



# Mainstreaming Decentralization and Collaboration in Disaster Risk Management: Insights from Coastal Bangladesh

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## Abstract

Bangladesh is renowned in disaster risk reduction (DRR) for active involvement of community people and local disaster management institutions in DRR activities. Our study aimed to describe the disaster risk management (DRM) institutions and assess their functioning in six coastal unions across the three coastal zones of Bangladesh. Both qualitative and quantitative research approaches were used. The study focused on two key local institutions—the Union Disaster Management Committees (UDMCs) and the Cyclone Preparedness Program (CPP)—functioning at the union level in DRM. Such institutions have both horizontal and vertical collaborations with other institutions. However, we argue that the UDMCs' external dependencies in their functioning indicate their limited financial and administrative autonomy, which is a barrier to successfully institutionalizing disaster management. The results show that the CPP is the most successful program, markedly increasing the trust of the people in warning dissemination and evacuation efforts in the event of a cyclone. Although the adoption of decentralized risk management systems has resulted in significant progress in increased rate of evacuation and reduced death rate and damage, lack of funding and equipment, limited coordination between institutions, lack of skilled and knowledgeable workforce, and inappropriate power structures may reduce the effectiveness of DRR activities prior to, during, and following disasters.

**Keywords** Coastal Bangladesh · Cyclone preparedness program (CPP) · Decentralization · Disaster risk governance · Institutional linkage · Union disaster management committee (UDMC)

## 1 Introduction

The United Nations Office for Disaster Risk Reduction (UNDRR, formerly known as UNISDR) launched the Hyogo Framework for Action 2005–2015 (HFA) in 2005. The HFA introduced the concept of disaster risk reduction (DRR) and highlighted the need to ensure DRR as a first priority both at the local and national levels with a strong institutional basis (UN 2015). The Sendai Framework for Disaster Risk

Reduction 2015–2030 was launched in 2015, stressing the need to enhance preparedness before a disaster, and recovery, rehabilitation, and reconstruction afterwards (UN 2015). It is necessary to evaluate the progress of both frameworks' priorities to understand the current situation of disaster risk governance and to plan a future framework.

Bangladesh has pioneered many thematic developments in disaster management. Although DRR was only officially incorporated in governmental policy in 2002, it was being implemented as early as the 1960s (Islam 1974). Initial structural measures to reduce the impact of hazards, such as cyclones and storm surges, had also begun at that time—for example, coastal embankment construction in 1960 and cyclone shelters (CSs) in 1962 (Islam 1974). As a nongovernmental DRR actor, the Bangladesh Red Crescent Society (BRCS) launched the Cyclone Preparedness Program (CPP) in 1972 (CPP 2019). This program continues to utilize many volunteers to disseminate warnings and implement evacuation orders (see, for example, Flood Forecasting and

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Warning Centre and BDRCS MoU<sup>1</sup> of 2021). By 1993, the government established the Disaster Management Bureau (DMB), whose tasks included reducing the human, economic, and environmental costs of disasters, and strengthening national capacities and cross-sectoral partnerships (Choudhury 2008; Haque and Uddin 2013).

When the global disaster management paradigm shifted from short-term relief and rehabilitation to DRR in the last decade of the twentieth century, Bangladesh developed and adopted new plans in disaster management. The DMB became the institutional foundation of an integrated approach to disaster risk reduction, response, and recovery and the focal point for the HFA (Choudhury 2008). As part of decentralizing DRM under the 2005 HFA and the 2015 Sendai Framework, the Bangladesh government aimed to involve local communities to manage DRR at pre-, during, and post-disaster phases. Since 2003, the government has had a Comprehensive Disaster Management Program (CDMP) that attempts to integrate risk reduction into disaster management by facilitating local disaster management plans at the union, upazilla (sub-district), and district levels, coordinating government agencies and nongovernmental organizations (NGOs), monitoring preparedness, maintaining an inventory of skilled disaster management personnel, and a depository of relevant information (Choudhury 2008; Choudhury et al. 2019; Mohibullah et al. 2021).

Coastal Bangladesh—the study area of this research—is highly vulnerable to tropical cyclone and its associated storm surge. Deaths from such hydrometeorological hazards have consistently decreased in Bangladesh since the 1970s despite their increase in frequency (Karim and Mimura 2008; Saroar and Routray 2012), with such deaths having fallen from half a million in 1970 to a few hundred in recent super cyclones (Rahman and Rahman 2015). The key to Bangladesh's success in disaster management thus far has been the involvement of the local community in DRR through disaster management committees (DMCs) at the national, subnational, and local levels (Shaw et al. 2013; Rahman and Rahman 2015; Parvin et al. 2019). Challenges still exist, however, particularly in relation to the provision of timely and effective warning messages for cyclone landfall, the warning dissemination system, early evacuation, and post-disaster recovery (Ahsan 2014; Paul 2014). Cyclones continue to generate significant impacts on the lives and livelihoods of the coastal poor in the long term (Ahsan 2010; Fakhruddin and Rahman 2015). It is, therefore, essential to evaluate those DRR actions implemented under a decentralized local government framework at the union level (the lowest or fourth level administrative unit of Bangladesh) to

determine the extent to which they are achieving the DRM goals of the national government.

In light of the above, using a decentralization lens, this research investigated the local disaster risk governance institutions, their establishment, composition, effectiveness, and the collaborations at the different phases of the risk management cycle. The research also aimed to understand the role, functioning, and challenges of local DRM institutions at the community level along the different coastal zones of Bangladesh.

## 2 Decentralization in Disaster Risk Management (DRM)

To better address disaster risk and vulnerability, a good level of understanding and coordination between central (that is, national) and local authorities is of utmost importance (Miller and Douglass 2016). Studying the decentralized disaster governance offers a means of understanding how effective the role of local government is in the face of various disasters. Decentralization refers to the transfer of the responsibility and authority for government services from the national government to regional and/or local governments (Faguet 2014; Bae et al. 2016; Putra and Matsuyuki 2019). In DRM, decentralization includes “authority being spread out from a smaller to a larger number of actors” (Pollitt 2007, p. 373) and shifting administrative, political, and fiscal power and responsibilities from central to local government (Treisman 2007; Scott and Tarazona 2011; Hermansson 2019).

Decentralization has been advocated to improve disaster governance by strengthening local capacities and bringing in local perspectives and expertise through the engagement of local actors (Hermansson 2019). Global frameworks, namely the HFA and its successor, the Sendai Framework, emphasized empowering local authorities and improving the performance of local governments as key participants in disaster management (Hermansson 2019; Putra and Matsuyuki 2019). Even before decentralized governance became a focus of these frameworks, international funders and policymakers had increasingly agreed that decentralized governance was more effective than a centralized authority in managing disaster risk (Ahmed and Iqbal 2009). Multilateral funders such as the World Bank welcomed decentralization as a crucial component of catastrophe risk mitigation strategies (Demeter et al. 2004; Ahmed and Iqbal 2009). Local governments are expected to take the lead in DRM as DRM has always been considered a local issue for which communities have for centuries been developing their own strategies to adapt to and minimize disaster risk (Scott and Tarazona 2011).

