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RESEARCH TECHNIQUES IN SOCIO-ECONOMIC SURVEY: A CASE STUDY OF FISHERFOLK IN BAKKHALI, SUNDARBAN, WEST BENGAL

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In order to identify the purpose, uses and limitations of the various techniques in research in Geography a trip was conducted to Bakkhali, Sundarban. The Focus Group Discussion (FGD) was structured around the key themes using the probe questions prepared in advance. For an in-depth information key informant (at the individual level) and several respondents (at the household level) through structured and semi-structured questionnaires were also incorporated. Blending of both qualitative and quantitative approaches gave a better insight into several aspects of fishing and issues of vulnerability and livelihood security of this peculiar ecosystem oriented primary stakeholders thriving on common property resources. Marine fisheries everywhere are an open access, i.e., nobody can be excluded from fishing and there are no rules and regulations governing access to and exploitation of marine fish. Indigenous fishing technology and practices were congenial to exploitation of marine fish on a sustainable yield basis. Due to increase in coastal population and growth in mechanized operations, the socio-economic status of fishermen communities is now in a fragile state.

INTRODUCTION

A focus group is a group of interacting individuals having some common interest or characteristics, brought together by a moderator, who uses the group and its interaction as a way to gain information about a specific or focussed issue/research topic. The Focus Group Discussion (FGD) is a rapid assessment, semi-structured data gathering method in which a purposely selected set of participants gather to discuss issues and concerns based on a list of key themes drawn up by the researcher/facilitator (Kumar, 1987). FGD is a qualitative data collection method effective in helping researchers learn the social norms and the range of perspectives that exist within a community or subgroup. The study was conducted across a stretch of 7 km. covering the twin localities: Bakkhali-Fresherganj in Namkhana Block of the district of S. 24 Parganas, West Bengal. The soil is new alluvium, saline in nature thus restricting the agricultural season. Fishing forms a conspicuous traditional source of income; also being a seasonal venture. Tourism is an added livelihood support system coming up in this area.

OBJECTIVE OF STUDY

The Research Method in Geography is 'to provide a foundation to the students in Geography, moving through methodology and introducing a number of commonly used methods in data collection and analysis' (Jones and Gomez, 2010). The study is intended for PG students embarking on a more focussed course of study in geographical techniques in micro-regional planning. It will help

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in improving their ability to the understanding of the application of these geographical (survey) techniques after being acquainted with the concept of data and types of data required; the pros and cons of quantitative and qualitative data; the ways of collecting such data; the uses and limitations of primary data and their analysis. The technique of conducting interviews, (ensuring that the interview data are unbiased) and developing the requisite expertise in relevant topic as far as possible is another crucial aim of this study.

LITERATURE REVIEW ON FISHER GROUP DISCUSSION

On Fundamentals

Focus Groups techniques—also called “Focus Group Discussions” or “user groups”—are developed after World War II to evaluate audience response to radio programmes (Seymour, 2004). The FGD is one of the many research tools, the methodology of which has been developed after the rise of statistical survey methods. It is social not individual; a type of group interview relying upon words spoken by the participants. The social, semi-public nature of the methodology shapes the data and the purpose that it serves (4). Since the focus is on language the methodology is labeled qualitative; numerical analysis is not the preferred technique; local perspectives being given in rich detail (Creswell, 1998). In strategic planning it seeks inputs from a variety of stakeholders; identifies strengths and gaps in public policy; provides a foundation for quantitative research (Seymour, 2004). It is a mini-study requiring one or two clear objectives which guides the research team in the formulation of discussion—questions (1).

On Advantages of FGD

FGD is a powerful research tool incurring lower cost and time, provided the groups are chosen properly in terms of composition and number (1). Focus groups are a good method to get people involved in the decision making process and have them provide their input regarding the topic. Information on how groups of people think or feel about a particular topic/issue is obtained. It gives a great insight to certain opinions; helps improve the planning and design of new programme besides developing strategies for outreach. It provides a means of evaluating the existing programmes. It is a source of valuable spontaneous information requiring less preparation. It has become a popular method of obtaining information regarding numerous topics where the participants naturally interact directly with the researcher. It is very flexible, provides data at a quick and cheap rate and the results are easy to understand. It is effective for accessing a broad range of views on a specific topic because of the diverse nature of the participants (diversity in age, gender, education, access to resources, etc). It is appropriate for identifying group norms and discovering variety within a population. It elicits information on a range of norms and opinions in a short time. The group dynamic stimulates conversations and reactions. The results are highly believable as it reports actual statements from real people.

