The Case of *Diamer Bhasha* Dam in *Pakistan*

Muazzam Sabir and André Torre

1 Introduction

Land due to infrastructural projects has been subject to conflicts in several parts of the world and greatly influenced the socioeconomic position of different actors (Oppio et al. 2015; Magsi and Torre 2013) through compensation issues, displacement of local population, ineffective policies of resettlement (Williams and Porter 2006) and negative influences on their livelihood (Barron et al. 2004). About 80 million people around the world have been displaced due to infrastructural projects like construction of dams (Scudder 2005; WCD 2000). This situation led to socioeconomic disturbance in the form of unemployment and landlessness etc. (Brown et al. 2009). Several studies discussed the resettlement problems due to infrastructural projects like Hydropower Development in *Viet Nam* (Bui et al. 2013), Three Gorges Dam in *China* (Sun 2013) and their Socioeconomic Impacts like Hydroelectric Dams in *Turkish Kurdistan* (Moran 2004).

A significant basis of conflict due to infrastructural projects like dam is the behavioural difference and varying expectations among different stakeholders, which are often centralized at various governance levels. Land acquisition and related activities of the project could be much more difficult due to local values and traditions. Social and cultural differences among different stakeholders raise several issues, tension among different actors and ultimately conflicts. One of the important dimensions of conflicts is over compensations (in the form of monetary compensation, employment alternatives, social security assurance, etc.) which are either due to directly geographical disagreements or to difference in values and opinion and lack of understanding among actors over land use. Studies like Qian (2015) and Hui et al. (2013), emphasized that even single land compensation have

M. Sabir (✉) • A. Torre
UMR SAD-APT, INRA – Agroparistech, University Paris Saclay, Paris, France
e-mail: muazzam.sabir@agroparistech.fr; torre@agroparistech.fr

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_17

been improved, people still suffer from uncertainties like competing in labour markets and adapting a new life.

In order to ease the tensions and conflicts, various studies on water projects put emphasis on identification of network of actors, participation of stakeholders and especially participation of affected people in decision making like in *Manwan* Dam (upper *Mekong* River in southwestern *China*), *Lesotho Highlands Water Project* in *Southern Africa* (Tilt et al. 2009) and *Pak Mun* Dam project in *Thailand* (Awakul and Ogunlana 2002). Big land use issues like poverty, malnutrition, displacement, flawed resettlement and unemployment have been evolved by lack of coordination between stakeholders (Mahato and Ogunlana 2011). On the other hand several aspects of corruption, mismanagement and cronyism have also been noticed (Swain and Chee 2004; Magsi 2012; Awasthi 2014).

Conflicts arising over land use, by anyway, require careful approach by policy makers. Policies concerning land can hardly be "unbiased" in terms of conflict management, and should carefully treat sensitivities and unfairness, in order to handle the violent conflict in a better way (Vignon and Lecomte 2004). Many projects in developing countries are facing resistance, because of violation of land acquisition, compensation rights and negligent treatment of stakeholders (Magsi and Torre 2012). However, studies like Drazkiewicz et al. (2015) for different case studies in *Germany* showed concrete results and significantly positive influence under factors like conflict resolution, fairness of process, accommodation of interests, inclusion of Veto players etc.

In Pakistan, planning about water related issues was not always supported by all political parties. As a matter of fact the water availability for irrigation and other purposes is continuously declining, and the Country lacks facilities related to irrigation and other purposes, which dams provide (GOP 2012–2013). Pakistan is already one of the world's most water stressed countries and this condition is becoming more and more alarming due to increasing population growth; in addition to that, it is also facing electricity and gas shortage (Daily Times 2015). Looking at the circumstances, Government has set its priority to invest on developmental projects, especially dams. Previously, several developmental projects *Tarbela* and *Mangla* Dams and *Chotiari* water reservoir had caused dislocation of a lot of families even though their value for overall economy cannot be ignored. Despite of all the claims of the Government to provide benefits and raise living standard of local affected people, many of these projects caused poverty and low living standard (Dawn 2008). These issues comprise social instability and government's unpromising claims about human benefit from developmental project.

This article highlights the conflicts arising due to land use and especially to construction of dams, using observations on a peculiar case study: the project of construction of *Diamer Bhasha* Dam in *Pakistan*. We identify the conflicts arising due to this infrastructural project, the network of actors involved and how these actors are engaged with each other. We then discuss the different type of conflicts among different actors, and their impact on the local people and ultimately on the project. The main focus of this study is to analyse the different conflicts in terms of geographical and organized proximity. Different kinds of ethnic groups, their social

issues and geographical problem are also discussed along with geopolitical problems of this project. Finally, in the light of this analysis and discussion, we provide some recommendations related to the setting of new projects like Dams construction in developing countries.

2 Case Study: *Diamer Bhasha* Dam Project in Pakistan

This part provides the information concerning *Diamer Bhasha* Dam case study, including geographical area and economic activities as well as presentation of social characteristics of local people. Moreover, it gives the plan, key features of the project and estimated (by Government) benefits. Significance of the project and some main issues in the form of socioeconomic impacts and conflicts between different actors are also highlighted.

2.1 Area Profile and Economic Activities

Diamer Bhasha Dam is one of the major projects in *Pakistan* to deal with water and electricity shortage which is named after *Diamer* (a district in northern areas of *Pakistan* called *Gilgit Baltistan*) and *Bhasha* (a village in *Kohistan* in the province of *Khyber Pakhtunkhwa*).

Khyber Pakhtunkhwa (KPK) is a province of Pakistan with about 17 million populations and 74,521 km^2 of total stated area (Pakistan Bureau of Statistics 2016). The province has strong agricultural potential, offers a diverse climate and landscape for variety of tourism activities (Comprehensive Development Strategy, KPK 2010). *Kohistan* is a district of KPK and according to 1998 census whole population of the area is about 472,570. Total reported area of district *Kohistan* is 7492 km^2 (Pakistan Bureau of Statistics 2016). *Bhasha* is a village of *Kohistan* and part of this project, which is why; it is named as *Diamer Bhasha* Dam Project. The government has obtained some land from this village for the project, but there is no effect on any household in this area, as a main part of the dam is located in the *Diamer* district of *Gilgit Baltistan*.

Gilgit Baltistan (GB) officially known as the northern areas of *Pakistan* has an area of 72,971 km^2. This region is connected with *Khyber Pukhtunkhwa* province of *Pakistan* to the west, *Afghanistan* to the north, *China* to the east and *Indian* administered *Jammu and Kashmir* to the south west. The estimated population approaches approximately 1,000,000 (GOGB 2010). *Diamer* is a district of *Gilgit Baltistan* which has an area of 10,936 km^2. The region has an estimated population of 0.2 million. The capital of the district is *Chilas* (Ali 2013).

Major portion of the dam project and activities are located in *Diamer* district of *Gilgit Baltistan*. Most of the land acquisition and all the people who are going to be affected socially and economically are from *Diamer* district. Total number of households in this area is 12,039 in which directly affected households are about 4228. They are dispersed into 20 different valleys and more or less 32 villages in the

Table 1 Economic activities of the local actors

Occupation of local actors	% share of occupational status
Agriculture/farming	33.5
Unskilled workers (construction mostly)	10.5
Skilled workers	16.6
Government service	19
Business	15.1
Private employment (in enterprise, e.g. agriculture)	4.7
Security forces	0.6

Source: WAPDA Survey (2007–2008)

form of different ethnic groups with different local values, traditions and caste system. These valleys are located geographically in a tough mountainous area, difficult to access due to rough terrain. During some months of rainy season, situation becomes even worse because of landslides and it is extremely difficult to access these areas by road. However, people in the valleys over the mountains connect with each other by rough paths (there are no proper roads). In winter, people living in valleys over mountains, has to migrate to lowers parts of this district like *Chilas* etc. due to extreme cold. As a local tradition people especially owners prefer to live in valleys during summer because according to local law land of whole area is entitled to owners.

The occupational status of the affected households in project area is as follows (Table 1):

2.2 Case Study Description

The project of *Diamer Bhasha* Dam was included in the water vision 2025 of Water and Power Development Authority (WAPDA), in *Pakistan*. Government started its feasibility study in the year 2001, considering it as priority (Dawn 2006); as the *Kala Bagh* dam project was knotted in inter provincial politics. The estimated cost of the project was US$13.684 billion approved in July, 2012 and detailed engineering design was completed up to June, 2008. To complete the funding needs of this project, intentions of the Government are towards different donor agencies, i.e. Asian Development Bank (ADB), World Bank and USAID, etc. However, there has been no assurance of funding from donor agencies so far. The project is at its land acquisition stage and construction of dam has not been started yet.

The dam is located on the River Indus, about 315 km upstream of Tarbela Dam and 40 km downstream of *Chilas* city. It is supposed to be in such a way that right abutment and right power house are in *Gilgit Baltistan* and left bank and left power house are in *Khyber Pakhtunkhwa*. It has maximum height of 272 m and is roller compacted concrete (RCC) dam. The project would cover an area of 110 km^2 and the reservoir would extend 100 km upstream of the dam (GOP 2012–2013).

This project is supposed to have a contribution of 4500 MW of electricity, US$2.216 billion per annum revenue generation and to supplement the current shortage of electricity in a considerable way. It could hold a reservoir of 8.1 MAF (Million Acre Feet) and with live storage of 6.4 MAF annual surface water worth of US$63 billion. Moreover, this dam will contribute in increasing the life of Tarbela dam by 35 years with increasing its further annual electricity generation capacity by 1111 GWh worth of US$118.3 million (GOP 2012–2013). Construction of *Diamer Bhasha* Dam clearly comes into view as an important sign towards water and energy shortage of *Pakistan*.

According to government this dam will create employment during construction and subsequently in agriculture, industry and commercial sector (GOP 2012–2013). Many skilled and unskilled workers in *Diamer* district will be given preference for employment. The project also includes up gradations of hospitals in *Gilgit* and construction of schools in other districts of the region (The Express Tribune 2010).

In spite of the importance of this project in the country's increasing electricity and water demand, benefits from the dam is also carrying some heavy costs in the form of low living standard of affected people, conflicts among different actors and instability in the region. The dam will swamp about 32 villages and 4228 households. 30,350 people are going to be affected due to this project. It will affect the major occupation of the area and living standard of the people by submerging the 2660 acres of agricultural land.

Construction of this project has faced tough local resistance and there have been protests on small and large scales. A number of issues have been seen resulting from tensions between local people, local resistance against the project and conflicts. Affected people staged several protests demonstrations against Government and people blocked the roads, especially Karakoram Highway, in an attempt to intensify their protests. Even in some cases people threatened the contractor working on site and project work had been stopped for almost 1 year. People also threatened to bulldoze the structure in the project area. Moreover, there is legal action of affected people over Government about land measurements, but cases are still pending in court (Pamir Times 2015; Mir 2012).

However, the most painful incident of the project so far is the death of people for some reasons. Three people died and several were injured when police opened fire on protesters, who were protesting for land rates and compensation rights (GB Tribune 2010; Mir 2012). This matter has been resolved after several meetings by increasing compensation. In another incident 7–8 people died and several were injured because of boundary issues between two provinces. People from both *Khyber Pakhtunkhwa* and *Gilgit Baltistan* claim 7–8 km long territory over the boundary of these two provinces, which led to clash between both sides and death of people. Security forces had been deployed at that moment to stop the conflict and the matter is still in court. This boundary issue might lead to delay in project and there is fear of another bloody clash if this matter has not been resolved soon (Dawn 2016; Muhammad 2013).

3 Methodology

3.1 Conflict Analysis

The study focuses on proximity analysis of conflicts between different actors at different levels. In order to fulfill this objective, network of different actors and conflicts among them have been identified through various interviews of affected people and Government agencies etc. Finally the data have been collected on various conflict issues among different actors including differences of their culture and values, their engagement with each other, land acquisition and compensation and ethnicity in the area etc. Both primary and secondary sources were included as a source of data collection on desired issues. Primary source include interviews with experts of different backgrounds and local stakeholders. 61 interviews have been conducted during a field work of 3 months, mostly from the project area (*Chilas* and other valleys) and some other parts of *Pakistan* (Table 2).

Secondary sources include daily regional press and public and private published literature. This source of information has been used by some studies (Admasu 2015) and it is also a better source to cross check the information and carry out better analysis (Torre et al. 2014; Awakul and Ogunlana 2002; Mahato and Ogunlana 2011; Mann and Jeanneaux 2009; Ali and Nasir 2010). This source of information is essential for obtaining information in some dimensions, particularly to realize the public view when two parties are in disagreement.

Moreover public and private literature for project related information, were also collected as next secondary source in order to attain more widespread results. Public literature includes different brochures and financial information released by WAPDA online, from time to time to give updates on project activities. These project activities include geographical information, main features, benefits, plans about land acquisition and resettlement etc. Further data and information through field survey of WAPDA is also obtained which contain economic activities in

Table 2 List of interviewees

Background of the interviewee(s)	Number of interviewee(s)
Water & Power Development Authority (main Government agency to carry out this project)	10
Planning Commission (Government Organization)	7
Private consultants for Bhasha Dam & other related projects	9
District administration & police	6
Diamer Poverty Alleviation program (NGO)	5
Local leaders/representatives	10
Legal advisors	5
Journalists and social workers	9

Source: The authors

Table 3 Social status of the respondents in the study area

Ethnic Group	Social status	Caste	Number in %
Shin	Owner	Upper	39.5
Yashkun	Owner	Upper	24
Kamin	Owner	Lower	11
Dom	Non-owner	Lower	1.4
Gujar	Non-owner	Lower	6.5
Mruts	Non-owner	Lower	7.4
Others	Non-owner	Lower	10.2

Source: WAPDA Report on Diamer Bhasha Dam, Accessed in 2015

project area, ethnic groups, number of households in each village and their ethnic attachments etc.

It is essential to take into consideration the different ethnic groups in the study area on the basis of their common ancestry, local traditional laws and common history. A major distinction among ethnic groups is on the basis of their rights to access the land and natural resources. This distinction is known as "original settlers" termed as "Owners" (who settled first time in this area) and late comers termed as "Non-owners" (who arrived late in this area after owners). Further there is also distinction of upper caste and lower caste. Most of the "non-owners" belong to lower caste but "owners" are divided into upper caste and lower caste. According to traditional law, which is accepted by Government also, all public lands (forests, water, pastures, barren land and non-timber forest which are termed as "common lands") belong to mostly owners. Non-owners can claim the land, only they purchase for their residence and business (Table 3).

People of each ethnic group recognize most of the people of their own group in the specific area and always marry within their own ethnic group. They can easily recognize the ethnic characteristics of a person and respond accordingly. They prefer to live within their own ethnic group that is why a specific area is dominated by a specific ethnic group with respect to population.

3.2 Proximity Relations

Concept of proximity was elaborated in the framework of either regional science renewal or birth of economic geography, leading towards two major categories of proximity i.e. geographical and organized proximity (Torre and Gilly 1999; Torre and Wallet 2014).

Geographical proximity relates to spatial differences between economic actors not only through physical factors but also social constructions like transport infrastructure or telecommunication technologies. It expresses the physical distance between two entities and also includes parameters like km, time, price and some other perception of the actors. Geographical proximity plays central role in generation of conflicts and it can be undesirable and desirable. It is undesirable or unwelcome when different categories of users disagree on land use in three ways:

Superposition (when different users desire to use single piece of land for different purposes), Contiguity (when individuals disagree on the boundaries between their respective properties) and Neighbourhood (a situation in which undesirable effects are diffused into air, water or under the effect of gravity over to actors located in proximity) (Torre and Zuindeau 2009). Under desirable proximity land users seek proximity to other social or economic actors or to natural or artificial resources. It can be of two types: Permanent geographical proximity leads to location or relocation of actors in an area which is likely to provide what they need and temporary geographical proximity, which does not call for location or relocation of activities as it can be done through trips and visits of varying duration and momentarily face to face interactions.

Organized proximity concerns about different ways and means by which different actors are close to each other in non-spatial terms. Such proximity refers to arranged nature of human activities. Organized proximity is based upon two ideas: The logic of belonging, in which two or more actors belong to similar relationship or network, whether their relation is direct or intermediate. It may depend upon sector in which they are operating, such as engineers or researchers who belong to same network etc. Logic of similarity corresponds to mental adherence to common categories. People can be connected through common projects, same cultural or religious values or symbols, social norms and common languages etc. It makes easy the interaction among various individuals, researchers etc. who did not know each other before but share the same reference.

Geographical proximity can benefit in conflict resolution by avoidance and imposed solutions and necessitated by cooperative solutions i.e. give and take solution and concerted solution. But it should always be combined with organized proximity. Organized proximity is zero when solution of avoidance is adopted, less affective when solution is imposed and increases significantly when give and take and concerted solutions are activated. Thus temporary geographical proximity and organized proximity are complementary and enables the actors to find the process of negotiation and compromise (Gallaud and Torre 2004). Further, among the modes of conflicts prevention involvement of third party could also play an important role to promote negotiations and to adopt non-judicial rout. The solutions could involve technical acts, compensation in the form of financial, natural and technical, land use planning, eliminating the activity or moving it somewhere else etc. (Torre et al. 2014).

4 Results and Discussion

4.1 Main Conflicts: Land Use Issues

The project has a number of small and large scale impacts on the area and the affected people. These impacts of the project are creating conflicts among different actors in different dimensions i.e. between different groups of affected people at local and provincial level and between Government and affected people. When the

project started passing through its different phases, various actors engaged in a variety of conflicts.

