Transforming Environmental Politics and Policy

THE POLITICS OF CLIMATE CHANGE KNOWLEDGE

LABELLING CLIMATE CHANGE-INDUCED UPROOTED PEOPLE

Nowrin Tabassum

ROUTLEDGE

The Politics of Climate Change Knowledge

This book addresses political knowledge of climate change and its relation to labelling people affected by climate change, either as 'climate refugees' or as 'climate change-induced displaced people or migrants'.

By questioning the knowledge of climate change and subsequent labelling of people, this book will spark debate in studies of global climate politics and transnational policy networks. Rather than considering the issue of climate change as a given phenomenon, the author explores how the politicized knowledge of climate change has been produced in international negotiations and how that knowledge is transmitted from global forums to local country levels via climate change action plans and resilience projects. This book introduces the concept of multi-scalar knowledge brokers (MKBs) – individual actors who work at multiple levels (local, national, and international) to transmit the knowledge of climate change from global level to local level.

The author uses the primary case study of Bangladesh to demonstrate how the dominant actors in global climate politics – the Intergovernmental Panel on Climate Change (IPCC), the United Nations Framework Convention on Climate Change (UNFCCC), and the World Bank, as well as the USA and the UK– interact with the government and local NGOs in Bangladesh regarding transmitting the knowledge of climate change, labelling the uprooted people, and implementing resilience projects.

This book will be of interest to students, scholars, and practitioners of international relations, environmental politics, climate change studies, political ecology, political geography, and migration and displacement studies.

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Acronyms and non-English terms

Note: The non-English terms mean the terms that are used in the very local context of Bangladesh. The entries below are the spellings adopted in this book.

ADB	Asian Development Bank
ANT	Actor-Network Theory
AusAID	The Australian Agency for International Development
BCAS	Bangladesh Centre for Advanced Studies
BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	The 2009 Bangladesh Climate Change Strategy and Action Plan
BCCTF	Bangladesh Climate Change Trust Fund
BCCT	Bangladesh Climate Change Trust
BDT	Bangladeshi Taka (currency)
BELA	Bangladesh Environmental Lawyers Association
BSF	Indian Border Security Forces
BUP	Bangladesh Unnayan Parishad
BWDB	Bangladesh Water Development Board
CCC	Climate Change Cell
CDMP	Comprehensive Disaster Management Programme
CEGIS	Centre for Environmental and Geographic Information Services
CIF	Climate Investment Fund
CODEC	Community Development Centre
COP	Conference of Parties of the UNFCCC
CPE	Critical Political Ecology
CREL	Climate Resilience Ecosystems and Livelihoods
CRPARP	Climate Change Resilience Participatory Afforestation and Reforestation Projects
CSOs	Civil Society Organizations
CSRL	Campaign for Sustainable Rural Livelihoods
DFID	Department for International Development (UK)
FoEI	Friends of the Earth International
GCF	Green Climate Fund
GEF	Global Environmental Facility
GMSL	Global Mean Sea Level

GPE	Global Political Economy
ICCCAD	International Centre for Climate Change and Development
IDP	Internally Displaced Persons
IFC	International Financial Corporation
IIED	International Institute for Environment and Development
IMF	International Monetary Fund
IOM	International Organization for Migration
IPAC	Integrated Protected Area Co-management
IPCC	Intergovernmental Panel on Climate Change
IPCC-CZMS	IPCC Coastal Zone Management Subgroup
IR	International Relations
LDCF	Least Developed Countries Fund
MP	Members of Parliament
NACOM	Nature Conservation and Management
NAPA	The National Adaptation Program of Action
NGOs	Nongovernmental Organizations
OECD	The Organization of Economic Co-operation and Development
PKSF	Palli Karma-Sahayak Foundation
PPCR	Pilot Programme for Climate Resilience
PPP	Polluter Pays Principle
PPT	Parts Per Thousand
RDRS	The Rangpur-Dinajpur Rural Development Service
SST	Sea Surface Temperature
TERI	The Energy Research Institute
TIB	Transparency International Bangladesh
UN	The United Nations
UNDP	The United Nations Development Programme
UNEP	The United Nations Environmental Program
UNHCR	The United Nations High Commissioner for Refugees
UNFCCC	The United Nations Framework Convention on Climate Change
US	The United States
USAID	The United States Agency for International Development

1 The puzzle and the method

Introduction

Studies on socio-economic impacts of climate change are divided on arguing whether climate change causes population movement or not. Some literature argue that climate change has the potential to make lands uninhabitable – leading to deterioration in the living conditions of its inhabitants – and consequently, the inhabitants migrate from their homes in search of new livelihoods (Guzman, 2013, pp. 11–18, pp. 63–71). Some of the areas most vulnerable to climate change are small island countries and countries at lower altitudes because they are more prone to inundation because of the climate change-induced sea level rise. Among those at risk are the Pacific Island countries (such as Fiji, Kiribati, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu), Bangladesh, and the Maldives (Guzman, 2013, pp. 54–96). Climate change is also causing droughts and water shortages in other countries, notably Yemen, Syria, the entire Arabian Peninsula and Persian Gulf Coast, and Northern Africa (particularly sub-Saharan Africa) (Chellaney, 2013, p. xxi, pp. 161–165). People in these countries are being forced to leave their homes in want of water (Chellaney, 2013, p. xxi, pp. 161–165).

On the other hand, Jane McAdam (2011, p. 12) contradicts the discussion above and argues, 'It is conceptually problematic and empirically flawed in most cases to suggest that climate change alone causes migration'. She established this argument based on her field research in Bangladesh, Kiribati, and Tuvalu – the countries that are at risk of climate change-induced sea level rise. She claims that these displacements do not take place directly due to climate change or its impacts, but rather for economic reasons (see McAdam, 2011, pp. 13–14). Climate change, she explains, destroys crops, shelter, and sources of earning of the inhabitants of climate-stressed areas. The inhabitants then move from a disaster-prone area to a safer place in search of food, shelter, and earning. Therefore, climate change causes poverty, and then it is *the poverty* that drives people to move. Thus, for her, climate change alone does not cause people to move, and that the salient reasons are more to do with poverty and economics.

Alongside these two opposite arguments – that climate change *can* or *cannot* cause population movement – debates also exist around how to label the

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climate change-induced uprooted people. The actors who support the framing that climate change causes population movement are divided regarding the issue of labelling the climate change-induced uprooted people. Some argue that these people should be categorized as climate *refugees* because the effects of climate change completely destroy their habitat and there is no way for them to return to it but to take refuge in a host country. Others argue that climate change and its effects have no potential to generate cross-border migration but only internal displacements, for which reason these people should be labelled climate change-induced internal *migrants* or *displaced people* (more on this below).

These different conflicting but coexisting arguments *raise* the following questions: Why do some pieces of literature argue that climate change can cause population movements if it is not the actual scenario? Is it simply climate change deniers or sceptics who have advanced the argument that climate change does not cause population movement? Is the labelling of climate change-induced uprooted people just a matter of terminology/use of words (i.e. the choice between 'climate refugees' or 'climate change-induced migrants/displaced people'), or is there any political significance behind the labelling of these people?

By considering the different arguments, this book aims to investigate what kind of actors are involved in producing the *knowledge of climate change* and *population movement* and is there any political significance of labelling (and relabelling) the displaced people differently. The actors include state actors, and non-state actors such as climate scientists (considered as individual actors), non-governmental organizations (NGOs), and international organizations.

This chapter, *first*, introduces the international context under which state actors, non-state actors, NGOs, and international organizations label and relabel the climate change-induced uprooted people. It is worth noting that the early publications on climate change between the 1980s and early 2000s identified a sharp disagreement between two sets of actors involved in naming the uprooted people (Methmann & Oels, 2015, pp. 52–60). The disagreement revolved around issues related to legal, political–economic, and security-related challenges/opportunities. For example, there existed a tacit alliance between low-lying countries, environmental NGOs, and climate scientists who prefer to label the climate change-induced uprooted people as climate refugees (McAdam, 2011, p. 6; Methmann & Oels, 2015, p. 52). On the other hand, there existed a tacit coalition of high-carbon-emitting countries, the United Nations High Commissioner for Refugees (UNHCR), the United Nations Framework Convention on Climate Change (UNFCCC), the Asian Development Bank (ADB), and the World Bank who never agreed to categorize the climate change-induced uprooted people as climate refugees; instead, since the 2010s, they have preferred to label the people as climate change-induced displaced or migrants (Methmann & Oels, 2015, pp. 52–64). For the convenience of our discussion, I name the first set of actors 'refugee-group' and the second set of actors 'migrant-group' (see Table 1.1).

