The Jahangirnagar Review: Part II: Social Science, Vol. 46, No. 1, 2022
ISSN 1682-7422, © Jahangirnagar University

The Nature of Community Participation in Disaster Management: A Study on Selected Coastal Villages in Bangladesh

Farhana Zaman[1]
Pritilata Sarkar[2]

Abstract: Community people affected by disasters are currently considered paramount in the disaster management process as they can identify their contextual risks and understand their specific needs better than others. Despite having recognized their vital role in the disaster mitigation process, their participation is limited in many aspects. Drawing on this background, the current study aims at exploring the nature of community participation in selected disaster-prone coastal villages of Bangladesh. From Marxist and structural-functionalist perspectives, the study intends to highlight the nature of social exclusion and feeling of deprivation and powerlessness of the community people in every step of the development process. Based on a questionnaire survey on a sample size of 93 coastal men and women, the study finds that the extent of community participation in the development process is not satisfactory at all. Before starting any development project, community people's consent is not taken. Consequently, many development activities keep detrimental effects on coastal livelihoods. To supplement the quantitative data the study also conducted two FGDs which show that training programs local people receive most often fail to increase their income and livelihood opportunities and thus are considered ineffective by the coastal people. These indicate inappropriate need assessment due to a lack of poor community participation in the planning process. The study thereby suggests that empowering community people through ensuring adequate community participation in development process is badly needed for effective disaster risk reduction and achieving community resilience.

Keywords: Community, community participation, disaster, disaster management, risk

1. Introduction

It is generally recognized that the physical geography of the coastal region of Bangladesh is more diverse and dynamic (Brammer, 2014). This dynamic area is in constant flux due to sediment shifting and many other reasons (Schwartz, 2005). This is the region where system interactions between land, ocean, atmosphere, and humans occur (Ahmed, 2019). The zone is gradually becoming more complex due to the occurrence of extreme climatic events. An area of 47,201 km^2 belongs to the coastal zone of Bangladesh which comprises 32% of the country's total area. Around 35 million people which represents almost 29% of the total population live in the coastal zone (Ahmed, 2019). This zone is exposed to very high tides, frequent cyclones coming from the Bay of Bengal, and high sediment input from upstream (Najnin, 2014).

[1] Farhana Zaman, Professor, Department of Sociology at Jagannath University.
Email: farhanazjnu@gmail.com

[2] Pritilata Sarkar, Research Assistant, Voluntary Association for Social Advancement (VASA).

Due to the frequent attack of a number of natural disasters each year, Bangladesh is experiencing the effects of climate change in a more devastating way (Rana et al., 2011; Haider and Hossain, 2013; Hussain, 2001). According to Global Climate Risk Index 2019, Bangladesh is the seventh most affected country in the world by extreme weather events between 1998 and 2017 affecting approximately 37 million people (Barua and Rahman, 2019). The geographical location makes the country highly vulnerable to tropical cyclones and other natural hazards that mostly include floods, cyclones, droughts, storms, tidal surges, salinity intrusion, riverbank erosion, and sea-level rise (CDP, 2020). About 5% of the global cyclones are formed over the Bay of Bengal causing a loss of about 80% of the global casualties in Bangladesh (Khatun and Paul, 2019). Saline water intrusion due to sea-level rise causes an increase in soil salinity affecting the physiological process of the plants and ultimately resulting in crop failure and the consequent food insecurity (Ahmed and Haider, 2014).

Disasters of any scale cause a considerable loss of many lives and properties and affect the overall well-being of the coastal people (Ahmed et al., 2019; Barua and Rahman, 2019; Khan et al., 2020; Guleria and Edward, 2012). The reconstruction phase in disaster management requires the equal participation of all the stakeholders, both internal and external, including disaster management agencies, government, and non-government organizations (NGOs), policymakers, private investors, and most importantly local communities (Imperiale and Vanclay, 2020). Too often disaster management plans and policies face structural failures that ignore the role of the community in disaster management. This ultimately leads to poor disaster preparedness resulting in weak community resilience (Imperiale and Vanclay, 2020).

Considering community resilience, community-based approaches received much attention from disaster professionals after the Second World War (Phiri et al., 2016). In the mid-1980s, the comprehensive disaster management (CDM) approach became subjected to immense critique by many scholars who perceived it as top-down. This approach received an allegation that this failed to assess local context and community needs and thereby is unable to address the vulnerabilities of the poor (Maskrey, 1989). As a result, during the 1990s, disaster practitioners and policymakers adopted a community-centered perspective as an alternative to the top-down approach in the process of disaster preparedness and management (Allen, 2006).

Community-based disaster risk reduction (CBDRR) has been highlighted in many studies as one of the most effective approaches in the field of disaster management since 2000 (Wang, 2019; Samaddar, 2015). Strong calls to institutionalize disaster risk reduction (DRR) at the local level have been reflected in the international disaster risk reduction frameworks (Amaratunga et al., 2018). Hyogo Framework for Action 2005–2015 and Sendai Framework for Disaster Risk Reduction 2015-2030 highlighted the importance of the community for its central role in increasing adaptation capacity and building resilience (Wang, 2019). Thus, it is vital to assign clear roles and responsibilities among community people before, during, and after a disaster occurs so that communities can identify their risks and reduce vulnerabilities by themselves (Gero et al., 2011).