Issues among local population and Government started arising on the basis on cultural differences when Government agents/outsiders came to this area for project activities. Although there is great element of hospitality among local people they usually do not accept outsiders (Government agencies) interfering their social and economic life. There is lack of understanding between local people and Government due to social and cultural differences. Although Government hired some local people to deal with local population and project activities but according to opinion of some experts these efforts are not enough and Government should have hired local experts and NGOs etc.

Moreover, people were not properly informed about different project phases and activities and Government also ignored their proper participation in different project activities. According to WAPDA the *Diamer-Bhasha* dam project is approved by council of common interest for national consensus in 2010 (The Nation 2010) and according to minister of planning and development all political parties are backing up the project (Iqbal 2013). However, the consensus meeting was attended by Prime Minister of *Pakistan*, Chief Ministers of four provinces and representatives from *Gilgit Baltistan*. So, there was not much scope under discussion because this body was either to vote in favour of dam or against it. It has also been observed that consultation with affected people has not been taken place at local level about the construction of the dam (Singh 2012).

Some of the experts and stakeholders we interviewed discussed that there was proper information dissemination about land rate compensations and employment opportunities in the form of workshops of stakeholders, interviews and tribal meetings, seminars and cadastral surveys etc. Public was encouraged to participate in the project in the form of a 27 member committee including mainly local leaders and religious leaders etc. However, lack of information dissemination and at some places wrong information dissemination by Government agents about over-evaluation of people's lands has been noted. So people expected more compensation and this situation led to conflicts when Government announced original land rates as compensations (Table 4).

Experts' and stakeholders' opinion over information dissemination and public participation.

Table 4 Consent of affected people

Consent of affected people	Response of experts in percentage (%)	
Information dissemination	Yes	25
	No	64
Public participation	Yes	23
	No	57

Source: Authors' Calculation

Majority of the experts argued against these views, as there was no proper information dissemination and public participation especially on the basis of equal participation of all actors such as owners; non-owners etc. in major project activities i.e. land measurement, land category decisions and ownership of lands at provincial level and also on the basis of different ethnic groups etc. Several other conflicts arose on the basis of these project activities, among the affected people and also between affected people and Government.

Government negotiated the land rate compensations with local people after deadly conflicts in 2010, in which three people died and several were injured in clash with forces (GB Tribune 2010; Mir 2012). Although these negotiations seem successful and no conflict has been seen over land rates after 2010, according to some stakeholders the representative committee of local people was forced to accept the land rates with fear of further causalities of local people if another clash with forces becomes inevitable. After negotiations with local people three land categories have been decided, including cultivated land, cultivable land and barren land. Compensations for private lands and common lands are being provided on the basis of these land categories. People, in some areas, are claiming that their cultivable lands have been shown as barren lands in order to reduce the compensation rate. According to expert views, because of this land category conflict, land for resettlement of affected people could not be acquired, which in return is causing delay in resettlement, socioeconomic disturbance and ultimately delay in project.

Conflicts between Government and affected people are also on land measurements and land record preparation. This is tribal area and there had been no record of land/area hold by people for all types of lands including residential, agricultural and commercial etc. All the land transactions and conflicts over lands were handled by local leaders. After decision of this project activity, Government agents (land administers) called "*Patwaris*[1]", first time prepared the land record. According to experts and stakeholders there have been corruption, mismanagement and favouritism reported over land measurement. Conflicts arose between local people from *Gilgit Baltistan* and Government over less land measurement, as local people were not satisfied for land/area measured by Government agents. Their records have limited accessibility and reliability indicating the room for corruption and un-official change in land records. In the literature, land right change, informal land rights, political favouritism and mismanagement by local land managers have been addressed as main source of conflicts (Anaafo 2015; Zhu and Simarmata 2015; Admasu 2015).

Territory conflict on much larger scale has also been observed in this project. Territorial conflict (boundary issues) between *Gilgit Baltistan* and *Khyber Pakhtunkhwa* is over about 7 km long area on the left bank of *Indus River*. Almost, all of the experts and stakeholders reported violent conflict over this issue, 7–8 people died and several were injured. The majority of the experts and stakeholders reported this issue mainly because of the compensation. But if this territory comes

[1]Local land administrator and government official who keep the record regarding land ownership.

Table 5 Major conflicts

Conflicts	Response of experts in percentage (%)	
Land measurement conflicts	No	0
	Yes	75
Land category conflict	No	2
	Yes	51
Ethnic conflict	No	8
	Yes	82

Source: The authors

under *Khyber Pakhtunkhwa,* there will be share in royalty from electricity generation after construction of dam; otherwise *Gilgit Baltistan* will get the whole royalty (Table 5).

Another important dispute started among the affected people, mainly between the two main ethnic groups (i.e. owners and non-owners) over compensation for common lands. This significant issue is affecting seriously socioeconomic of local people and is based on several places, mainly in *Thak Das* (Site for the model village with the same name) and *Chilas*. Majority of the non-owners have less land, limited work opportunities and low income. The amount, most of the non-owners are going to receive for acquisition of their personal lands will not be sufficient for their resettlement. Due to this project activity when Government decided to provide compensation for common lands, non-owners claimed their share from compensations, which according to local law are not eligible. This issue of compensation from common lands started conflicts between actors of different ethnic groups and Government. Violent conflicts have been seen over these issues. Non-owners threatened the contractors working on site and project work had been stopped for 1 year.

Almost all the lower caste groups, most of the times, are not allowed to take part in decision making activity. This is also a conflicting point between owners and non-owners. Among the two distinguishing groups, Kamin and Dom, Kamin are already owners and getting their share in compensations from common lands. On the other hand Dom and also the Kamin provide the services to the upper caste owners, so owners compensate the Dom also from common lands, which leaves no conflicts between these actors. So lack of ability to take part in decision making is not a problem for both Kamin and Dom. However, lack of decision making ability of other non-owners is creating conflict, mainly for the purpose of no share from common land compensations.

4.2 Proximity Analysis of *Diamer-Bhasha* Dam Issues/Conflicts

Proximity analysis is a useful tool to analyse the conflicts between different actors. It helps to identify the network of actors and the cooperative and conflict behaviours among them. It also proposes conflict resolution mechanisms. In case of *Diamer-*

Bhasha Dam project, both organized and geographical proximity have been seen and studied.

Geographical proximity played an important role in conflict process. We found undesirable geographical proximity in the form of "contiguity" which is the basis for conflicts between local actors and Government agencies. It has been observed in case of land measurements by Government agents, as people are not satisfied with the land/area measured. Most of them claim more land than announced by Government after measurement. Moreover, contiguity and superposition of interests have also been observed in case of provincial territory conflict, when people of both provinces (i.e. *Gilgit Baltistan* and *Khyber Pakhtunkhwa*) are not satisfied over the boundary, which led to severe conflicts, mainly over compensation and also on royalty after the construction of dam.

Another crucial cause of conflicts, lack of organized proximity, has also been observed among different actors, at different levels. Two types of significant conflicts, i.e. among the affected people and also between affected people and Government agencies, would never have occurred if there were proper understanding and coordination.

First, this lack was observed among two main groups of affected people, *Shin, Yashkun, Kamin* and *Dom* on the one hand, and on the other *Gujar, Mruts* and "*Others*". All of these groups are on same platform of the project, having some similar goals against other external actors (Government agencies), including payment of cash compensation from Government, construction of model villages for resettlement and ultimately development of this area due to this project. Due to different values, history and local traditions, there exists lack of interaction and understanding among these groups, mainly on the property rights and decision making leading towards delay in project activities and ultimately conflicts (Fig. 1).

Secondly, a lack of organized proximity has also been observed between local actors (affected people) and Government agencies. Although both parties are in favour of the project, yet there exists conflict over land category between both parties in addition to cultural differences, lack of understanding and trust among each other. Further, in case of land category conflicts, both parties agree on use of land but disagree on structure/category of land on the basis of which compensation has to be provided.

If we enter a bit more into the details, it appears that logic of similarity has been observed between owners as well as between most of the lower castes (non-owners). It is also true for other actors working at local and national level i.e. Government agencies. Although they belong to different areas and backgrounds they are bound to same administrative rules and operational goals.

On the other hand, logic of belonging can be observed between upper caste owners and *Dom* (Lower caste non-owners). Although they differ in values and traditions from owners they are normally being compensated by the upper castes on the basis of services they provide to upper caste owners, which leads to no conflict over demand for compensation from common lands. Further, Logic of belonging is also an important aspect for the property right conflict related to land category conflict as different groups of actors working at local level made alliances against

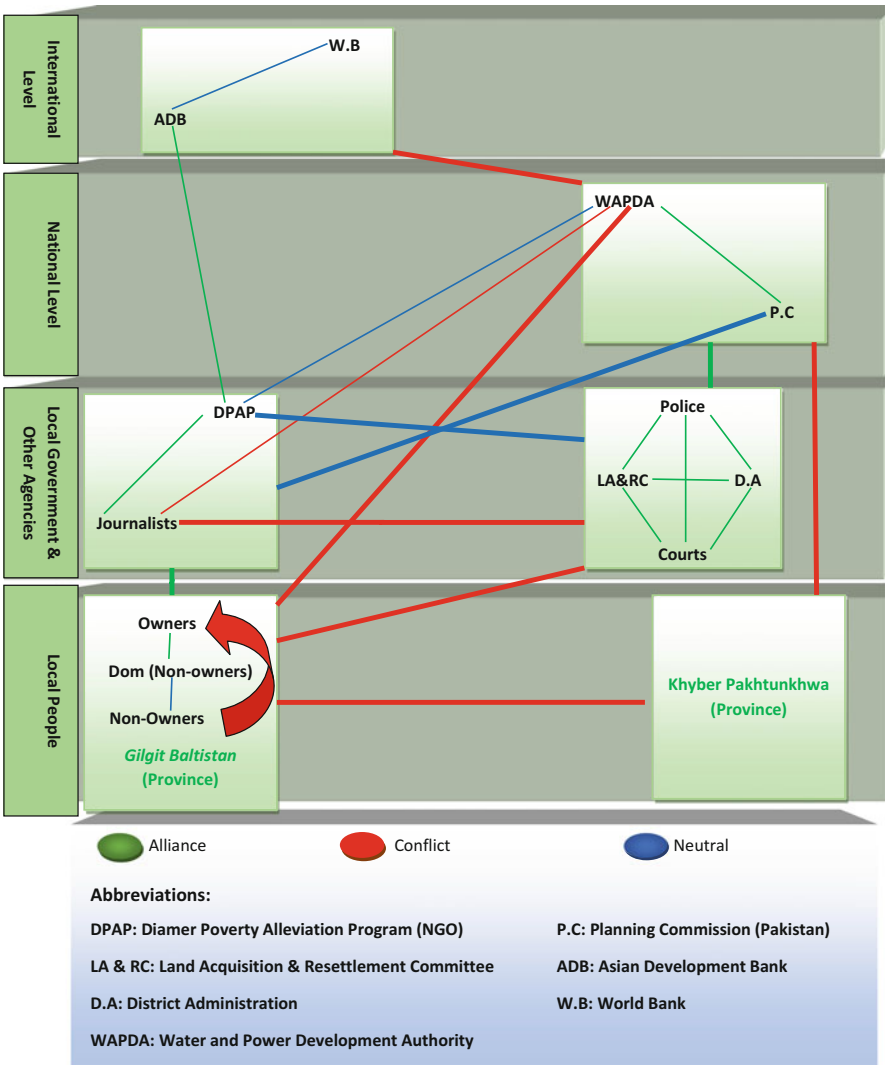

Fig. 1 Network of actors in the case of *Diamer Bhasha* Dam. Source: The authors

Government agencies. Moreover, there exists an alliance network expanding from local actors (from *Gilgit Baltistan*) to other agencies working at local level i.e. journalists and DPAP. This alliance is against Government agencies/actors working not only on local level but also at national level, on all types of property rights issues and also on cultural differences. This logic of belonging can also be seen at local level and international level between DPAP and ADB.

5 Conclusion

Big infrastructures like dams are vital need of the time in order to overcome the energy and water shortage problems. Such projects bring also, along with them employment opportunities and put the country on the path of progress to attain the level of development. But they also carry some heavy costs for directly affected local people in the form of socioeconomic disturbance and low living standard, tensions and conflicts among various actors. These conflicts could take several expressions in the form of legal actions, bringing the matter to the notice of the public authorities, mediatisation (bringing the matter to the attention of the media), assault or verbal confrontation, putting up signs and even in some brutal cases death of people (Torre et al. 2014).

It is suggested that government should avoid management weaknesses, corruption and conflicts from infrastructure projects (Magsi and Torre 2014). World Commission on Dams (WCD) condemned that government's accountability led to corruption, misappropriation and discrimination of benefits (WCD 2000). It also gives the principles for resettlement of displaced persons in the form of consultation of all stakeholders before planning. Unfortunately the point of view of planners is often different from the affected population, particularly in developing countries.

Diamer Bhasha Dam project has several impacts on the area and local people raising conflicts in several different dimensions among different actors. The impacts of the project include socioeconomic disturbance in the form of displacement, resettlement, employment and livelihood of affected people. Further, due to this project activity the interaction between actors at local and national level has become inevitable on several project activities like land acquisition, compensations etc. which created social and cultural problems at local level and disturbance in local values and traditions. These matters discussed above have been the reason of conflicts among local people in the form of ethnicity, compensations and territorial rights and also between local people and Government agencies in the form of compensations and property rights.

Both organized and geographical proximity play a key role in these conflicts. Undesirable geographical proximity has been observed in the form of contiguity over land measurement conflicts between local people and Government, as well as over boundary issue between *Gilgit Baltistan* and *Khyber Pakhtunkhwa*. Superposition of expectations for land also plays a role over territory issues between of two provinces, where people are not satisfied over the boundaries. So there is dissatisfaction over land compensation due to dissatisfaction over geographical demarcation. Lack of organized proximity has been observed between two main groups of local actors, as well as between local people and Government agencies. One can observe logic of similarity between upper caste owners and lower caste owners on the basis of same values and thinking over land rights leaving no conflict among them. It also exists between different actors of Government agencies, as they belong to different areas, different backgrounds and working distantly but still having same thinking and decisions because they are bound to same administrative

rules. Moreover, logic of belonging is observed between local people of *Gilgit Baltistan* and other agencies working at local level.

Geographical proximity should be associated with organized proximity to manage the conflicts. A highly organized proximity for the purpose of negotiations and compromise is required between owners and non-owners for land right conflicts, territorial conflict between two provinces, cultural and land category conflict. Strong political efforts are required to bring all the stakeholders on same table and to satisfy them by sharing land rights and compensations with proper negotiations. Strong negotiation skills are also recommended to be built among stakeholders at local level in order to protect their rights through NGOs or donor agencies. Involving third party for conflict resolution could also be helpful. This method has already been under consideration by Government to involve religious leaders as third party to resolve territory conflicts between two provinces. It could appear helpful to create understanding among different actors for successful negations and give and take solution between local ethnic groups and other involved groups of actors in the long run.