On Limitations of FGD

It shouldn't be used for quantitative purposes such as testing of hypotheses or generalization of findings for larger areas. It is risky to use FGD as a single tool as people tend to center their opinions on the most common ones. Information obtained may not be applied generally to other groups of people. Conducting the FGD requires a trained interviewer. There is less control over the group and uncertainty about the accuracy of what the participants say remains. It is not the best method for acquiring information on highly personal or socially sensitive topics. Much planning for a focus group can't be done (Greenbaum).

On Method of FGD

Escalada and Heong have suggested using a minimum number of topics/sub themes for an in-depth discussion; to proceed from general to specific; to prepare probing questions avoiding irrelevant questions; to select the venue which will be "free from distractions and where participants can talk openly" and the time according to their convenience. Debus (1988) had provided vital guidelines for analyzing the data such as (i) developing a plan for analysis (background of the research, objectives, methods, discussion details); (ii) analyzing the content of the group discussion by reviewing the notes, grouping the research findings according to key themes and (iii) Synthesizing the group discussion by identifying the recurrent ideas evolving during the discussion.

METHODOLOGY OF FGD

Procedure: (I) (Pre-field Survey)

Step-I: This involves specifying the objectives and information needs of the FGD.

Step-II: In this the major topic was broken into discussion points or themes.

Perception of the fishermen; their knowledge, awareness and access to information; their physical safety, well being and their vulnerability; problems relating to fishing and their possible solutions/coping strategies are the **key themes**.

Step-III: This consisted of preparing probing questions. The **probes** are on varieties of fish, method of catch, weather related impacts, norms of fishing, training facilities and the infra-structure of the landing center.

Procedure: (II) (Field Survey)

The choice of the participants depends on the topic of discussion. Accordingly the venue and the participants are pre-determined by the survey team at Fresergunj Jettyghat and the different members of the fishing community respectively.

The participants i.e., the fishermen's names are asked along with their background information. The probe questions which are prepared in advance are put up. All participants are given the opportunity to participate right from the *mahajan*, owner of the trawler/fishing boat to the helper (labourer) including those who make the nets (fishing equipment). This is done with the objective of having representatives of the intended target population including the vulnerable ones. Care is taken not to use dichotomous questions that yield Yes or No answers. Similarly leading question (e.g., Don't you think that *Hilsa* variety of fish is an excellent item for export?) is skipped. The value of time of the stakeholders is kept in mind and the survey is completed within the time schedule of 1-1½ hours without hampering their work. The survey schedule is fixed up in the evening when the fish had been packed off and the participants are in a relaxed mood. The survey team expressed their gratitude at the end of the session as a sign of respect towards the participants.

As for the recording of the session the rapporteurs captured the discussion in writing and by taking snap shots. Due to time constraint the survey team is divided into two mini groups.

Household Respondent Survey

A total of 45 families are surveyed using a structured questionnaire, the survey area cover villages of Amrabati and Bijaybati of Fresherganj Gram Panchayat(GP) and Mousani and Baliara of Moushuni

GP. Through this Face-to-face interview an in-depth exploration of opinions are obtained. It must be mentioned that such a method is best suited where the respondent is initially unknown.

Key Informant Interview

To obtain information a community resident (Sri Ardhendu Samanta) had been contacted and formal and informal techniques are applied. The key informant had also assisted us in the application of the Participatory Rural Appraisal (PRA) tool besides the FGD.

FINDINGS

Of the 45 families surveyed (based on the Household Respondent Survey), 27 families (60%) are directly associated with fishing as their main occupation; 20 being engaged in marine fishing; 3 in the coastal area and 4 in inland fishing. Marine fishing constituted a major share (of 74.07%), while 11.11% are dependent on coastal fishing and 14.82% of the families are engaged in inland fishing.

Social Aspect

Marine fishing is a male pursuit. Illiteracy and the general hereditary nature of the occupation calls for the fishermen viewing their job as an insecure birth-ascribed one (Deb, 2010) burdened with debt and limited resources, highly prone to natural calamities and exploitation, insecure catch resulting in them being a disadvantaged group. They belong to the *Kaivartta* or *Kaibartas* (*Jele Kaibartas*), *Mahishyas*, *Malis* and *Majhis*, the *Bagdis* (i.e. *Meendhara*) castes. When on board, their sources of entertainment are the radio, tape recorder and the TV. The fishermen's Co-operative Societies are weak both in organisation and investment capacity.