It is also argued that as in most cases, disasters mostly occur in a particular geographical context (that is, rarely

<sup>1</sup> <https://bdracs.org/memorandum-of-understanding-between-flood-forecasting-and-warning-centre-and-bdracs/>.

affecting a whole country equally) (Ahmed and Iqbal 2009; Putra and Matsuyuki 2019), effective mitigation and risk reduction efforts require the utilization of local information, expertise, and resources (Messer 2003). For instance, tropical cyclones in Bangladesh affect various coastal areas rather than the entire country. Local governments can better plan for disasters in the region, as they have a deeper understanding of the local context and vulnerabilities (Bae et al. 2016). Decentralized governance can be effective in the pre-, during, and post-disaster phases of disaster management. In the emergency (during disaster) phase, local governments are in the position to be the first on the scene with rescue and mitigation efforts. They can possess local knowledge of the specific location and conditions, which may be quite helpful in such situations (Ahmed and Iqbal 2009; Bae et al. 2016). Local elected representatives with a desire to build political capital are also attracted to helping with relief and rescue efforts (Ahmed and Iqbal 2009).

Decentralized disaster management is also effective in pre- and post-disaster preparedness and planning. It has been argued that local government is best placed to undertake essential pre-disaster preparedness actions such as risk mapping, infrastructure maintenance, awareness building, disaster resistant building regulations, land zoning, dam and embankment construction, and emergency planning (Ahmed and Iqbal 2009; Skidmore and Toya 2013; Bae et al. 2016). In the post-disaster phase, local governments may also best be able to adequately manage recovery, reconstruction, and rehabilitation with adequate damage assessment and targeting (Ahmed and Iqbal 2009; Garschagen 2016).

Nevertheless, the effectiveness of a high reliance on local governments to deal with disasters has been questioned, as a decentralized disaster management may also have drawbacks. A lack of sufficient human, technical, or financial resources may limit the DRM capacities of local government, especially in developing and less developed countries or newly decentralized administrations when dealing with high impact but low frequency risk (Scott and Tarazona 2011; UNISDR 2012; Jha and Stanton-Geddes 2013; Nottage et al. 2014; Bae et al. 2016). It has been shown that while decentralization was implemented to comply with an international framework, key decisions and resources remained sometimes centralized (due to political leaders' desire to keep decision-making power (Ahmed and Iqbal 2009).

Decentralization brings government closer to the public, allowing their preferences to be better represented in policy decisions (Ahmed and Iqbal 2009). However, it is argued that too close contact between government employees and local inhabitants might breed conflicts of interest, lack of professionalism, and corruption (Prud'Homme 1995; Tanzi 1996; Ahmed and Iqbal 2009). When local residents (particularly politicians and members of local elites) collaborate

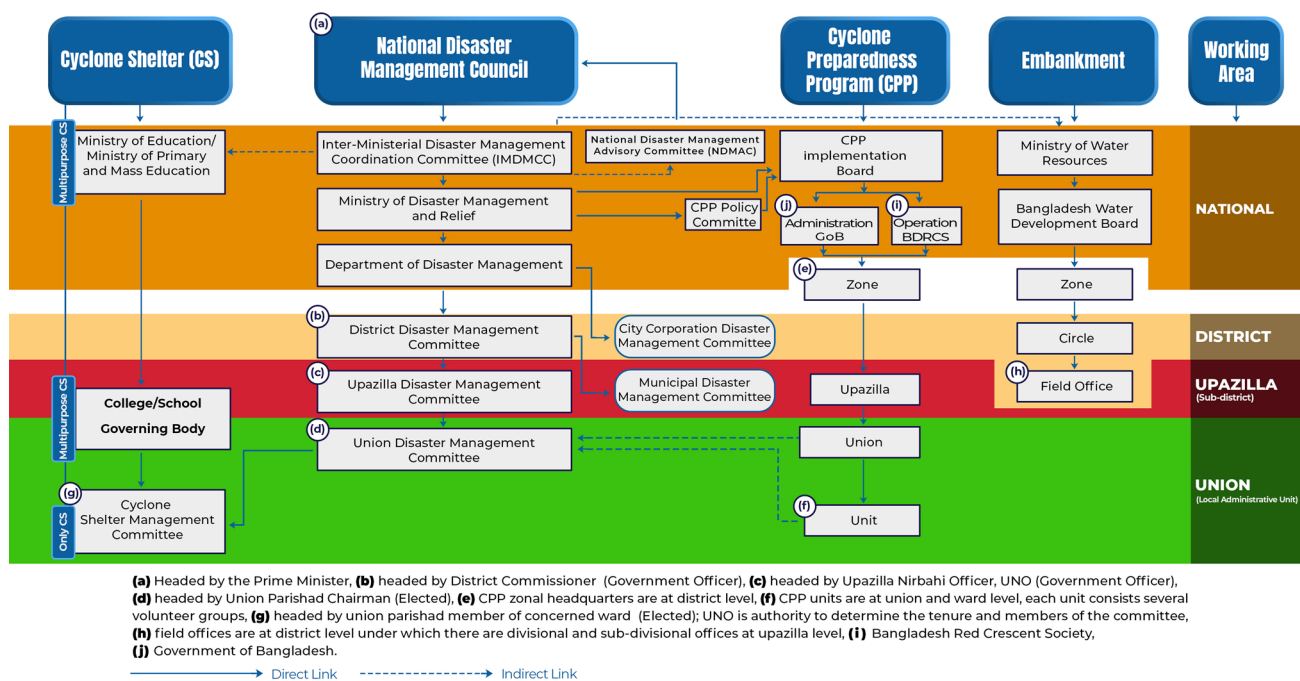
with local bureaucrats, the local government's supervisory and enforcement capability may be weakened, impacting community vulnerability (Ahmed and Iqbal 2009). Therefore, empirical accounts are critical to determining whether and how decentralization is beneficial in reducing catastrophe risk in developing nations. We have no intention to argue against decentralized disaster governance, but rather, "to raise the issue that simply setting up a decentralized institution would not be enough, and that strong intergovernmental and inter-organizational collaborations are necessary for effective disaster management" (Bae et al. 2016, p. 51). Here we explore the structure of existing decentralized disaster risk governance in coastal Bangladesh and how effective such management is in tackling disasters risk reduction at the local level.

### 3 Disaster Management in Bangladesh: Regulatory Frameworks, Institutions, Practices, Decentralization, and Collaboration

Institutional structures to support disaster management were established soon after independence in 1971. The government of Bangladesh's disaster management activities are driven by several national guidelines, namely, the Disaster Management Act (DMA), the Disaster Management Policy, the Standing Orders on Disaster (SOD), and the National Plan for Disaster Management (NPDm) (Sabur 2012; Alam and Ray-Bennett 2021). These relate directly to disaster planning and policy. Other plans and policies indirectly related to disaster management include the Perspective Plan 2021–2041, the 8th Five Year Plan, and the Bangladesh Delta Plan 2100 (Alam and Ray-Bennett 2021). These frameworks and policy documents aim to reduce the gaps between government and people by increasing involvement of stakeholders from different levels and democratization, resulting in a more efficient and transparent disaster management system.