References

Admasu GT (2015) Urban land use dynamics, the nexus between land use pattern and its challenges: the case of Hawassa city, Southern Ethiopia. Land Use Policy 45:159–175

Ali N (2013) Why anxious about Chilas? Pamir Times. http://pamirtimes.net/2013/08/16/why-anxious-about-chilas/. Accessed 30 June 2016

Ali Z, Nasir A (2010) Land administration system in Pakistan: current situation and stakeholders' perception. In: FIG Congress 2010, Facing the challenges: building the capacity Sydney, Australia, 11–16 April. http://www.fig.net/resources/proceedings/fig_proceedings/fig2010/papers/fs03f/fs03f_ali_nasir_3901.pdf. Accessed 30 June 2016

Anaafo D (2015) Land reforms and land rights change: a case study of land stressed groups in the Nkoranza South Municipality, Ghana. Land Use Policy 42:538–546

Awakul P, Ogunlana SO (2002) The effect of attitudinal differences on interface conflict on large construction projects: the case of the Pak Mun Dam project. Environ Impact Assess Rev 22 (4):311–335

Awasthi MK (2014) Socioeconomic determinants of farmland value in India. Land Use Policy 39:78–83

Barron P, Smith CQ, Woolcock M (2004) Understanding local level conflict in developing countries theory, evidence and implications from Indonesia. Social development paper The World Bank, Washington, DC

Brown HP, Tullos D, Tilt B, Magee D, Wolf AT (2009) Modelling the costs and benefits of dam construction from a multidisciplinary perspective. J Environ Manag 90:S303–S311

Bui HMT, Schreinemachers P, Berger T (2013) Hydropower development in Vietnam: involuntary resettlement and factors enabling rehabilitation. Land Use Policy 31:536–544

Comprehensive Development Strategy, KPK (2010) Planning and development department. http://lgkp.gov.pk/wp-content/uploads/2014/03/11.-Report-on-Khyber-Pakhtunkhwa-Comprehensive-Development-Strategy-2010-2017.pdf. Accessed 30 June 2016

Daily times (2015) Power shortfall reaches 4600 MW. http://www.dailytimes.com.pk/national/27-Mar-2015/power-shortfall-reaches-4600-mw. Accessed 30 June 2016

Dawn (2006) All reservoirs will be built: Musharraf: Diamer-Bhasha dam project launched. http://www.dawn.com/news/189653/all-reservoirs-will-be-built-musharraf-diamer-bhasha-dam-project-launched. Accessed 30 June 2016

Dawn (2008) Diamer-Bhasha dam: risks and controversies. http://www.dawn.com/news/330268/diamer-bhasha-dam-risks-and-controversies. Accessed 30 June 2016

Dawn (2016) Bhasha dam victims want boundary dispute resolved. http://www.dawn.com/news/1256646. Accessed 30 June 2016

Drazkiewicz A, Challies E, Newig J (2015) Public participation and local environmental planning: testing factors influencing decision quality and implementation in four case studies from Germany. Land Use Policy 46:211–222

Gallaud D, Torre A (2004) Geographical proximity and circulation of knowledge through inter-firm cooperation. In: Wink R (ed) Academia-business links. Palgrave, Macmillan, London

GB Tribune (2010) Police opened fire at Bhasha Dam protesters, 3 killed, 4 injured. http://gbtribune.blogspot.fr/2010/02/police-opened-fire-at-bhasha-dam.html. Accessed 30 June 2016

GOGB (2010) Pakistan development forum 2010, reform Agenda-road to sustainable economic Development, Government of Gilgit Baltistan. http://siteresources.worldbank.org/PAKISTANEXTN/Resources/GOVERNMENTOFGILGIT-BALTISTAN.pdf. Accessed 30 June 2016

GOP (2012–2013) WAPDA annual report. Water and Power Development Authority Pakistan. http://www.wapda.gov.pk/index.php/investor-s-corner/annual-report?download=20:annual-report-fy-2012-13. Accessed 30 June 2016

Hui MCE, Bao JH, Zhang LX (2013) The policy and praxis of compensation for land expropriations in China: an appraisal from the perspective of social exclusion. Land Use Policy 32:309–316

Iqbal A, (2013) Bhasha Dam as vital as N-plan: minister, Dawn. http://www.dawn.com/news/1054454. Accessed 30 June 2016

Magsi H (2012) Development projects and land use conflicts in Pakistan rural settings, an analysis. Int J Rural Stud 19(1):1–8

Magsi H, Torre A (2012) Social network legitimacy and property right loopholes: evidence from an infrastructural water project in Pakistan. J Infrastruct Dev 4(2):59–76

Magsi H, Torre A (2013) Approaches to understand land use conflicts in the developing countries. Macrotheme Rev 2(1):119–136

Magsi H, Torre A (2014) Proximity analysis of inefficient practices and socio-spatial negligence: evidence, evaluations and recommendations drawn from the construction of Chotiari reservoir in Pakistan. Land Use Policy 36:567–576

Mahato BK, Ogunlana SO (2011) Conflict dynamics in dam construction project: a case study. Built Environ Proj Asset Manag 1(2):176–194

Mann C, Jeanneaux P (2009) Two approaches for understanding land use conflicts to improve rural planning and management. J Rural Community Dev 4(1):118–141

Mir S (2012) Diamer-Bhasha dam compensation: affected people threaten to bulldoze dam's structures. The Express Tribune. http://tribune.com.pk/story/393243/diamer-bhasha-dam-compensation-affected-people-threaten-to-bulldoze-dams-structures/. Accessed 30 June 2016

Moran T (2004) The environmental and socio-economic impacts of hydroelectric dams in Turkish Kurdistan. http://rudar.ruc.dk/bitstream/1800/403/1/The_Environmental_and.pdf. Accessed 30 June 2016

Muhammad P (2013) Diamer Bhasha: boundary dispute threatens to stall key dam project. The Express Tribune. http://tribune.com.pk/story/651710/diamer-bhasha-boundary-dispute-threatens-to-stall-key-dam-project/. Accessed 30 June 2016

Oppio A, Corsi S, Mattia S, Tosini A (2015) Exploring the relationship among local conflicts and territorial vulnerability: the case study of Lombardy Region. Land Use Policy 43:239–247

Pakistan Bureau of Statistics (2016) Kohistan district at glance. http://www.pbs.gov.pk/sites/default/files//tables/District%20at%20a%20glance%20Kohistan.pdf. Accessed 30 June 2016

Pamir Times (2015) Diamer-Bhasha dam affectees protest in Chilas – video report. http://pamirtimes.net/2015/10/22/diamer-bhasha-dam-affectees-protest-in-chilas-video-report/. Accessed 30 June 2016

Qian Z (2015) Land acquisition compensation in post-reform China: evolution, structure and challenges in Hangzhou. Land Use Policy 46:250–257
Scudder T (2005) The future of large dams: dealing with social, environmental, institutional and political costs. Earth Scan, London
Singh P (2012) The Diamer Bhasha dam in Gilgit Baltistan: India's concerns. Strateg Anal 36 (4):597–611
Sun Q (2013) Partial social cost benefit analysis of three Gorges dam: impact assessment update and a greenhouse gas externality component study. http://dalspace.library.dal.ca/bitstream/handle/10222/42660/Sun-Qian-MA-ECOM-Dec-2013.pdf?sequence=1. Accessed 30 June 2016
Swain A, Chee AM (2004) Political structure and 'Dam' conflicts: comparing cases in Southeast Asia. http://www.worldwatercouncil.org/fileadmin/wwc/Library/Publications_and_reports/Proceedings_Water_Politics/proceedings_waterpol_pp.95-114.pdf. Accessed 30 June 2016
The Express Tribune (2010) Diamer-Bhasha dam: locals seek jobs in project. http://tribune.com.pk/story/94994/diamer-bhasha-dam-locals-seek-jobs-in-project/. Accessed 30 June 2016
The Nation (2010) CCI approves construction of Bhasha Dam. http://nation.com.pk/politics/19-Jul-2010/CCI-approves-construction-of-Bhasha-Dam. Accessed 30 June 2016
Tilt B, Braun Y, He D (2009) Social impacts of large dam projects: a comparison of international case studies and implications for best practice. J Environ Manag 90:S249–S257
Torre A, Gilly JP (1999) On the analytical dimension of proximity dynamic. Reg Stud 34 (2):169–180
Torre A, Zuindeau B (2009) Proximity economics and environment: assessment and prospects. J Environ Plan Manag 52(1):1–24
Torre A, Melot R, Magsi H, Bossuet L, Cadoret A, Caron A, Darly S, Jeanneaux P, Kirat T, Pham H, Kolokouris O (2014) Identifying and measuring land-use and proximity conflicts: methods and identification. Springer Plus 3:85
Torre A, Wallet F (2014) Regional development and proximity relations. New horizons in regional science. Edward Elgar, London, p 375
Vignon NP, Lecomte HBS (2004) Land, violent conflict and development. OECD Development Centre. Working Paper No. 233. https://www.oecd.org/dev/29740608.pdf. Accessed 30 June 2016
WAPDA (2007–2008) Cadastral survey, Diamer District Administration, Revenue Department (unpublished report)
WAPDA (2015) Report on Diamer Bhasha Dam. Accessed in 2015 (unpublished report)
WCD (2000) The report of the world commission on dams. Dams and development. http://www.unep.org/dams/WCD/report/WCD_DAMS%20report.pdf. Accessed 30 June 2016
Williams A, Porter S (2006) Comparison of hydropower options for developing countries with regard to the environmental, social and economic aspects. In: Proceedings of the international conference on renewable energy for developing countries-2006. http://www.udc.edu/docs/cere/Williams_Porter.pdf. Accessed 30 June 2016
Zhu J, Simarmata HA (2015) Formal land rights versus informal land rights: governance for sustainable urbanization in the Jakarta metropolitan region, Indonesia. Land Use Policy 43:63–73

Opportunities and Challenges for South Asian Co-operation on Human Rights: A Case Study of the UN Human Rights Council

Arjun Sharma, Anna-Luise Chané, and Idesbald Goddeeris

1 Introduction

As with all labels predicated on geography, the idea of a homogenous South Asian polity is subject to allegations of oversimplification. Indeed, if there is anything common among India, Pakistan, Bangladesh, Sri Lanka, the Maldives, Nepal, Afghanistan and Bhutan, it is their very heterogeneity in terms of culture, ethnicity, demography, politics and economics. Yet, their shared experience of colonization under the British; historical flows of people, goods and ideas, and not to mention, the necessity of keeping a semblance of peace amongst their shared and often contested borders, have compelled these nations to articulate a common agenda. Since its establishment in 1985, the South Asian Association for Regional Cooperation (SAARC) has provided a forum for the abovementioned states to design a shared mechanism for inter-regional co-operation.

In form, SAARC members have stated their wish to "promote universal respect for and observance and protection of human rights and fundamental freedoms for all" (SAARC Social Charter, Article 2 para 2.xii.). In substance however, their commitment is questioned whenever, for instance, there is a discussion about gross violations of human rights perpetrated by the Indian military in Jammu and Kashmir, or by successive authoritarian military regimes in Pakistan, which have

The research leading to these results has received funding from the European Commission's Seventh Framework Programme (FP7/2007-2013) under the grant agreement FRAME (project n° 320000).

A. Sharma (✉) • A.-L. Chané • I. Goddeeris
Leuven Centre for Global Governance Studies, University of Leuven—KU Leuven, Leuven, Belgium
e-mail: arjun091182@gmail.com; annaluise.chane@kuleuven.be; idesbald.goddeeris@kuleuven.be

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_18

often suppressed free speech and perpetrated violence against ethnic minorities. Most recently, Sri Lanka has been on the dock for its treatment of the Tamil population during and after their war with the Liberation Tigers of Tamil Eelam (LTTE). Others question the SAARC's ability to implement its human rights agenda when one of its members, Bhutan, has yet to ratify the two core treaties of the international bill of rights—the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR). Compared to other regional organizations, such as the Organization of American States (OAS), the Council of Europe (CoE), the African Union, or even ASEAN, SAARC has yet to create a common mechanism on human rights related issues.

Nevertheless, there are glimmers of hope. Presently, all the member states have or are attempting to form a legitimate democratic government. Although this does not automatically signal a deeper appreciation or respect for human rights, it does indicate a hopeful trajectory involving a larger role for civil society. This is not merely wishful thinking; civil society consortiums such as the South Asian Free Media Association (SAFMA), South Asians for Human Rights (SAHR), and South Asia Forum for Human Rights (SAFHR) are actively lobbying SAARC to deepen its obligation to upholding human rights (Sattar et al. 2012; Deuja 2010). In 2010, the first sub-regional workshop on a South Asian Human Rights Mechanism was held in Kathmandu, where the participants drafted a declaration demanding the establishment of a common South Asian mechanism for directing human rights (Kathmandu Declaration 2010).

As SAARC inches towards the goals stated in the Kathmandu Declaration, in the interim, it is important to gain a better understanding of how the SAARC nations are presently expressing their agenda at the global level. Such an analysis is relevant for two reasons: first, it gives an idea of the extent to which SAARC states have the ability to co-ordinate and implement their agenda in global human rights fora, and second, it positions SAARC within the broader configuration of regional and special interest coalitions, to understand how these groups undermine, complement and shape its human rights objectives. A broader appreciation of the constraints as well as opportunities for creating a pan South Asian human rights consciousness can create more room for discussion and prospects for strategic planning, for both academics and activists.

To address this objective, this study will examine the participation of SAARC members in the Human Rights Council based on 691 resolutions tabled between 2006 and 2015. After providing a brief background about the institutional framework of the Human Rights Council, we will briefly discuss our methods for collecting and analysing the data. Subsequently, we will analyse the extent and mode of participation of SAARC states, both individually and collectively. In the second part of the analysis, we will focus on qualitative issues by assessing which human rights related thematic areas are supported by SAARC states and how this

compares to other countries' and groups' preferences. The resulting observations and their implications will be discussed in the concluding section.

2 Human Rights Council: Background and Institutional Framework

The Human Rights Council was established in 2006 as a successor to the former Commission on Human Rights. Its mandate includes the promotion of universal respect for human rights, addressing human rights violations and providing recommendations to the UN General Assembly for the development of international human rights law (UN General Assembly 2006). Both thematic and geographic human rights issues are addressed at the Human Rights Council through a variety of tools, including the adoption of resolutions. Thematic resolutions focus on a particular human rights issue,[1] whereas human rights situations pertaining to a specific country are addressed through country resolutions. These resolutions are often used to bring attention to local issues and employ the Human Rights Council forum to support or put pressure on national governments to abide by their commitments to international human rights law. Although Human Rights Council resolutions are non-binding, they nonetheless carry significant political weight as they represent the opinion of the international community.

Organizationally, the Human Rights Council is composed of 47 members who are elected by a simple majority by the members of the UN General Assembly.[2] The seats are allocated based on a geographical scheme to ensure fair representation. In total, 13 seats are allocated for the African Group and the Asia-Pacific Group[3] respectively, eight seats for the Group of Latin American and Caribbean States (GRULAC); seven seats for the Group of Western European and other States (WEOG), and six seats for the Eastern European States. Elected members serve for a period of 3 years and are prohibited from serving more than two consecutive terms. The rest of the UN member states can participate in the Human Rights Council as observers, however they do not have voting rights, and their speaking slots are later and shorter compared to those of members. More importantly though, both member and observer states are allowed to sponsor and co-sponsor resolutions. Usually, the main sponsor of a resolution is responsible for drafting the text and facilitating negotiations. Other states may express their support for the proposal by

[1] See for a non-exhaustive list of thematic issues addressed: OHCHR, List of human rights issues, http://www.ohchr.org/EN/Issues/Pages/ListOfIssues.aspx.

[2] As per the UN General Assembly Res 60/251 (2006) UN Doc A/RES/60/251.

[3] Note that the name of the group changed from 'Group of Asian States' to 'Group of Asia and the Pacific Small Island Developing States' (short: 'Asia-Pacific Group') in 2011, see Manoa (2015, p. 94).

acting as co-sponsors. Most resolutions are submitted by one or more sponsors with multiple co-sponsors.

Between 2006 and 2015, five out of the eight SAARC states (India, Sri Lanka, the Maldives, Pakistan and Bangladesh) served as Council members. Of these countries—all of whom belong to the Asia-Pacific Group in the Human Rights Council—India, Bangladesh and Pakistan have served longest as Council members, followed by the Maldives and Sri Lanka.

3 Data Collection and Recording

For the purpose of our analysis we created a database recording 691 thematic and country resolutions tabled in the 28 regular and 22 special Human Rights Council sessions held between 2006 and 2015. The data for each resolution was extracted from the session reports publicly available on the Human Rights Council website. The session reports contain a summary of the proceedings along with details of resolutions adopted and a list of countries that sponsored or co-sponsored these resolutions.

Existing literature exploring political dynamics within the Human Rights Council and other UN bodies generally uses voting behaviour as a proxy to measure the relationship within and between countries and political blocs (e.g. Macon et al. 2011; Hug and Lukács 2013; Jin and Hosli 2013). Since only a select number of resolutions are voted upon, a large swathe of information about the participation of states in the Human Rights Council is ignored in the process. There is also a growing awareness amongst scholars of national and international fora—with similar institutional designs and procedures—that sponsorship of a resolution requires a greater commitment in terms of time and resources thereby indicating a stronger commitment to a particular bill, or resolution, in the case of the Human Rights Council (Kessler and Krehbiel 1996; Wilson and Young 1997; Koger 2003; Fowler 2006; Panke 2013). Similarly, the act of co-sponsoring a resolution requires closer co-ordination and shared commitment between the parties involved when compared to voting.

In addition to recording the co-sponsors, each resolution entered in our database was further assigned to one or more thematic areas or to a country situation, based on their content and in line with the issues identified by the OHCHR.[4] Out of 691 resolutions, 312, or 45% of resolutions were submitted on behalf of regional and special interest groups. These include the African Group, the European Union (EU), the GRULAC, Non-Aligned Movement (NAM) and the Organization of Islamic Cooperation (OIC). For these records, we indicated, both, the name of the

[4]See supra, note 2.

group, as well as all the individual member countries belonging to the group as co-sponsors. This method of recording data allows us to analyse both countries, as well as regional groups as actors, providing valuable insights about political dynamics at the Human Rights Council.

4 Methodology: Social Network Analysis

Social Network Analysis (SNA) is a set of tools and methods to study relationships between different actors. It is particularly well suited to study political structures such as the Human Rights Council, whose modus operandi is determined by active negotiation and contestation between coalitions of countries. The two basic components of SNA consist of 'nodes' which are represented by points in a graph, and 'lines' or ties, which denote the relationship between any two nodes (Scott 2012). In the case of the Human Rights Council, nodes can be represented as countries, or one of the seven regional groups which frequently sponsor resolutions. The lines between these nodes represent the number of resolutions co-sponsored by a pair of countries. These relationships are usually represented as a one-mode or two-mode matrix (Scott 2012), which can be visually depicted as graphs illustrated in Figs. 1 and 2.