Table 1.1 Refugee-group and migrant-group

Coalitions	*Time frame*	*Preferred labelling*	*Actors involved*
Refugee-group	From the early 1980s to the 2000s	Climate refugees	Low-lying countries, environmental NGOs, and climate scientists
Migrant-group	From the 1980s to the 2000s	Never recognized climate refugees	High carbon-emitting countries, ADB, the UNHCR, the UNFCCC, and the World Bank
	Since the 2010s	Label climate change-induced displaced people/migrants	

Source: The table was constructed on the basis of the writings of Biermann and Boas (2010), pp. 62–67; Docherty and Giannini (2009), pp. 360–365; Karasapan (2015), para. 3; McAdam (2011), p. 6; Methmann and Oels (2015), p. 52.

Although the literature noted that there had been a sharp division in the way the uprooted people were labelled, I have identified that *refugee-group recently adopted the definition of migrant-group*, abandoning their previous one and compromising the interests that had underpinned their earlier preference for it. Therefore, the puzzle around labelling the uprooted people is: *Why has refugee-group adopted migrant-group's definition, even though it goes against refugee-group's long-term interests*? In this book, I describe the puzzle by focusing on a single case study on Bangladesh, and I shape my research question accordingly. The reason I choose Bangladesh as a case study is discussed later in this chapter.

Second, this chapter describes the method of data collection for writing this book. This book takes a qualitative approach since the understanding of defining the climate change-induced uprooted people is located in the constructivist tradition. The method of data collection includes field research in Bangladesh, which comprised elite interviews and a literature search. By *elites*, I identify people who are climate scientists, university professors, government officials, and officials of international organizations who work on climate change and climate change-induced migration issues. On the other hand, the literature search helped find important official documents that recorded the issue of climate change scenario in Bangladesh and that produced the knowledge: *climate refugees* and *climate change-induced displaced/migrants*.

Third, this chapter concludes by explaining the plan of the book. Excluding this introductory chapter, this book contains six chapters and a conclusion. Chapter 2 showcases a literature review that contains existing debates in international climate change-related discussions about defining climate change-induced uprooted people. Chapter 3 presents a new theory – knowledge network theory – which contains conceptual and theoretical understandings of politics of climate change knowledge. Chapter 4 gives an overview of the climate change scenario in Bangladesh. This chapter is important for understanding which effects have

been considered and/or ignored in framing the knowledge of climate refugees and climate change-induced displaced people/migrants. Chapters 5–7 contain an empirical analysis of how knowledge brokers[1] play a significant role in replacing the term climate refugees with that of climate change-induced displacement by maintaining a transnational network. The conclusion summarizes the argument of this book and the original contribution of this research. It also explains the limitations of this research and gives a direction for future research.

The international context

According to Methmann and Oels (2015, pp. 52–58), the official papers and documents of climate science from the 1980s and 1990s labelled the climate change-induced uprooted people as *climate refugees*. Academic and non-academic literature did likewise. However, no international/regional organization or jurisdiction classified climate refugees as one of the recognized categories of refugees. Anyone can indicate the incident that the United Nations Environmental Program (UNEP) published a colour-coded map on their website in 2005, titled *50 million climate refugees by 2010*, and argue that the UNEP, as a part of the United Nations, already recognized the term climate refugees via the title of their published map (Wall Street Journal, 2011, para. 1). However, the argument can be refuted by stating that the UNEP deleted the map from its server in 2010 (Wall Street Journal, 2011, para. 1). The deletion of the map can be an indication that the UNEP was not confident to classify the climate refugees as one of the recognized categories of refugees.

The non-recognition of the term 'climate refugees' by any jurisdiction produced two conflicting groups around the world – refugee-group and migrant-group. In refugee-group, the Association of Small Island States (AOSIS) became the 'lone supporter' of the Polluter Pays Principle (PPP) in the UNFCCC, standing in favour of the term climate refugees (Eckersley, 2015, p. 485). The PPP expresses an 'obligation by states to compensate climate refugees on the basis of each state's relative causal contribution to the loss and damage suffered, measured in terms of total cumulative emissions rather than current aggregate or per capita emissions' (Eckersley, 2015, p. 485). In 2006, the Maldives proposed an amendment to the UNHCR's definition of refugee in favour of including climate refugees (McAdam, 2011, p. 6). The then finance minister of Bangladesh, in a similar tone, demanded a revision to the UNHCR's refugee status definition at the 2009 UNFCCC's annual conference in Copenhagen, COP15 (McAdam, 2011, p. 6). Sara Shaw, climate justice and energy coordinator at Friends of the Earth International (FoEI; an international network of environmental organizations) stated, 'We believe that climate-refugees have a legitimate claim for asylum and should be recognized under the U.N. refugee convention and offered international protection' (Deen, 25 August 2015, para. 6).

On the other hand, the high-carbon-emitting countries in migrant-group never agreed to classify climate change-induced displaced people as one of the recognized categories of refugees. Australia, for example, which is the highest per

capita carbon dioxide emitter in the world, does not recognize climate refugees (Karasapan, 2015, para. 3). The Australian Labour Party proposed in 2006 to accept climate refugees from the Pacific Island countries, but this was rejected by the then Australian government (Biermann and Boas, 2010, p. 66). In 2007, the Australian Green Party tabled a bill at the Australian parliament named the Migration (Climate Refugees) Amendment Bill 2007 to recognize climate refugees (Parliament of Australia, 2007). However, this effort was not successful (Parliament of Australia, 2007). By 2015, New Zealand and Australia had rejected 17 applications from the Pacific Island countries seeking climate refugee status (O'Brien, 2015, para. 7–10). In a similar tone, the United States – one of the top three carbon-emitting countries in the world – is also against recognizing the term climate refugees (Buckley, 2014, p. 200). Hartmann argues that climate refugees are on the US security agenda, with the United States viewing itself as threatened by 'barbarian' climate refugees who may take up arms and enter the United States by undermining the US border security forces (Hartmann, 2010, pp. 238–242).

Although the high carbon emitters never agreed to recognize the knowledge of climate refugees, they agreed to give funds to the climate-affected countries for implementing climate change resilience and adaptation projects (UNFCCC, 1992, article 4). The high carbon emitters do not give the funds directly to the climate-affected countries but under the fiduciary management of many development organizations such as the World Bank, ADB, International Monetary Fund (IMF), and International Financial Corporation (IFC).

These development organizations, according to Methmann and Oels (2015, pp. 59–63), *re-conceptualized* climate refugees as climate change-induced migration, and offered prescriptions to manage/govern the migrants through climate change resilience and adaptation projects in a way that the projects politically and economically 'co-benefit' both – the donors (i.e. Coalition B) and the recipients of the funds (i.e. Coalition A). The projects are mainly anti-migration projects which restrict cross-border and internal migration of the climate-affected-people[2], but encourage the people to be resilient while encountering the effects of climate change (a detailed analysis of the projects has been described in Chapter 7 of this book) (Methmann & Oels, 2015, p. 63; Tabassum, 2017, pp. 51–52). Thus, the resilience projects facilitate 'a shift of responsibility' from the high carbon emitters to the climate change-affected people (Methmann & Oels, 2015, p. 63). The projects also benefit the high carbon emitters because the emitters do not have to give shelter to the climate change-induced uprooted people within their borders, but they can portray that they are doing something through the resilience projects to safeguard the climate change-induced uprooted people.

On the other hand, the climate change-affected countries receive the funds to implement the adaptation and resilience projects for making their climate change-affected people resilient. In this way, echoing from Methmann and Oels (2015, pp. 59–62), the projects 'co-benefit' both the parties – refugee-group and migrant-group.

Migrant-group has been releasing the funds to the climate-affected countries since 2010 (see references in Chapter 6). Since that time, refugee-group,

particularly the Pacific Islands and the low-lying countries, moved away from their position for demanding refugee status for the climate change-induced uprooted people in international venues. Even at the governmental level, policy papers of those countries stopped using the term climate refugees and replaced it with that of climate change-induced migration or displaced people (Methmann & Oels, 2015, p. 58 and p. 62).