Though from the structural-functionalist perspective the importance of community participation has been acknowledged by disaster scholars and practitioners for the purpose of community's well-being and stability, its practice is not yet manifested in

reality (Samaddar et al., 2015). In many cases, effective community participation is challenged by a number of factors such as lack of social trust, leadership, experience, financial constraints, tradition and religious faith, political influence, geographic location, risk perception level, lack of education, and poor social networks (Gero et al., 2011; Samaddar et al., 2015; Islam, 2014; Hussain, 2001). In some cases, most vulnerable people are excluded from the participatory process due to local political influence. Interference of local politics and its consequent power relations between individuals, groups, and communities regulate access to resources, and livelihood opportunities and determine the relationship with the ecological and social context. This Marxian reflection of social exclusion gives the ultra-poor a feeling of deprivation and ultimately weakens their capacity to respond effectively and reduce the disaster risk. Since there is a lack of adequate literature providing knowledge on this issue, the current study aims at exploring the nature of community participation among the disaster-prone coastal people of Bangladesh. In this regard, the study also intends to highlight the consequences of ineffective community participation and the nature of social exclusion.

2. Conceptual and Theoretical Framework

The impact of natural hazards is growing in the coastal areas of Bangladesh. Both government organizations (GOs) and non-government organizations (NGOs) are actively working for building community resilience by minimizing vulnerability and maximizing adaptation capacity through effective community participation. Thus, in the process of disaster planning and management, a clear understanding of the concepts of vulnerability, adaptation capacity, community resilience, and community participation is crucial. According to Chambers (1983), vulnerability on the external side refers to risks, shocks, and stress to which an individual or household is subject while the individual side includes the locals or the communities who are defenseless due to lack of adaptation capacity. Watts and Bolhe (1993) have identified three risks that can make a community vulnerable: the risk of being exposed to unsafe situations, the risk of lacking necessary resources to cope, and the risk of lacking potentiality. The potentiality or adaptation capacity of a community can be improved by adding new and improved methods of coping with the environment to their cultural repertoire (O'Brien and Holland, 1992; Hussain 2001). Thus, adaptation capacity is a precondition of community resilience that refers to the ability of a community or a system to absorb disturbances and thrive in an environment characterized by change, uncertainty, unpredictability, and surprise (Carpenter et al., 2001; Magis, 2010). According to Magis (2010) for developing community resilience, the existence, development, and engagement of community resources by community members are crucial.

However, the community has so far been perceived as the passive recipient of aid in times of a disaster (Phiri et al., 2016). But the idea that community people become the victims and feel helpless when a disaster strikes is a myth. Currently, community people are considered active agents in the process of disaster preparedness and mitigation (Grove, 2014; Zaman, 2021). Thereby, the concept of community participation has been introduced as a corrective style in geographically disadvantaged localities where residents are mostly poor. (Burns, 2004). Kala and Bagri viewed community participation as "a method of grassroots democracy where individuals have a right to participate in decision-making on matters that directly affect their lives" (Kala and Bagri, 2018: 319). According

to Hossain (2013) "community participation, generally, refers to the involvement of people in any project to solve their problems or to develop their socio-economic conditions (Hossain, 2013: 161)." It is people's right to raise their voices and express their choices (Sastry, 2001: 2). Sometimes people are forced to give their consent to many development projects which are harmful to their community. Community participation ensures the informed consent of the community people before starting any development projects ("Community Participation", n. d.). Thus, "Community participation can be loosely defined as the involvement of people in a community project to solve their own problems" ("Community Participation", n. d.). They participate in planning, mobilizing, training, evaluating plans and programs, and finally implementing and monitoring (Hossain, 2013). Community participation allows community people to feel a sense of community and helps them to recognize the benefits of their involvement in the community development process (Hossain, 2013).

Disaster practitioners find community participation as an instrument of community empowerment. Besides, it increases project effectiveness and efficiency (Paul, 1987). Through community participation, people get a way to develop their skills and gain self-confidence. There are four levels of intensity in community participation: information sharing, consultation, decision making, and initiating action. When community people are involved in the process of taking action, the intensity of community participation is said to have reached its peak (Paul, 1987). In such a way, once the equal participation of all the stakeholders is ensured, a system (or a community) is expected to run smoothly.

From the structural-functionalist perspective, a system can stay at a state of equilibrium if all the sub-systems function positively. This indicates that for the stability of a system, all the sub-systems are needed to be equally operational. Parsons' structural-functional view thus proposes that all the stakeholders of a system (i.e society or community) need to be equally powerful to run the system as a whole. Parsons conceptualized power in society as a variable sum. Thereby the logic of the Parsonian position is that the empowerment of the powerless without any negative effects on the power of the powerful can contribute to development (Mayo and Craig, 1995). In that sense, empowering community people without affecting the power of other stakeholders is expected to contribute to building community resilience. However, from a Marxist perspective, it is not possible to empower the powerless in the capitalist mode of production where political as well as economic power are closely attached and cannot be separated from the capitalists' interests (Mayo and Craig, 1995). In this sense, it is really difficult to empower the communities by increasing their capacity in disaster-prone coastal areas. Moreover, communities are not always the basis for collaboration, but competition too. The apparent feeling of cohesion and harmony is a false impression of community in terms of inequality as well as unequal power relations (Cannon, 2008). Consequently, all the community people may not possess the same development goals and the local poor consequently remain underrepresented at the decision-making level (Cronin et al., 2004).