The matrix containing the relationships between actors is the primary element of analysis. Over the years, SNA scholars have developed various mathematical tools to analyse these matrices to extrapolate information about the structure of a particular network based on the power and position of the actors within it. As illustrated in Fig. 2, the Human Rights Council is represented as a two mode relationship, since it is based on an indirect affiliation between countries based on the resolutions they collectively co-sponsor, as opposed to a direct relationship such as a bilateral trade treaty. Taken together thus, a higher number of resolutions co-sponsored by any two pair of countries suggests a closer relationship between the two countries. Further, we assume that the larger the number of co-sponsors for a particular resolution, the less chance any two countries co-sponsoring the resolution will have for working closely. To compensate for this, we assign a weight to each relationship between two countries. If, for instance, two countries co-sponsor one resolution, where they are the sole co-sponsors, then the weight of their relationship would be 1/2 or 0.50. Similarly, if there were 20 other countries co-sponsoring the resolution then the weight for that tie would be 1/22 or 0.045,

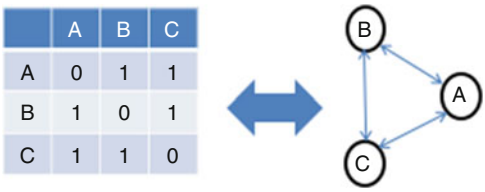

Fig. 1 Case × Case (one-mode) matrix. Source: Adapted from Scott (2012)

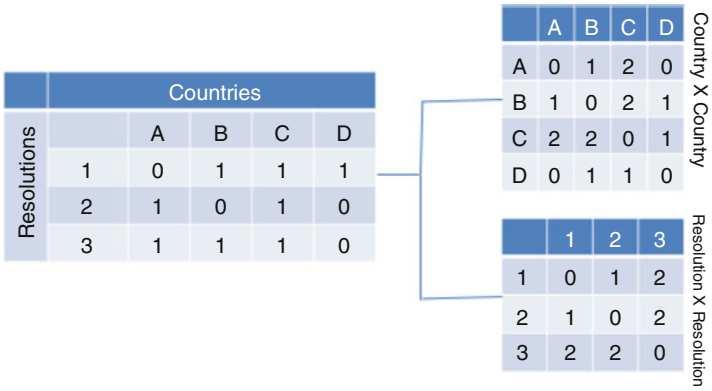

Fig. 2 Country × Resolution (two-mode) matrix. Source: Adapted from Scott (2012)

which is less than 0.50. Applying this method, we constructed a square, country by country matrix to represent the Human Rights Council network.

5 Centrality and Participation of South Asian Countries in the Human Rights Council Network

The square matrix containing the 195 countries[5] and weighted co-sponsorship ties between them can be represented as a network graph. Since the resulting graph for the Human Rights Council network contains a large number of relationships, visually very little information can be discerned in terms of the structure of relationships in the network at this level. Thus, to gain a better understanding of how actively SAARC members sponsor or co-sponsor resolutions compared to other members or observers in the Human Rights Council, we calculate the relative activity and positions of countries within the Human Rights Council network. The results presented in Table 1 are based on the degree centrality measure, which is the sum of all the ties that a country has with other countries (Wasserman and Faust 1994). Stated simply, a higher degree centrality would indicate that a country participates relatively more frequently with a large number of other countries.

Table 1 indicates that a majority of South Asian countries do not participate actively in (co-)sponsoring resolutions. Seven of the eight South Asian countries fall in the bottom quartile with respect to their degree centrality scores and number of resolutions (co-)sponsored. Only the Maldives appears to consistently and actively participate in (co-)sponsoring resolutions. It is also worth noting that the largest country in terms of population and economic influence—India—lags behind

[5]This includes the 193 member states of the UN who are either members in the Human Rights Council or represented by observers, as well as two non-member states represented by observers (Palestine and the Holy See).

Table 1 SAARC member participation at the Human Rights Council (Database created by Chané and Sharma[a])

Country	Weighted degree centrality	Degree centrality ranking	Number of resolutions (co-)sponsored	Number of resolutions not (co-)sponsored on behalf of groups	Percentage of resolutions not (co-)sponsored by group	OIC	NAM
Maldives	316.38	47	321	154	48	1	1
Bangladesh	188.79	122	192	51	27	1	1
Sri Lanka	184.84	123	189	97	51		1
Pakistan	183.98	124	187	43	23	1	1
Afghanistan	122.45	153	124	3	2	1	1
India	74.99	165	76	34	45		1
Nepal	45.01	172	46	12	26		1
Bhutan	41.58	180	42	8	19		1

[a]Further details about the sources and methods used for creating the database are provided in Sect. 3 Data Collection and Recording above

Afghanistan in its participation. Membership in regional and political groups, such as the OIC or the NAM, appears to influence participation rates. All South Asian countries are members of the NAM, half of them also of the OIC. Both groups are active participants at the Human Rights Council. In fact, out of the top five most active SAARC member states, four have dual membership in both the NAM and the OIC. To gain a better understanding of how often South Asian countries (co-) sponsor independently of their groups we have also calculated the percentage of resolutions that were *not* (co-)sponsored on behalf of a group. These results present us with a slightly different picture. Here we can observe that countries such as Sri Lanka, the Maldives and India tend to (co-)sponsor more resolutions outside their groups, indicating a more independent diplomatic approach and, perhaps, capacity.

6 Comparative Analysis of Thematic and Country Issues

After gaining a general understanding of the extent and ways in which individual SAARC countries participate, we can proceed to a more qualitative analysis of the content of the resolutions that they (co-)sponsor at the Human Rights Council. Since each of the resolutions is assigned a set of human rights thematic areas, we can categorize all the resolutions (co-)sponsored according to these themes. Further, we calculate the average participation rate based on individual country participation (number of resolutions (co-)sponsored). This measure gives us an indication of whether there are any thematic issues that SAARC countries prefer individually and collectively. To allow for a comparison between the (co-) sponsorship patterns of SAARC members as a group, we also include the participation rates of the other active groups in the Human Rights Council, namely the EU, the OIC, the NAM, the African Group and GRULAC.

The resulting scores of thematic issues presented in Tables 2 and 3 can be broken down into three parts. The first part will assess how the South Asian countries' participation at the Human Rights Council aligns with their commitment to specific human rights issues in the framework of SAARC. The second part will consider how the (co-)sponsorship of resolutions within certain thematic areas reflects the national priorities of SAARC members. The final part will consider how the preferences of the South Asian countries align with those of other groups active at the Human Rights Council.

6.1 Sponsorship/Co-sponsorship (SAARC Core Areas)

Although the SAARC Charter of 1985 does not explicitly refer to human rights, it proclaims it to be one of the objectives of the organization to 'provide all individuals the opportunity to live in dignity and to realize their full potentials' (SAARC Charter, Article I(b)). This broadly worded commitment may be understood to presuppose certain human rights guarantees. In line with this the SAARC states have adopted a small number of regional human rights instruments, namely the SAARC Convention on Preventing and Combating Trafficking in Women and

Table 2 SAARC members top 20% thematic areas based on the participation rate (database created by Chané and Sharma)

Thematic issues	Participation rates of SAARC members											Participation rates of other groups					
	SAARC priority	Resolutions tabled	Afghanistan	Bangladesh	India	Nepal	Bhutan	Sri-Lanka	Pakistan	Maldives	Average	African states	Arab states	EU	GRULAC	NAM	OIC
Development	No	10	10	10	10	10	10	10	10	10	1.00	0.98	1.00	0.01	0.83	1.00	0.93
International cooperation	No	8	8	8	8	8	8	8	8	8	1.00	0.98	1.00	0.00	0.81	1.00	0.92
Coercive measures	No	7	7	7	7	7	7	7	7	7	1.00	0.98	1.00	0.00	0.80	1.00	0.91
Trust fund for LCD	No	1	0	1	1	1	1	1	1	1	0.88	1.00	0.68	0.79	0.52	0.75	0.74
Climate change	Yes	5	0	5	2	5	3	5	3	4	0.68	0.59	0.48	0.36	0.24	0.45	0.46
Family	No	2	2	2	0	0	0	2	2	2	0.63	0.84	1.00	0.00	0.11	0.62	1.00
Technical cooperation	No	4	3	2	2	1	1	3	3	4	0.59	0.73	1.00	0.46	0.56	0.68	0.82
Defamation of religions	No	4	4	4	0	0	0	0	4	4	0.50	0.50	1.00	0.00	0.08	0.44	1.00
Traditional values	No	4	2	3	0	0	0	4	3	2	0.44	0.38	0.58	0.00	0.11	0.35	0.57
Sport	No	4	2	2	2	0	0	3	3	2	0.44	0.82	0.68	0.76	0.47	0.59	0.66
Financial crisis	No	2	0	2	2	0	1	0	2	0	0.44	0.60	0.48	0.00	0.35	0.46	0.46
Food	Yes	12	1	9	0	2	1	11	9	7	0.42	0.35	0.53	0.37	0.41	0.38	0.41
Funds of illicit origin	No	5	3	3	0	0	0	1	3	3	0.33	1.00	0.89	0.00	0.07	0.60	0.83
Maternal mortality	Yes	5	0	2	2	1	1	2	0	5	0.33	0.35	0.21	0.94	0.47	0.30	0.26
Regional co-operation	No	7	2	2	2	2	2	3	2	3	0.32	0.19	0.23	0.57	0.15	0.21	0.25
Local government	No	2	0	0	1	0	0	2	0	2	0.31	0.11	0.20	0.46	0.23	0.15	0.14
NHRIs	No	4	2	0	3	0	0	0	0	4	0.28	0.64	0.51	0.94	0.34	0.44	0.49
International order	No	5	0	3	0	0	0	3	5	0	0.28	0.21	0.54	0.00	0.19	0.24	0.29
Education	No	10	2	3	0	0	0	7	3	5	0.25	0.35	0.39	0.93	0.51	0.33	0.35

(continued)

Table 2 (continued)

Thematic issues	Participation rates of SAARC members											Participation rates of other groups					
	SAARC priority	Resolutions tabled	Afghanistan	Bangladesh	India	Nepal	Bhutan	Sri-Lanka	Pakistan	Maldives	Average	African states	Arab states	EU	GRULAC	NAM	OIC
International solidarity	No	10	0	8	0	0	0	8	4	0	0.25	0.21	0.43	0.00	0.22	0.25	0.26
Birth registration	No	3	0	0	0	0	0	1	3	2	0.25	0.17	0.23	0.79	0.51	0.22	0.20
Child mortality	Yes	2	0	0	0	0	0	2	0	2	0.25	0.24	0.11	0.98	0.47	0.25	0.24
Drones	No	2	0	0	0	0	0	2	2	0	0.25	0.06	0.14	0.00	0.20	0.12	0.10
Work	No	1	0	0	1	0	0	1	0	0	0.25	0.20	0.36	0.36	0.36	0.22	0.19
Child marriage	Yes	1	0	0	0	1	0	0	0	1	0.25	0.56	0.45	1.00	0.58	0.43	0.44

Table 3 SAARC members bottom 20% thematic areas by participation rate (database created by Chané and Sharma)

	Participation rates of SAARC members									Participation rates of other groups					
Thematic issues	Afghanistan	Bangladesh	India	Nepal	Bhutan	Sri-Lanka	Pakistan	Maldives	Average	African states	Arab states	EU	GRULAC	NAM	OIC
Human rights defenders	0	0	0	0	0	0	0	3	0.06	0.11	0.09	0.93	0.35	0.12	0.14
Detention	0	0	0	0	0	0	0	2	0.05	0.04	0.05	0.95	0.27	0.07	0.05
Sexual orientation and gender identity	0	0	0	0	0	0	0	0	0.00	0.01	0.00	0.91	0.24	0.05	0.02
Internal displacement	0	0	0	0	0	0	0	0	0.00	0.10	0.05	0.99	0.21	0.10	0.08
Death penalty	0	0	0	0	0	0	0	0	0.00	0.16	0.09	0.93	0.41	0.16	0.15
Executions	0	0	0	0	0	0	0	0	0.00	0.05	0.07	0.96	0.39	0.11	0.08
Genocide	0	0	0	0	0	0	0	0	0.00	0.17	0.03	0.90	0.27	0.13	0.06

Children for Prostitution, the SAARC Convention on Regional Arrangements for the Promotion of Child Welfare in South Asia (both adopted at the 2002 SAARC summit in Kathmandu), and the SAARC Social Charter (adopted at the 2004 SAARC summit in Islamabad). These instruments address major human rights challenges in the region, namely trafficking in human beings, poverty, underdevelopment, protection of children and women, as well as the provision of health services and education. Other initiatives taken at SAARC level include the establishment of a SAARC Food Bank to serve as a regional food security reserve, and measures addressing climate change, including a series of Action Plans and the 2010 SAARC Convention on Cooperation on Environment.

We can thus observe that SAARC members appear to share a common commitment, particularly to socio-economic rights and development and to the protection of vulnerable groups, such as women and children. Overall, Sattar et al. (2012) analysis of SAARC's human rights initiatives suggests that SAARC countries are more inclined towards economic, social and cultural rights rather than civil and political rights. Furthermore, addressing the challenges linked to environmental degradation and climate change appears to be a regional priority. Based on this regional consensus and prioritization, we examine whether these issues are also actively promoted by SAARC states at the global level.

We first focus on the resolutions tabled by SAARC states in the Human Rights Council—either individually, or as members of (cross-regional) core groups. Here, we observe a strong regional focus on issues relating to climate change and the environment. Since the seventh session of the Council, there have been regular resolution initiatives, first by the Maldives, then jointly by Bangladesh and the Philippines on human rights and climate change. In the seventh session of the Human Rights Council, the Maldives tabled a resolution requesting the United Nations High Commissioner for Human Rights (UNHCHR) to conduct a study on the relationship between climate change and human rights,[6] and in the tenth session a follow-up resolution which, among others, convened a panel discussion on the issue.[7] In the 18th session, the topic was again picked up jointly by Bangladesh and the Philippines,[8] who have since tabled additional resolutions in the 23rd session (deferred)[9] and in the 26th session.[10] We can also observe strong support for these resolutions from other SAARC members. Most of them co-sponsored the resolutions tabled, with Nepal and Sri Lanka co-sponsoring all five resolutions, Pakistan and Bhutan three, and India the first two. Afghanistan was the only member to not co-sponsor these resolutions.

[6]HRC Res 7/23, Human rights and climate change, 28 March 2008, UN Doc A/HRC/RES/7/23.

[7]HRC Res 10/4, Human rights and climate change, 25 March 2009, UN Doc A/HRC/RES/10/4.

[8]HRC Res 18/22, Human rights and climate change, 30 September 2011, UN Doc A/HRC/RES/18/22.

[9]Human Rights Council draft resolution A/HRC/23/L.27, introduced and deferred on 14 June 2013.

[10]HRC Res 26/27, Human rights and climate change, 27 June 2014, UN Doc A/HRC/RES/26/27.

In addition, the Maldives has tabled a series of resolutions addressing human rights and the environment since the 16th session, together with a fluctuating cross-regional core group of up to ten other countries.[11] These initiatives led to the appointment of an Independent Expert on human rights and the environment in 2012. Here, however, we observe considerably less support from the other SAARC states. Only Bhutan once supported a draft resolution as a co-sponsor.

With regard to children's rights, we again observe the Maldives as the most active proponent among the SAARC states of initiatives in this issue area. The Maldives actively engaged in the negotiations of the Third Optional Protocol to the Convention on the Rights of the Child on a communications procedure which was adopted by the Human Rights Council in 2011.[12] In addition, it was part of a larger cross-regional group of countries which tabled a resolution addressing child and forced marriage in the 24th session of the Council.[13] The co-sponsorship patterns of the SAARC states on children's rights resolutions in the Council are very mixed, with Maldives and Sri Lanka (co-)sponsoring actively, while their regional neighbours rarely or never co-sponsored.

Considering SAARC's thematic focus on socio-economic rights and development, we observe that initiatives on these issues appear to be tabled by the NAM as a group, rather than by SAARC states individually. Between 2006 and 2015, NAM has tabled ten resolutions on the right to development[14] and eight resolutions on the '[e]nhancement of international cooperation in the field of human rights' in the

[11]HRC Res 16/11, Human rights and the environment, 24 March 2011, UN Doc A/HRC/RES/16/11; HRC Res 19/10, Human rights and the environment, 22 March 2012, UN Doc A/HRC/RES/19/10; HRC Res 25/21, Human rights and the environment, 28 March 2014, UN Doc A/HRC/RES/25/21; HRC Res 28/11, Human rights and the environment, 26 March 2015, UN Doc A/HRC/RES/28/11.

[12]See HRC Res 11/1, Open-ended working group on an optional protocol to the Convention on the Rights of the Child to provide a communications procedure, 17 June 2009, UN Doc A/HRC/RES/11/1; HRC Res 13/3, Open-ended working group on an optional protocol to the Convention on the Rights of the Child to provide a communications procedure, 24 March 2010, UN Doc A/HRC/RES/ 13/3; HRC Res 17/18, Optional Protocol to the Convention on the Rights of the Child on a communications procedure, 17 June 2011, UN Doc A/HRC/RES/17/18.

[13]HRC Res 24/23, Strengthening efforts to prevent and eliminate child, early and forced marriage: challenges, achievements, best practices and implementation gaps, 27 September 2013, UN Doc A/HRC/RES/24/23.

[14]HRC Res 1/4, The right to development, 30 June 2006, UN Doc A/HRC/RES/1/4; HRC Res 4/4, The right to development, 30 March 2007, UN Doc A/HRC/RES/4/4; HRC Res 9/3, The right to development, 24 September 2008, UN Doc A/HRC/RES/9/3; HRC Res 12/23, The right to development, 10 February 2009, UN Doc A/HRC/RES/12/23; HRC Res 15/25, The right to development, 10 January 2010, UN Doc A/HRC/RES/15/25; HRC Res 18/26, The right to development, 30 September 2011, UN Doc A/HRC/RES/18/26; HRC Res 19/34, The right to development, 23 March 2012, UN Doc A/HRC/RES/19/34; HRC Res 21/32, The right to development, 28 September 2012, UN Doc A/HRC/RES/21/32; HRC Res 24/4, The right to development, 26 September 2013, UN Doc A/HRC/RES/24/4; HRC Res 27/2, The right to development, 25 September 2014, UN Doc A/HRC/RES/27/2.