The uses of words such as refugees and migrants in international climate change discussions raise some questions: Is the labelling and re-labelling of climate change-affected people just a matter of changing words (replacing *climate refugees* with that of *climate change-induced migration* or *displaced people*)? Have the actors of refugee-group failed to prove that climate change can produce refugees, which, as a result, drove the actors of refugee-group to move away from demanding refugee status for the displaced people? Or, Is the labelling highly political?

These questions make it imperative to investigate what factors influenced the actors of refugee-group to shift their previous radical position *from* demanding refugee status for the climate change-induced uprooted people *to* imposing responsibilities on the climate change-affected people to be resilient. For this investigation, I have chosen to focus on the case of a single climate-vulnerable country, instead of trying to cover all countries. The reason for choosing one country is that it facilitates an in-depth analysis. This book also describes how the single case can be a representative of other similar climate-vulnerable countries such as the Maldives, the Pacific Island countries.

I have chosen Bangladesh as the case study for this research because, according to much of the literature on climate change, it is among the countries most prone to produce very large numbers of climate change-induced uprooted people. As climate science forecasted, several effects of climate change have already manifested in the country simultaneously. First, the melting glaciers of the Himalayas and the thermal expansion of the Indian Ocean have caused sea level rise that has submerged land. Bangladesh's Bhola Island has lost half of its landmass and displaced half a million people (Docherty & Giannini, 2009, p. 356). Kutubdia, another island, has been slipping underwater due to rising sea levels (McVeigh, 2017, para. 1–5). Second, global warming and the warming of the Northern Indian Ocean has increased the frequency of cyclones and raised the level of precipitation in Bangladesh (Naser, 2012, p. 63). The two devastating cyclones, Cyclone Sidr in 2007 and Cyclone Aila in 2009, displaced 2 million people and more than 70,000 families, respectively, because the cyclones permanently destroyed homelands (Dastagir, 2015, p. 49). Climate science forecasts that if the temperature rises according to the current trend, the whole country will face more devastating experiences in the near future, including submerging more lands.

The government of Bangladesh, as well as its major climate-oriented NGOs (for example, Bangladesh Centre for Advanced Studies [BCAS], EquityBD, and Campaign for Sustainable Rural Livelihoods [CSRL]) and Bangladeshi climate scientists, formed part of refugee-group during the 1990s and 2000s, advocating in international venues to classify climate change-induced uprooted people

as climate refugees. They demanded that the high carbon emitters should compensate affected countries by sheltering climate refugees and bearing all costs of their relocation (McAdam, 2011, p. 6). However, since 2010, these actors have not demanded refugee status for the uprooted people, and the policy papers and government documents of the country no longer use the term 'climate refugee' but rather 'climate change-induced displacement or migrants' (more details in Chapter 6).

In this situation, it is rationally justified to investigate *why* the government of Bangladesh and its non-state actors have moved from their previous radical position on climate refugees. It is also imperative to investigate whether the donors of the resilience projects have any role in influencing the decisions of the aforementioned countries and non-state actors. For this reason, this book formulates the following research question to be investigated.

Research question: Why and how have the key political–economic actors replaced the knowledge of *climate refugees* with that of *climate change-induced displaced/migrants* in the discussions of climate change in Bangladesh?

The key political–economic actors include domestic, foreign, and transnational actors. The domestic actors are the state actors and non-state actors of Bangladesh. The state actors include the government of Bangladesh and its various ministries/departments/bodies, which work on climate change issues and which are in charge of managing funds and projects to deal with the issues. The non-state actors include various local NGOs in Bangladesh, which work on climate change issues. On the other hand, the transnational actors refer to the actors whose work transcends national boundaries. Examples would be members of the Intergovernmental Panel on Climate Change (IPCC) and international and regional institutions such as the UNFCCC, the World Bank, and the ADB. This book also considers knowledge brokers as transnational actors because they help produce, disseminate, and institutionalize specific knowledge at local, national, and international levels. I use the term 'foreign actors' to refer to the high-carbon-emitting countries (they are mainly Western-industrialized countries) and their official departments, which give funds to Bangladesh for implementing climate change resilience projects. I mainly consider the funds given by the United States to Bangladesh. A detailed description of these actors is provided in Chapters 5–7.

Argument: I argue that the political–economic actors have replaced the concept of climate refugees with that of climate change-induced displaced people or migration because the term 'climate change-induced displacement' helps such actors to develop a network by which they can achieve the following political and economic interests:

(i) The high-carbon-emitting countries are exempted from giving shelter and compensation to the climate change-induced uprooted people. The emitters argue that the affected people should be self-responsible by being *resilient or adaptive* in facing climate change-induced calamities.
(ii) The high carbon emitters and transnational actors justify that they are already helping the climate change-affected countries via prescribing implementation

of climate-change-related resilience projects and providing finance to such projects.

(iii) On the one hand, the domestic and transnational actors can secure contracts for big-budget *climate change adaptation/resilience projects*, which are funded by the high-carbon-emitting countries. On the other hand, the high carbon emitters integrate the funds into the current loans to the recipient country in such a way that the donors (i.e. the high carbon emitters) get the loans paid off with interests.

The transnational network refers to a cross-border network of domestic, foreign, and transnational actors through which these actors reconcile their political and economic interests through the resilience projects. However, in producing knowledge related to the resilience projects, these actors do not include the voices of the actual climate change-induced uprooted people. The voice of the uprooted people has remained ignored in the climate change discussions in Bangladesh.

Original contribution to knowledge: The original contribution to knowledge made by this book is twofold. First, theoretically, this book introduces a hybrid theory: knowledge network theory. The hybrid theory is a combination of the following:

1. *Knowledge analysis* from the perspective of critical constructivism of International Relations (IR) and Critical Political Ecology (CPE)
2. *Network analysis* from the perspective of Stone's (2002) *knowledge network*
3. *The analysis of the role of knowledge brokers* from the perspective of Finnemore and Sikkink's (1998) analysis of *norm entrepreneurs*

The critical constructivism of IR explains that knowledge is not power-neutral or value-free. In a similar tone, CPE describes how 'scientific knowledge' regarding environment, ecology, and climate change has its roots in power politics between actors who tend to secure their interests in the process of producing the knowledge. Drawing on the political nature of knowledge, this book demonstrates that the knowledge about climate refugees and climate change-induced displaced people/migrants is not value-neutral. The knowledge framed in terms of climate refugees was developed to serve specific sets of interests of refugee-group. However, a transnational network of actors afterwards replaced it with the knowledge of climate change-induced displaced people to serve the interests of parts of refugee-group and migrant-group.

This book borrows Stone's (2002) concept of knowledge networks in describing the transnational networks. The main contribution of the book is the introduction of the concept of multi-scalar knowledge brokers (MKBs). The brokers are individual actors. Their main task is to maintain the fluidity of the transnational network by bridging the interests of national actors in line with international actors, which in the end also serve the material interests of the brokers.

The conceptual analysis of multi-scalar knowledge brokers is similar to Finnemore and Sikkink's (1998) analysis of *norm entrepreneurs*. Norm

entrepreneurs produce specific knowledge and help institutionalize the knowledge at local, national, and international levels, in a way which also serves the entrepreneurs' interests. However, Finnemore and Sikkink's (1998) analysis of norm entrepreneurs is in deficit in describing how and by using what tools the norm entrepreneurs connect the global, national, and local actors in institutionalizing the knowledge at local, national, and international levels. The concept of multi-scalar knowledge brokers remedies this deficit by describing how the multiple roles of the brokers at local, national, and international levels are key to connecting all the actors. The analysis of the multiple roles of the brokers distinguishes this book from many other publications on knowledge networks (see Chapter 3 for details about the knowledge brokers).

Second, empirically, this book demonstrates a better understanding of why specific knowledge (in this case framed in terms of climate refugees) has been dropped and why it has been replaced by another one (framed in terms of climate change-induced displaced people). In addition, this book will also demonstrate that knowledge brokers are not local actors but individual transnational actors who can hold important decision-making positions at local, national, and international knowledge production networks. Knowledge brokers' functions at multiple levels help bring the interests of refugee-group in line with the interests of migrant-group for producing/replacing, transmitting, and institutionalizing specific kinds of knowledge at policy levels. For aligning the interests of refugee-group and migrant-group, the knowledge brokers have played vital roles in replacing the knowledge of climate refugees with that of climate change-induced migrants or displaced people.

