

Chapter 18

Addressing Climate Change and the Risks of Disaster to Human Security: The Role and Initiatives of Civil Societies in Asia



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Abstract Natural disasters and climate change affect human security as they undermine access to livelihood, clean water, food, property, homes, health care, and education. There are strong links among climate change adaptation (CCA), disaster risk reduction (DRR), and human security. Therefore, creating communities resilient to climate change and disasters enhances human security, and engagement by multiple stakeholders is crucial. In particular, involvement of civil society organizations (CSOs) is necessary to meet the present challenges to both CCA and DRR. Depending on the type of CSO, support and contributions vary. Nongovernment organizations (NGOs) customarily have knowledge, experience, and project funds. International NGOs (INGOs) are particularly significant in countries that cannot prioritize CCA and DRR because they confront other intractable issues. National and local NGOs understand the communities' challenges, but they have smaller budgets and less experience than INGOs. Adequately funded national and local NGOs could be ideal partners for communities, but when resources are inadequate, CCA and DRR initiatives require support from INGOs and international organizations. CSO networks can assist national and local CSOs in developing capacity, strengthening knowledge, supplying tools and guidance, and providing opportunity to meet donors. This chapter review challenges to implementing CCA and DRR projects by CSOs and CSO networks and shares case studies of ongoing projects in Indonesia, Afghanistan, the Philippines. It discusses how CSOs have contributed to CCA and DRR, and their implementation.

Keywords Civil society organizations · Climate change · Disaster risk reduction · Asia

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J. M. Pulhin et al. (eds.), *Climate Change, Disaster Risks, and Human Security*,
Disaster Risk Reduction, https://doi.org/10.1007/978-981-15-8852-5_18

373

18.1 Introduction

Climate change is increasingly evident in the ascending sea levels, eroding coastlines, warming temperatures, declining supply of fresh water, and proliferation of endemic diseases. More frequent and extreme climate-related events escalate threats to life and property. They are associated with greater numbers of displaced people and property damage. Intensified seasonal weather patterns affect livelihood and agriculture. The globe's changing climatological risks demand improved disaster risk reduction (DRR) strategies (Solecki et al. 2011; Mercer 2010; Van Aalst 2006).

DRR strategies were developed by analyzing how historical hazards and socioeconomic and biogeophysical trends boost exposure to environmental perils. Given the global concern over climate-related disasters, it is urgent to determine whether the extant DRR strategies address the potential risks from climate change. Those strategies normally entail two elements. The first is upscaling policies to mitigate structural and nonstructural hazards as models update the information about the changing exposure and vulnerabilities to climate change (Solecki et al. 2011). The second element is the establishment of relationships among climate change adaptation-(CCA) and DRR-related institutes to share information and to work together.

There is considerable potential for synergy between CCA and DRR (O'Brien et al. 2006) in assessing risks, vulnerability to livelihoods and wellbeing, and institutional capacity. However, gaps between CCA and DRR establishments, inadequate communication between them, and their inherently different focus hinder joint efforts to tackle future challenges. Unless CCA and DRR enhance their synergies, human security remains at risk.

Birkmann and von Teichman (2010) identify scale, knowledge, and norms as impediments to synergy between institutions charged with undertaking CCA and DRR. CCA is analyzed on a global scale, whereas DRR focuses on local vulnerabilities and risks. CCA falls under ministries of the environment or meteorology, whereas ministries of the interior, land-management, defense, or development are responsible for DRR. CCA was viewed initially as an environmental problem for environmentalists and natural scientists who advocated reducing greenhouse gases as the best response. Only after the dangers of climate change were recognized was the need for CCA raised. Furthermore, scientific knowledge about climate change has not been communicated successfully to the public, and there are discontinuities in local and scientific data/tradition. However, combining different fields of knowledge could ensure the necessary linkages and effective management of CCA and DRR. Joint efforts are key to minimizing the risks of climate change and environmental disaster for human security.

Human security is "a condition that exists when the vital core of human lives is protected and when people have the freedom and capacity to live with dignity" (Adger et al. 2014). The Human Development Report by the United Nations Development Programme (UNDP) describes seven categories of human security: economic, food, health, environment, personal, community, and political (UNDP 1994). Human

security is affected as natural disasters and climate change undermine access to livelihoods, clean water, food, property, homes, health care, and education (Adger et al. 2014; Ruttinger et al. 2015). Izumi and Shaw (2014) document strong links among CCA, DRR, and human security,

Creating communities resilient to climate change and disasters enhances human security, and engagement by multiple stakeholders is crucial (Jimba et al. 2012). Civil society organizations (CSOs) and the CCA and DRR establishments are active in Asia. CSOs range from small, informal, community-based organizations to large, high-profile international non-government organizations (INGOs) working through local partners across the developing world (UNDP 2013; Shaw and Izumi 2014). CSOs undertake several major roles (Izumi and Shaw 2011):

- a. Provide support following small-scale climate-related disasters that occur yearly
- b. Raise awareness of and increase the capacity of local governments and other CSOs to address climate change, its impact, and DRR initiatives
- c. Partner with local governments to shape and implement their strategic plan for climate-related disasters
- d. Mobilize additional support needed to manage climate-related disasters and expand collaborations with stakeholders into wider partnerships.