Council.[15] All of these resolutions were sponsored 'on behalf of' the entire group, including the SAARC states. Similarly, NAM has regularly tabled resolutions on the human rights consequences of 'unilateral coercive measures' or sanctions.[16] Again, these resolutions were sponsored in the name of the entire group, which explains the unanimous support of the SAARC states.

Resolutions in the area of economic, social and cultural rights tabled by other states or groups in the Council, received very mixed support from the SAARC states. The Cuban-led resolutions on the right to food, for example, were very often co-sponsored by Sri Lanka, Bangladesh, Pakistan and the Maldives, but rarely by Afghanistan, Bhutan, India and Nepal.[17] Resolutions addressing the right to education particularly received support from Sri Lanka but were never co-sponsored by India, Nepal and Bhutan. Similarly, Sri Lanka, Pakistan and Bangladesh frequently co-sponsored resolutions on cultural rights, whereas none of the other SAARC members co-sponsored.

Finally, through the adoption of the SAARC Convention on Preventing and Combating Trafficking in Women and Children for Prostitution in 2002 SAARC members voiced their support for this issue. In the Human Rights Council, Germany and the Philippines annually table resolutions on trafficking in persons,

[15]HRC Res 7/3, Enhancement of international cooperation in the field of human rights, 27 March 2008, UN Doc A/HRC/RES/7/3; HRC Res 10/6, Enhancement of international cooperation in the field of human rights, 26 March 2009, UN Doc A/HRC/RES/10/6; HRC Res 13/23, Enhancement of international cooperation in the field of human rights, 26 March 2010, UN Doc A/HRC/RES/13/23; HRC Res 16/22, Enhancement of international cooperation in the field of human rights, 25 March 2011, UN Doc A/HRC/RES/16/22; HRC Res 19/33, Enhancement of international cooperation in the field of human rights, 23 March 2012, UN Doc A/HRC/RES/19/33; HRC Res 23/3, Enhancement of international cooperation in the field of human rights, 13 March 2013, UN Doc A/HRC/RES/23/3; HRC Res 25/3, Enhancement of international cooperation in the field of human rights, 27 March 2014, UN Doc A/HRC/RES/25/3; HRC Res 28/2, Enhancement of international cooperation in the field of human rights, 26 March 2015, UN Doc A/HRC/RES/28/2.

[16]HRC Res 6/7, Human rights and unilateral coercive measures, 28 September 2007, UN Doc A/HRC/RES/6/7; HRC Res 9/4, Human rights and unilateral coercive measures, 24 September 2008, UN Doc A/HRC/RES/9/4; HRC Res 12/22, Human rights and unilateral coercive measures, 2 October 2009, UN Doc A/HRC/RES/12/22; HRC Res 15/24, Human rights and unilateral coercive measures, 1 October 2010, UN Doc A/HRC/RES/15/24; HRC Res 19/32, Human rights and unilateral coercive measures, 23 March 2012, UN Doc A/HRC/RES/19/32; HRC Res 24/14, Human rights and unilateral coercive measures, 27 September 2013, UN Doc A/HRC/RES/24/14; HRC Res 27/21, Human rights and unilateral coercive measures, 26 September 2014, UN Doc A/HRC/RES/27/21.

[17]HRC Res 6/2, The right to food, 27 September 2007, UN Doc A/HRC/RES/6/2; HRC Res 7/14, The right to food, 27 March 2008, UN Doc A/HRC/RES/7/14; HRC Res 10/12, The right to food, 26 March 2009, UN Doc A/HRC/RES/10/12; HRC Res 12/10, The right to food, 1 October 2009, UN Doc A/HRC/RES/12/10; HRC Res 13/4, The right to food, 24 March 2010, UN Doc A/HRC/RES/13/4; HRC Res 16/27, The right to food, 25 March 2011, UN Doc A/HRC/RES/16/27; HRC Res 19/7, The right to food, 22 March 2012, UN Doc A/HRC/RES/19/7; HRC Res 22/9, The right to food, 21 March 2013, UN Doc A/HRC/RES/22/9; HRC Res 25/14, The right to food, 27 March 2014, UN Doc A/HRC/RES/25/14; HRC Res 28/10, The right to food, 26 March 2015, UN Doc A/HRC/RES/28/10.

supporting the mandate of the mandate of the Special Rapporteur on trafficking in persons, with a focus on women and children.[18] These resolutions were frequently co-sponsored by the Maldives and Sri Lanka.

6.2 Sponsorship/Co-sponsorship (National Priorities)

Members' engagement in the Human Rights Council is not limited to the core areas of SAARC. The Maldives, for example, was also actively engaged in a number of issues relating more closely to civil and political rights. In particular, it was part of a core-group of countries which lead an initiative for the appointment of a Special Rapporteur on the rights to freedom of peaceful assembly and of association.[19] Resolutions on this issue received very little support in terms of co-sponsorship from other SAARC members. Furthermore, the Maldives has twice sponsored resolutions addressing the independence of judges and lawyers, together with Australia, Botswana, Hungary, Mexico and Thailand,[20] and has frequently co-sponsored other initiatives on these matters. These resolutions were also prioritized by India, which (co-)sponsored five out of the nine resolutions tabled between 2006 and 2015. Other SAARC members however never or rarely co-sponsored.

Of the SAARC countries Pakistan acts most frequently as a main sponsor of resolutions in the Human Rights Council, however, it does so almost exclusively on behalf of the OIC. Human rights issues addressed in this way include in particular defamations of religion (until 2010), 'combating intolerance, negative stereotyping and stigmatization of, and discrimination, incitement to violence and violence

[18]HRC Res 8/12, Mandate of the Special Rapporteur on trafficking in persons, especially women and children, 18 June 2008, UN Doc A/HRC/RES/8/12; HRC Res 11/3, Trafficking in persons, especially women and children, 17 June 2009, UN Doc A/HRC/RES/11/3; HRC Res 14/2, Trafficking in persons, especially women and children: regional and sub regional cooperation in promoting a human rights-based approach to combating trafficking in persons, 17 June 2010, UN Doc A/HRC/RES/14/2; HRC Res 17/1, Mandate of the Special Rapporteur on trafficking in persons, especially women and children, 16 June 2011, UN Doc A/HRC/RES/17/1; HRC Res 20/1, Trafficking in persons, especially women and children: access to effective remedies for trafficked persons and their right to an effective remedy for human rights violations, 5 July 2012, UN Doc A/HRC/RES/20/1; HRC Res 23/5, Trafficking in persons, especially women and children: efforts to combat human trafficking in supply chains of businesses, 13 June 2013, UN Doc A/HRC/RES/23/5; HRC Res 26/8, Mandate of the Special Rapporteur on trafficking in persons, especially women and children, 26 June 2014, UN Doc A/HRC/RES/26/8.

[19]HRC Res 15/21, The rights to freedom of peaceful assembly and of association, 30 September 2010, UN Doc A/HRC/RES/15/21; HRC Res 21/16, The rights to freedom of peaceful assembly and of association, 27 September 2012, UN Doc A/HRC/RES/21/16; HRC Res 24/5, The rights to freedom of peaceful assembly and of association, 26 September 2013, UN Doc A/HRC/RES/24/5.

[20]HRC Res 23/6, Independence and impartiality of the judiciary, jurors and assessors, and the independence of lawyers, 13 June 2013, UN Doc A/HRC/RES/23/6; HRC Res 26/7, Mandate of the Special Rapporteur on the independence of judges and lawyers, 26 June 2014, UN Doc A/HRC/RES/26/7.

against, persons based on religion or belief' (since 2011), and the human rights situation in Israel and the Occupied Palestinian Territories. The only resolutions that Pakistan tabled in a national capacity dealt with the use of drones.[21] They were co-sponsored by Sri Lanka but by no other SAARC member.

Overall, we can observe that India, Nepal and Bhutan sponsor or co-sponsor less resolutions than other SAARC members. Based on its (co-)sponsorship behaviour, India appeared to support particularly resolutions addressing National Human Rights Institutions (NHRIs), the right to health, freedom of opinion and expression, the independence of the judiciary and business and human rights. Nepal's and Bhutan's co-sponsorship of resolutions was too sporadic to draw conclusions on their human rights priorities in the Council.

6.3 Sponsorship/Co-sponsorship (Country Resolutions)

With regard to country resolutions we see a clear division between SAARC states that are members of the OIC, and those that are not. The OIC regularly tables resolutions on Israel and the Occupied Palestinian Territories under item 7 of the Human Rights Council's permanent agenda.[22] These resolutions are tabled 'on behalf of' the entire group, including the South Asian member states. Sri Lanka has co-sponsored 12 resolutions under agenda item 7, India, Nepal and Bhutan only one.[23]

Apart from that, all SAARC members with the exception of the Maldives rarely sponsor or co-sponsor country-specific resolutions. This does not only apply to resolutions tabled under agenda item 4, which are generally more contested in the Global South, but also to resolutions focusing on technical assistance and capacity building, tabled under agenda item 10.

6.4 Comparison to Other Groups

Based on their sponsorship or (co-)sponsorship of resolutions in the Council, we can draw certain conclusions on how South Asian human rights priorities align with

[21]HRC Res 25/22, Ensuring use of remotely piloted aircraft or armed drones in counter-terrorism and military operations in accordance with international law, including international human rights and humanitarian law, 28 March 2014, UN Doc A/HRC/RES/25/22; HRC Res 28/3, Ensuring use of remotely piloted aircraft or armed drones in counter-terrorism and military operations in accordance with international law, including international human rights and humanitarian law, 26 March 2015, UN Doc A/HRC/RES/28/3.

[22]For the Human Rights Council's permanent agenda see HRC, Institution-building of the United Nations Human Rights Council (A/HRC/5/1), annex V.B.

[23]HRC Res 13/9, Follow-up to the report of the United Nations Independent International Fact-Finding Mission on the Gaza Conflict, 24 March 2010, UN Doc A/HRC/RES/13/9; note that India, Nepal and Bhutan also co-sponsored HRC Res S-12/1, The human rights situation in the Occupied Palestinian Territory, including East Jerusalem, 16 October 2009, UN Doc A/HRC/RES/S-12/1.

those of other regional or political groups. First, in line with their membership in NAM, the OIC or both, we can observe an alignment of SAARC members with the priorities of these two groups (see Tables 2 and 3). Resolutions on the right to development, international cooperation and unilateral coercive measures belong to the core priorities of blocks from the Global South, including NAM and the OIC, but also the African group, the Arab group and the GRULAC. Here, the SAARC states share the Southern position and consistently endorse resolutions tabled by these groups.

Similarly, SAARC members who participate in the OIC actively co-sponsor resolutions on the protection of the family and defamation of religions, as well as country resolutions on Israel and Palestine. These priorities are not necessarily shared by those SAARC members who are not members of the OIC.

Tables 2 and 3 also indicate a greater disparity in the types of thematic areas supported between the SAARC and the EU member states. Human rights issues that are more strongly prioritized by SAARC members, such as development, international cooperation, unilateral coercive measures, the protection of the family, defamation of religions or traditional values, are never co-sponsored by EU member states, which generally take a very critical view of the proposed resolutions. On the other hand, issues strongly prioritized by the EU, such as human rights and sexual orientation or gender identity, the rights of internally displaced persons, the death penalty, and extrajudicial, summary and arbitrary executions are never (co-) sponsored by SAARC states. Then again, we can also observe certain convergences between EU priorities and priorities of SAARC states, in particular of the Maldives. For example, EU member states strongly supported resolutions addressing maternal mortality and morbidity, which have been sponsored jointly by Burkina Faso, Colombia and New Zealand. On average, a third of the SAARC members sponsored these resolutions, with the Maldives sponsoring all of them. Similarly, EU member states have traditionally supported resolutions on National Human Rights Institutions. This support was shared in particular by the Maldives and India. Another example are the two resolutions on child mortality and morbidity, tabled by Austria, Botswana, Ireland, Mongolia and Uruguay in the 24th and 27th session of the Council. Both of them were (co-)sponsored by most EU member states, and also by the Maldives and Sri Lanka.

Finally, it is in the comparison to other regional and political groups at the Human Rights Council, that we see the issue of climate change emerging as a particular South Asian priority. Not only have SAARC members been consistently in the lead on these resolutions, the average (co-)sponsorship rate of SAARC states is also higher than those of other regional groups.

7 Conclusion

Despite representing some of the world's fastest growing democracies with an interest in asserting their influence in international fora, both scholars and activists have charged the SAARC with dragging its feet in implementing a common

mechanism to reinforce its commitment towards global human rights conventions. This omission is contrasted against the initiatives of SAARC's regional counterparts in Europe, Africa and the Americas, who have created common mechanisms and separate commissions to guide their engagement with human rights issues. Our analysis of (co-)sponsorship patterns of resolutions reflects the general lack of cohesiveness of SAARC members in the UN Human Rights Council. With the exception of the Maldives, SAARC members (co-)sponsor fewer resolutions compared to other countries in the Council. Nevertheless, we observe that SAARC member states, albeit sporadically, manage to represent SAARC's human rights priority areas at the Human Rights Council. It is particularly interesting to observe that while SAARC members may not appear to directly co-ordinate their activities as a unit, all SAARC members belong to either the NAM or the OIC group. Four out of the eight SAARC states belong to both. An examination of thematic areas (co-)sponsored by these groups indicates a strong alignment of their priorities. This observation suggests that critics advocating for a greater commitment to human rights from the SAARC need to also consider the priorities and co-ordination of NAM and OIC. A better understanding of these dynamics should open up more space for human rights advocates to develop alternative strategies to engage with SAARC members. Conversely, the alignment of SAARC with regional and special interest coalitions, which are often combative in their opposition to the EU and other 'Northern' or 'Western' states, may unwittingly overshadow their own initiatives. Taken together, these opportunities and constraints suggest that to find solutions for improving SAARC's human rights commitment, it is important to not only study the human rights priorities and policies of its individual members, but to also juxtapose them with those of other groups at both the regional and global levels.

References

Deuja S (2010) Establishing a robust regional human rights mechanism in south Asia. Asian Hum Rights Def 6(1):4–7

Fowler JH (2006) Connecting the congress: a study of cosponsorship networks. Polit Anal 14 (4):456–487

Hug S, Lukács R (2013) Preferences or blocs? Voting in the United Nations Human Rights Council. Rev Int Organ 9(1):83–106

Jin X, Hosli MO (2013) Pre- and post-lisbon: European Union voting in the United Nations General Assembly. West Eur Polit 36(6):1274–1291

Kathmandu Declaration, Outcome document of the first sub-regional workshop on a south Asian human rights mechanism, 24–25 March 2010. http://forum-asia.org/documents/SAHRM%20Workshop%20Proceedings-final.pdf. Accessed 3 Aug 2016

Kessler D, Krehbiel K (1996) Dynamics of cosponsorship. Am Polit Sci Rev 90(3):555–566

Koger G (2003) Position taking and cosponsorship in the U.S. house. Legis Stud Q 28(2):225–246

Macon KT, Mucha PJ, Porter MA (2011) Community structure in the United Nations General Assembly. Phys A: Stat Mech Appl 391:1–19

Manoa F (2015) The New Pacific diplomacy at the United Nations: the rise of the PSIDS. In: Fry G, Tarte S (eds) The New Pacific diplomacy. ANU Press, Acton, pp 94–98

Panke D (2013) Unequal actors in equalising institutions: negotiations in the United Nations General Assembly. Palgrave Macmillan, Houndmills, Basingstoke

Charter of the South Asian Association for Regional Cooperation, 8 December 1985. http://saarc-sec.org/SAARC-Charter

Sattar M, Swee Seng Y, Muzart S (2012) SAARC and human rights: looking back and ways forward. Asian Forum for Human Rights and Development (Forum-Asia), Bangkok

Scott J (2012) Social network analysis. Sage, Thousand Oaks

Social Charter of the South Asian Association for Regional Cooperation, SAARC/SUMMIT.12/SC.29/27 ANNEX-V, 6 January 2004

UN General Assembly Resolution 60/251, Human Rights Council, 15 March 2006, Doc No A/RES/60/251

Wasserman S, Faust K (1994) Social network analysis: methods and applications. Cambridge University Press, Cambridge

Wilson RK, Young CD (1997) Cosponsorship in the U.S. congress. Legis Stud Q 22(1):25–43

State of Democracy in South Asia: The Cases of Bangladesh, India, and Pakistan

Siegfried O. Wolf

1 Introduction: Initial Observations on the State of Democracy in South Asia

The 'third wave' of democratization resulted in an outburst of observers voicing hopes for a 'second liberation' in South Asia. However, after several up and downs, some of the South Asian country's move ahead in the democratic transitions and "become freer, while others do not". In consequence, when it comes to the state of democracy in South Asia, the picture looks quite mixed. However, one can emphasize that basically the people of South Asia are able and readier to boot out governments which is interpreted by several sources as a positive sign towards a deepening of democracy. There is no doubt that the holding of elections and a smooth transfer of power is definitely a milestone in the chequered political history of many South Asian states. Taking the entrenched authoritarian traditions into account—imposed by military rule, civilian dictatorship, absolute monarchical rule and other unfortunate trajectories like the rise of Islamic fundamentalism, communal violence, and endemic corruption—nation-building and democratic transition were hampered since the young South Asian states gained officially independence from colonial rule. But the appreciation of the claimed "new democratic wave" after witnessing more or less successful elections in most of South Asian states during the recent years ignores the resilience of the decades-old authoritarian, anti-democratic patterns.