Method of data collection: Why constructivism is a good fit for this book?

The research conducted in the book is *investigative* in nature because it seeks to find out *why* and *how* the knowledge of climate refugees has been replaced by that of climate change-induced migrants in the discussions of climate change, with a particular focus on Bangladesh. The discussion above makes it clear that some political–economic actors – such as climate scientists and policymakers – came up with the knowledge of Bangladesh's climate refugees in a specific period – during the 1990s–2000s – and then – since 2010 – the actors replaced that knowledge with a new one, climate change-induced migration. Nevertheless, some of the literature on climate change still reproduces the argument that climate change and its effects can produce refugees. Political–economic actors deploy the concepts of *climate refugees* and *climate change-induced migrants* based on specific contexts and their spatial and temporal considerations. One idea can replace the other in a different particular context, but in other contexts, the ideas can also co-exist. Therefore, the knowledge or idea of climate refugees and climate change-induced migrants cannot be analyzed by a *positivist paradigm* and *quantitative data analysis* in which knowledge is seen as context-free, objective, and static.

Instead, for the following reasons, the constructivist approach is the best fit for the research of this book. The constructivist ontology is built upon three

components: context, intersubjectivity, and power (Klotz & Lynch, 2007, pp. 7–11). According to the constructivist ontology, actors produce specific knowledge and give a meaning to that knowledge based on their understanding of the social, cultural, spatial, and historical contexts (Klotz & Lynch, 2007, p. 3 and p. 44; Pouliot, 2007, p. 361). In this way, the knowledge and actors' actions are both mutually constituted and have a reciprocal influence on each other. In addition, the constructivist ontology also explains that since the context varies across spatial, temporal, and societal differences, multiple meanings of an idea can still coexist even in a period in which one specific meaning prevails over others; in particular, the meaning produced by powerful actors can prevail over others by undermining the ideas brought up by the weaker actors (Klotz & Lynch, 2007, p. 10). Therefore, the context and power relations of the actors are important components of the constructivist ontology. Drawing from the discussion above, it is evident that Bangladesh during the 1990s and 2000s was in favour of producing the idea of climate refugees; however, it changed afterwards. The Western-industrialized countries never accepted the idea of climate refugees, instead favouring climate change-induced displaced people. Later, the interactions between the powerful Western-industrialized countries, the government of Bangladesh, and its NGOs and climate scientists resulted in the replacement of the term *climate refugees* with that of *climate change-induced displacement* (detailed discussion in Chapter 6). The power of the interaction between the actors is vital in replacing the earlier concept. For all these reasons, this research fits into the constructivist ontology.

A constructivist *epistemology*, meanwhile, dwells on the interactive relations between the researchers and the researched items/participants, through which the two parties (researcher and researched items/participants) co-produce the research findings, by describing the context in detail. A focus on the interactive relations between the researcher and the researched items/participants means, for example, (i) that the researcher can conduct in-depth interviews with the participants and then shape arguments based on reasoning about the data collected from the interviews; and (ii) the researcher can analyze the contents of particular items of literature or can interpret any linguistic indication, symbol, etc., in making meaning of a specific social reality. The argument of the research in the book is also based on the above-mentioned interactive relations between me, as a researcher, and my researched items/participants.

According to Klotz and Lynch (2007, p. 16), 'the definition of core concepts' can be 'the starting point for exploring methodological choices' in any research that follows a constructivist tradition in which actors' actions and knowledge are both mutually constituted. The authors add that the definition of the core concepts directs the researcher to find which technique of data collection could be the best suited to 'capturing the process of mutual constitution that are at the heart of the constructivist approach' (Klotz & Lynch, 2007, p. 16). The two core concepts in this book are *knowledge* (including the knowledge of climate refugees and climate change-induced migrants or displaced people) and political–economic actors (explanations of these concepts are presented in Chapter 3). I started to explore

these two core concepts in the process of my literature review and the conceptual analysis afterwards directed me to conduct extensive field research in Bangladesh.

Field research is the researcher's personal interaction with the research subjects in the selected field site, which contains the potential answer to the research question (Wood, 2007, p. 142). The research subjects can be human or non-human. Some examples of non-human research subjects can be documents, maps, reports, contents of reports, and newspaper articles. On the other hand, human research subjects are participants, informants, and respondents. In this research, I have found that no single technique can give me the full picture of (i) the context of the research, (ii) power relations between different political–economic actors, and (iii) the intersubjective meaning of the two ideas – climate refugees and climate change-induced displaced people/migrants – which are co-created by the actions of the political–economic actors and their knowledge. Therefore, my initial choice was to employ two techniques for collecting data:

1. Content analysis of relevant literature
2. Elite interviews (face-to-face interviews and Skype interviews) with the people who were involved in the climate change discussions in Bangladesh

Justification for choosing these two techniques is described below. My initial choice was also to conduct in-depth interviews with the people uprooted due to climate change-induced disasters. The reason for choosing these people was to know how they viewed the different framings of their displacement. However, for security reasons, I was not able to undertake the interviews.

1. *Content analysis of relevant literature*

Researchers analyze the contents of selected literature to find how certain actors produce particular knowledge at a particular time in a given context (Klotz & Lynch, 2007, p. 51). This research consulted the content analysis of some selected literature in order to understand who the proponents of the knowledge of climate refugees and climate change-induced displaced people/migrants are, in the particular context of Bangladesh, and how they produced the knowledge. Among the many variants of the content analysis, I have employed *summative content analysis*. Summative content analysis refers to finding specific keywords in the existing literature that better explain the context of the study subject (Hsieh & Shannon, 2005, pp. 1283–1285). I was particularly looking for keywords that were related to the ideas of climate refugees and climate change-induced displaced/migrants in the context of Bangladesh. The keywords were 'sea level rise', 'population movement', 'climate refugees' 'climate change-induced displacement/migrant', and 'actors'. For the content analysis, I selected the following literature:

(i) The official documents of the government of Bangladesh. It includes the 2005 and 2009 Bangladesh National Adaptation Programme of Action (NAPA), the 2009 Comprehensive Disaster Management Programme, the 2014

Comprehensive Disaster Management Programme Phase II, the Assessment of Sea Level Rise on Bangladesh Coast through Trend Analysis, and the 2010 Bangladesh Climate Change Trust Act.

(ii) The documents of the following donor-funded resilience projects are as follows:
The 2008 Bangladesh Climate Change Resilience Fund (BCCRF)
The 2010 Bangladesh Climate Change Trust Fund (BCCTF)
The 2010 Pilot Programme for Climate Resilience (PPCR)
The 2015 Green Climate Fund

(iii) The cyclone data of Bangladesh produced and provided by the Bangladesh Meteorological Department.

(iv) Newspaper articles, academic books, and journal articles.

(v) A doctoral thesis collected from the University of Dhaka.

The literature search during my field research also influenced me to look at the following documents to understand how the issue of sea level rise and its relation to population movement has been framed in the existing literature:

(i) The Five IPCC Assessment Reports (published in 1990, 1995, 2001, 2007, and 2013/14) – particularly the chapters that explain the climate change scenario of Bangladesh.

(ii) Documents of the UNFCCC such as the National Adaptation Programme of Action (NAPA) Index for developing countries, the 1992 UNFCCC Treaty, and Declarations of Conference of Parties of the UNFCCC (COPs) and talks – particularly the 2001 Marrakesh UNFCCC Climate Conference, the 2010 Copenhagen UNFCCC Climate Conference, the 2009 Bonn Climate Talk, and the 2015 Paris UNFCCC Climate Conference.

(iii) The World Bank Climate Change Data of Bangladesh (source: the World Bank Climate Change Knowledge Portal) and documents of the World Bank regarding Bangladesh's climate change such as the 2000 Bangladesh Climate Change and Sustainable Development.

The literature search also helps discover the roles of multi-scalar knowledge brokers. Information about the knowledge brokers, documented in this book, is collected from publicly available sources.

2. *Elite interviews* (face-to-face interview and Skype interview)

According to Delaney (2007, pp. 208–219), elites are the individuals in the decision-making or leadership roles, and are experts on a certain issue whose opinion is very important to take into consideration for analyzing a particular context or issue. In this book, I identify elites who are climate scientists, university professors, government officials, and officials of international organizations who work on climate change issues and who are in important decision-making positions at national and international levels regarding climate change issues. I collected the

names of the elites from relevant literature. These people work on climate change issues, and therefore, they can tell stories of climate refugees and climate change-induced displacement/migrants, which are not available in the existing literature or documents. Therefore, the only option to know about the stories was through interviewing them.