In order to minimize the negative effects of these external forces and maximize the effective participation of the community people in the disaster management process, many disaster mitigation or disaster risk reduction approaches have been developed. Community-based Disaster Risk Management (CBDRM) is a disaster risk reduction approach that covers a broad range of interventions, measures, activities, projects, and programs to minimize the risks of disasters basically developed and designed by the

community people who are at-risk localities. According to this approach, the community has the capacity, indigenous knowledge, and an adequate understanding of the daily hazards they are exposed. This approach paves the way for analyzing and managing disaster risks that both originate from and is organized by local communities (Yore et al., 2018). Local people identify their urgent needs and explore their capacities and goals including reduction of vulnerabilities and increasing the capacities of at-risk communities to cope with and adapt to disasters, preventing or minimizing loss and damage to life and properties, and finally minimizing local people's sufferings and hastening recovery (Islam, 2013).

Thus, local people are considered the main propellers in the process of CBDRM. This approach states that risk reduction measures are community-specific and thereby it addresses vulnerable conditions of the community, looks for causes behind vulnerability, aims at strengthening local people's capacity, and recognizes their knowledge by linking with development. Figure 2.1 shows the steps of CBDRM. Once the most vulnerable communities are identified, it is important to build up relationships with local people. The next step involves risk assessment, and prioritization of risks that will be conducted by the local authorities with the involvement of local people, community leaders, and expert practitioners. Before implementation, risk management planning analyzes the status of local resources and distributes the roles and responsibilities among various stakeholders. It is vital to ensure that implementation should be done at the local level with the support of the local people. Finally, participatory monitoring and evaluation involve all the stakeholders to measure the progress (Salajegheh and Pirmoradi, 2013).

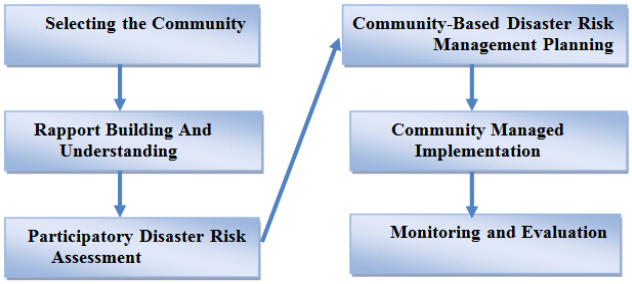

Figure 2.1: Steps of CBDRM

Source: Kafle and Murshed, 2006

Drawing on this conceptual and theoretical background, the current study focuses on exploring the role of local people particularly the landless coastal poor, in disaster management, and their participation at decision-making levels about disaster preparedness. The study, thereby, expects that effective participation of the local people both at the community level and at the decision-making level can contribute to minimizing risk and enhancing the resilience of the community.

3. Methods and Materials

Choosing mixed methods research combines the strengths as well as minimizes the weaknesses of each method (Creswell & Plano Clark, 2007). Considering this, the study employs mixed methods that combine the data of both quantitative and qualitative

research in order to get in-depth information about the research objectives. Koyra Upazila is one of the most disaster-prone Upazila in the Southern part of Bangladesh. North Bedhkashi union and Koyra union are bounded by Koyra Upazila of Khulna district on the south of the Bay of Bengal. The Upazila is blessed with the Sundarbans area of Khulna district. Data have been collected from a number of selected villages of these two unions including Katmachor, North bedhkashi, Hajatkhali, Ghatakhali, Harinkhola, Gajipara, Gobra, Jilighata, Matiavanga. These villages experience disasters due to frequent natural hazards and suffer from a lack of resilience each year. Development interventions are ongoing for a long in all these villages. Thereby it is vital to assess their level of community participation in enhancing resilience.

For quantitative data collection researcher used a semi-structured survey questionnaire. The questions were structured on socio-demographic information and on the nature of their community participation including their access to training, workshop, and other skill development programs, the effectiveness of training, informed consent before starting a development project, and the effects of development projects without the involvement of local people. Data were collected from a sample size of 93 coastal people (51.6% males and 48.4% females) (see Table 3.1). Though according to using W.G. Cochran's theorem, the representative sample size was calculated at 385 (at 95% confidence level and margin of error of 0.05), it was not possible to collect data from this large sample due to the pandemic situation and also due to time and fund constraints. Respondents were selected purposively based on their maturity to answer (ranging between 19-24 and 60+ age groups) and also based on their availability in the locality. However, the researchers tried to minimize the errors by supplementing data from qualitative sources.