The government formulated the Standing Orders on Disaster (SOD) in 1997, the country's first DRM regulatory framework (later amended in 1999, 2010, and 2019). They define the roles and responsibilities of all people concerned in all stages of disasters and describe the role and duties of the Prime Minister's Office, relevant ministries, government departments, and elected authorities at the local level in disaster management. All other applicable rules and regulations are subordinate to SOD (Sabur 2012; Alam and Ray-Bennett 2021).

Bangladesh's Disaster Management Act (Act No. 34 of 2012) entered into force in 2012. It details the legal responsibilities of the different ministries and committees involved in DRR. Bangladesh continued its DRM commitment by



**Fig. 1** The institutional framework of disaster risk reduction in Bangladesh. This figure is a compilation with amendment from Alam (2021), CPP (2019), CDMP (2010), DDM (2019), and GoB (2021). The flow of horizontal and vertical connections is theoretical

implementing the Sendai Framework. In accordance with section 19 of the DMA, the government formulated the National Disaster Management Policy of 2015 (GoB 2015) which offers a national perspective on disaster risk governance, considers different communities, regions, sectors, and hazards, and includes a strategic long-term framework.

In agreement with governance sector decentralization, the government operates a variety of interconnected and interdependent institutions to ensure effective disaster management planning, coordination, and implementation (see Fig. 1). The institutional framework includes responsibilities and activities of many organizations in a top-down collaborative approach from the national, district, upazilla (sub-district) to the union levels. The current structure began with the establishment of the Disaster Management Bureau, which enhanced and institutionalized disaster management after the 1991 cyclone and the 1998 floods (Sabur 2012).

At the national level, the National Disaster Management Council (NDMC) (headed by Prime Minister (PM)) and National Disaster Management Advisory Committee (NDMAC) (headed by a PM-selected specialist) operate as core apex committees in disaster governance in Bangladesh. The NDMAC provides advisory support to the NDMC. Their main common activities are: (1) advocacy and (2) policy and planning reform. Under the advocacy program, the committees are in charge of promoting awareness of the benefits of risk reduction to political, senior policy, and government department leaders as well as media and academic

institutions. Both are also in charge of reviewing disaster management and development planning policy as well as mainstreaming and promoting a comprehensive risk reduction culture.

The third core committee at the national level is the Inter-Ministerial Disaster Management Coordination Committee led by the Ministry of Disaster Management and Relief (previously the Ministry of Flood and Disaster Management). Under this committee, the ministry performs the secretarial responsibilities of implementing the directions of the NDMC. The ministry provides overall guidance to other relevant ministries (for example, Ministry of Education, Ministry of Water Resources), committees and the various sectors, and leads DRR and emergency management. According to the current institutional framework, the Ministry of Disaster Management and Relief is the government’s focal point for disaster-related matters; it is duty-bound to coordinate national disaster governance activities across all organizations (Sabur 2012; Alam and Ray-Bennett 2021). Aside from these three apex national agencies, several other institutions work at the national level in a wide range of disaster-related fields (see Fig. 1).

At a decentralized level, risk management is the responsibility of the DMCs at the district, upazilla, and union levels. City corporation and pourashava (municipality) DMCs are also established in large cities and local urban growth centers, respectively. These committees oversee planning, reviewing, coordinating, and

implementing disaster management activities in pre-, during, and post-disaster phases in their own jurisdictions (Ha and Ahmad 2015). Regulatory frameworks provide that, at the local level, each DMC has its own set of responsibilities to strengthen disaster management activities (Sabur 2012; Ha and Ahmad 2015).

The composition, roles, and responsibilities of DMCs at the district, city corporation, and pourashava levels are not discussed here in detail as in this research we focused on the disaster management at the union level as the country's lowest administrative unit. At the upazilla level, the UzDMC is formed to coordinate with the Union Disaster Management Committee (UDMC) and DMCs. There is a basic difference between UzDMC and UDMC in terms of formation. UzDMC is headed by an administrative officer called Upazilla Nirbahi Officer while UDMC is headed by an elected representative (Union Parishad Chairman) of local government. At the union level, the UDMC is the closest local government to community people. So, in a study of the effectiveness of Bangladesh's decentralized risk management policy, it is relevant to assess the functioning of the UDMC and its role in implementing DRR actions and its linkage to other DRR bodies. This research engaged with six UDMCs of coastal Bangladesh, including Gabura Union (Satkhira District), Southkhali Union (Bagerhat District), Jahajmara and Purba Charbata Unions (Noakhali District), and Baraghope and Magnama Unions (Cox-Bazar District).

Along with the UDMC at the union level, the Cyclone Preparedness Program (CPP), a Bangladesh Red Crescent Society (BDRCS) initiative, is another disaster management activity since independence. The BDRCS has managed it since its beginning. Currently, this program is jointly managed (see Fig. 1) by the BDRCS and the Ministry of Disaster Management and Relief in 13 of the 19 coastal districts. The CPP includes more than 55,000 volunteers (CPP 2019) who are responsible for disseminating warning messages before cyclones (trying to reach all inhabitants), facilitating evacuation, and providing first aid to the injured. The CPP's main aim is to save lives by bringing people to CSs before a cyclone's landfall. A union leader is in charge of the CPP at the union level and runs all CPP activities while maintaining coordination with the UDMC. A CPP union leader is also a member of the UDMC and assists the UDMC's DRR activities, including preparing a disaster risk and vulnerability reduction plan (DDM 2010). The CPP's main funding comes from the Bangladesh government and the BDRCS. In addition to that, for the local level emergency need and petty expenditure, a "CPP Development Fund" is created by CPP volunteers independently (CPP 2019).

## 4 Material and Methods

In this study, a mixed research methodology including qualitative focus group discussions, interviews, quantitative surveys, and systematic field observations has been used for primary data collection. Secondary data were collected from local administrative unions (that is, Union Parishad Offices). These data included meeting minutes, local disaster management plan, local awareness billboard, and so on. The main fieldwork was conducted from May to July 2015. No ethical approval was considered necessary according to the Vrije Universiteit Brussel guidelines, but all participants were asked to sign a form of consent before interviewing.