The shadows of the past can be seen especially in Pakistan. This country witnessed in May 2013 its first 'regular' transfer of power between two civilian governments through elections. However, the military still dominates all significant political decision-making and was able to entrench its formal role in the political-institutional setup then never before. Furthermore, Islamic fundamentalist groups

S.O. Wolf (✉)
South Asia Democratic Forum (SADF), Brussels, Belgium
e-mail: siegfried.wolf@sadf.eu

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1_19

and other anti-democratic veto-player from within the country's society (as well as from outside) are not only challenging Pakistan's security but also determines an existential threat towards each attempt towards democratic transition. The fact that the so called establishment (understood as the political and socio-economic elite) which is hampering Pakistan's development and increasing tremendously all kind of inequalities since the country's existence maintains to be a major roadblock for severe and sustainable processes of democratic transition.

Another country of concern is Bangladesh, despite the reintroduction of parliamentary democracy (after experiencing two military dictatorships), and the holding of several elections leading to changes in government, the country had to face once again a 'quasi-military' rule during the caretaker government of 2006–2008 accompanied with massive violation of human rights in order to suppress all kind of political participation and contestation. Additional the 'political pampering' and material support of Islamist political parties and organisations by one of the two mainstream political parties led to a tremendous rise of Jihadism, determining today the greatest threat for freedom of speech and secularism. Subsequently, Bangladesh is moving fast away from the notion of being a liberal democracy.

Last but not least, India which is doubtless South Asia's most established democracy with a smooth functioning electoral process must also deal with numerous issues regarding human rights violation, ethnic and communal violence, gender discrimination, and endemic corruption which are overshadowing the country's democratic success story.

As such, by tackling with the three cases of Bangladesh, India, and Pakistan, the chapter will go beyond the electoral patterns as analytical framework. It will be argued that just looking at the holding elections as indicator for successful democratic transition is misleading in the South Asian context. It neither gives a clear description of the status of fundamental rights, freedoms, quality of (democratic) (democratic) good governance nor if the will of the people as supreme authority in a democracy is respected. In order to prove this rationale, the chapter will apply the concept of (liberal) 'embedded democracy' by Wolfgang Merkel.

2 Theoretical Considerations: The Concept of 'Embedded Democracy'

Even a brief discussion of what democracy is must begin with the premise that there is a widespread agreement on the notion of 'people's sovereignty'. But there is endless theoretical debate about what might be the best and most suitable realization of that abstract conception. Subsequently, there are numerous definitions of democracy which are deriving from different streams of political thinking, ideological convictions and worldviews. Yet mainstream definitions of democracy understand 'modern democracy' as a set of institutional arrangements (form of government), that guarantees that the polity is "governed by the freely expressed will of the people whereby all individuals are to be treated as equals" (Hadenius 1992). Here, it is most important to point out, that the conception of democracy must derive from three democratic core principles (or values), namely peoples'

sovereignty, equality, and liberty (Brettschneider 2006; Diamond and Morlino 2005; Lauth 2004; Merkel et al. 2003). The realization of these three principles is sine qua none for democratic rule. But there is much argument in the democracy literature, not only how realizes peoples' sovereignty, but also how equality, and liberty should be implemented in political practice. Having said this, one can identify a wide range of different concepts and definitions of democracy: from minimalist-procedural 'electoral' version which equates democracy with mechanism to choose political elites (representatives) (Dahl 1971; Schumpeter 1942) to more expansive concepts of liberal, participatory, strong, or deliberative, democracy (Diamond 2008; Diamond and Morlino 2005; Barber 1984; Habermas 1976). The former one reduces democracy to the notion of the existence of a functional electoral system and representative form of government (Dahl 1971; Schumpeter 1942). This has raised critics among many scholars working on the conceptualisation of 'modern, liberal democracy'. The basic argument is that 'electoral minimalism' is only focusing on one aspect of democracy (elite selection) which is not sufficient to address all three essential democratic core values. Therefore, in order to fill this gap the notion of 'liberal democracy' adds to the minimum of an electoral system the recognition of universal fundamental civil rights, individual liberties, the rule of law, accountability, among others more specific requirements like civilian supremacy in decision making and civilian control over the armed forces (Croissant et al. 2011a, b).

In an attempt to translate the theoretical notion of 'liberal democracy' into a systematic and integrated framework the multidimensional concept of 'embedded democracy' was developed (Merkel 2004; Merkel et al. 2003). At the core lies the assumption, that in order to fulfill all three democratic principles in a given political system, a set of institutions must be established which can analytically be disaggregated into five 'partial regimes': (A) the electoral regime, (B) the system of political liberties and political participation, (C) the regime of civil rights, (D) the system of horizontal accountability, (E) and institutions which guarantee the effective power for the democratically elected representatives (Fig. 1).

Partial regime A (Fig. 1) institutionalizes the democratic principle of peoples' sovereignty and responsive and accountable rule through universal, free, fair and meaningful elections.

Partial regime B (Fig. 1) complements the electoral regime by providing for the necessary political rights of participation and articulation which are necessary to

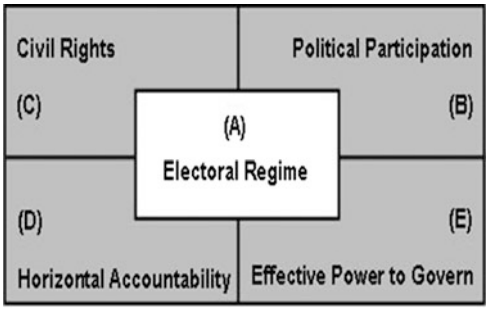

Fig. 1 The five 'partial regimes'. Source: Merkel (2004), Merkel et al. (2003)

make elections meaningful instruments of vertical accountability: the rights of free political association and unhindered information.

Partial regime C (Fig. 1) limits the exercise of political power, prevents the abuse of political authority and guarantees individual freedom through a set of civil liberties. As such, civil rights are central to the rule of law which is understood as containment and limitation of the exercise of state power. In other words, the rule of law is the principle that the state is bound to the effective law and acts according to clearly defined prerogatives (Elster 1988).

Partial regime D (Fig. 1) prevents the abuse of state power and ensures inter-agency supervision through institutional checks-and-balances between the legislative, executive and judicative branches.

Finally, *partial regime E* (Fig. 1) includes those institutions which guarantee that it is the democratically elected politicians alone who exercise decision-making authority in all relevant political issues. They prevent extra-constitutional actors not subject to democratic legitimization and accountability from incising the legitimate political authorities' power to govern.

When linked together, these partial regimes initiate the healthy functioning of the democratic structure. In this context, each of these partial regimes and its respective institutional arrangements providing highly specialized elements (functions) for the functionality of the democratic system as a whole. In other words, each of the partial regimes has an analytical set of distinct norms, rules and practices which interact with other. More concrete, the different regimes are mutually influencing and balancing the functions and influences of the other partial regimes. Only if this 'mutual embeddedness' is guaranteed there will be functioning and resilient democracy. Any constrain within one of this partial regimes, meaning the infringement of a norm, rule, or practice (e.g. a ban on press freedom, violation of human rights, restrictions on freedom of association), result in the erosion of the liberal character of democracy. In sum, the concept of 'embedded democracy' offers a set of systematic criteria which allows measuring the quality of democracy suitable for research aims and goals of this chapter.

3 State of Democracy in South Asia

3.1 Electoral Regime

3.1.1 Bangladesh

Since its return to parliamentary democracy in 1991, the quality of electoral process has varied greatly. Especially the 2014 general elections marked a major setback.[1] Basically one can state that most voters are able to employ their franchise and cast

[1]The 2014 national election was boycotted by the BNP and 19 allied parties (BTI BDH 2016). The BNP-led party alliance refused the polls "to protest what they said were unfair circumstances" (FH BDH 2016b). This left the majority of elected seats (153) uncontested, ensuring an AL victory. The AL won 234 parliamentary seats, the Jatiya Party (JP) won 34—led by the former military ruler Hussain Muhammad Ershad—, and independents and minority parties captured the

their vote to their own political choice. Furthermore, the country was able to carry out significant reforms in order to improve the quality of elections by reducing options for manipulations. The introduction and the conduct of new electoral mechanism, like a new voter list with photographs after the voters list got cleared and new ID cards (ANFREL 2009) are some of the most outstanding examples.[2] Nevertheless, besides the general large support for democracy and election among the people in Bangladesh, electoral process gets hampered by an unrestricted struggle between the country's two major parties Awami League (AL) and Bangladesh Nationalist Party (BNP) leading to remarkable polarisation and violence. For example, at the day of the 2014 general elections, at least 21 people got murdered. Another extraordinary disturbing factor are the activities of Islamist political parties and affiliated front organisations trying to hamper the electoral campaigns of secular and liberal political forces during the electing time and beyond. However, despite the high level of violence, people decided to casts their votes ignoring potential threats. This assessment got clearly confirmed on December 30, 2015, during the 'local-level elections' (2015 Municipal Election[3]) in the country (Yates 2016).

3.1.2 India

India has held direct elections to the legislature since 1920, which are today perceived as generally been free and fair (FH IND 2016)—besides a small setback which occurred in the 1970s in the context of the emergency rule of Indira Gandhi. Since then, elections are not "marred by significant registration fraud, systematic irregularities, severe government intimidation of the opposition, vote buying, or frequent election-related violence" (Mechkova and Lindberg 2016). Universal suffrage by secret ballot is ensured, the country hosts a dynamic multiparty system with a large number of political parties are able to run and political posts are filled according to the outcomes of elections (Mitra et al. 2006). The notion of coalition building is getting successfully applied leading to a functional, alternating 'quasi-two party system' on the national level. The general election of 2014 was the largest democratic exercise in the world, with over 800 million people eligible to vote (BTI IND 2016). The management of such a challenge was possible because the country was able to establish independent and impartial Election Commission which has undertaken numerous reform measures to improve the technical aspects of the electoral process to ensure transparent, impartial and correct polls. In this context,

remainder (FH BDH 2016b). Only 12 parties out of the 40 registered with the Bangladesh Election Commission participated in the election (Riaz 2016, p 67). Despite international and domestic critics, the old and new AL government did not recognize the critics on the conditions under which the polls were held and resisted calls for fresh elections (FH BDH 2016b).

[2]In this context, one must be aware that much of the credit for these measures goes to the last military backed caretaker government between 2006 and 2008 (ANFREL 2009) which is also linked with large scale human rights violations and truncation of political rights of the Bangladeshi people.

[3]http://bangladeshelections.org/#/

the digitalization of electoral rolls and introduction of electronic voting machines are remarkable examples. However, some critical issues are still remaining, for example "the bribing of voters is still a widespread practice among political parties" (BTI IND 2016)—especially at the state level by regional parties—or in form of some irregularities during election process for example booth capturing or missing of names from electoral rolls (BTI IND 2016).

3.1.3 Pakistan

Under Pakistan's first Constitution of 1956 there was to be a parliamentary democracy and direct elections on the basis of adult franchise (Mitra et al. 2006). By 1962 a new constitution had installed a presidential form of government, with absolute power vested in the President. Ever since, Pakistan has been trying to find its equilibrium somewhere between the two tendencies, despite numerous ruptures to its political system (Mitra et al. 2006). In 1973, the country got its third constitution providing for a bilateral legislature, by having a National Assembly and a Senate. After experiencing some democratic intermezzos and several enforced regime changes (Coup d'états) by the military, with the 2008 general elections the country started another attempt towards democratic transition. Holding once again in 2013 more or less free and fair election (meaning not massively manipulated by the soldiers), Pakistan witnessed its first democratic change of rule and subsequent transfer of power between two elected governments in its history. However, the 2013 polls were featured by a number of weaknesses and democratic setbacks. Besides some vague and subjective candidacy requirements, procedural problems, the elections were especially hampered by violence through the Pakistan Taliban and other militants challenging the active as well as passive right to vote. In this context, not only (potential) candidates got threaten in the pre-election period but also during the actual poll day numerous attacks were carried out. Also the voters, workers, and political leaders in general got into the focus of violent attack in order to undermine the electoral process. In consequence, the judgement of many observers that the 2013 elections were favourably, citing active competition and campaigning, and a relatively high voter turnout of 55%, must be put in perspective (FH PAK 2016; BTI PAK 2016). By having said this, one has to be aware that around 11 million women were excluded from the elections (mainly due to social reasons) and that the voter turnout could be even higher with less violent disturbances.

3.2 Political Liberties and Political Participation

3.2.1 Bangladesh

The Constitution grants the people of Bangladesh freedom of assembly and freedom of association, including the permission to assemble and to participate in public gatherings and processions. Subsequently, the country has a long tradition of high political participation (Bertocci 1982, p 993). Regarding Riaz (2016, pp 68–69), this pattern of Bangladesh politics gets reflected in two phenomena: the

high voter turnout in elections and the existence of numerous political parties. The fact that Bangladesh has a strong 'quasi two-party system' in which power alternates regularly between political coalitions led by the AL and BNP (FH BDH 2016b) as well as numerous politically active civil society organisations creates an opportunity for the politically aware citizens to take actively part in Bangladesh politics.

But in this context one must also mention another feature of political parties and culture in Bangladesh: the existence of a strong patron-client relationship between the party loyalists and the party leaders (Riaz 2016, p 71). Regarding several analysts, these patron-client relations are not only legitimizing the prevalent hierarchies with the political parties but also responsible for the production of omnipotent leaders, lack of internal party democracy, and the subsequent absence of accountabilities within these political organisations (Ahmed 2003; Bertocci 1982; Kochanek 2000; Riaz 2016, p 71). In consequence, there are remarkable limitations for citizens for participation within political parties.

Furthermore, there is the threat of the rising Islamist militancy and international Jihadism which is gaining more and more leverage in state and society, determining the greatest challenge for Bangladesh's democracy in general and political liberties and political participation in particular (SADF 2015; Wolf 2016a, b, c, d). Latest phenomenon finds its expression in a series of killing of secular thinkers and writers by Islamist militants, the harassment of outspoken civil society groups, increasing restrictions on critical journalists and self-censorship of media content, and the subsequent deterioration in the space for freedom of expression. As such, Bangladesh is assessed as only "Partly Free" (FH BDH 2016b). In this context, one must mention that the country' status regarding the freedom of press "declined from "Partly Free" to "Not Free" due to the severe harassments, killing of pro-democratic, liberal and secular bloggers, publishers, journalists and other independent thinkers and writers (BTI BDH 2016; FH BDH 2015, 2016a; Wolf 2016a, b, c, d). In consequence, self-censorship by media appears rather as a norm as an exception.

3.2.2 India

Basically the Indian constitution guarantees the freedom to assemble peacefully the right to demonstrate is mostly guaranteed in practice. (BTI IND 2016). However, the government can impose restrictions on the right to assemble "interest of public order or to preserve the sovereignty and integrity of India" (BTI IND 2016). Indicators of political participation in India have on the whole been consistently positive, despite the country's deep income disparities, low literacy levels and gender inequity. Furthermore, electoral participation has not been markedly differentiated along gender, caste or community lines (Mitra et al. 2006). In this context, it is interesting to note that caste based political parties turned out to be rather a supporting element for constructive political participation instead of producing harmful divisive loyalties leading to socio-political conflicts. Universal adult franchise and direct elections to a central parliament and state legislatures encouraged successfully mass involvement in the political process beyond narrow

partisan interests based on caste, language or religion. In this context, conducting so called 'Affirmative Action' through the reservation of seats in national and state legislatures was introduced to ensure that traditional disadvantaged groups like Scheduled Tribes and Castes (STs and SCs)/Other Backward Class (OBC) would have a voice to take part in politics and subsequently in decision-making. Other remarkable measure to enhance political participation were the community development programme of the 1950s, the institutionalization of Panchayati Raj, a decentralized form of government at the village level, and the reservations for women in local elected bodies in 1992 (via the 72nd constitutional amendment). In addition, civil society organizations can operate freely (Mechkova and Lindberg 2016), trade unions, farmer organizations and student unions as well as social movements have played an active role in Indian politics and were able to mobilize huge numbers integrating them into political processes. As such, demonstrations (public gatherings) are often used by civil society as an instrument to forward demands to the government (BTI IND 2016). Latter options of participations in politics are gaining significance "given the low degree of internal democracy in political parties (BTI IND 2016). As such, political participation in India is featured by the fact that women, religious and ethnic minorities, and the poor vote in large numbers (FH IND 2016).

Furthermore, one can state that there is freedom of expression in India (Mechkova and Lindberg 2016) and its vibrant media remained the freest in South Asia in 2014 (FH IND 2015a). However press freedom in the country was threatened by several factors during the last years, including an occasional of legal actions against journalists and politicized interference in editorial content as well as and staffing decisions occurs, for example by media owners (FH IND 2015a). Against this backdrop, Freedom house in its 2015 Freedom of Press and Freedom on Net reports considers Indian press as 'partly free' (FH IND 2015a, b). The Bertelsmann Transformation Index 2016 states, that the media in India "enjoy considerable freedom of expression" (BTI IND 2016).