Table 3.1: Distribution of the Sample Size

Villages	**Frequency**	**Percent (%)**
Katmachor	10	10.8
North bedhkashi	2	2.2
Hajatkhali	23	24.7
Ghatakhali	22	23.7
Harinkhola	3	3.2
Gajipara	14	15.1
Gobra	12	12.9
Jilighata	2	2.2
Matiavanga	5	5.4
Total	93	100.0

Source: Survey, 2021

For the qualitative method, two FGDs have been conducted. A checklist has been developed for FGD focusing on some major themes of the study including the nature of community participation, informed consent in development activities, access to training programs, the effectiveness of training, etc. Participants of FGDs, each consisting of 4-5

participants (both male and female), were selected purposefully based on their availability in the locality. FGD data have been used as quotations to back up the quantitative data. Besides, participants were asked to say 'yes', 'no', or 'confused' about a few statements prepared by the authors to get an overall impression of the nature of community participation. The answer was taken based on the opinion of the majority.

The quantitative data was finally analyzed with the help of the SPSS software program. For better comprehension of the collected data, a statistical analysis such as percentage distribution was computed. The researchers took the informed consent before collecting information and promised to maintain the confidentiality of the information.

4. Results and Discussion

Community participation is at present the key to a society's development. Community people know the best what is good for their society. They know their historical background and social context better than others. Currently, development organizations consider community people as the primary stakeholder in the disaster mitigation process. It is thereby vital to explore the nature of the local people's participation in the process of disaster management. After presenting data on socioeconomic background, the study gradually unfolds data on the nature of community participation.

Table 4.1 shows that about 51% of people can only sign followed by 38% who have finished primary education. A very insignificant number of respondents have reached a higher level of education. This means that the educational status of the community people is very poor. Thus, with such educational background, it is often difficult for these people to establish their voice in the development process. FGDs participants said that only the voices of the powerful groups and a very few educated people are heard in the disaster management process while their voices remain unheard. However, many disaster studies find the indigenous knowledge of the local people more effective compared to scientific solutions to the problems (Haque, 2019). This signifies the importance of the voices of local people that should be heard in the process of disaster planning and management.

Table 4.1 also represents data on the occupational status of the respondents. The occupational status here indicates the primary occupation of the respondents. The coastal people are involved in multiple occupations as any one occupation is not adequate to support the household expenditure. Table 4.1 shows that most of the respondents (44%) in the study areas were day laborers and a very insignificant number of respondents (1%) were involved in boat building. Again, 20% of respondents used to earn their livelihood by fishing. In coastal areas, many development projects are running where people work as day laborers and get the chance of earning a good amount of money. Thereby people abandon their traditional work and get involved in this type of activity. Thus, in disaster-prone areas, people who are always in survival tension, cannot often spare time for receiving any training or participating in a workshop for enhancing their capacity. This in turn increases their survival tension and vice versa.

Though most coastal people were illiterate, they mentioned that they understand the meaning of community participation. They stated that they participate in opinion exchange programs in various ways. Table 4.2 shows that about 88% of respondents got the chance to exchange their views through workshops. Another greater number (84%)

mentioned that they could share their opinion when NGO workers visit their houses and 80% of respondents mentioned community-based organizations.

Table 4.1: Socioeconomic Status of the Respondents

Socio-economic variables	Educational status	Frequency	Percentage (%)
Education	Illiterate	4	4.3
	Can sign only	47	50.5
	Primary	35	37.6
	Secondary	4	4.3
	Higher secondary	1	1.1
	Graduate	1	1.1
	Others	1	1.1
	Total	93	100
	Occupational status	**Frequency**	**Percentage (%)**
Occupation	Farmer(crops)	10	10.8
	Fisher	19	20.4
	Crab fattener	4	4.3
	Shrimp farmer	1	1.1
	Wood collector	3	3.2
	Day laborer	41	44.1
	Small businessman	12	12.9
	Fishing net maker	2	2.2
	Boat builder	1	1.1
	Total	93	100.0

Source: Field survey, 2021

A male participant of FGD (aged 42) stated-

> *We have a community-based organization in every village. A leader known as a change agent is selected for disseminating knowledge that he/she receives from NGO workers among neighbors. The leaders or community development workers used to visit us weekly or monthly and teach us what she/he learns.*

Table 4.2: Ways of View-exchange between Local People and NGO Workers

Chances	**Frequency**	**Percentage**
Through community-based organization	51	79.7%
NGO workers visit your houses and teach	54	84.4%
Workshop	56	87.5%
Training	39	60.9%
Change agents	44	68.8%
Opinion on equal access to these programs	**Frequency**	**Percentage (%)**
Yes	18	19.4%
No	75	80.6%
Those who have greater access	**Frequency**	**Percentage (%)**
Educated	58	77.3%
Community leaders	62	82.7%
Political leaders	72	96.0%

Source: Field survey, 2021, (Note: It's a multiple-response Table)