I conducted face-to-face elite interviews from November 2016 to March 2017 in Bangladesh. I also undertook Skype interviews with two elites who were neither in Bangladesh nor in Hamilton, Canada.

I followed non-probability sampling for recruiting the elites for the interviews. Non-probability sampling involves researchers' subjective judgement for drawing manageable samples from a larger population (Tansey, 2007, p. 14). In this research, I have selected elites through snowball sampling techniques. Snowball sampling includes identifying an initial set of relevant respondents and then requesting the respondents suggest other names, which can give more information on the topic of research (Tansey, 2007, p. 18). I drew five potential respondents from publicly available sources such as newspaper articles and the literature on climate change and climate refugees. I contacted the potential participants by email and phone to request an interview.

The danger of snowball sampling is that the respondents only share the names of those with similar viewpoints (Tansey, 2007, p. 19). To avoid this bias, I gathered an initial list of participants who work for different organizations and who would likely bear different views. I requested the initial set of participants suggest other names whom I could interview. In this way, I collected names of the second set of participants. I asked the second set of participants to give me other names of potential participants. Thus, the process continued.

I conducted face-to-face interviews with 12 participants and Skype interviews with 2. I asked open-ended and unstructured questions. I did 13 interviews in Bengali and 1 interview in English (because that participant was English-speaking).

I conducted this research as a doctoral student at McMaster University, Canada. I was committed to the McMaster Research Ethics Board's (MREB) research ethics rules for conducting this research. The rules include not divulging the names or other identifying information about human participants while citing their interviews in the book. The rule is intended to keep the participants' identities confidential. So, when I cite the interviews of the participants in this book, I have not used original names or exact official roles. However, for the convenience of analysis, particularly the analysis in Chapters 4–6, I use the following fake names for the participants: Participant 1, Participant 2, Participant 3, Participant 4, Participant 5, Participant 6, Participant 7, Participant 8, Participant 9, Participant 10, Participant 11, Participant 12, Participant 13, and Participant 14.

As mentioned earlier, I conducted 14 elite interviews. Elites are small in numbers. I deemed 14 elite interviews sufficient for this research because *very few elites* were involved in the issue of climate change and its impacts on Bangladesh. Furthermore, many elites I approached declined to give me interviews. Some

elites agreed to give me interviews under specific conditions, which did not match the ethics of the research, and in these cases, I declined the interviews.

Validity of the research

This research has its limitations: being based on a single case, Bangladesh, it arguably has limited external validity. However, the aim of this research is to strive for a high degree of internal validity through conducting an in-depth analysis of the situation in Bangladesh. The research findings could also be relevant for other countries. In particular, the analysis of knowledge brokers and their role in the alignment of domestic and foreign interests can be generalizable. In this way, the external validity of this single case can be attained because, as Mahoney and Goertz (2006, pp, 227–229) have observed, a single case study is contextually generalizable to other similar scenarios. Chapter 8 explains how this research can be generalized.

Plan of the book: Chapter outlines

Excluding this introductory chapter (Chapter 1), the book is divided into seven chapters. Chapter 2 showcases the international scenario of the debates regarding labelling climate refugees and climate change-induced displacement, and about the actors who produced these concepts. This chapter demonstrates that there is no longer North–South division regarding replacing the term 'climate refugees' with that of 'climate change-induced displacement'. Instead, the Northern and Southern countries unanimously replaced it. This chapter also notes that the existing theories of IR/GPE (Global Political Economy) and Political Ecology are insufficient for analyzing the entire scenario. To meet this gap, Chapter 3 introduces a hybrid theory, a combination of critical constructivism of IR and CPE, namely Stone's (2002) knowledge network and Finnemore and Sikkink's (1998) analysis of norm entrepreneurs.

Chapter 4 analyzes the impacts of climate change in Bangladesh. This chapter demonstrates that sea level in Bangladesh is not rising solely due to global warming but also because of a lack of water in the upstream river basins. Therefore, the existing knowledge claims that Bangladesh is going underwater due to climate change-induced sea level rise, which is creating population movements are misleading. Rather, global warming-induced increased tropical depressions and severe cyclones are more appropriate for framing the climate change-induced population movement. This chapter also directs us to read the remaining chapters of the book in order to discover why the issue of sea level rise is used for labelling climate change-affected people as 'climate refugees' by ignoring information about tropical depressions and severe cyclones.

Chapter 5 introduces the political–economic actors, knowledge brokers, and climate finance in operation in Bangladesh. These three elements are essential to understand the content of Chapter 6, which discusses the role of the actors who replaced the term 'climate refugees' with that of 'climate change-induced

displaced people' and their interests. Chapter 7 analyzes the political and economic interests of the actors and the transnational network in which they are situated.

Chapter 8 is the concluding chapter of this book. It includes a summary of the book, a brief description of the original contribution to knowledge, a note on the limitations of this research, and an analysis of key research findings. This chapter also analyzes how the concept of knowledge brokers is also applicable for other countries such as the United States, Canada, and India. It will discuss about the roles of the three members of the Rockefeller family from the United States (Winthrop Rockefeller, John D. Rockefeller, and William Rockefeller), the former IPCC chairman Rajendra Pachauri from India, and the former UN executive Maurice Strong from Canada. The concluding part of the chapter directs us to conduct future research on the nature of climate change finance and its relevance to fighting the effects of climate change.

Notes

1 Knowledge brokers are those people who help produce, disseminate, and institutionalize specific knowledge on behalf of others at local, national, and international levels. Chapter Three contains a detail discussion on the concept of knowledge broker.
2 I use the term climate change-affected people to refer the people who have been uprooted due to climate change-induced disaster.

2 Conceptual debates

Climate refugees versus climate change-induced displacements/migrants

Introduction

As mentioned in Chapter 1, a review of policy documents, published between the 1980s and the 2000s, demonstrates that refugee-group and migrant-group were engaged in a debate over the proper names for people who had been uprooted due to the effects of climate change. Refugee-group labelled the people *climate refugees,* and migrant-group called them *climate change-induced displaced people*. The conceptualizations of climate refugees or climate change-induced displacement were in conflict in three major aspects: (i) legal interpretations, (ii) security concerns, and (iii) political–economic analysis (see Table 2.1). This chapter explores these three debates, seeking to understand how political–economic actors across the world produced knowledge about climate refugees or climate change-induced displaced people/migrants and what interests of the actors lay behind the different conceptualizations.

The first debate covers whether climate refugees or climate change-induced displacement should be covered by the current refugee status of the United Nations High Commission for Refugees (UNHCR) or by a different arrangement. The second debate addresses the security concerns of climate-affected countries and the Western-industrialized countries. The climate-affected countries consider that climate change threatens their statehood by making their terrain uninhabitable and forcing their citizens to move from their places of living; therefore, the countries argue, these people must be entitled climate refugees. In contrast, the Western-industrialized countries are unwilling to open their borders for the people uprooted due to climate-affected reasons. Instead, they consider that it is the climate change-affected people's own choice to migrate from the climate-stressed areas to distant places, and so it is not a case of forced migration. Therefore, the Western-industrialized countries do not view the migrants as climate refugees but as self-conscious climate migrants or displaced people. The third debate is related to the question of liability for changing the climate. The climate change-affected countries blame high-carbon-emitting Western-industrialized countries for their excessive carbon emissions, which has resulted in global warming and the associated population displacement effects. Therefore, they demand that the climate victims be classified as climate refugees, and the high-carbon-emitting countries

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Table 2.1 Three major debates in defining climate victims

Area of the debate	*Actors involved*	*Stand of the actors*	*Implications*	*Global position of the actors*
Legal	Refugee-group: Scholars of law schools, climate-vulnerable countries, environmental NGOs	*Revisionist*: Revise existing regime or adopt new convention for recognizing climate refugees	The term 'climate refugees' should be introduced	Weak
	Migrant-group: The UNHCR, the UNFCCC, the UN employees, legal experts	*Status quo*: Climate refugees are not refugees as per the UNHCR's refugee status	It is better to use the term 'climate induced displacement'	Dominant
Security	Refugee-group: Small island and low-lying countries	Climate-change challenges statehoods of climate-vulnerable countries that generate climate refugees	Demand the recognition of climate refugees	Weak
	Migrant-group: The West, international and regional organizations, donors	Climate change does not force people to move. People move by their own choice. They can also be adaptive and resilient in facing climate change	Label climate change-induced displacement/migration rather than climate refugees	Dominant
Political–economic	Refugee-group: Small island and low-lying countries	Excessive carbon emission of the high carbon emitters create climate refugees	Promote polluter pays principle in order to get compensation for climate refugees	Weak
	Migrant-group: The high carbon emitters and international financial institutions such as the World Bank, IMF, etc.	High carbon emitters have not recognized the term climate refugees in order to avoid the liability of the climate victims. However, they use the term climate change-induced displacement	Fund adaptation projects in the climate-affected countries	Dominant

compensate these refugees for having made the world warmer. Meanwhile, the high-carbon-emitting Western-industrialized countries refused to give refugee status to the climate victims. Instead, the high-carbon-emitting countries managed to exempt themselves from the liability question through Article 52 of the 2015 COP 21 Paris Agreement (UNFCCC, 2015, p. 8).