3.2.3 Pakistan

Political instability, periodic military coups, irregular elections, short-lived governments, allegations of corruption and institutionalized clientelism have resulted not only in a generally low voter turn-out whenever elections have been held but also in limitations in political participation of Pakistan's citizen (Mitra et al. 2006). Basically the Constitution of Pakistan's grants the freedom of association assembly (CoP 2015). But there are still two major types of institutional weaknesses which are recognized as possible hindrances to greater participation: structural, operational deficiencies in public sector institutions and obstacles stemming from social bias or custom. The second weakness is most evident in the limited participation of women. Increased membership of women in political parties has not yet led to a significant number of women appointees in important positions within the parties. The lack of internal democracy and transparency as well as the leadership culture focusing on individual personalities or political dynasties is further undermining political participation, not only of women

(FH PAK 2015a). In this context one should also note that women are underrepresented in all spheres of the political process and have been prevented from casting votes in some districts, like KPK (FH PAK 2015a).

Despite the existing institutional aberrations, Pakistan has a developing multiparty system, with numerous factions represented at the national and provincial level. In this context, one can also state that the country has a large number of social, economic and political movements, organisations and other associations representing addressing a variety of issues, such as fair trade, economic and educational development, human rights, environmental problems, labour and minority issues, are in operation in Pakistan (BTI PAK 2016; FH PAK 2015a). These groups are free to demonstrate—as long as it is peaceful and without arms[4]—and perform an important role in monitoring political processes (Mitra et al. 2006; CoP 2015). However, in this context one must mention that there are increasing intentions within the government to restrict the activities of national and international nongovernmental organizations (NGO's). In 2015, several international NGOs were ordered to leave the country and other ones were placed under investigation, creating a working environment of uncertainty and suspicion for them (FH PAK 2016).

Article 19 of the 1973 constitution grants freedom of speech and expression to every citizen of Pakistan. However, the country's "blasphemy laws are used as a pretext to persecute religious minorities, particularly Christians and Ahmadiyyas. Latter ones have to face increasing social harassments, political side-lining and physical attacks in Pakistan. Moreover, the Blasphemy laws are occasionally used against the media. Subsequently journalists have to face in addition also extra-legal threats and violence (FH PAK 2015a) by non-state actors like Pakistan Taliban or associated Islamist militant groups. Media which are reporting critical about such developments facing regularly censorship and other pressure from state, like above mention blasphemy law to discredit journalists. In this context, there are some kind of room to report on grievances among government policies, especially when it's involved civilian politicians. However when it comes to political sensitive issues which involved the country's armed forces and intelligence interests, like the situation in Balochistan, there is no freedom of speech and expression. Websites and blogs addressing sensitive subjects are subjects of governmental 'content management' routinely filtered blocked (FH PAK 2015b), and the government has increased censorship (FH PAK 2015a). Media not respecting this restriction have to face severe consequences, including lives of its employees. As such, Freedom house ranked Pakistan in 2015 as "one of the world's most dangerous places for journalists" (FH PAK 2015a).

[4]Especially last year, the government imposed "temporarily bans on gatherings or any activity designated a threat to public order" (FH PAK 2016).

3.3 Civil Rights

3.3.1 Bangladesh

The constitution of Bangladesh guarantees both fundamental rights and other civil rights, but the Government of Bangladesh (GoB) has a historical poor record in securing the rule of law and to protect the rights of its citizens (BTI BDH 2016). In this context, endemic corruption, patronage, lack of resources, and criminality, limited bureaucratic transparency, and political polarization have significantly undermined the political-administrative structure and the efficiency of the GoB (THF BDH 2016; BTI BDH 2016). In order to stabilize the deterioration in law and order, governments in recent years have introduced and applied a strict anti-crime policy, as a result of which numerous cases of human rights violations have been reported and criticism has been particularly directed at the special force Rapid Action Battalion (RAB) (Mitra et al. 2006). Major sources of civil rights violations included arrests without warrant, the use of torture, forced disappearances, extrajudicial or so-called encounter killings by the police. Otherwise, civil rights were further restricted by frequent politically motivated general strikes (hartals) resulting in enforced closure of office, business and movement of vehicles. In most of the hartal situations, the public life and ordinary interaction between the people were brought a standstill (BTI BDH 2016). However, in order to improve the law and order situation and to increase the level of trust in the country's institutions, the government is starting to contain the culture of impunity, one of the most crucial step was the of the International Crimes Tribunal (ICT) to investigate and prosecute suspects for the genocide committed in 1971 by the Pakistan Army and their local collaborators.

3.3.2 India

De jure, civil rights are constitutionally guaranteed in India to all citizens. In addition, the fundamental rights aim at rectifying past inequalities, abolishing 'untouchability', prohibiting discrimination on the grounds of religion, caste, gender and ethnic, and forbidding forced labour. However, besides the general recognition of these fundamental ad civil rights there are exception to these legal provisions in disturbed areas where emergency laws are in force. One example of such a law is the Armed Forces (Special Powers) Act (AFSPA). This act provides for the arrest without a warrant of anybody suspected of having committed an offence and protects soldiers from prosecution (BTI IND 2016). In other words, AFSPA allows the security forces to act with impunity and led to repeated human rights violations and other abuses. Consequently, the special powers for the armed forces got in the center of public debate in India.

Otherwise there are reports about regularly committed custodial killings and police abuses including torture and rape during custody. Latter one points at another major problem in India the discrimination and violence against women and girls. Basically sex crimes and rapes are extremely widespread and not limited to certain social segments of India's society but underprivileged groups remain particularly affected (BTI IND 2016). Endemic corruption, understaffed courts, lack of

necessary resources (like technology) enhancing the general slow functioning of the judicial system (FH IND 2016). In consequence, most of the perpetrators of gender, ethnic and societal related violence act with impunity.

However, India carried out certain measures that has led to legislation aimed at addressing corruption. For example, the Lokpal and Lokayuktas Act (signed in 2014) aiming at the forming of autonomous government entities "tasked with receiving complaints of corruption against public servants or politicians, investigating claims, and pursuing convictions through the courts" (FH IND 2016). Furthermore, the so called 2014 Whistleblowers Protection Act got amended in May 2015 by the current Prime Minister Modi administration and there are clear indications that the "2005 Right to Information (RTI) Act is widely used to improve transparency and expose corrupt activities" (FH IND 2016). However, besides these efforts to carry our legal reforms, regarding domestic and international observers, still much has to be done regarding the concrete implementation of the new legal provisions.

3.3.3 Pakistan

In theory, the Constitution of Pakistan guarantees fundamental and civil rights, especially it grants every citizen the right to a fair trial and due process. However, in practice, this right has been violated at numerous occasions. Some of the most remarkable ones are the provisions of special powers[5] for the country' security forces in the context of counter-terrorism (National Action Plan/NAP[6]). In this context, the 21st Amendment of January 2015 determines a significant transfer of power to the country's armed forces[7] (Asad 2015), especially the provision to establish military courts. The fact that civilians can be subjected to military jurisdiction is a major cause of concern (Wolf 2015a, b). It is still not quite clear if the proposed special tribunals will function under the supervision of the country's highest courts or if there will be any effective parliamentary oversight. In this regard, one should mention that it is a generally accepted international principle that military courts should have no juridical clout over civilians (Decaux 2010). In other words, the judicial system must ensure that civilians accused of a criminal offence of any nature, including terrorism, are brought to justice by civilian courts.

[5]Some of these new special powers includes that "individuals illegally crossing national boundaries can now be tried by military courts", the "federal government can transfer any case, pending in any trial court, to military courts", that "those convicted by military courts will have no right of appeal before civilian courts". Additionally, the "new legislation gives a judicial mandate to an executive functionary" (Asad 2015).

[6]Source: http://infopak.gov.pk/InnerPage.aspx?Page_ID=46

[7]The 21st amendment to the Constitution also provides for entering the Pakistan Army Act 1952, the Pakistan Army Act 1953, the Pakistan Navy Act 1961 and the Protection of Pakistan Act, 2014 in the first schedule of the Constitution. The first schedule of the Constitution contains laws which are exempted from the application of Article 8 (1) and (2) of the Constitution. These articles are part of Chapter 1 of the Constitution relating to the fundamental rights of Pakistan's citizens (Geo. tv 2015).

Military courts in many countries do not have a good reputation or record of offering a fair judicial system, especially regarding human rights and fundamental principles of justice (Decaux 2010). This is gaining significance especially in Pakistan which is featured by an omnipresent culture of impunity and security forces are kept unaccountable in cases where threats to national security are involved. In such a climate, corruption and office abuses are common phenomena and they mostly go unpunished (BTI PAK 2016).

Further violations of civil rights by the Pakistani state are the persecution of religious minorities by the extremists, violence against women and girls, honor killings and murder, especially in the country's rural areas. Another matter of severe concerns is the application of the so called "blasphemy laws" are most dramatic and is in clear contradiction to domestic law (especially constitution) but also too international law agreements, signed by the government in Islamabad. The blasphemy laws, as they occur in Pakistan, carry a potential death sentence for anyone who insults Islam. Observers are stating that say "they have been used to persecute minority faiths and unfairly target minorities" (BBC 2014).

Consequently, one must state that the constitutional safeguard to protect human and civil rights in Pakistan "remain ineffective in most cases" (BTI PAK 2016). Moreover, one has to state that not only political and societal behaviour but also several legal regulation and practices are against the country constitution.

3.4 Horizontal Accountability

3.4.1 Bangladesh

Basically the constitution of Bangladesh recognizes the notion of separation of powers. Against this backdrop, the constitution vests the executive power of the Republic in the executive and the legislative power of the Republic in Parliament ETH (n.n.). Furthermore, though there is no specific vesting of the judicial power of the Republic, it is vested in the judiciary (ETH n.n.). As such, all the three powers should act autonomously and without interference in each other's spheres. However, the realities on the ground are looking quite differently. The judiciary is insufficiently separated from the executive (THF BDH 2016). Additionally, there is no separation of power between executive and legislative authority. Latter one is severe hampered by "the absence of an opposition party in the parliament" which "has removed any real possibility of checks and balances" (BTI BDH 2016). The lack of intra-party democracy combined with dominant culture of loyalty to the party leader (concentration of power), the clear majority of the ruling party, as well as the constrains entrenched in Article 70 of the constitution, which prohibits legislators from acting against their party (BTI BDH 2016), are further hindrances for effective horizontal accountability. The fact that the judiciary is highly politicized, corrupt and inefficient (the court system has produced 2.3 million pending cases) has worsened the situation by allowing the executive to exercise control over the country's judiciary (BTI BDH 2016; THF BDH 2016). In sum, although "institutional checks and balances are weak and in some cases appear to be

non-existent" which undermines the government accountability (FH BDH 2016a, b), the democratic institutions are capable of performing the basic task of governance in Bangladesh.

3.4.2 India

Besides the fact that the separation of power is not explicitly mentioned in the Constitution of India it is quite apparent that the notion of it was a guiding principle during the drafting process. Against this background, one can state that the "separation of powers is guaranteed and implemented through a system of "checks and balances" (BTI IND 2016) between the three major organs of Indian governance structure. In theory as well as in practice, the executive is responsible to the legislature for its actions and derives its powers from the legislature. In other words, Indian "rulers are held responsive to the citizens through electoral competition" (Mechkova and Lindberg 2016). However, there are some constrains regarding the oversight capabilities of the legislative. In this context, several structural factors are hampering the working of the parliament in general and the efficiency of its control functions over the executive in particular. Some remarkable shortcomings are the lack of competence of some members of parliament in crucial policy fields, tight parliamentary session periods, and frequent interruptions of sessions and walkouts by opposition parties (BTI IND 2016). The judiciary is largely independent of the executive and legislative organs (BTI IND 2016; FH IND 2016). Due to the considerable activism of the judges and higher courts—especially the Supreme Court in 'suo moto response' to public-interest litigation matters—some tensions between the judiciary and the other branches of governance are appearing from to time to time over time. But like the legislative, also the judiciary suffers from "limited functional operability", mainly due to understaffing (especially at the lower levels of the court system) and political corruption. Latter one has actual a negative effect on the efficiency of most of the branches of India's governance (BTI IND 2016; FH IND 2016; THF IND 2016). In sum one can state, that beside some institutional weaknesses, the executive, legislative and judiciary are acting as a check and balance to each other in order to ensure a separation of power. Additionally, due to their established mechanism of coordination and cooperation all three organ are making India's parliamentary system of governance work.

3.4.3 Pakistan

In theory, the constitution of Pakistan provides for a separation of power. However, the reality is quite different. Due to the absence of any functional formal and informal mechanism for civilian control, the country's armed forces are dominating all significant decision-making which is weakening tremendously the country's executive. Furthermore, the Pakistan's military is also beyond the authority of the parliament (BTI PAK 2016). The only branch will have possessed some level of independence was the judiciary, especially Pakistan's Supreme Court. At several occasions, the Supreme Court under the charismatic leadership of Chief Justice Iftikhar Muhammad Chaudhry challenged the executive as well as the military. It

also vehemently raises it claims of interpretation of the country's constitution against the legislative. However, much of the autonomy—especially realm of influence—got lost with the 21st Amendment and the subsequent establishment of military courts. The fact that civilians can be subjected to military jurisdiction is severe limiting the competence of the Pakistan's (civilian court system). This is gaining significance since the military courts are acting at the moment outside any oversight mechanism, neither through the judiciary nor the legislative. Finally, the executive and legislative are getting further side-lined by the military through the APEX Committee system, which is supposed to improve the implementation of the CPEC project.

In this context, the establishment of the military Apex Committees at federal and provincial levels, combined with a lack of parliamentarian oversight by the national and provincial assemblies seriously hampers not only decision-making power of the government but also the separation of power between legislative and executive. In other words, most of the important decisions related to CPEC are made by this military-bureaucratic hybrid. In this context, the initial purpose of the Apex Committees was to coordinate security and implement the National Action Plan (NAP), which was drafted jointly by the government, the parliament and the army (Jaffrelot 2016). While the initial (and official) function of the Apex Committees relates to institutionalizing (and legitimize) the "process of decision-making via consultation between democratically elected authorities and the military" (Croissant et al. 2013, p 192), it is obvious that the supreme authority on most crucial issues lies with the army. Over time, the Apex Committees have become more important decision-making bodies than the federal and provincial cabinets as well as specialist civilian institutions. This is evident from the fact that federal and provincial cabinets meet less frequently compared to federal and provincial Apex Committees (Rizvi 2015). This is gaining significance since the establishment of concrete control mechanism for the APEX Committees are not intended yet, neither by the CPEC Committee of the National Assembly nor of the Senate. In sum, the traditional intervention of the military into the political arena in general and its current activities in the context of the CPEC development undermined the establishment of functioning and effective checks and balance in order to guarantee the separation of power worth the name.

3.5 Effective Power to Govern

3.5.1 Bangladesh

In the last four-and-a-half decades the country experienced a variety of systems of governance-from a Westminster-style parliamentary government to one-party presidential rule to a multi-party presidential system including military rule (BTI BDH 2016; Riaz 2016, p 58). The different types of governments were mark by extreme variations regarding the opportunity of civilians to effective power to govern, especially during the era of military dominated rule (1975–1990). However, constitutionally there are no bureaucratic and institutional hurdles for the functioning

of the (elected) government today (BTI BD 2016). But due to the increasing threat of domestic and international Jihadist terrorist activities as well as persistently occurring violence perpetuated by the oppositional Bangladesh National Party (BNP) and Islamist political groupings, the ruling Awami League (AL) has increasingly become dependent upon law enforcement agencies, such as the Rapid Action Battalion (RAB) and the Border Guards Bangladesh (BGB), and intelligence apparatuses, such as the National Security Intelligence (NSI) and Directorate General Defence Forces Intelligence (DGFI), to address non-constitutional political and militant activities against the government in the country. However, besides the fact that civilian control over the armed forces is not institutionalised, due to the strong leadership of Prime Minister Sheikh Hasina (AL) civilian supremacy is prevalent in decision-making in all policy fields. At the moment it seems that "the Bangladeshi military has no interest in stepping into power again, unless its arm is severely twisted and the security situation is totally out of control with rioting on the streets" (Harrison 2013, p 120). As such, the country's executive has full power to govern and decision-making processes are not hampered by extra-constitutional activities and/or actives. But in this context, one must also state that over time, the parliament "has become the most ineffective institution" (Riaz 2016, p 68). One of the major reason is that, the attitude of the ruling party, irrespective of AL or BNP, "has given the impression that the opposition as very little role to play in any political decision making (Riaz 2016, p 68). In consequence, the parliament lacks any constructive working relationship between government and opposition effecting negatively. Furthermore, oppositional parties are persistently boycotting the parliament and moving politics in the street in order to enforce changes in government (Barry 2014; FH BDH 2016b).

3.5.2 India

The Republic of India "is a stable democracy" (THF IND 2016) and the "elected political representatives have the effective power to govern (BTI IND 2016). Civilian control of the military is codified in the constitution and implemented. Basically one can state that in extra-constitutional veto powers are almost non-existent in India (BTI IND 2016). In this context one can state that—unlike in Pakistan (Wolf 2013a, b) and Bangladesh (Wolf 2013a, b)-, the military was and is respecting civilian supremacy since the country's independence in 1947. Subsequently—based on the respective constitutional regulations—the executive power is vested in a prime minister and cabinet. The president plays a largely symbolic role but possesses some important powers (FH IND 2016). However, there are view limitations regarding the effective power to govern for the central government in some areas of the Indian Union, for example "parts of the northeast, and those regions in central India which are controlled by the Naxalite rebels (the so called *Red Corridor*) (BTI IND 2016). Other limitations for the effective power to govern are endemic corruption within all layers of India's political-administrative system (FH IND 2016). Latter one has a negative effect on government efficiency and economic performance (THF IND 2016). Finally there are some attempts from hostile Pakistan-based terror groups to undermine Indian administration in Jammu

& Kashmir as well as to challenge the law and order situation in other parts of the country like in Punjab or Mumbai. However, until now "external actors are unable to manipulate domestic politics in India, given the state's strong performance and the high value it attaches to the principles of sovereignty and non-interference" (BTI IND).