Economic Aspects

The Fresherganj landing center was formally recognized by the State Government in 1995 to promote fishing, create employment and raise the GDP. Fishing is a seasonal venture with two peak seasons—rainy and winter season. It serves the local (Namkhana, Diamond Harbour, Haora, Nischindapur, Sealdah); national (Bihar, Orissa) and international markets through Khiddirpore to Europe and USA. The fish catch depends on quantum of fish stock available which is influenced by rainfall, sea surface temperature and current and also on the fishing effort and fishing technology adopted.

There are four types of fisher folk out in the sea (on board a trawler): the *majhi*; the driver, those who catch the fish and the helper (labourer). In a trawler 10 to 15 labourers are hired, covering four trips in a month, each trip is of 7–8 days duration. (The duration of each trip depends on amount of fish and the ice). Mechanization has led to an increase in the number of fishing days yet the benefits are lesser cited the labourers (lower order).

Profit sharing is (on a 55 : 45 ratio) between the *mahajans* and labourers. Of this latter share there is again distribution based on the status of the group—the *majhi* gets more than the labourer). The boatman gets 4% of the total earnings.

Types of fish caught: *Vetki*, *Hilsa*, *Topse*, *Amuda*, *Parshe*, *Bhola*, *Khoyra*, *Rupsa* and *Parul* for local and domestic market, while tiger prawn, tuna, mackerel and *pomphret* mainly serve the international one. The excess fish is dried (*sutki*) but is not much profitable and is sold in the local market.

A majority of the families depend on hired equipments; trawlers are also catching up as in other parts of the country depending on marine fishing.

Table 1: Accessories in Fishing

Equipments	Owned	% Share	Hired	% Share	Total	% Share
Trawler	02	10	08	40	10	50
Trolley	01	05	Nil	Nil	01	05
Boat	04	20	04	20	08	40
Nil	—	—	—	—	01	05

(Source: Sample Survey of Households, 2011)

Economic Problems

In the marine fish marketing channel in India there are several intermediaries, the first one being the auctioneer who auctions the fish to various traders at the landing centre after the fishermen bring their catch. Other intermediaries are the trawler owner(s), wholesaler, retailer and the vendor. Due to the long channels the share of the fisherman reduces, thus lowering his income/livelihood opportunity. The trawler, trolley owners and the smaller trawler owners, (i.e. owners of the mechanized crafts), traditional craft owners (*choto shalti*) boat owners and the money lenders are positioned at the top of the socio-economic hierarchy. This is an outcome of the transformation from the traditional, localized, subsistence, non-mechanized fishing to modernized, large territorially organized, profit oriented and mechanized fishing. Over fishing arising out of introduction of mixed gear, motor boats (*bhutbuti*) and mechanized trawlers is resulting in marine fishing becoming unsustainable in nature. A rapid decline in the fishing entitlements (i.e., ability and right to fish appropriately to ensure food for the family from a designated zone) has increased the vulnerability of the fishing community in the lower hierarchical order. The seasonal nature of this occupation and the uncertainty of catch add to their problem. Moreover fishing has become a costly affair with the rising cost of boats, nets, motors, fuel, maintenance, etc.

Modernization and Declining Traditional Know-how

With globalization and the Information Technology Revolution there is less dependence on the traditional knowledge. The weather forecast (including warning signals) by Indian Meteorological Department through the TV and radio, communication by mobile through the vessel owner on land with those on board, the use of the global positioning system (GPS) have brought a significant change in fishing. The fishermen on board are informed before hand of the prevailing market price of the fish and accordingly are asked to come to the landing center by the owner of the vessel (generally when it is high they come to the landing center). Modern trawlers are well equipped with scientific equipments and modern machines; using of the GPS for tracking the path and precise location and the wireless phone for communication with the port and owner. The geographical location of the vessel, the fish and the fishing boundary limit of a group is determined with the GPS. The trawlers also provide entertainment facilities, facilities for cooking using diesel/kerosene instead of wood (collected elsewhere in Sundarban area from the mangrove forests) Training is provided by the Fishing Unions, but most of the fishermen being illiterate are not interested. The GPS is of no use if the persons who are trained in its functioning remain absent/ fall ill. However it has been learnt from the senior fishermen that the southerly wind brings blue water near the coast while the northerly wind normally does not affect the water colour. With the turbulence of high tide, coastal water becomes muddy and when it recedes it becomes bluish. They generally predict weather through the traditional knowledge acquired regarding height of the water at sea, wind speed, colour of the sky, etc. Their custom tells them to avoid venturing out during full moon and new moon period because of high tide.