This chapter, *first*, explains how the existing literature frames the debates around the concepts of climate refugees and climate change-induced displacement. The existing literature portrays the three debates in such a way that there is a fixed binary division between the Western-industrialized countries and climate-affected countries regarding labelling climate-change-induced uprooted people either as climate refugees or via climate change-induced displacement. However, the existing literature misses the point that the West and the climate-affected countries, as well as international organizations, donors, and non-state actors, *agreed* to replace the term 'climate refugees' with that of 'climate change-induced displaced people or migrants'. For this reason, the *second* section of this chapter addresses the knowledge gaps in the existing literature regarding the labelling. The *third* section of this chapter describes how this book addresses the knowledge gaps.

Legal interpretations: Status quo biased versus revisionists

The UNHCR is considered the ruling regime worldwide for providing a legal definition of a refugee. The 1951 UNHCR Convention Relating to the Status of Refugees defined refugees as persons who fled their country of origin because of the fear of persecution due to belonging to a particular race, religion, nationality, social group, or political opinion (UNHCR, 2010, pp. 14–16). It is worth noting that the original refugee status of the UNHCR was not the same as it is today. The status was formulated to protect politically persecuted people who crossed borders before 1 January 1951 and only within Europe (UNHCR, 2010, p. 2). In this sense, it was Europe based and time constrained.

According to Chimni (1998, pp. 351–354), the purpose of formulating this refugee status was to protect European anti-communists who had escaped from their country of origin for fear of being persecuted by their socialist governments. For him (1998, p, 356), the Western-industrialized countries were the main actors who promoted the status of refugee because their interests lay in supporting and sheltering anti-communist activities during the Cold War. However, the status of refugee precluded displaced people who crossed over from their country of origin due to internal conflicts and whose origins were from developing countries. Therefore, the developing countries pressed for a revision of the UNHCR's refugee status by including fear of war and violence. As a result, in 1967, the UNHCR adopted a protocol, which omitted the geographical and time limitations of the previous definition and included the fear of war and violence (UNHCR, 2010, p. 2).

Although the 1951 Convention and the 1967 Protocol have helped many refugees find new homes, they are not comprehensive enough to include people who have had to flee from their place of living due to climate change and its effects.

The people who have been displaced for climate change-induced reasons are not considered refugees. Such people will not be recognized as refugees until or unless the UNHCR or any other international or national jurisdiction defines them as such.

However, refugee-group and some scholars argue that the exile-biased condition of the UNHCR's characterization of refugees is inappropriate for describing climate refugees. These actors have demanded a revision of the current refugee status of the UNHCR to include climate refugees or the adoption of a new regime in the UNFCCC for the protection of climate refugees. Frank Biermann and Ingrid Boas (2010, p. 67) prescribed that climate refugees can be defined as:

> people who have to leave their habitats, immediately or in near future, because of sudden or gradual alteration in their natural environment related to at least one of three impacts of climate change: sea-level rise, extreme weather events, and drought and water scarcity. (Biermann and Boas, 2010, p. 67)

For Biermann and Boas (2010, p. 63), the displaced people can be internally displaced people (IDPs), or they can also cross the border of their country of origin to take shelter in a foreign country. However, according to Docherty and Giannini (2009, pp. 367–372), the definition above is inadequate because, first, it includes IDPs, which contradicts the UNHCR's definition of a refugee. Second, the definition restricts climate change and its effects to only three categories: sea level rise, extreme weather events, and drought and water scarcity, thus ignoring other potential consequences of climate change. For improving Biermann and Boas's definition, Docherty and Giannini (2009, p. 372) advanced a new definition of climate refugees, according to which an individual needs to fulfil the following requirements to be considered as a climate refugee:

1 Forced migration
2 Temporary or permanent relocation
3 Movement across national borders
4 Disruption consistent with climate change
5 Sudden or gradual environmental disruption
6 A 'more likely than not' standard for human contribution to the disruption

McAdam (2011, pp. 10–11) conducted field research in three climate-affected countries – Bangladesh, Kiribati, and Tuvalu – and found that climate-change-related weather events do not engender cross-border migration in those countries, which is mandatory to receive the title of refugee as per the UNHCR's refugee definition, but solely internally displaced people (IDPs). For this reason, for many legal professionals and bureaucrats, 'climate refugees' is not a suitable term for referring to the migrants, and they prefer 'climate change-induced migration or displacement'. Kyung-wha Kang, the former Deputy High Commissioner for Human Rights in the Office of the United Nations High Commissioner for

Human Rights (OHCHR), argues that the existing humanitarian regimes such as the UN Guiding Principles on IDPs (internally displaced persons) are sufficient to address the issue of climate change-induced migrants because it includes provisions for human and natural-made disasters (Zetter, 2011, p. 21). The UN Guiding Principles on IDPs (2001) state:

> internally displaced persons are persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized border. (UNHCR, 2010, p. 1)

The UNFCCC also does not recognize the term climate refugees and uses the term climate change-induced migrants or displacement. The UNFCCC's 2010 Cancun Adaptation Framework, paragraph 14 (f), called for national, regional, and international coordination and cooperation in implementing planned relocation of climate-displaced communities by asserting that human rights should be fully respected in all actions related to climate change (UNFCCC, 2011, p. 5). The Advisory Group of Climate Change and Human Mobility of the UNFCCC recommends an action plan be considered in the 2015 Paris Agreement. The action plan contains guidelines for evacuating climate-affected areas, protecting vulnerable evacuees from any harm once displaced, and organizing their planned relocation (UNHCR, 2015, p. 1). The draft Paris Agreement contained the guidelines and recommendations for safeguarding climate change-induced migrants (Karasapan, 2015, para. 3). However, it was removed from the final agreement due to strong opposition by Australia (Karasapan, 2015, para. 3). Therefore, no significant attempt was taken to safeguard the climate change-induced uprooted people in the UNFCCC's 2015 Paris Climate Conference/ Agreement.

It is worth noting that sometimes the term 'environmental refugee' is used as a synonym for 'climate refugee' and vice versa. For example, Myers and Kent (1995, pp. 18–19) advanced a definition of environmental refugees that, for some scholars, includes climate refugees. The definition is:

> who can no longer gain a secure livelihood in their traditional homelands because of environmental factors of unusual scope, notably drought, desertification, deforestation, soil erosion, water shortage and climate change, also natural disasters such as cyclones, storm surges and floods. In face of these environmental threats, people feel they have no alternative but to seek sustenance elsewhere, whether within their own countries or beyond and whether on a semi-permanent or permanent basis. (Myers & Kent, 1995, pp. 18–19)

However, as the term 'environmental refugee' blends all kinds of environmental disasters including those that are not related to climate change, this book does not consider the term as a synonym for climate refugee.

Security narratives: Resilience

The knowledge of climate refugees has emerged from two distinct forms of security narratives. The first security narrative explains that climate change can make lands uninhabitable, threatening the sovereignty of statehoods, which will result in the creation of many climate refugees. The second security narrative derives from deep xenophobia of the Western-industrialized countries (which are also high carbon emitters). The Western-industrialized countries see climate-change-induced uprooted people as threatening to cross their borders and overwhelm their border security forces (as we noted in Chapter One with respect to one view of the attitude of the United States), and therefore they seek to prevent the mass influx of these people. The conflicting views of the two narratives are described in more detail later.