Thus, community people have a number of ways to raise their voices in the disaster management process provided that these ways are equally functional for all. Table 4.2 shows that about 81% did not have equal access to participate in workshops while 19.4% had access. According to 96% of respondents, political leaders had greater access to participate in the workshop/training followed by community leaders (83%). Besides a few educated people also had greater access. As they cannot express their opinion in an organized way, most often their opinions are suppressed and exist unvoiced within the community. Particularly female participants of FGD stated that their opinions were less captured compared to their male counterparts. The lack of women's participation and representation in every aspect of disaster response is evident in other studies too (Shah, 2012). Though programs such as workshops, training, etc. were organized for knowledge sharing, awareness generating, and skill-building of the local people, their opinions were not reflected equally in those programs. As a result, they were often offered such sort of training that ultimately failed to provide adequate support to their well-being. People, in turn, lost their interest in training as most of the training, people received, was ineffective. Sometimes people fail to take further advantage of these opportunities for the vicious cycle of poverty. A female participant of FGD 2, aged 36, mentioned

> *Though we know about community participation, actually we do not participate. I hide myself when NGO workers come. I took credit a few months ago from an NGO and could not return the money. That's why when they come to me, I don't meet them. I cannot take any more advantage of them due to that reason.*

Table 4.3: Information on the Efficiency of Training

Training received	**Frequency**			**Percentage (%)**		
Yes	75			80.6%		
No	18			19.4%		
Total	93			100%		
Opinion on training	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	No comment
The training I received helped me a lot	4 (4.3%)	7 (7.5%)	17 (431%)	1 (1.1%)	0 (0%)	74 (79.6%)
The training was not appropriate for me	0 (0%)	5 (5.4%)	5 (5.4%)	9 (9.7%)	0 (0%)	74 (79.6%)
Training increased my income	2 (2.2%)	6 (6.5%)	6 (6.5%)	5 (5.4%)	74 (79.6%)	0 (0%)
The training opened my income opportunities	1 (1.1%)	4 (4.3%)	6 (6.5%)	6 (6.5%)	2 (2.2%)	74 (79.6%)

Source: Field survey, 2021

Around 80% of respondents did not receive any training in the last three years. Table 4.3 shows that the training respondents received was not that effective. It was found that 79.6 percent didn't give any comment. The training people received helped only a few. Local people mentioned that training did not increase their income. Only 2% of people agreed while the majority (around 80%) disagreed with the statement that training helped them a lot. One FGD participant said-

> *NGO workers gave me training on flower making. But there is no local demand for flowers in this area. People are busy earning their livelihood. Only a few people who go to the pagoda for worship, buy flowers from us.*
>
> -A female participant of FGD 2, aged 40

Another participant said

> *NGO workers knock me most often to provide me with training. But I am not interested to take any training. I need credit or grants. I have vision problems. I cannot take any training due to this disability. If I take training, I cannot participate in any community program or I cannot contribute to my community with that training.*
>
> -A female participant of FGD, aged 42

The above statements indicate that local needs are not assessed with the involvement of the local people before selecting any training program for them. Therefore, in many cases training goes in vain. Inappropriate training is often considered one of the causal factors of disasters (Haworth et al., 2018). Though the community people have better knowledge and understanding of their social and cultural context, it is evident that disaster risk reduction plans do not practically originate from them.

Table 4.4: Nature of Development Activities and Community Participation

Development activities	**Frequency**	**Percentage (%)**
Embankment building	85	91.4%
Cyclone shelter building	80	86.0%
Bridges and culvert building	81	87.1%
Pond filtration project	49	52.7%
Large-scale shrimp farming	38	40.9%
Building sluice gates	45	48.4%
Salt making projects	40	43.0%
Rehabilitation projects	63	67.7%
Hygiene and Sanitation projects	68	73.1%
Sustainable livelihood projects	56	60.2%
Community consent was taken before starting any project	**Frequency**	**Percentage (%)**
Yes	29	31.2
No	64	68.8
Total	93	100.0
Opinion about the selection of the place of a cyclone shelter	**Frequency**	**Percentage (%)**
Yes	16	17.2%
No	77	82.8%
Total	93	100%
Opinion on the community consent on pond filtration	**Frequency**	**Percentage (%)**
Yes	0	0%
No	93	100%
Total	93	100%
Opinion on the community consent on Shrimp farm projects	**Frequency**	**Percentage (%)**
Yes	20	21.5%
No	73	78.5%
Total	93	100%

Source: Field survey, 2022

Note: Multiple responses were taken in development activities

Table 4.4 shows that a large number of development projects are running in the coastal areas. Due to the frequent experience of the cyclone, building an adequate number of cyclone shelters (86% of respondents mentioned) is a major concern of development agencies. Besides, sea-level rise and consequent saline water intrusion are affecting the

lives and livelihood of coastal communities. One of the major challenges of development agencies is to stop saline water intrusion by building embankments (about 91% of respondents mentioned). This further helps to minimize the risks of river bank erosion. Besides, saline water intrusion spoils the sources of pure drinking water. Thereby, the pond sand filtration project is going on in every coastal village (53% of respondents mentioned). Despite the loss to the crop and drinking water, saline water is highly suitable for shrimp farming. Thereby, shrimp farm projects are rising in the coastal belt at a large scale (41% of respondents mentioned).