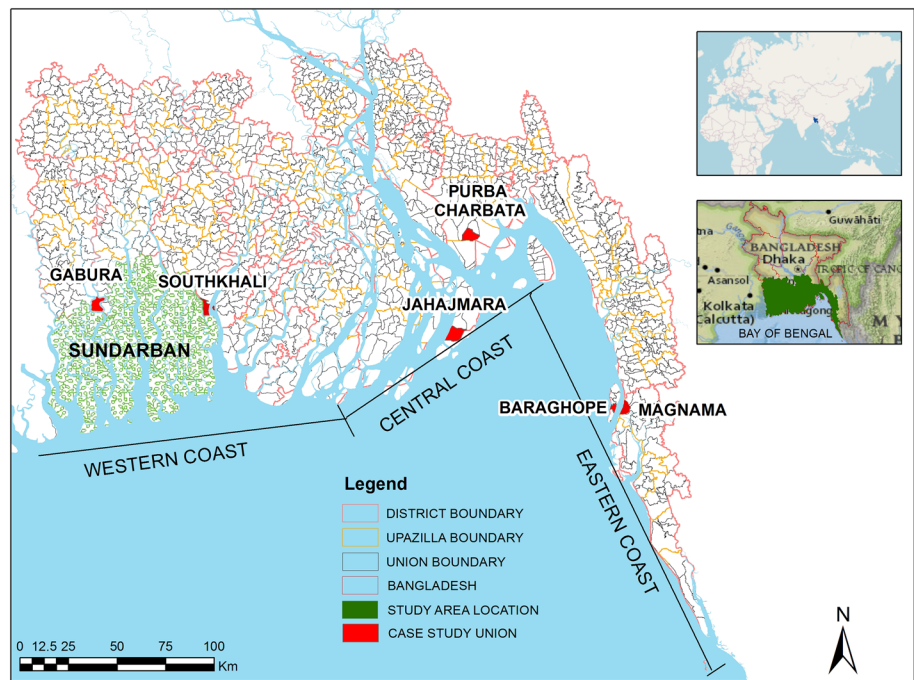
### 4.1 Study Areas

Six coastal unions, two from each of three coastal zones, were selected as study areas (Fig. 2). The unions studied were selected on the basis of the following criteria: the union belongs to one of the country's 19 coastal districts; it is on or very close to the coastline; and it has been hit by at least one deadly tropical cyclone in the last 20 years. In each coastal zone one union is on an island, while the other is part of the mainland. More details on the vulnerability, exposure, and risk profile of the selected unions can be found in Quader et al. (2021).

### 4.2 Qualitative Data Collection

Participatory research appraisal (PRA) techniques were used for qualitative data collection. These include focus group discussions (FGDs) that were used to assess each coastal community's vulnerability to coastal hazards and critically assess the functioning of the disaster management institutions at the local level. Two FGDs were conducted in each union; one with local inhabitants selected regardless of race, age, and religion, and another with UDMC members. The UDMC members (at least one person from each professional or organizational category was invited and when one denied we moved to another, contacting twice for confirmation) were invited over phone to participate in the discussion. Prospective participants for the local people's FGD were recruited by advertising at advantageous locations in the unions (that is, market area, local tea stall, and so on). Purposeful and convenience sampling techniques were applied to select participants, based on the following inclusion criteria: the participant (1) is able to decide to join the discussion, (2) has witnessed at least one natural hazard-induced disaster, and (3) undertakes work related to his/her livelihood within the union. When all criteria were met, the potential

**Fig. 2** Map of the coastal zone in Bangladesh. The six unions included in the study are marked in red and their names are indicated. Subset maps show the location of Bangladesh and its coastal zone



participants were contacted twice to confirm and notify them of the date, time, and place for the discussion.

An FGD was organized in each union at a location convenient for all participants (for example, a local school after class time, or Union Parishad meeting room). Each FGD lasted two to three hours. The lead researcher conducted and guided the discussion, following a prepared guideline. Discussion started with participant consent: participants could decide to leave the discussion after listening to the consent letter before the actual discussion began. Discussion was guided by an outline including the themes of hazards, vulnerability, disaster impact, adaptation practices, and future adaptation options. Discussion of each section was divided into the three phases of the disaster cycle (that is, pre-disaster, disaster, post-disaster) to identify the involvement of the local people in the disaster management activities in each phase. Recording methods adopted for the discussion included: the head researcher writing a record on paper at a desk, a rapporteur writing the thematic points in bullet form on a flipchart, and a voice recording using an electronic voice recorder (with participant's prior consent). Participants had the chance to discuss, oppose, and agree after a debate on each particular theme. The discussion was moderated by the head researcher who intervened if there was any dominant voice among participants. He encouraged those who remained silent to speak on the issue. The debated key themes were again read out at the end of the discussion to confirm that those attending had been able to express their opinions and had been understood correctly. The meeting ended when discussion appeared to reach its natural conclusion and no new data or themes were emerging. The

language of the sessions was the local dialect—Bangla. The records and transcripts were then translated into English and imported to Nvivo 12 (qualitative data analysis software) for analysis. The relevant themes, nodes, and codes (inductive and deductive) were created and collated in the software and analyzed to explore the risk management as evaluated by the local people and UDMC functionaries.

In addition, 18 key informant interviews (KII) were conducted to understand the strengths and weaknesses of the Cyclone Preparedness Program (CPP), with three KII in each case study union. Participants were the upazilla CPP team leader, union CPP team leader, and village level CPP unit team leader. There were some limitations to conducting fieldwork. First, the six study unions are located in remote areas of Bangladesh, and finishing the fieldwork within the scheduled time was a significant challenge. Second, it was difficult to avoid unexpected participation in the FGD sessions. In some cases, uninvited people entered the FGD venue, wasting time taking them out.

### 4.3 Quantitative Data Collection

A survey was administered among CPP volunteers as part of the quantitative techniques adopted in the study. We collected a list of CPP members in each of the six unions, with address and contact details provided by CPP headquarters (Dhaka). We developed a structured questionnaire with closed and open structured questions aiming to examine the role and effectiveness of the CPP in terms of administrative, logistics, and financial autonomy, and horizontal and vertical institutional linkages. With their consent, available members

**Table 1** Union disaster management committees (UDMCs) and number of FGD attendees from UDMC

Coastal Zone	Relative location	Union	Total UDMC member	FGD attendee from UDMC		
				Femal	Male	Total
Western	Island	Gabura	35	1	5	6
	Mainland	Southkhali	39	5	13	18
Central	Island	Jahajmara	36	5	14	19
	Mainland	Purba Charbata	40	3	16	19
Eastern	Island	Baraghope	37	3	12	15
	Mainland	Magnama	31	2	8	10

were interviewed face-to-face. As mentioned earlier, a purposive and convenience sampling followed to select survey participants also and a total of 160 member CPP volunteers were surveyed across the six unions. Each session lasted approximately 45 minutes. The quantitative data were analyzed by SPSS software.

## 5 Results and Analysis

This section outlines the key first-hand accounts with analysis. It begins by describing the formation of local disaster management institutions and their horizontal and vertical collaboration. Later, the role, functions, effectiveness, and problems of such local DRR institutions in disaster risk governance are described.