Conflicts

Conflict over control and access to productive fishing areas; conflict between the vessel owners over gear control (higher capability of trawlers for fishing in deeper and distant waters) are common. The mobile fishing equipments of trawlers greatly damage the fishing equipments of small scale fishermen. Permit problem; political conflicts, meager insurance results in conflicts. There are rules and regulations regarding the size of nets to be used, but this is often not maintained. The overlapping interest of various fishing sectors (exploitation of the territorial waters up to 12 nautical miles is a state subject while the rest of the CEZ is dealt with by the centre) are responsible for the social and political conflicts (Xth Plan).

Infrastructure

Fishing harbours are being set up with electricity, drinking water facility, ice factory and diesel dumps for co-operative as well as private trawlers.

The gear employed in catching fish in deep sea, inshore and estuary fishing can be classified as—fixed nets, drift nets, inshore drag nets, scoop nets, long line and hooks and lines. Three types of nets (made of nylon fiber) are used and maintained after each fishing trip. They are the drift gillnetting for *hilsa* locally known as *Hilsa* net (75cm–90 cm); the *Pomphret* net (120cm–130 cm), the *Nakura* net (150cm–170 cm) and are appropriate for collecting fish > 250 gram in size. The nets are square/rectangular in shape. Normally the nets are replaced every two years. Bottom longline netting is prevalent here. The trawler's catchment area of fishing is determined by the net boundary (with a plastic ball attached).

Preservation of fish caught is done with ice blocks and soda (the ice being smashed), the price of which is higher in the rainy season (June–October) of Rs. 95/- than in winter (November–March) of Rs. 75/- per block; the lifting charge being Rs. 3/- per block. This is available from the nearby ice factory.

A new Police Station has been set up beside the landing center for preventing infiltration of terrorists and foreigners (particularly the neighbouring Bangladeshis). When attacked by pirates (*jaladasyus*) the fisher folk inform the water police, or send signal to any vessel noticed by them.

The Aila of May 2009 and its drastic effect have led to the issuing of a Special Identity Card for the fisher folk.

Livelihood Security

The Rani Rashmoni Fishermen's Association is having 70–80 mahajans. They are insured by Namkhana Matsya Union Office. Fishermen's dependence on external agencies for fuel, motors, loans, repair and maintenance has increased. The custom of *dadand* still prevails. This custom calls for the fishermen to take money from the *dadandar* and hand over their collect (i.e. sell the produce) to him only (thus repaying the loan) at a price much lower than that of the normal market. This is a highly skewed lending contract in favour of the *dadandar* who takes undue advantage of their poverty. Exploitation still prevails and the poor (lower order) fishermen are in the mercy of the *dadandar/mahajans*. They have lower cash, catch lower quality and quantity of fish, do not have the opportunity to bargain in the open market (due to the *dadand*); can't escape easily when in danger; have no source of entertainment in their vessel; there is no protection from heat, rain and storm as they are to fish in the open sky for four continuous days, hence fall sick easily as well. Division of labour is not significant as all are involved in the same nature of work unlike those in trawlers where there is a distinct division of labour and earnings as well.

Geographical Problems

The natural calamities, silting up and salinity are the major environmental problems as revealed from the supporting table. Vulnerability of the residential coastal communities to natural disasters is common as expressed by a majority of the respondents (3/4). Economic and political factors are also cited by a few to be problematic. Traditional fishermen identified trawling as one key reason for depletion of fish stocks and destruction of their gear.

Table 2: Problems

Type of Problem	No. of Respondents	% Share of Respondents	Remarks
Natural Calamities	15	75	
Salinity	01	05	
Sedimentation	01	05	
Insect	01	05	
Economic	03	15	Wage and profit sharing, inputs
Political	01	05	

(Source: Sample Survey of Households, 2011).

Interventions

At the State level there is one apex body the West Bengal State Fisheries Cooperative Federation (BENFISH) both for the inland and the marine sector.

The West Bengal Fisheries Development Corporation and State Fisheries Development Corporation are the two institutions engaged in infra-structure development, establishing of modern fishing breeding farms and fish production in inland and marine sectors. The District Rural Development Agencies through IRDP provides financial assistance to fishermen below poverty level. Assistance is also provided by national institutes like NABARD, National Co-operative Development Corporation, Marine Product Export Development Agency. Transportation by insulated trucks has been started by BENFISH.