Though these projects symbolize development, projects without the involvement of local people often cause much harm to a community. Table 4.4 shows, around 69% of respondents stated that development organizations didn't take community consent before they started any project. One participant of FGD stated-

> *Our permission was not taken before any project starts in our locality. We don't know what will happen and when. The day project starts, people come with resources and technology, and we can see that these are happening. But before that, we never get any idea about that.*
>
> -A male participant of FGD, aged 29

Another male participant mentioned

> *We are poor. Why should they talk to us about these issues? Moreover, we are illiterate. They don't count us. They go to political leaders who are powerful and share with them and take permission from them. They do not need to take permission from us.*
>
> -A male participant of FGD 1, aged 52

About 83% of respondents stated that their opinion was not taken about the selection of the places for cyclone shelters. As a result, most of the participants of FGD, particularly female participants, suffered a lot when a cyclone stroke. A female participant mentioned-

> *They did not consult with us before selecting a place for cyclone shelter. As a result, the cyclone shelter is far away from our village. We do not want to leave our home leaving valuable things behind. If the cyclone shelters would have been closer to us, we would move frequently. Now the decision-making is difficult about moving towards cyclone shelter leaving valuable things behind.*
>
> -A female participant of FGD 2, aged 32

Another elderly female participant stated-

> *It is difficult for me to move to the cyclone shelter due to the long distance. Moreover, the cyclone shelter is not women-friendly. There is no separate washroom for women in cyclone shelters.*
>
> -A female participant of FGD, aged 55

Table 4.4 also shows that opinion was not taken on the pond sand filtration projects. As a result, women of some villages suffered a lot. It took much time to collect water as many women mentioned during an informal conversation with them. Respondents also talked

about their suffering regarding shrimp projects. FGD data shows that respondents suffered economically due to shrimp projects. Many people lost their job. Participants of FGDs stated that shrimp projects contributed to increasing salinity in their areas. These projects decreased water quality too. Rich people caused inundated non-saline lands artificially for profitable shrimp farms, as many participants stated. For the same purpose, local elites used to grab poor people's land too. Undoubtedly shrimp farming serves as an important adaptation strategy in the coastal areas, artificial inundation of non-saline lands and associated illegal land grabbing trap the coastal poor into a patrimonial system of authority. This uneven distribution of benefits further infuses insecurity among the poor and powerless coastal people (Sovacool et al., 2017). Though local people are supposed to identify their urgent needs and explore their capacities and goals, the opposite scenario exists in reality.

Table 4.5 shows that the nature of community participation is not satisfactory in the coastal areas of Bangladesh. They didn't agree with the statements that "local people are a part of any development project" or "Before starting any new project, development agencies discuss with us its objectives". Besides, they mentioned that many development projects brought detrimental effects on their livelihood. Again, large-scale shrimp farms made many people jobless. However local people still believe that development projects are committed to increasing their income and savings and also guaranteeing their livelihood.

Table 4.5: Measuring the Extent of Community Participation based on Participants' Opinions

Opinion	Yes	Confused	No
Before starting any new project, development agencies discuss with us about its objectives.			✓
Local people are a part of any development project.			✓
Development plans are executed through the participation of community people.			✓
Any project is always beneficial for the community.			✓
Any development project is committed to guaranteeing livelihood security.	✓		
Any development project can bring new jobs for us.		✓	
Any development project is committed to increasing our income and savings.	✓		
We all have equal access to benefits.			✓

Source: FGD, 2021

Note: The Table is prepared based on the majority of the opinion

Information presented in this section clearly shows that level of community participation is low in the coastal areas of Bangladesh. Massive shrimp farming and artificial

inundation of non-saline lands with saline water by the local elites symbolize the Marx's capitalist mode of profit-making. This mode of economic production causes the exploitation of landless coastal poor in a multifarious way. Local powerful groups, also known as social supreme, manipulate the representation and participation of the poor class in every step of community participation ranging from information sharing to initiating action (Mallick and Vogt, 2011). The selection process of people for the workshop or training programs is also negotiated by the power relations, and the local poor in most cases do not get access to these programs. Though national policies show much progress toward disaster mitigation, disaster studies show that the major weakness in disaster management plans lies in poor implementation at the local level (Ahmed, 2019). Shortcomings of disaster plans are also reflected in the whole coastal social system where the sub-systems are not equally operational. Community people, being the central stakeholders, are not equally empowered compared to other stakeholders. From the structural-functional perspective, this powerlessness of the coastal people at the decision-making level may result in poor disaster preparedness and less community resilience.

5. Conclusion

Coastal areas are highly vulnerable to a number of climate change-induced hazards and consequent disasters. In such a situation, through effective participation of community people, resilience can be achieved as local people have better knowledge about their well-being. Thus, by utilizing local knowledge, along with the scientific knowledge of development organizations, coastal communities' strength and capacity can be increased. However, the study finds that the level of community participation is not at all satisfactory as the involvement of the community people in development planning is very less. Due to this reason, many development projects keep detrimental effects on the local livelihood. The study also finds most of the training ineffective as those training failed to increase their income and savings. Need assessment with the involvement of the local people is not done in most cases. Thereby, the training people received in the last three years was not effective in their life. Besides, development agencies do not consider local people as the primary stakeholder and don't bother to take their consent before starting any development project. In many cases, local elites or powerful groups possess greater access to the decision-making level. From the structural-functionalist perspective, the stability of the coastal communities is supposed be affected by the unequal distribution of power and benefits among the sub-systems i.e among various stakeholders. The profit-making capitalist mode of production excludes the powerless poor from the planning and implementation process. Consequently, the local poor suffer from a feeling of deprivation and feel detached from the development goals of their own community. The study thereby suggests that the extent of community participation has to be ensured in order to make an effective disaster management plan and for achieving community resilience.