A significant characteristic of CSOs is that they are close to communities and better understand local risks, challenges, and capacities. Therefore, CSOs often lead community-based initiatives in collaboration with local governments. This chapter reviews challenges in implementing CCA and DRR projects by CSOs and shares case studies of ongoing projects in Indonesia, Afghanistan, the Philippines, and by CSO networks. It discusses how CSOs have contributed to CCA and DRR and their implementation.

18.2 Challenges to CCA

Adger (2003) emphasizes that many climatological risks require unilateral planning and intervention by the state; yet, CCA strategies require individuals and communities to act collectively. CSOs can empower the capacities of local actors to address these matters and to participate in setting local and national policy (Vignola et al. 2009).

However, traditional CCA efforts invoke top-down approaches because adapting to climate change was characterized originally as a problem of global pollution (Karim and Thiel 2017; Van Aalst 2006). The growing dissatisfaction with top-down, scenario-driven approaches prompted a search for locally relevant CCA methods developed from the bottom up (Van Aalst 2006). The impact of climate change is first visible in harm to residents' health and food and water shortages after droughts and floods. Therefore, community-based CCA and DRR involve community stakeholders in assessing current situations and challenges, discussing how to reduce vulnerability to climate change, and strengthening adaptive capacities (Allen 2006; Van Aalst 2006; Mansanet-Bataller 2010). However, communities often know little

about climate change and adaptation strategies, perhaps reflecting the deficiencies of long-term, top-down approaches to climate change. Thus, CSOs, the private sector, and local governments become instrumental in raising awareness and developing communities' capacity to adapt to climate change (Thomalla et al. 2006; Ampaire et al 2017). Many CSOs engage in those activities, and CCA projects under DRR initiatives are increasing.

18.3 Challenges to DRR

The Hyogo Framework for Action (HFA), adopted at the 2005 UN World Conference on Disaster Reduction in Kobe, Japan, encouraged the involvement of multiple stakeholders in DRR (UNISDR 2005). The Sendai Framework for Disaster Risk Reduction (SFDRR), an international DRR blueprint drawn at the 2015 UN World Conference on Disaster Risk Reduction in Sendai, anticipates active participation by government, academia, the private sector, CSOs, and communities committed to collaboration with other stakeholders.

In particular, the SFDRR encourages the use of science-based data for setting environmental policy and making decisions via collaboration with academia and scientists (UNISDR 2015). CCA initiatives require the same approach. The SFDRR includes as a new element the seven global targets for monitoring and evaluation. Individual governments are expected to monitor and evaluate the implementation of the SFDRR based on the targets. Inadequate data concerning disaster damage and losses render it difficult to measure that progress, identify core issues and challenges, assess the economic impacts of disasters, and develop sound national policies. Unfortunately, many countries lack systems and mechanisms to collect data, and establishing them is challenging (Groeve et al. 2014). Thus, many countries neither incorporate science and technology into DRR nor link it effectively to the populace. For instance, science and technology groups enjoy little stature in developing local evacuation plans, and science-based early warnings and forecasts often are not disseminated publicly (Shaw et al. 2016). These deficiencies highlight the disparity between science and practice and the need to strengthen the links between science and the populace. Collaboration among scientists, scholars, and practitioners is indispensable to scale up current DRR measures.

In sum, the primary challenge to CCA is to strengthen collection of local data, community-based projects, and collaboration with CSOs. DRR initiatives need more robust policy based on science and technology, data for monitoring, links between science and the populace, and collaboration with practitioners such as CSOs.

Involvement of CSOs is crucial for ameliorating the present challenges to both CCA and DRR. Concerning CCA, involvement of CSOs can help communities understand climate change and its impact. CSOs can initiate and lead CCA projects with local governments and communities based on their knowledge and experience. CCA is often considered a scientific and environmental matter for which a

top-down approach works well; however, the involvement of CSOs and local stakeholders in community-based, bottom-up approaches is absent in the current situation. Conversely, community-based approaches and involvement of local stakeholders have been the norm in DRR for many years. However, DRR lacks the scientific approach. It has become obvious that CCA and DRR require both local inclusivity and the application of science and technology. That endorses strongly the need for both establishments to work together and to learn from each other.