The literature of political science and international law defines statehood as a status/quality of a country, which possesses the following qualifications: a well-defined territory (with specific national borders), a permanent population (which lives in the area), a government (which exercises authority over the territory and people), and the sovereignty that gives states a separate identity and the capacity to establish diplomatic relations with other jurisdictions (see the 1933 Montevideo Convention on the Rights and Duties of States, Article 1). Based on this view of statehood, a state develops its security policies with the intention of safeguarding its territory, border, population, and sovereignty.

Small island countries and low-lying countries are proponents of this security narrative concerning climate refugees. According to the first security narrative, climate change-induced disasters and their effects challenge a state's control over its territory, national borders, and population. The effects of global warming include sea level rise that causes the disappearance of lands beneath the waves, river bank erosion, crop failures (due to changing patterns of rainfall), drought, and saltwater intrusion into agricultural lands. Thus, states lose control over their territory, the fertility of their lands, food production, and access to safe drinking water. In this sense, anthropogenic global warming challenges the statehood of countries. Examples of these countries are the Maldives, Kiribati, and Tuvalu. It is reported that 14 inhabited islands of the Maldives have been abandoned because of land erosion by the sea (Guzman, 2013, pp. 1–63). The former president of the Maldives, Mohamed Nasheed, called attention to the country's vulnerable situation in 2009 in the world's first-ever underwater cabinet meeting (Guzman, 2013, pp. 1–63). Dressed in scuba gear, the President called on world leaders to cut their carbon emissions, recognize uprooted people as climate refugees, and consider their relocation to a second country (Guzman, 2013, pp. 55–56). He also added, 'We do not want to leave the Maldives, but we also do not want to be climate refugees living in tents for decades' (Ramesh, 2008, para. 7). The president also declared that his country was considering Australia, one of the nearest developed countries to the Maldives, as a new home if the country disappeared into the ocean, while India and Sri Lanka were also on the list for consideration. The president advocated using a portion of his country's

billion-dollar annual tourist revenue to buy a new homeland abroad (Ramesh, 2008, paras 6 and 7).

Two families from Kiribati and Tuvalu have been reported to claim the status of climate refugees in New Zealand's court. The refugee claimants argue that they have been forced to leave their places of origin due to sea level rise and to take shelter in New Zealand. They also added that their countries are unable to shelter them because of the threat of going underwater (O'Brien, 2015, paras 1–13). John Campbell, a geographer at New Zealand's University of Waikato, predicts that about 1.7 million people may be uprooted by climate change in the Pacific region by 2050 and may claim refugee status in New Zealand and Australia (O'Brien, 2015, para. 13). Australia, aware of this situation, actively works against any international effort to shelter climate refugees: note, again, Australia's strong opposition in the negotiations of the UNFCCC's 2015 Paris Agreement to taking action to safeguard climate change-induced displaced persons. Australia, the highest per capita carbon dioxide emitter in the world, asserts that it has already funded many climate resilience projects in the Pacific and is therefore exempt from sheltering climate refugees within its territory (Karasapan, 2015, para. 3).

The second kind of security narrative, according to Hartmann (2010, p. 238), emerges from a deep-seated and long-standing xenophobia on the part of the West and its associated stereotypes of people around the world. Hartmann (2010, pp. 238–239) remarks that the Western-industrialized countries consider that climate change will induce the dark-skinned, fast-breeding, and dangerous poor people of climate-vulnerable Africa (and Asia) to take up arms against the West, thus violating their borders as climate refugees. The West also fears taking on the liabilities of these climate refugees. It is worth noting that the UNHCR's definition of 'refugee' made the Western-industrialized countries responsible for sheltering refugees from Eastern Europe in the Cold War period. Similarly, recognizing climate refugees would also make the West responsible for these new refugees. To avoid such liability, the Western-industrialized countries and their allied international institutions such as the UN, the World Bank, and the ADB prefer to use the term 'climate change-induced migration/displaced,' which does not contain the word 'refugee'. For example, the Under-Secretary-General of United Nations Office of the High Representative for Small Island Developing States was asked in an interview whether the displacement of people and communities in the small island states of the Pacific was inevitable, and if so who should be responsible for assisting these states and communities (McNamara, 2008, p. 39). The Under-Secretary-General argued:

> Population movement as one of the dimensions of climate change is very important to take note. What should be realized is that climate refugees for the small islands is a reality and they cannot deny it—the negative aspects of this reality, so each of the islands will have to adapt itself to the new situation … These are very, absolutely serious matters for people of those countries and those countries themselves. (McNamara, 2008, p. 39)

The Western-industrialized countries, with the assistance of the international financial institutions, have also introduced the notion of 'resilience' into global climate politics, seeking to govern the climate change-induced migration/displaced people in such a way that the displaced people do not cross the national borders of the Western-industrialized countries and take shelter into it (Methmann & Oels, 2015, pp. 58–62). Although the term 'resilience' might seem vague, international financial institutions use the term as a tool to implement a neoliberal agenda in fighting against climate change. A closer look at the resilience discourse will clarify this issue.

The proponent of the resilient concept, the ecologist Crawford S. Holling (1973, p. 17), described resilience as a *social* or *ecological* system that can 'absorb changes […] and still can persist' (Holling, 1973, p. 17; also cited in Methmann & Oels, 2015, p. 54). Holling (1973) differentiated two types of resilience: (i) resilience as maintenance or engineering resilience, and (ii) resilience as an adaptation or ecological resilience. Later, scholars built on Holling's analysis of resilience for describing issues in different fields. Some scholars do not separate the *social* and *ecological* systems as Holling did. Instead, they propose a third kind of resilience that concerns how social and ecological connections help systems absorb changes and still persist (Methmann & Oels, 2015, p. 58). The third kind of resilience has been entitled socio-ecological or transformative resilience (Methmann & Oels, 2015, p. 58). Later still, all three variations of resilience have migrated to other disciplines to describe different issues elsewhere. A short description of these three variants as related to climate change and population movement is given later.

(i) Resilience as maintenance: Drawing from Holling's view of resilience as maintenance, Walker and Cooper (2011, p. 144, pp. 151–154) describe how the term *resilience* has been used by the international financial institutions (i.e. the World Bank, International Monetary Fund, the Bank for International Settlements) as a crisis management or risk management tool against unpredictable and unprecedented financial and economic crises and risks. The term *resilient* has also been used in national security strategies, such as *building resilience* against unpredictable threats against national security (Walker & Cooper, 2011, p. 144, pp. 152–154). The unpredictable threats can be terrorism, climate change, infrastructure damage, pandemics, and natural. This kind of resilience is called *resilience as maintenance* because it seeks to maintain or manage the potential threat or crisis.

Bourbeau (2013, p. 13) explains resilience as maintenance by giving an example of international migration:

> In the context of international migration, a society opting for resilience as maintenance will identify the movement of people (through an emphasis on either 'mass migration' or either 'illegal migration') as an important security threat and as a threat to collective identity that should be fought. The arrival

> of a boatload of refugees on the country's shores will be interpreted as a security threat to the host society and its social cohesion. (Bourbeau, 2013, p. 13)

In the case of responding to the issue of climate refugees and climate-change-induced displaced people, the Western-industrialized countries have employed the concept of resilience as maintenance because they view climate refugees as a threat to their sovereignty, and therefore consider them a national security issue. This kind of refugee must, therefore, be prevented from entering their countries (Methmann & Oels, 2015, pp. 51–68).

(ii) Resilience as adaptation: The ecological discourse of resilience views resilience as a kind of adaptation for handling climate change (Methmann & Oels, 2015, p. 58). The United Nations Development Programme (UNDP), the United Nations Environmental Programme (UNEP), the World Bank, and the World Resource Institute sought to define 'resilience as adaptation' in a report entitled *Roots of Resilience*, which is summarized by Walker and Cooper (2011, p. 155) as follows:

> Resilience is the capacity to adapt and to thrive in the face of challenge. This report contends that when the poor successfully (and sustainably) scale-up ecosystem-based enterprises, their resilience can increase in three dimensions. They can become more economically resilient – better able to face economic risks. They – and their communities – can become more socially resilient – better able to work together for mutual benefit. And the ecosystems they live in can become more biologically resilient – more productive and stable. (Walker & Cooper, 2011, p. 155)

The next section, on the political–economic narrative, includes a detailed discussion of *resilience as adaptation* issues in the light of defining climate refugees and climate change-induced displacement.