References

Ahmed, I. (2019). The national plan for disaster management of Bangladesh: gap between production and promulgation. *International Journal of Disaster Risk Reduction*, 37(101179),1-8.doi: 10.1016/j.ijdrr.2019.101179.

Ahmed, I., Ayeb-Karlsson, S., van der Geest, K., Huq, S., & Jordan, J. C. (2019). Climate change, environmental stress and loss of livelihoods can push people towards illegal activities: a case study from coastal Bangladesh. *Climate and Development*, *11*(10), 907-917.

Ahmed, M. F., & Haider, M. Z. (2014). Impact of salinity on rice production in the south-west region of Bangladesh. *Environmental Science: An Indian Journal*, *9*(4), 135-141.

Allen, K. M. (2006). Community based disaster preparedness and climate adaptation: local capacity building in the Philippines. *Disasters*, 30, 81–101.

Amaratunga, D., Malalgoda, C., Haigh, R., Panda, A., & Rahayu, H. (2018). Sound practices of disaster risk reduction at local level. *Procedia engineering*, *212*, 1163-1170.

Barua, P., & Rahman, S. H. (2019). Indigenous Knowledge for Community Resilience Against Seasonal Flooding: The Case of Southeastern Coast of Bangladesh. *IUP Journal of Knowledge Management*, *17*(4), 47-67.

Brammer, H. (2014). Bangladesh's dynamic coastal regions and sea-level rise. *Climate RiskManagement*, 1, 51-62.

Burns, P. M. (2004). Tourism planning a third way? *Annals of Tourism Research*, *31*(1), 24-27.

Cannon, T. (2008). *Reducing people's vulnerability to natural hazards communities and resilience* (No. 2008/34). WIDER Research Paper.

Carpenter, S., Walker, B., Anderies, J. M., & Abel, N. (2001). From metaphor to measurement: resilience of what to what?. *Ecosystems*, *4*(8), 765-781.

Chambers, R. (1983). *Rural development: Putting the last first.* London: Longman. "Community Participation". (n. d.). available at:

https://ec.europa.eu/echo/files/evaluation/watsan2005/annex_files/WEDC/es/ES12CD.pdf

Creswell, J., & Plano Clark, V. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.

Cronin, S. J., Gaylord, D. R., Charley, D., Alloway, B. V., Wallez, S., & Esau, J. W. (2004). Participatory methods of incorporating scientific with traditional knowledge for volcanic hazard management on Ambae Island, Vanuatu. *Bulletin of volcanology*, *66*(7), 652-668.

Freeman, C., Nairn, K., & Gollop, M. (2015). Disaster impact and recovery: what children and young people can tell us. *Kōtuitui: New Zealand Journal of Social Sciences Online*, *10*(2), 103-115.

Gero A, Meheux K, Dominey-Howes D. Integrating Community Based Disaster Risk Reduction and Climate Change Adaptation: Examples from the Pacific[J]. *Natural Hazards and Earth System Scienc*es, 2011, 11(1): 101-103.

Grove, K. (2014). Agency, affect, and the immunological politics of disaster resilience. *Environment and Planning D: Society and Space*, 32(2), 240-256.

Guleria, S., & Edward, J. P. (2012). Coastal community resilience: Analysis of resilient elements in 3 districts of Tamil Nadu State, India. *Journal of Coastal Conservation*, *16*(1), 101-110.

Haider, M., & Hossain, Z. M. (2013). Impact of salinity on livelihood strategies of farmers. *Journal of soil science and plant nutrition*, 13(2), 417-431.

Haque, M. (2019). Indigenous knowledge and practices in disaster management: Experiences of the coastal people of Bangladesh. In *Disaster risk reduction* (pp. 59-72). Palgrave Macmillan, Singapore.

Haworth, B. T., Bruce, E., Whittaker, J., & Read, R. (2018). The good, the bad, and the uncertain: Contributions of volunteered geographic information to community disaster resilience. *Frontiers in Earth Science*, *6*, 183.

Hossain, M. A. (2013). Community participation in disaster management: role of social work to enhance participation. *Antrocom Online Journal of Anthropology*, 9(1), 159-171.

Hussain, M. Akbar, (2001). Anthropological Approaches to the Study of Natural disasters, *Journal of Anthropology*, 6:67-86

Imperiale, A. J., & Vanclay, F. (2020). Top-down reconstruction and the failure to "build back better" resilient communities after disaster: lessons from the 2009 L'Aquila Italy earthquake. *Disaster Prevention and Management: An International Journal*, *29*(4), 541-555.