18.4 CCA and DRR Case Studies

This section presents case studies of CSO-based CCA and DRR projects in Indonesia, the Philippines, Afghanistan, and by two CSO networks to showcase various types of CSO involvement in CCA and DRR. Questionnaire surveys and interviews were conducted with CSOs in Indonesia, the Philippines, and those based in Japan that are working for Afghanistan as well as regional and international CSO networks.

- a. Indonesia: case study of a CCA project by a CSO.
- b. Philippines: case study of a DRR project by a CSO of journalists that incorporates CCA.
- c. Afghanistan: case study of a DRR project by an international NGO that incorporates CCA.
- d. CSO networks: a case study of CSO networks that develop the capacity of CSOs to meet climate-related disasters.

18.4.1 *Indonesia*

Established in 2001, the YAKKUM Emergency Unit (YEU) focuses on emergency response initiatives and reduction of risks from environmental disaster. Given increases in climate-related disasters in Indonesia, YEU is concerned with how climate change affects communities, particularly their food security and livelihoods (farming). YEU initiated a CCA project: climate-adaptive farming in drought-prone areas. YEU introduced climate-adaptive agriculture to four villages in the Gunungkidul District that are highly vulnerable to water and food shortages. It sought to strengthen crop resilience in Yogyakarta, a city in Java, with a grant from the Indonesian Climate Trust Fund. Problems communities face there include the following:

- a. Each year, farmers suffer crop losses from landslides, volcanic ash, and attacks by long-tailed macaques. Climate change has led to droughts, long dry seasons, unpredictable rainfall, and long rainy seasons. Its secondary effects include pest incursions and environmental degradation.

- b. Direct farming losses attributable to climate change include reduced yields, crop failures, scarcity of green grass for livestock, and lake water drying up. Alongside the economic losses farmers incurred are expenses of buying water and green grass during the long dry seasons. Farmers commonly sell their livestock to buy water and green grass.
- c. The price of seedlings is high, and farmers cannot produce their own seedlings.

Eventually, farmers identified the following adaptation plan:

- a. Climate-adaptive farming that combines organic farming, biological pest control, and drought-resistant seedlings from local varieties.
- b. Conservation of an artificial lake as source of water during dry seasons.
- c. Fermenting livestock feed to reduce costs of buying green grass during dry seasons (Fig. 18.2). YEU conducted capacity development on how to make fermented livestock feed from straw, grass, and leaves available during dry seasons (Fig. 18.1).

Farmers initially resisted shifting from traditional farming to climate-adaptive organic farming without guarantees of bigger harvests. In such cases, national NGOs that know local cultures, histories, and traditions were important in explaining new ideas and innovative approaches to farmers. After understanding the evidence and the results of organic farming, farmers were more motivated toward its practices.



Fig. 18.1 Farmers learn how to reproduce the biopesticide *Paenibacillus polymyxa* (photo provided by YEU)



Fig. 18.2 Making livestock feed in Giripurwo with an extension officer (photo provided by YEU)

18.4.2 Philippines (an NGO of Journalists)

Information and data concerning climate change are often complex, making it difficult to frame issues and identify their consequences. Mass media are essential in disseminating information understandably and issues widely. The Center for Community Journalism and Development (CCJD) is a non-profit platform for exchange between local news media and the populace on issues that have an impact on communities in the Philippines. The CCJD builds capacities for news reporting and develops mechanisms for media-citizen engagement. Alongside a broader engagement with human rights, governance and development, peace and conflict, and gender, the CCJD addresses the environment, reducing disaster risks, and adapting to climate change. It seeks for journalists to facilitate discussion among local governments, CSOs, and communities about local challenges and to identify solutions jointly. Climate change generally is considered a scientific matter; therefore, the media has a role to inform how it affects daily lives, how to reduce its risks, and how to prepare for its consequences. “Public journalism” helps communities understand climate change as a local problem.