### 5.1 Local Decentralized Disaster Risk Governance Institutions and Their Composition

According to SOD, several institutions run disaster management activities at the union level in coastal Bangladesh, such as the Union Disaster Management Committees (UDMCs), the Cyclone Preparedness Program (CPP), the Cyclone Shelter Management Committees (CSMCs), and so forth. Among these disaster management authorities at the local level, the UDMC played a central role. Accounts from interactions with local stakeholders and inhabitants confirmed that since they were established two decades ago, the UDMCs have been a local government (Union Parishad) lead authority in DRM. However, the results suggest that the composition of the UDMCs is not always updated in accordance with regulatory frameworks. A UDMC should count between 36 and 39 members according to SOD. The FGDs revealed that, of the six unions studied, only three UDMCs (Baraghope, Jahajmara, and Southkhali) are formed according to the SOD guidelines and keep committee membership up-to-date (Table 1). Of the three remaining unions, Purba Charbata included non-listed members (which are not listed by the SOD) as additional ones (total 40 members) while membership of Magnama and Gabura failed to reach the required number. For Magnama Union, no formal UDMC had been

approved before our fieldwork in June 2015. It was formed just before the FGD session but not duly approved.

Although the UDMCs were existing, the rapid turnover in the responsible administrative departments made it difficult to have a stable UDMC composition. In addition, the temporary absence of elected members (chairman and members) from local government (Union Parishad) creates a vacuum condition in the composition of the UDMC. These formal issues of composition lead to periods of inactivity of the UDMC, but might also more fundamentally, lead to imbalance in the power dynamics within the UDMC. We noted that local power dynamics, political and economic influences led to the inclusion/exclusion of representatives from different groups (for example, farmers, fishermen, school teachers, imams, media persons, disaster experts, cooperative society members, freedom fighters). When asked about the reason of this unbalanced composition, the participants reported that rapid turnover of government officials in charge of different sectors at the local level make it difficult to have a stable UDMC composition according to SOD. One UDMC chair reported:

How can our UDMC be formed fulfilling the requirement of Standing Orders of Disaster? As there are members from different government agencies, so when the representing person's position of this agency is vacant, how can we make sure all members are there at all the time.

As for the reason for including non-listed committee members in UDMC, the FGD participants indicated that social networking and trust are very important in emergency responses. The participants argued that people familiar with the area and well-connected with locals should be included as committee members, at least during the disaster period. Moreover, additional people were needed to balance local politics. This may provide better coordination during disasters. One participant stated:

Sometimes we need to include additional members considering local social and political context. In that case, we could not follow the SOD, but we have taken additional members because of necessity. And we co-

opt these additional people only for the emergency phase of disaster.

Along with the UDMCs, the Cyclone Preparedness Program runs in the case study unions. It focuses solely on cyclone disasters in coastal Bangladesh. The participants from all six unions reported that the CPP is active in their unions with a good number of volunteers from a range of professions including local businessmen (34%), farmers and fishermen (23%), day laborer (3%), students (6%), Teacher (10%), and others (24%).

The results show that the CPP is better structured than the UDMCs in most places. Although the CPP is jointly managed by the BDRCS and the Ministry of Disaster Management and Relief at the national level, at the union level it is solely managed and implemented by the BDRCS (DDM 2010; CPP 2019), which is the prime reason for its efficient structure and function, according to the participants. Moreover, the work of the CPP is fully run by volunteers from the local community, only aiming to reduce the risk of the community rather than any direct personal economic benefit. We found CPP teams at the union and unit (ward) levels in all study unions. This indicates an administrative decentralization of disaster risk governance at the local level, which runs effectively.

In addition to the UDMC and CPP, when asked about NGO and private sector involvement, the FGD participants reported that at least one national or local NGO (not the same one working in six study unions) is involved in disaster management in each study area, in particular for during and post-disaster management periods.

## 5.2 Horizontal and Vertical Collaborations Within and Between the Institutions

While in the decentralized disaster risk governance, the UDMC is the focus of local level DRM, there are other government and nongovernmental organizations intersecting with UDMC efforts to prepare and implement any risk reduction activities as horizontal collaboration. The participants from the UDMCs reported that, to prepare a comprehensive disaster management program (for example, preparing union resource and risk maps, preparing hazard and livelihood calendar, conducting risk assessment, listing vulnerable communities) per SOD guidelines, the UDMCs received substantial technical support through their horizontal collaboration with NGOs. For example, four UDMCs (Gabura, Sothkhali, Purba Charbata, Baraghope) had arranged meetings with NGO technical support. The UDMCs have prepared hazard maps, annual work plans and DRR plans, and other programs (for example, celebrating DRR day) with NGO financial and technical assistance.

In decentralized risk governance, it is also important to collaborate with other disaster management institutions like the CPP in coastal Bangladesh. The CPP and UDMCs are the two most important institutions at the union level actively involved in emergency situations related to any disaster. When asked about collaboration of CPP with such committees, the FGD participants of local inhabitants and UDMC reported that in some cases they found a lack of collaboration between CPP and UDMC members. As CPP members are provided with warning dissemination equipment, the UDMCs completely depend on CPP members to disseminate early warnings and evacuate people to CSs. The result suggests a strong collaboration between UDMC and CPP that can assist to run successful warning dissemination activities.

Along with such horizontal collaboration, it was also found that local level institutions undertake vertical collaboration in two ways: (1) local government authorities with various district and national level government agencies; and (2) local government agencies with international aid agencies. The FGD participants reported that the UDMCs need different help during and after disaster from different sub-district and district level government offices such as fire services, agricultural office, social welfare office, and so on. Moreover, collaboration exists between a UDMC and upazilla's (sub-district) and district's disaster management committees. In terms of collaboration with international donor agencies, the participants reported that donor agencies implement different activities where they need formal and informal collaboration with the UDMCs. For instance, to distribute emergency relief they are helped by the elected members of the Union Parishad who prepare a list of vulnerable families. Even upper level government agencies and international donors seek voluntary assistance from local people in emergency embankment protection and house building through the coordination of local institutions (like the UDMCs). While a successful collaboration brings positive outcomes in DRR, in terms of distribution of the responsibilities, the FGD participants reported that the effectiveness (for example, risk assessment, increase of awareness, less damage, less deaths, increase of the number of evacuated people, post-disaster recovery activities) of the collaboration depends on various factors such as the relationship between the higher authority and local government authority, political processes/influences.