3.5.3 Pakistan

Since Pakistan became an independent state, the country experienced several changes in the role of the military in politics (Croissant et al. 2013, p 191) while undermining any attempts of institutional civilian control and ultimately, the effective power to govern of the civilian government. In consequence, overtime the military were able to dominate all crucial policy fields. Despite the fact that the government had several opportunities to regain control over 'their' military and political decision-making, due to a lack of political will, partisan politics, endemic corruption, and weak civilian institutions all civilian administrations failed in this direction (Wolf 2013a, b, 2015a, b, 2016a, b, c, d, Wolf and Kane 2010). One of the latest examples, is the implementation of a mega-development project, namely China-Pakistan Economic Corridor (CPEC). To guarantee a smooth functioning of the project, Pakistan need to ensure its overall security, as well as to reach the goal of a 'terror free' Pakistan. The military, which took recently a back seat—especially in the years between the 2008 and 2013 national elections, is now grasping increasingly power. In order to ensure a safe environment for the CPEC development, the civilian institutions were granting the military tremendous special power. As such one can state, that the current CPEC engagement created the opportunity for the armed forces to continue and extent its informal influence in decision-making but also established the strongest institutional role of the army in the country's politics.

Despite the fact that the decision-making takes place through mutual consultation in institutional mechanism (Apex Committees, International Forum on the China Pakistan Economic Corridor), indicating some degree of power-sharing between military and civilians, the supreme authority for policy formulation of internal security, public policy, foreign policy and national defence is the military.

Besides the country's military, another significant veto players limiting the decision making power of the civilians are the Islamic clergy who "has the power to influence government decisions in religious issues. It has been visible in recent debates on blasphemy laws and the Hadood Ordinances" (BTI PAK 2016).

4 Concluding Thoughts

Today elections are held in all selected South Asian countries.[8] The fact that the latest elections in Bangladesh, India and Pakistan are all conducted more or less in a free and fair manner, happened the first time in the history of the whole region. As

[8]This counts also counts for Afghanistan, Bhutan, Maldives, Nepal and Sri Lanka.

such, it indicates a general trend towards democratisation in all three cases. In this context one can state, that Pakistan witnessed its first transfer of power between two elected governments, in spite of continuing military power dominance. Bangladesh too is on a good track regarding the consolidation of its electoral systems, beside the fact that the latest rounds of national elections got boycotted by the opposition. However, since the end of the semi-authoritarian, military-backed caretaker government of 2006–2008, parliamentary democracy got reintroduced with the holding of regular elections as modus operandi for selection of political leadership. And India is experiencing since decades' smooth electoral process and transfers of powers between alternating governments. But the quality of democracy in Bangladesh, India and Pakistan is being severe challenged by states as well as non-state actors using substantial (unconstitutional) veto-power to undermine democratic transition and consolidation in general, and separation of powers and numerous political rights, liberties, and freedoms. For example, Pakistan and Bangladesh is facing tremendous rise of Islamist leverage not only in the general public sphere but especially in the country's respective political and administrative structures. Additionally, the quality of democracy in the region suffers further from societies characterised by strong social, political and economic inequality, as well as religious, ethnic, and gender related differences determining deep cleavages among the people in the countries under observation. Democratic consolidation in India has to deal with foreign influence with finds its expression especially in areas bordering Pakistan. Terrorists enjoying the good will of Islamabad are using Pakistani territory to destabilise Indian administered Kashmir and Punjab as well as other urban areas of the India. In consequence, India, Bangladesh and Pakistan are witnessing political violence and militancy which serves as a major sources of legitimacy and power for security sector agents (including regular Armed Forces, Paramilitary, Policy, and intelligence) to act unconstitutional as well as creating the breeding ground for religious fundamentalists to emerge and carry out anti-democratic activities. The fact, that many Pakistan and Bangladesh and partly India are characterised by weak political institutions combined with corrupt bureaucracies and clientelism are further constrains for prospering political systems. Dynastic rule and fragmented political parties which are mostly serving partisan political and economic interests of the elites has negative effects on the political trust and the will for peaceful political participation among electorates in the selected three states. Therefore, state failures and the subsequent low quality of democracy, selfish national elites, rise of Islamic terrorism, tensions between different ethnic-religious groups, struggles over distribution of national wealth, scarce natural resources (especially water), and disputes over territories are key security challenges (among many others).

To sum up, there are no doubts that the fact that all three selected South Asian countries experienced more or less smooth, free and fair elections is a positive and important development. But drastic democratic backlashes like the severe stalemate in Bangladesh between the two major political parties or the role of the military in Pakistan politics exemplify the fragility and vulnerability of processes of democratic transition in the region. As such one must state that apart from the Indian

Union, democratic experiments—especially when they included the notion of liberal democracy—in other countries in South Asia have stumbled time and time again (Jain 2009, p 211). Many of the cross-currents are originating from geostrategic considerations, a lack of political will and capacities of the respective governments and national elites to deal with the causalities and necessary consequences of failed democratic endeavours. Against this backdrop, ethno-religious extremism and Jihadism, and cross-border terrorism are the biggest threat to the region's stability (DeVotta 2016, p 154) and democratic transition. Here Pakistan stands out, given the manifest of state-sponsorship of Islamic fundamentalism and terrorist organisation as well as the rising degree of political-religious radicalisation and violence within its society. Nevertheless, Pakistan has at least managed to make a return to electoral democratic processes to form the government despite the massive distortions inflicted by militant Jihadi groups and increasing formal role of the military in the country politics. As such one can state, that democracy is appreciated in the selected states and that their respective populations have much faith in election. However, the major puzzle of democratic transition in all three countries remains: there will be no sustainable consolidation of democracy when it does not get accompanied by good governance in all layers of the respective political-administrative systems.

References

Ahmed N (2003) From monopoly to competition: party politics in the Bangladesh parliament. Pac Aff 76(1):55–77

ANFREL (2009) Bangladesh. Ninth National Parliament Election, 29 December 2008. Final report of the International Election Observation Mission of The Asian Network for Free Elections (ANFREL), Bangkok. http://newmediaauthority.com/anfrel/wp-content/uploads/2012/02/2008_bangladesh.pdf. Accessed 22 June 2016

Asad M (2015) The new martial powers. Dawn. http://www.dawn.com/news/1155411. Accessed 5 Oct 2015

Barber BR (1984) Strong democracy: participatory politics for a new age. University of California Press, Berkeley

Barry E (2014) Low turnout in Bangladesh elections Amid Boycott and Violence. New York Times. http://www.nytimes.com/2014/01/06/world/asia/boycott-and-violence-mar-elections-in-bangladesh.html. Accessed 25 June 2016

BBC (2014) What are Pakistan's blasphemy laws? http://www.bbc.com/news/world-south-asia-12621225. Accessed 5 Oct 2016

Bertocci PJ (1982) Bangladesh in the early-1980s: pretorian politics in an intermediate regime. Asian Survey 22(10):988–1008

Brettschneider C (2006) The value theory of democracy. Polit Philos Econ 5(3):259–278

BTI BDH (2016) BTI 2016. Bangladesh country report. Bertelsmann Transformation Index/BTI. Bertelsmann Foundation, Gütersloh, Germany. https://www.bti-project.org/fileadmin/files/BTI/Downloads/Reports/2016/pdf/BTI_2016_Bangladesh.pdf. Accessed 19 Sept 2016

BTI IND (2016) BTI 2016. India country report. Bertelsmann Transformation Index/BTI. Bertelsmann Foundation, Gütersloh, Germany. https://www.bti-project.org/en/reports/country-reports/detail/itc/IND/. Accessed 21 Sept 2016

BTI PAK (2016) BTI 2016. Pakistan country report. Bertelsmann Transformation Index/BTI. Bertelsmann Foundation, Gütersloh, Germany. https://www.bti-project.org/en/reports/country-reports/detail/itc/PAK/. Accessed 21 Sept 2016
CoP (2015) The constitution of the Islamic Republic of Pakistan. Including the 21 amendment of January 7, 2015. http://www.pakistani.org/pakistan/constitution/. Accessed 28 Sept 2016
Croissant A, Kuehn D, Chambers PW, Voelkel P, Wolf SO (2011a) Beyond the fallacy of coupism: conceptualizing civilian control of the military in emerging democracies. Democratization 17(5):950–975
Croissant A, Kuehn D, Chambers PW, Voelkel P, Wolf SO (2011b) Conceptualising civil-military relations in emerging democracies. Eur Polit Sci 10:137–145
Croissant A, Kuehn D, Lorenz P, Chambers PW (2013) Democratization and civilian control in Asia. Palgrave Macmillian, New York
Dahl RA (1971) Polyarchy. Participation and opposition. Yale University Press, New Haven
Decaux E (2010) International standard. Principles governing the administration of justice through military tribunals. Geneva Centre for the Democratic Control of Armed Forces (DCAF), Geneva. http://www.dcaf.ch/Publications/International-Standard-Principles-Governing-the-Administration-of-Justice-Through-Military-Tribunals. Accessed 5 Oct 2016
DeVotta N (2016) Trends and prospects. In: DeVotta (ed) An introduction to South Asian politics. Routledge, Abingdon, pp 153–158
Diamond LJ (2008) The spirit of democracy: the struggle to build free societies throughout the world. Henry Holt and Company, New York
Diamond LJ, Morlino L (eds) (2005) Assesing the quality of democracy. John Hopkins University Press, Baltimore
Elster J (1988) Introduction. In: Elster J, Slagstad R (eds) Constitutionalism and democracy. Cambridge University Press, Cambridge, pp 1–18
FH BDH (2015) Freedom on the Net 2015. Bangladesh. https://freedomhouse.org/report/freedom-net/2015/bangladesh. Accessed 21 June 2016
FH BDH (2016a) Freedom of the Press 2016. Bangladesh. https://freedomhouse.org/report/freedom-press/2016/bangladesh. Accessed 21 June 2016
FH BDH (2016b) Freedom in the World 2016. Bangladesh. Freedom House Bangladesh (FH BD). https://freedomhouse.org/report/freedom-world/2016/bangladesh. Accessed 21 June 2016
FH IND (2015a) Freedom of the Press. India. Freedom House India (FH India). https://freedomhouse.org/report/freedom-press/2015/india. Accessed 21 Sept 2016
FH IND (2015b) Freedom on the Net 2015. India. Freedom House India (FH India). https://freedomhouse.org/report/freedom-world/2016/india. Accessed 21 Sept 2016
FH IND (2016) Freedom in the World 2016. India. Freedom House India (FH India). https://freedomhouse.org/report/freedom-net/2015/india. Accessed 21 Sept 2016
FH PAK (2015a) Freedom of the Press. Pakistan. Freedom House Pakistan (FH Pakistan). https://freedomhouse.org/report/freedom-press/2016/pakistan. Accessed 21 Sept 2016.
FH PAK (2015b) Freedom on the Net. Pakistan. Freedom House Pakistan (FH Pakistan). https://freedomhouse.org/report/freedom-net/2015/pakistan. Accessed 21 Sept 2016
FH PAK (2016) Freedom in the World 2016. Pakistan. Freedom House Pakistan (FH Pakistan). https://freedomhouse.org/report/freedom-world/2016/pakistan. Accessed 21 Sept 2016
Geo.tv (2015) JUI-F expresses reservations over 21st amendment. https://www.geo.tv/latest/69-jui-f-expresses-reservations-over-21st-amendment. Accessed 5 Oct 2016
Habermas J (1976) Legitimation crisis. Heinemann, London
Hadenius A (1992) Democracy and development. Cambridge University Press, Cambridge
Harrison F (2013) Political Islam & the elections in Bangladesh. New Millennium, London. http://commonwealth.sas.ac.uk/sites/default/files/files/Political%20Islam%20and%20the%20Elections%20in%20Bangladesh.pdf. Accessed 19 Sept 2016
Jaffrelot C (2016) The façade of democracy. Indian Express. http://carnegieendowment.org/2016/04/01/facade-of-democracy/iwgu. Accessed 11 Oct 2016

Jain RK (2009) The European Union and democracy building in South Asia. International Institute for Democracy and Electoral Assistance, Stockholm
Kochanek S (2000) Governance, patronage politics and democratic transition in Bangladesh. Asian Survey 40(3):530–550
Lauth H-J (2004) Demokratie und Demokratiemessung – eine konzeptionelle Grundlegung für den interkulturellen Vergleich. VS Verl für Sozialwissenschaften, Wiesbaden
Mechkova V, Lindberg S (2016) Country brief India. The Varieties of democracy institute. Department of Political Science, University of Gothenburg, Sweden
Merkel W, Puhle H-J, Croissant A, Eicher C, Thiery P (2003) Defekte Demokratien, Bd. 1: Theorie. Leske + Budrich, Opladen
Merkel M (2004) Embedded and defective democracies (Consolidated & defective democracy? Problems of regime change). Democratization 11(5):33–58
Mitra SK, Wolf SO, Schöttli J (2006) A political and economic dictionary of South Asia. Routledge, London
Riaz A (2016) Bangladesh. In: De Votta N (ed) An introduction to South Asian politics. Routledge, Abingdon, pp 58–82
Rizvi HA (2015) The year of democracy. The Express Tribune. http://tribune.com.pk/story/1017185/the-year-of-democracy/. Accessed 11 Oct 2016
SADF (2015) Democracy stalemate in Bangladesh. What role for the international community? SADF Policy Brief No. 1. South Asia Democratic Forum (SADF), Brussels. http://sadf.eu/new/blog/democracy-stalemate-in-bangladesh/. Accessed 24 June 2016
Schumpeter JA (1942) Capitalism, socialism, and democracy. Harper & Brothers, New York
THF BDH (2016) 2016 index of economic freedom. Bangladesh. The Heritage Foundation (THF). http://www.heritage.org/index/country/bangladesh. Accessed 12 Oct 2016
THF IND (2016) 2016 index of economic freedom. India. The Heritage Foundation (THF). http://www.heritage.org/index/country/india. Accessed 12 Oct 2016
Wolf SO (2013a) Civil-military relations and democracy in Bangladesh, spotlight South Asia, Special Issue. Foundation for Applied Political Science of South Asia (APSA), Heidelberg, Germany. http://crossasia-repository.ub.uni-heidelberg.de/2937/. Accessed 10 Oct 2016
Wolf SO (2013b) Civilian control and democratic transition: Pakistan's unequal equation. Pakistan Security Research Unit (PSRU), Research Report 2, Durham University, United Kingdom. https://www.dur.ac.uk/psru/reports/. Accessed 12 Sept 2016
Wolf SO (2015a) Formal institutionalization of military rule: the 21st amendment in Pakistan. http://crossasia-repository.ub.uni-heidelberg.de/3806/. Accessed 10 Oct 2016
Wolf SO (2015b) Formal institutionalization of military rule: the 21st amendment in Pakistan. Briefing Paper 71. Pakistan Security Research Unit (PSRU), Durham University, UK. https://www.dur.ac.uk/resources/psru/PSRUBriefing71.pdf. Accessed 5 Oct 2016
Wolf SO (2016a) China-Pakistan economic corridor, civil-military relations and democracy in Pakistan. SADF Working Papers No. 2. South Asia Democratic Forum (SADF). http://sadf.eu/new/blog/sadf-working-paper-2-china-pakistan-economic-corridor-civil-military-relations-democracy-pakistan/. Accessed 10 Oct 2016
Wolf SO (2016b) Crackdown on Islamists: Bangladesh's new campaign against Jihadi terror in perspective. SADF Focus No. 17. South Asia Democratic Forum (SADF), Brussels. http://sadf.eu/new/blog/sadf-focus-17-crackdown-islamists-bangladeshs-new-campaign-jihadi-terror-perspective/. Accessed 24 June 2016
Wolf SO (2016c) Rising Islamism in Bangladesh is a European concern too. SADF Focus No. 16. South Asia Democratic Forum (SADF), Brussels. http://sadf.eu/new/blog/sadf-focus-16-rising-islamism-bangladesh-european-concern/. Accessed 24 June 2016
Wolf SO (2016d) The killing of Rezaul Karim Siddique. His assassination is not only a challenge for democracy but a Jihadist attack on the Bengali nation and culture too. IndraStra Global, New York. http://www.indrastra.com/2016/04/OPINION-Killing-of-Rezaul-Karim-Siddique-002-04-2016-0062.html#more. Accessed 24 Sept 2016

Wolf SO, Kane S (2010) Democratic ambitions under praetorian stress: civil-military relations in Pakistan. In: Croissant A, Chambers PW (eds) Democracy under stress: civil-military relations in South and Southeast Asia. Institute of Security and International Studies (ISIS), Bangkok, pp 171–200

Yates P (2016) How behavioral insights can nudge voter turnout in Bangladesh. The Asia Foundation. http://asiafoundation.org/2016/01/20/how-behavioral-insights-can-nudge-voter-turnout-in-bangladesh/. Accessed 22 June 2016

Index

© Springer International Publishing AG 2017

S. Bandyopadhyay et al. (eds.), *Regional Cooperation in South Asia*, Contemporary South Asian Studies, DOI 10.1007/978-3-319-56747-1