The CCJD received funding in 2008 from the UN Democracy Fund for a 2-year project—Media, Democracy, and Development—to develop free, responsible, independent, professional news. It is a member and former lead convener of the DRR Network Philippines, a coalition of organizations and individuals advocating community-based DRR. In concert with this network, DRR projects implemented by the CCJD have included

- a. DRR and media dialog in partnership with Oxfam GB and Christian Aid

- b. A flashflood public awareness campaign via community media on Camiguin Island in partnership with the Center for Disaster Preparedness and JICA
- c. Documenting lessons from early recovery efforts after Typhoons Ondoy and Pepeng in partnership with the Crisis Prevention Unit of UNDP Philippines
- d. Reporting disaster risk, climate change, and water issues in central Mindanao in partnership with Oxfam

New DRR initiatives have been developed by journalists who participated in the CCJD training—a weekly DRR radio program and a training program for local journalists. Although the CCJD is not the lead organization in monitoring the implementation of DRR-related law in the Philippines, it works with CSOs and provincial media partners to monitor local compliance. Its media-citizen initiatives enhance transparency and accountability in local governance.

18.4.3 Afghanistan (CWS)

Afghanistan is beset by long-term conflicts, refugees, terrorism, human rights issues, and food shortages. These ongoing difficulties have redirected attention from DRR efforts to mitigate natural disasters, a serious threat there. The climate change component is often combined with DRR initiatives to raise awareness of root causes of frequent and devastating natural disasters. Despite the impact of climate change (Fig. 18.3), the urgency of other issues compels many countries to neglect the risks and influence of climate change. They are unable to reflect its importance in policy, and do not share information with the public. Those countries must depend on support by NGOs and international organizations. However, not all CSOs know enough about climate change to conduct CCA. Therefore, involvement and support by experienced INGOs are crucial.

Founded as an international humanitarian organization in 1947, the Christian World Service (CWS) is an INGO that operates in Japan, Myanmar, Thailand, Cambodia, Indonesia, Vietnam, Pakistan, and Afghanistan. CWS Japan is leading a DRR project in Afghanistan to enact legal frameworks to address floods, landslides, and earthquakes and to develop a hazard map in collaboration with government, the private sector, and communities. Hazard maps enable communities to understand disaster risks and evacuation routes and destinations. The project includes promoting broadcasters' role in providing early warnings of disaster, explaining climate change, and encouraging communities to undertake CCA projects guided by DRR approaches (Fig. 18.4).



Fig. 18.3 Riverside community in Bihsud District in Nangahar Province. Recurrent floods affect the community and erosion of river bank poses a significant threat (photo provided by CWS Japan)



Fig. 18.4 Meeting with local authority to communicate specific hazard risks in Bihsud District in Nangahar Province (photo provided by CWS Japan)

18.4.4 CSO Networks: GNDR and ADRRN

Support from international NGOs knowledgeable about CCA and DRR is indispensable in countries where government is occupied with other problematic issues. However, national and local NGOs focus on problem solving in their respective countries and have few opportunities for outside knowledge, new technology, and tools. Their ability to develop capacity, raise awareness, and share information is enhanced by CSO networks that provide opportunity for CSOs to learn from each other and to build contacts with other stakeholders. Following are instances of regional and international CSO networks.

18.4.4.1 Asian Disaster Reduction and Response Network (ADRRN)

The ADRRN is a network established in 2002 to promote coordination, information-sharing, and collaboration among CSOs and other stakeholders for effective disaster reduction and response in the Asia-Pacific. Asia is a large and varied landmass with multiple river basins and floodplains and high population densities in disaster-prone regions; the region cannot avoid the impact of climate change. The ADRRN is raising CSOs' concerns globally, promoting best practices in disaster reduction and response, and developing members' capacities for DRR and CCA (Izumi and Shaw 2012).

For instance, the ADRRN organizes yearly regional workshops for all members to discuss common concerns and urgent issues. This year's workshop dealt with localization and weather-related disasters in Asia—i.e., why disasters occur and how to tackle them. It emphasized understanding the risks of climate change, preparing for weather-related disasters, and developing DRR measures. Presentations by speakers from different sectors and group exercises enlarged awareness of climate change, weather-related disasters, and the need to disseminate information and cope with future impacts of climate change.

Networks that assemble diverse stakeholders allow CSOs to identify partners, increase knowledge, exchange information, and identify funding opportunities. For instance, the UK-based Humanitarian Innovation Fund (HIF) funded YEU's project in Indonesia. YEU and HIF met through the ADRRN. Staff exchanges and collaborations are ongoing.

18.4.4.2 Global Network of Civil Society Organizations for Disaster Reduction (GNDR)

The GNDR was established in 2007 to connect civil societies globally. It raises a collective voice for action to reduce risks for and increase the resilience of the most vulnerable. It envisions a world of resilient communities wherein the vulnerable can prepare for, mitigate, recover from, and adapt to hazards of a changing climate. CCA

is its major focus. Its membership exceeds 850 organizations and 1,400 individuals in all regions.