## 5.3 Role, Functions, and Challenges of Local Institutions in Disaster Risk Management (DRM)

This section describes the critical part of the results based on first-hand accounts. It starts with a description of the activities of the UDMC and its effectiveness and challenges in disaster risk governance. Later it covers the CPP's role,



**Table 2** Functions and activities of the Union Disaster Management Committees (UDMCs). Functions and equipment are determined from the focus group discussions (FGDs) by the authors. Challenges and mitigation measures are the opinions expressed by the FGD participants

Coastal zone	Relative location	Union	Functions	Equipment/Products	Challenges	Measures to mitigate the challenges
Western	Island	Gabura	Several meetings conducted	Prepared "Need assessment" plan with the help of a NGO	Activities stopped after the duration of NGO project	Lump sum allocation in the yearly union budget can speed up regular activities
	Mainland	Southkhali	Several meetings conducted Arranged a disaster risk reduction (DRR) workshop	Have DRR work plan prepared by a NGO	No specific challenges	There is still a lot of NGOs that integrate UDMC functions in their programs. Ways should be thought of to keep it functional beyond the completion of NGO projects
Central	Island	Jahajmara	No meeting after UDMC formation	No equipment	Members do not know about their duties	Training at least on the rules and duties under the Standing Orders on Disaster (SOD) should be arranged immediately
	Mainland	Purba Charbata	Several meetings conducted	Prepared some awareness materials with the help of a NGO	No sustainable framework to conduct the activities of the committee when NGO stops working with it	Institutional linkage with the upazilla administration should be stronger and bi-monthly financial allocation (even if a small amount) is a must to make UDMC fully operational
Eastern	Island	Baraghope	Bi-monthly meeting arranged by a nongovernmental organization (NGO); Hazard mapping; celebrating different disaster related programs (for example, international day for disaster risk reduction)	A hazard map displayed on a billboard	Cannot function independently without the help of NGO	Needs some seed money from the annual budget; should increase the accountability of UDMC activities for disaster risk management
	Mainland	Magnama	Not functioning Formed during this fieldwork in June 2015 for the year 2015	A hazard map displayed at a billboard (prepared by NGO-Resource Integration Centre, RIC)	Elected chairman resides in town outside rather than in the union	Increase accountability and needs training

functions, and limitations in disaster risk reduction based on participants understanding.

### 5.3.1 Union Disaster Management Committee (UDMC)

The UDMCs lead DRM at the local level according to the SOD and the DMA. Table 2 explains the functions of the UDMCs in the six unions selected. Although the UDMCs are supposed to arrange bi-monthly meetings during normal times, this was not the case in all case study unions. Nongovernmental organizations helped the UDMCs of four of the six unions in arranging meetings (Table 2) while participants from Jahajmara stated that there was no meeting held of their UDMC as it had formed very recently (immediately before fieldwork).

Each local government unit of this study has a UDMC, but in most cases its functionality depends on technical and financial supports from NGOs. In terms of UDMC DRR activities, the participants reported that the UDMCs have prepared hazard maps, annual work plans for a year, and DRR plans as a pre-disaster initiative with the financial and technical help of NGOs. But UDMC member participants in all study unions stated that some of them have no clear idea about their responsibilities as members of such committees. Several NGOs included supporting a UDMC in their DRR projects and provided financial support to arrange meetings and discuss hazards, disasters, and DRM. The FGD participants stated that they argued for the allocation of a small fund from their Union Parishad's yearly budget for UDMC activities in relation to their responsibilities under the SOD. Table 2 shows that in some cases, a UDMC's (for example, Gabura) activities were disrupted when NGO support ceased.

Although the UDMCs run with the help of NGOs, participants from both local inhabitants and UDMC members reported that the UDMC played a critical role in the emergency and post-recovery phases. The UDMCs tried to coordinate with other local institutions to disseminate early warnings and undertake evacuations in the emergency phase. It was found that all immediate relief activities (for example, distributing food, water, clothing) by government and NGOs are run with the help of UDMC members. In the recovery phase, the UDMCs assist in listing disaster affected people and in damage assessment. They also assist distributing physical assets and infrastructure work.

The first-hand accounts from all unions reported that after forming a UDMC, the disaster management capacity had improved overall, thereby reducing risks to people and their assets. When asked about the benefits of UDMCs in disaster management, benefits that had not previously existed, participants from different stakeholders reported that their understanding of disasters (especially of cyclones) had improved, and they are now more aware of

disaster risk management than at any time before the formation of a UDMC. Participants argued that a significant reduction of the death rate (both for human and livestock) in cyclones is a vivid example of the success of the introduction of UDMCs and CPP.

Despite the UDMCs' critical role in pre-disaster risk assessment, early warning, evacuation, and immediate relief distribution, and its post-disaster damage assessment and recovery activities, the FGD participants from marginal groups raised critiques towards the UDMC regarding the disaster governance. For instance, marginal group participants stated that there is no relief distribution without complaints of corruption and nepotism. Allegations of lack of coordination among the local institutions were also raised by the FGD participants of local inhabitants from Baraghope, Magnama, Southkhali, and Gabura Unions. There were multiple accounts of a lack of coordination, of distribution of inappropriate types of relief items, of relief distribution activities concentrated in particular areas (for example, along the embankment), and of the same persons getting relief several times from different organizations while other people in need never received relief. An FGD participant from Gabura Union stated:

[With deep sorrow] We evacuated in a cyclone shelter in the last cyclone (*Aila*). We stayed there for several weeks. Our house was washed out by surge water. We did not get any relief as it was distributed only on the embankment that is far from the shelter. It is a pity that the relief distribution work did not reach the places that are difficult to go. There was no coordination among the beneficiaries selected by different organizations. Many people received relief goods more than their necessity, and they sold it. Some people who had migrated to urban areas before the cyclone came back to the area after Cyclone *Sidr* to get relief.

Finally, although the UDMCs are taking technical and financial supports from NGOs, they have played an overall satisfactory role in the risk assessment in the pre-disaster phase and in early warning dissemination, evacuation, and rescue phases. In contrast, the functionality related to relief distribution and post-disaster recovery activities is not satisfactory for all disaster events. While the UDMCs maintain good collaboration with other local disaster management institutions in pre-disaster and emergency phases, in the distribution of relief and recovery activities in the post-disaster phase, they mostly rely on the elected members of Union Parishad (who are also members of the UDMC), which has been reported as constraining the implementation of such disaster governance activities (Allen 2006; Choudhury et al. 2019; Alam and Ray-Bennett 2021).

### 5.3.2 Cyclone Preparedness Program (CPP)

Along with the UDMCs, the CPP is a critical local level institution, particularly for cyclone-prone coastal districts. Although CPP has horizontal linkage with the national disaster management committee (the SOD specifies CPP functions), it was found that at the local level, Bangladesh Red Crescent Society (BDRCS) volunteers implement CPP activities. Union Disaster Management Committee participants argued that the UDMCs are associated with the CPP activities in the pre- and post-emergency phases as per documentation, but the findings suggest that the coordination is not always functioning. For instance, a UDMC often does not practically include CPP members in emergency relief and post-disaster relief and recovery activities. One CPP team leader stated:

Our CPP team is mostly engaged in disseminating early warnings and evacuation to a cyclone, so we know who are the people most impacted, but when the UDMC listed affected people and their damage for relief activities, the UDMC mostly relied on the public representative of Union Parishad who is also the member of the UDMC.