RECOMMENDATIONS

Plans should be made accessible to the people in the local language; fishing communities should be educated on the various rules and regulations so as to ensure effective compliance with the rules and regulations. An increase in Government aid and infra-structural development efforts are to be enhanced and access to basic services of health, education, training and capacity building ensured. This would help in developing other skills. Alternative livelihood options based on proposals from the fishing communities to be made including a greater share in the marketing process to enhance their income and the custom of dadan needs to be done away with. The fishing communities need to have access to the formal system of credit and bank loans and insurance besides the micro-finance institutions (MFIs). More efficient and sufficient transport network for selling fish directly to Haora and Sealdah is required. More mobile towers of high range are felt essential by the fishermen. Moreover, dredging of the mouth of the creek is required. This can be done as a part of the MGNREGA scheme thus ensuring employment during the lean season.

CONCLUSION

The paper presents a general introduction to the use of focus groups as a research tool within the context of qualitative research, with the intention of promoting its use among researchers in geography at the micro level. The participatory approach was applied in the exploration of local knowledge and livelihood perspectives and in the understanding of micro-level livelihood dynamics. A cross section of fishermen varying in age, experience in fishing, and owning fishing vessels of varying size of the study area participated in the FGD meeting. The meeting was conducted in Bengali (local language). Household level case studies and other participatory techniques like the seasonal calendar, the PRA are applied; each method serving different but complementary roles. The FGD method is a challenging method producing highly useful information about programmes and services which surveys miss out. An insight into the target population's perceptions, needs, problems, power issues (within and between communities and other stakeholders also surfaced during the open house discussion) are obtained.

Some of the burning issues concerned with the fishing communities are dependence on the natural resource base, conflict over control and access to productive fishing areas, uncertainty of catch and sale, dependence on intermediaries and general prevalence of poverty and illiteracy. There is dire need of basic infra-structure (the absence of a College/Hospital in this Block, the Primary Health center is also far off. Fishing is a costly affair: the *choto shalti* (a traditional craft) is priced at Rs. 25-30 lakhs. Cost of other equipments is on the rise. Traditional fishing which is labour intensive and sustainable in nature is being ousted by the trawler fishing which is capital intensive and unsustainable. The class of traditional fishermen has gradually declined all over the world replaced by a professional trawler class which accounts for 65% of our total fishing catch. (Source: Working Group on Fisheries, 2001).

The marine fisheries sector has developed during the late 1950s in West Bengal. Prior to the Sixth Plan period (1980-85) very little was done to improve the infra-structural facilities for marine fisheries in West Bengal. Since then minor and major schemes are providing berthing, landing and post-harvest facilities. The Seventh Plan focused on the need for welfare measures, infra-structural development, deep sea fishing, motorization of the fleet and diversification of fisheries. The Ninth Plan emphasis on development, in other words more and more exploitation of the resources. However, the management which is often perceived as a response to development has not received the desired attention. Formulation and introduction of a new deep-sea fishing policy consistent with national interest should be given a top priority.

The region is undergoing rapid changes due to recent development in transport, communication and economic links with the urban centres. Connection with Kolkata has improved (NH117 and rail link up to Namkhana). With the tourist friendly approach of the local people, tourism is picking up fast resulting in increase in hotels. Thus there is scope of an increase in alternative livelihood opportunities for the local people.

REFERENCES

- Creswell, J. W. (1998): *Qualitative Inquiry And Research Design: Choosing Among Five Traditions*, Thousand Oaks, California, Sage.
- Deb, Apurba Krishna (2009): "Voices of the Fishantry": Learning on Livelihood Dynamics from Bangladesh; Ph.D thesis, University of Manitoba, Winnipeg, Canada.
- Debus, M.(1988): A handbook for excellence in focus group research. HEALTHCOM Project Special Report Series. Washington, D.C.: Porter/Novelli (retrieved from Escalada M. & Heong K. L.: Focus Group Discussion).

- Greenbaum, Thomas L. (1998): 10 tips for running successful focus groups, September 14
- Jones, John Paul and Gomez, Basil (2010): *Research Methods in Geography: A Critical Introduction*.
- Krueger, R. A. (1994): *Focus Groups: A practical guide for applied research* (2nd ed) Thousand Oaks, CA: Sage.
- Kumar, K. (1987): Conducting focus group interviews in developing countries. AID Program Design and Evaluation Methodology Report No. 8. Washington, D.C.: Agency for International Development.
- Schwarz, N. and Sudman, S. (Eds) (1996): *Answering questions: Methodology for determining cognitive and communicative processes in survey research*. San Francisco: Jossey-Bass.
- Seymour, Anne (2004): "Focus Groups: An important tool for strategic Planning".
- Sudman, S, Bradburn, N. M. and Schwarz, N. (1996): *Thinking about answers: The application of cognitive and communicative processes in survey research*. San Francisco: Jossey-Bass.

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