This network is supported by donor agencies such as the U.S. Agency for International Development, the Federal Department of Foreign Affairs/Swiss Confederation, World Bank GFDRR, and the Department for International Development. Support and funding allowed the GNDR to establish a secretariat with 10 staff members in the UK and to open access to funding DRR and CCA projects.

The GNDR publishes guides, toolkits, case studies, and reports such as *Views from the frontline*, a global initiative of 500 organizations across 69 countries to monitor and measure progress of the UN and governments in strengthening community resilience. It highlights the gaps between national policies and local practices, identifies needs for collaboration to implement local projects, and brings voices from the frontline to higher levels.

18.4.5 Value of CSO Participation in DRR and CCA Projects

The Indonesia case study highlighted the importance of ensuring that CSOs at the national level have working experience with communities and understand the local risks of climate change. Due to their prior experience with DRR projects, YEU recognized how to work with communities and how important it is to understand their situation and maximize their existing capacity. CSOs at national and local levels have the ability to understand local needs and risks through long-term experience with community-based projects and prioritize community needs, capacities, and vulnerabilities.

What is unique about the Philippine case study is that the CSO is composed of a group of professional journalists. One of the challenges of CCA that was pointed out in the previous section is that communities often know little about climate change and adaptation strategies. Journalists in this CSO recognize that gap and possess the best tools for disseminating information via various media formats (newspapers, radio, TV, etc.). Through their work as journalists, they can have a tremendous impact on communities by raising awareness and sharing information.

In cases of particularly challenging environments such as the current situation in Afghanistan, the contribution and involvement of INGOs is crucial for DRR and CCA because national and local CSOs are often fully occupied with providing emergency assistance. However, without any disaster preparedness and risk reduction measures in place before an emergency occurs, immediate damages and long-term impacts will be beyond the response capacity that they own and expect. Therefore, it is crucial to have support of INGOs that normally have more funds, capacity for and experience with raising awareness, and capacity for development. Even if it is not a fully dedicated project for CCA or DRR as CWS is, it is most useful to attach DRR and CCA elements to existing projects in order to save costs and human resources.

The role of CSO networks is often neglected because they do not directly conduct a project; rather, their primary role is to support capacity development and advocacy

efforts of member organizations that are required for CSOs. In addition, without the support of CSO networks, there are insufficient means of bringing the concerns and important messages raised by CSOs at national and local levels to regional and international levels. All levels of CSOs and CSO networks have different roles to play. As CCA and DRR are such diverse issues, collaboration and involvement of CSOs at all levels are indispensable.

18.5 Conclusion

O'Brien et al. (2008) argue that human security entails responding to climate change and risks of disaster in ways that reduce vulnerability and conflict and create a more equitable, resilient, and sustainable future. Climate change and the potential for environmental disasters raise concerns about long-term human security (Barnett and Adger, 2007). The term "human security" encompasses all the effects that climate change exerts on food and water shortages, insufficient housing and education, livelihoods, and health. It extends to the climatological effects on social welfare and rights, gender, age, class, culture, traditions, and living conditions (O'Brien et al. 2008). It is crucial to acknowledge that CCA and DRR are imperative to human security.

CSOs are crucial for implementing CCA and DRR initiatives (Allen 2006; Van Aalst et al. 2007; Vignola et al. 2009) and for reducing the gaps in CCA and DRR identified in this chapter. One major challenge is to give communities sufficient knowledge about climate change and risks of disaster. Depending on the type of CSO, support and contributions vary. NGOs customarily have knowledge, experience, and project funds. They engender opportunities for countries with few or inactive national and local NGOs with lesser knowledge, experience, and budgets. INGOs are particularly significant in countries such as Afghanistan that cannot prioritize CCA and DRR because they confront other intractable issues. CSOs at national and local levels understand communities' challenges, but they have lesser budgets and experience than INGOs. Adequately funded CSOs at national and local levels could be ideal partners for communities, but when resources are inadequate, CCA and DRR initiatives require support from INGOs and international organizations is needed, as shown in Indonesia and the Philippines. CSO networks can assist national and local organizations in developing capacity, strengthen their knowledge, supply tools and guidance, and provide opportunity to meet donors.

CCA and DRR address issues that threaten the quality of life and human life itself. It is crucial that CSOs inform communities about connections between climate change and environmental disasters and the connections among CCA, DRR, and human security. Doing so enables the populace to understand potential risks and the importance of approaches that transcend the traditional.

Acknowledgements The author's heartfelt appreciation goes to Ms Hepi Rahmawati (YEU), Mr. Takeshi Komino (CWS Japan), and Mr Red Batario (CCJD) whose comments and information were of inestimable value for this study.

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