The CPP plays critical roles in the pre-, during, and post-disaster phases, in the coastal district. When asked what activities were included in the CPP, the CPP volunteers reported that the CPP particularly focuses on the cyclone event and was involved in early warning dissemination, evacuating people to safe place (for example, CSs), providing first aid to injured people, sending critical cases to a nearby hospital, and assisting BDRCS in its post-cyclone emergency assistance efforts. The CPP's role in all three phases of disaster was praised by local people of the coastal unions. Most CPP volunteers have lived their entire life in their area of operation, so they know their areas very well, which plays a critical role in disseminating early warnings and evacuation. It also helps CPP volunteers to establish collaboration with locals due to trust, pre-established relations, shared history, and local knowledge. Local inhabitants of all unions reported that CPP volunteers work very hard disseminating early warning messages almost door-to-door before cyclones. When the early warning situations become serious, CPP volunteers starts evacuation, implementing the SOD. One FGD participant from Southkhali Union stated:

[...] it was a rainy night before the cyclone *Sidr*. The roads were muddy. We were confined in the house for several days. We heard the announcement of cyclone warning daily before the cyclone. We did not evacuate till the last time when it was announced as great danger signal (No. 10). The CPP volunteers came

to evacuate us at the last moment at the risk of their lives. We are grateful to them.

Cyclone Preparedness Program volunteers are trained and have knowledge about early warning and evacuation. The findings from the questionnaire survey conducted with 160 CPP volunteers in the six unions (Table 3) indicate that 94% of the CPP volunteer participants received education between primary and Bachelor degree and 95% have received training on their responsibilities one to four times after becoming a CPP member. The survey results also show that CPP volunteers have overall a correct understanding of cyclone warning signals. Red colored flags are hoisted along the coast to indicate that there is a depression at sea that might turn into a cyclone and approach the coast. The maximum number of flags are three: one flag indicates warning signal of 1 to 3, two flags indicate a warning of 4 to 7, and three indicate a "great danger" (signal 8 to 10). Cyclone Preparedness Program volunteers are instructed to act differently by watching the number of flags (that is, a siren is also used to disseminate warning when there are three flags). When asked about the meaning of the warning flags, none of the participants from CPP volunteers gave completely wrong meaning for all three combinations of warning flags (Table 3) while many of them have completely right understanding.

The CPP volunteers are not always sufficiently equipped. About 18% of those sampled had no equipment. The most common pieces of equipment reported by the CPP volunteer participants are raincoats (22% of respondents). The other essential equipment that 10–15% of the volunteers possess are a radio, megaphone, siren, signal flag, gumboots, and life jacket. Although union CPP team leaders distribute some equipment before a cyclone, there is a problem of equipment adequacy and operation. As a CPP volunteer team leader from Gabura stated:

There are 15 units under my supervision in my union. Each unit consists of 15 volunteers. I have only 2 megaphones at this moment. I cannot distribute at least one megaphone to each unit. The batteries used in these are not available in the market. If any of the megaphone's battery dies, it becomes unusable.

Cyclone Preparedness Program volunteers try to reach all inhabitants to disseminate warnings and evacuations; however, the volunteer participants reported that most of them (76%) disseminate cyclone warnings on foot, which is a barrier to reaching all people within the shortest time, with just 20% using a bicycle for warning dissemination. As rainy weather is common before a cyclone, it becomes difficult to reach remote areas by walking to warn people to evacuate.

Although CPP volunteers are highly motivated to fulfil their responsibility, they do not receive any compensation

**Table 3** Capacity profile of volunteers of the cyclone preparedness program (CPP) (n = 160)

Capacity indicator	Category	n	%
Education	Illiterate	3	2
	Literate without any degree	7	4
	Primary education	33	21
	Secondary education (10 years schooling)	40	25
	Higher secondary (12 years schooling)	45	28
	Bachelor degree	15	9
	Others <sup>a</sup>	17	11
Number of training sessions participated	No training	8	5
	One	37	23.1
	Two	25	15.6
	Three	32	20
	Four	58	36.3
Understanding of warning flags	Correct	64	40
	Partially correct	96	60
	Wrong	0	0
Equipment	Raincoat	35	21.9
	Radio	16	10
	Megaphone	14	8.8
	Siren	16	10
	Signal flag	11	6.9
	Life jacket	9	5.6
	Helmet	6	3.8
	Gumboots	10	6.3
	Torchlight	6	3.8
	Saw/spade/sabot <sup>b</sup>	8	5
	Bicycle	1	0.3
Mode of warning dissemination	No equipment	28	17.6
	Walking	121	75.6
	Van/rickshaw/auto tampo <sup>c</sup>	8	5
	Bicycle	31	19.4

<sup>a</sup>Other education includes Dakhil Madrasa education equivalent to secondary education (2), eight years of schooling (8), and nine years of schooling (7)

<sup>b</sup>Sabot is an iron rod used to cut and remove heavy materials like trees

<sup>c</sup>Van and rickshaw are human powered mechanical vehicle used for human and goods transport in Bangladesh; auto-tampo is run by compressed natural gas and used for the transportation of people

for any physical injury or death. During cyclones between 1991 and 2007, 26 CPP volunteers died while doing their duty of informing their communities about a cyclone's state, particularly evacuation orders. The participants from CPP volunteers reported that they take great risks evacuating people and do it voluntarily, but they said compensation should be available for physical injury or death as they have family depending on them. One CPP team leader stated:

We have risks, from permanent physical damage to life lost. We don't need to be paid for volunteering, but the authority should ensure some damage allowance if anybody is injured permanently or dies. If we knew the government would look after our family if anything

bad happened, then we might be more motivated and perform better.

The volunteer participants reported that being honored and respected by locals and working to safeguard local people are the main incentives for their volunteerism. A key informant and CPP volunteer of Jahajmara Union stated:

I teach in a local primary school. I became involved in CPP after the 1991 cyclone. I saw the devastating effect of the cyclone. I decided to join CPP after that cyclone. After serving 10 years as a volunteer, I have been made team leader at the upazilla level. As an upazilla CPP team leader, I have been invited to many social and government functions. Although I have no

financial benefit from being involved in the CPP, I feel honored to be a team leader. I want to be involved with it till my death.

## 6 Discussion

Both the HFA and the Sendai Framework advocated for empowering local authorities and emphasized the need to improve the performance of local governments as key participants in disaster management (UN 2015; Bae et al. 2016; Putra and Matsuyuki 2019). Bangladesh's disaster management regulatory frameworks and institutions at the national, district, upazilla (sub-district), and union levels show that Bangladesh has theoretically fulfilled the aims of the Sendai Framework (Alam and Ray-Bennett 2021; Mohibullah et al. 2021). Nevertheless, there is a concern about how the decentralized institutions are structured and function practically at the union level, particularly as institutions at the union level are the first responders to any disaster (Alam and Ray-Bennett 2021). This discussion provides an understanding of how the local DRR institutions are established and collaborate with each other as part of the disaster risk reduction process. This section also critically discusses the contribution of our empirical findings to the literature by exploring the role and effectiveness of such DRR institutions at the local level from a decentralization perspective in disaster risk governance.