Islam, K. F. (2013). *Community Based Disaster Management in Bangladesh*. Available at: https://www.researchgate.net/publication/333972153_Community_Based_Disaster_Management_in_Bangladesh/link/5d10640f299bf1547c79551b/download, last accessed on 5th May, 2022.

Kala, D., & Bagri, S. C. (2018). Barriers to local community participation in tourism development: Evidence from mountainous state Uttarakhand, India. *Tourism: An International Interdisciplinary Journal*, *66*(3), 318-333.

Khan, A. A., & Sumon, M. S. R. (2020). Socio-economic Impacts of Water Logging in the South-West Coast of Bangladesh. In *Water Management in South Asia* (pp. 159-173). Springer, Cham.

Kafle, S. K., and Murshed, Z. (2006). *Community-based disaster risk management for local authorities participant's workbook Asian disaster preparedness center*. Prepared for ADPC. Available at: https://www.researchgate.net/publication/265642277_COMMUNITY-BASED_DISASTER_RISK_MANAGEMENT_FOR_LOCAL_AUTHORITIES_PARTICIPANT%27S_WORKBOOK_Asian_Disaster_Preparedness_Center

Khatun, M. R., & Paul, G. C. (2019). Impact of the cyclonic storm Komen along the coast of Bangladesh and recovery measures. *Int J Sci Eng Res*, *10*(2), 1334-1340.

Magis, K. (2010). Community resilience: an indicator of social sustainability. *Society and Natural Resources, 23*, 401–416. doi:10.1080/08941920903305674

Mallick, B., & Vogt, J. (2011). Social supremacy and its role in local level disaster mitigation planning in Bangladesh. *Disaster Prevention and Management: An International Journal*, 20(5), 543-556. DOI 10.1108/09653561111178970

Maskrey, A. (1989). *Module on Community based Disaster Risk Management, CBDM-2 Handout*. Bangkok, ADPC.

Najnin, A. (2014). *Integrated Approach to Assess Vulnerability of the Coastal Region of Bangladesh due to Climate Change.* A Master's Thesis. Available at: https://www.researchgate.net/publication/306286222_Integrated_approach_to_assess_vulnerability_of_the_Coastal_Region_of_Bangladesh_due_to_climate_change_httphdlhandlenet1036211748/download11021122

O'Brien, M., and Holland, T.D. (1992). The role of adaptation in archeological explanation. *American Antiquity*, 57, 36–69.

Paul, S. (1987). *Community participation in development projects*. Washington, DC: World Bank.

Phiri, A., Van Nikerk, D., & Van, E. S. (2016). Theoretical orientation of community based disaster risk management. *Global Journal of Human-Social Science*, *16*(1).

Rana, S. M., Kamruzzaman, M., Rajib, M. A., & Rahman, M. M. (2011). Changes in cyclone pattern with climate change perspective in the coastal regions of Bangladesh. *Environmental Research, Engineering and Management*, *56*(2), 20-27.

Samaddar, S., Yokomatsu, M., Dayour, F., Oteng-Ababio, M., Dzivenu, T., Adams, M., & Ishikawa, H. (2015). Evaluating Effective Public Participation in Disaster Management and Climate Change Adaptation: Insights From Northern Ghana Through a User-Based Approach. *Risk, Hazards & Crisis in Public Policy*, *6*(1), 117-143.

Sastry, K.R. (2001). *Improving Community Participation and People's Awareness in Disaster Reduction.* The paper is prepared as a contribution to the first edition of the Global Blueprints of Change and for use in conjunction with the International Workshop on Disaster Reduction convened on 19-22 August 2001 in Reston VA.

Schwartz, M. (Ed.). (2006). *Encyclopedia of coastal science*. Springer Science & Business Media.

Shah, S. A. (2012). Gender and building homes in disaster in Sindh, Pakistan. *Gender & Development*, *20*(2), 249-264.

Sovacool, B. K., Tan-Mullins, M., Ockwell, D., & Newell, P. (2017). Political economy, poverty, and polycentrism in the global environment facility's least developed countries fund (LDCF) for climate change adaptation. *Third World Quarterly*, *38*(6), 1249-1271.https://doi.org/10.1080/01436597.2017.1282816https://doi.org/10.1080/01436597.2017.1282816

Wang, J. Liu, N. Xu, C. Fan, Y. Fan, S. He, L. and Jiao, N. Ma. (2019). The role of Indigenous knowledge in integrating scientific and indigenous knowledge for community-based disaster risk reduction: A case of Haikou Village in Ningxia, China. *International Journal of Disaster Risk Reduction*, 41, 101309.

Watts, M. J., & Bolhe. G. (1993). Hunger, famine, and the space of vulnerability. *Geojournal*, 30(32), 117-125.

Yore, R. K., I, and Tofa, M. (2018). *Community-based Disaster Risk Management (CBDRM).* Global alliance for Disaster Risk Reduction and Resilience in the Education Sector. Available at: https://www.preventionweb.net/files/61520_communitybaseddisasterriskmanagemen[1].pdf , last accessed on 5th July, 2022.

Zaman, F. (2021). The role of popular discourse about climate change in disaster preparedness: A critical discourse analysis. *International Journal of Disaster Risk Reduction*, *60*, 102270.