### 6.1 Functions and Capacity of Local Institutions and Their Horizontal and Vertical Linkages

In Bangladesh, the UDMCs are associated with local government authority with the local Union Parishad chairman chairing the relevant UDMC. All elected members (12) of Union Parishad (lowest level local government system) are automatically members of the UDMC (DDM 2010; GoB 2015), and they are the critical persons working directly at the grassroots level in the emergency and post-disaster relief and recovery phases. The results show that the UDMCs commonly lack technical and financial resources, which hampers optimal implementation of disaster management activities in all phases of disaster. For instance, limited financial and technical capacity meant Union Parishads could not assist UDMCs in arranging training, preparing disaster response equipment, taking actions to increase disaster awareness, mapping disaster risk, or preparing a DRR action plan. It was found that all case study unions run such activities with technical and financial help from NGOs. In Gabura Union, UDMC functions were stopped when NGO funding and technical support ceased. This dependence on NGOs limited the UDMC's capacity to take decisions independently (Choudhury et al. 2019). As UDMCs are the foci of local

level disaster management activities, their financial and administrative autonomy is critical in successful local DRM institutionalization. Although several case studies in the existing literature found that decentralization has the potential to enhance disaster management governance at the local level (Jones et al. 2013; Rumbach 2016), without empowerment and resources, such decentralized disaster management becomes a burden for local institutions in developing and less developed countries (Allen 2006; Choudhury et al. 2019; Alam and Ray-Bennett 2021).

It is evident that the vertical and horizontal institutional linkages are a precondition for effective decentralized disaster risk governance (Bae et al. 2016; Parvin et al. 2019). Although UDMC dependence on NGOs in their operations in some case challenged independence and financial autonomy, our results suggest that horizontal collaboration with NGOs and other local institutions has played a positive role during emergency and recovery phases of disasters. Horizontal collaboration with NGOs enhances UDMC capacity by providing UDMC members with training on the legal framework defining their responsibilities, but also on technical know-how relevant for disaster management (Paul and Routray 2011). Vertical linkages with higher level government institutions (that is, with district administration, central government departments, national and international NGOs) are also essential to provide resource to build infrastructure (CS, embankments) and provide post-disaster relief (Choudhury et al. 2019); but this dependence on resources from higher level limit the UDMC to an advisory role with limited power to implement its own decision.

### 6.2 Role and Effectiveness of Local Institutions in Disaster Management

This study revealed that introducing disaster management institutions at the local level as part of decentralized risk governance is functioning and positively impacts on lives and livelihoods of local people. As local institutions, the Union Disaster Management Committee (UDMC) and Cyclone Preparedness Program (CPP) play a crucial role in DRR in coastal Bangladesh (Haque and Uddin 2013; Alam and Ray-Bennett 2021; Mohibullah et al. 2021). Although the establishment of the UDMC structure is not smooth in all six study areas, the disaster management activities in pre-, during, and post-disaster phases are mostly running in these areas.

Although different institutions worked in the decentralized process of risk governance at the union level, the UDMC bears the overall responsibility (Haque and Uddin 2013; Choudhury et al. 2019). Therefore, a strong UDMC is critical for getting the maximum benefit from other disaster management institutions (MoDMR 2019). In terms of technical and financial capacity, the UDMCs of the six

study areas are nominal. The UDMCs need support from NGOs for most technical issues such as disaster training, awareness-building activities, disaster-related publications, and publicity. In terms of financial capacity, the UDMCs are mostly run on allocations from the relevant Union Parishad. These allocations are generally not enough and such limited financial and technical capacity at a local level is a constraint on the successful decentralization of disaster risk governance. Several case studies found that decentralization has the potential to improve disaster management and governance at the local level in Bangladesh (Allen 2006; Choudhury et al. 2019; Alam and Ray-Bennett 2021); however, without complete financial and technical supports from the government, successful functioning of local level institutions might be limited in the future.

Moreover, while elected public representatives chair each UDMC at the local level and all the national-level disaster management committees, the immediate two top disaster management committees (UzDMC and DDMC) of each UDMC are headed by bureaucrats (Upazilla Nirbahi Officer and Deputy Commissioner, respectively) (Choudhury 2008). The frequent transfer of government officials at upazilla (sub-district) and district levels impacts decision making and support supply (Choudhury et al. 2019). Moreover, as the government officials who chair the upazilla and district level committees are outsiders, they usually do not have lived experience about a prior disaster of the particular localities, which may be a necessary condition for disaster risk management planning (Allen 2006; Choudhury et al. 2019; Alam and Ray-Bennett 2021). Thus, placing the elected chairperson of the Upazilla Parishad as chair of the UzDMC and the elected chairperson of the District Parishad as chair of the DDMC is essential for better coordination, collaboration, and decision making for disaster risk management.

In contrast to the UDMC, the CPP is in better condition in its function and activities. Although a CPP has limited resources in some cases, its primary governance by the Bangladesh Red Crescent Society and the voluntary nature of its running are the main factors of its success in cyclone risk management. A supply of sufficient equipment to CPP volunteers and acknowledgement of the volunteers' activities will encourage greater activities in disaster risk management.

Finally, decentralized disaster risk governance through UDMCs and CPP at the union level is part of paradigm-shifting in disaster management from instant top-down relief distribution to comprehensive disaster management by involving different stakeholders from the local community (Haque and Uddin 2013). The benefit of such decentralization in DRM is visible across Bangladesh (Haque and Uddin 2013; Alam and Ray-Bennett 2021; Mohibullah et al. 2021). The findings of this study also support the existing literature (Haque and Uddin 2013; Alam and Ray-Bennett

2021; Mohibullah et al. 2021) on the establishment of disaster management institutions from the national to a local level bringing positive outcomes in disaster risk management. However, lack of funding, equipment, coordination, a skilled and knowledgeable workforce, and appropriate power structures are the main constraints of effective implementation of disaster management activities at the local level.

## 7 Conclusion

In accordance with the HFA and the Sendai Framework, disaster management activities have been decentralized in many countries (for example, Indonesia, Vietnam, Pakistan, South Korea, Turkey), and the critical role of decentralizing DRM in the face of climate change has been increasingly recognized (Ainuddin et al. 2013; Bae et al. 2016; Garschagen 2016; Hermansson 2019; Putra and Matsuyuki 2019). Bangladesh has also introduced decentralization of DRM governance structures to reduce the disaster risk. As part of decentralization, the government of Bangladesh established different disaster management institutions from the national level to the local level under two primary regulatory frameworks—the Disaster Management Act (DMA) and Standing Orders on Disaster (SOD). This article provides an understanding of the local level DRM institutions, their composition, role, and functions in disaster management from a decentralization perspective.

The results suggest that although there are some irregularities (for example, inclusion and exclusion of members of Union Disaster Management Committees), the establishment of local level disaster management institutions are prominent in most of the cases studied. The vertical and horizontal linkages of local level disaster management institutions are found; however, their disaster management activities are still run with technical and financial support from nongovernmental organizations. Our results suggest that decentralized governance plays a critical role and has resulted in success in disaster risk management at the local level; however, it is not adequate in all aspects, nor functioning properly in its existing form due to the lack of funding, equipment, coordination, and a skilled and knowledgeable workforce. This study has contributed to the literature by generating new understanding on decentralization and disaster risk governance at the local level. Finally, the article suggests for the government to increase their financial and technical supports as well as to give financial autonomy to local institutions in some extent to run the disaster management activities effectively.

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