(iii) Transformative resilience: Transformative resilience assumes that climate change-induced migration is not a 'forced displacement by climate change' but, as Methmann and Oels (2015, p. 60) put it, the migration is a conscious decision made by people in climate-affected areas (as it is their free choice). People are capable of improving their livelihoods through migrating to another place and training themselves as skilled labourers (Methmann & Oels, 2015, p. 60). The World Bank provides funds in climate-affected countries for resilience projects, which teach entrepreneurial abilities and technical skills to the climate change-induced uprooted people, nudging such people to participate in the global labour market as skilled labourers (World Bank, 2010, pp. 130–131; Methmann & Oels, 2015, p. 60). The International Organization for Migration (IOM) also prescribes empowering climate victims to migrate to a nearby community and get skilled labouring jobs there. Kiribati, one of the countries most vulnerable to going underwater, is an example of a state which

> has initiated investment in its human capital by training its potential climate victims as skilled labourers, aiming to send them to Australia (Yamamoto and Esteban, 2014, p. 251).

In this way, the Western-industrialized countries and international and regional organizations make the climate victims responsible for shaping their own fate in facing climate change, and therefore they do not recognize the term climate refugees but prefer the idea of climate change-induced migration/displacement.

Political–economic narrative: Polluter pays principle versus adaptation projects

The political–economic narrative of climate refugees stemmed chiefly from the polluter pays principle (PPP). The concept has roots in both Western and Eastern philosophy, the core idea being that punishment should rightly pertain to the polluter who caused damage to the environment and be expressed in terms of financial penalties intended as compensation for the loss. Luppi, Franscesco, and Shruti (2012, p. 135) remark that Plato used the idea underpinning the PPP in his *The Dialogues of Plato: the Laws* as: 'If anyone intentionally spoils the water of another … let him not only pay for damages but purify the stream or cistern which contains the water'. Kautilya, one of the most prominent philosophers of the Indian subcontinent (and a rough contemporary of Plato, c. 300 B.C.), prescribed different levels of financial and other punishments for harm to the environment such as polluting water, damaging seeds, killing animals, etc., in his classic book *Arthashastra* (translated as the *Study of Economics*) (Shamasastry, 1915, pp. 60–100).

In the contemporary world, both the developed and developing countries, regional organizations, and international regulations use PPP as a pollution control mechanism to punish the polluters (Khan, 2015, pp. 639–642). In the UNFCCC, the PPP (also known in the UNFCCC as the loss and damage principle) was tabled in 1991 by Vanuatu on behalf of the Alliances of Small Island States (AOSIS), who are at highest risk of inundation by a combination of sea level rise and coastal erosion resulting from higher levels of tropical cyclones (Roberts & Huq, 2015, p. 149). The small island countries identified high-carbon-emitting countries as polluters of the climate and argued that the excessive carbon emissions of the high-carbon-emitting countries are the principal reason for global warming, and hence the cause of the sea level rise and tropical cyclones which threaten to destroy them (Yamamoto and Esteban, 2014, pp. 1–261). The submerging lands leave their inhabitants uprooted, and the uprooted people are, therefore, understood as climate refugees.

By advancing the PPP, the small island countries demanded that the high carbon emitters provide economic compensation to the victims of the small island countries and low-lying developing countries who have been suffering from sea level rise and are threatened with submersion (INC, 1991). The aim of the PPP was to introduce an insurance pool to provide insurance against sea level rise

(Roberts & Huq, 2015, p. 149). In the 2007 Bali Action Plan, the AOSIS submitted an outline for the mechanism about how to address the compensation, which includes (i) an insurance component against climate change-induced extreme weather events, risks to crop production, food security, and livelihoods; (ii) a rehabilitation component to the climate victims as well as climate refugees, and (iii) a risk management component to manage climate change-induced risks (Roberts & Huq, 2015, p. 149).

However, the high carbon emitters did not recognize the term climate refugees, because recognizing the term would make them liable to take on responsibility for the climate victims. Instead, the high carbon emitters and other developed nations agreed in Article 4(4) of the UNFCCC (1992) to fund climate change adaptation and resilience projects in developing countries through the international financial organizations, particularly through the World Bank (the UNFCCC, 1992, Article 4). ADB, International Monetary Fund (IMF), the World Bank, and many other donor agencies now provide funds for adaptation/resilience projects in developing countries that include (i) building seawalls and embankments to protect against sea level rise and river bank erosion, (ii) implementing coastal afforestation projects because the forests can mitigate the severity of cyclones, (iii) planting saline-tolerant crops that will reduce food scarcity caused by saline intrusion into arable lands, and (iv) technological support for introducing a green economy and reducing carbon emissions (Rai et al., 2014, pp. 527–543; Bettini & Gioli, 2015, p. 2). The main rationale behind these funded projects is that they would be able to make the climate change-affected people resilient/adaptive in facing the adverse effects of climate change, and so, the people will not migrate due to climate change effects (Bettini & Gioli, 2015, p. 11).

Knowledge gaps in the existing literature and the contribution of this book

The discussion above demonstrates the following four major knowledge gaps in the existing literature. First, the existing literature shows that there exists a sharp division between refugee-group and migrant-group in producing the knowledge about climate refugees and climate change-induced displaced people/migrants. The actors of migrant-group include the architects of the UNHCR's refugee status, the Western/Northern countries and their state-led donor agencies, and the international organizations, which generate knowledge about climate change-induced migration/displacement. The actors of refugee-group are mainly climate-affected countries, some environmental non-governmental organizations (NGOs) and some scholars who support the knowledge of climate refugees. The way the literature has painted the division between the two groups makes the fight between refugee-group and migrant-group static and unchanging. This appearance of stasis leaves it unclear why the official/government documents of climate-affected countries, its NGOs, and the climate scientists who were proponents of the term *climate refugees* during the 1990s had replaced the term with that of *climate change-induced displacement* after2010.

Second, the literature that produces the knowledge of climate refugees and climate change-induced displacement/migration does not critically analyze the climate change data and the relevant associated scenarios in a given country or region. The literature tends to consider the effects of climate change as a given phenomenon, and it produces the knowledge of climate refugees and climate change-induced displacement/migration based on that given phenomenon. For example, in the case of Bangladesh, the knowledge of climate refugees and climate change-induced displacement/migration has been produced on the basis of the knowledge of sea level rise. However, in Bangladesh, sea level is rising not only due to climate change-induced global warming but also for the lack of sufficient water from the upstream river flows (see Chapter 4). For this reason, producing the knowledge of Bangladeshi climate refugees and climate change-induced displacement/migration on the basis of the sea level rise data is misleading. A critical discussion of the climate change data is needed in order to understand its direct connection with population movements.

Third, the existing literature does not clarify to what extent the climate change resilience projects can indeed help climate-change-induced uprooted people. The projects considered as promoting *resilience as maintenance*, *resilience as adaptation*, and as *transformative resilience* do not include the voices of the uprooted people, but exclusively reflect the views of the climate scientists and policymakers/advocates who produce the knowledge of climate refugees and climate change-induced displaced people/migrants. The *transformative resilience* projects impose a burden on the uprooted people themselves to be self-responsible and skilled labourers and find jobs in the global labour market, migrating to the areas where they can get a job. However, the projects do not guarantee that there will indeed be any employment for the climate victims, and they do not consider whether there are any labour shortages in the job market on such a scale.

Fourth, the Western-industrialized countries give funds as loans to implement *resilience as adaptation* and *transformative resilience* projects in the climate change-affected countries through the international financial institutions (such as the World Bank, IMF or ADB, and some state-owned agencies (such as USAID and DFID). However, the adaptation and resilience projects do not curb the severe effects of climate change but cause further damages such as (a) polders and embankments (under construction) are severely damaged by increased attacks of cyclones, coastal flooding, and sea level rise; (b) the coastal afforestation project is not working because most of the plants have been washed away/destroyed by the frequent attacks of cyclones and flood; and (c) the saline concentration in the land has increased so much that the saline-tolerant crop cannot survive (Rawlani & Sovacool, 2011, p. 860; Yamamoto and Esteban, 2014, p. 56). However, in spite of all the losses, the climate victim countries agree to take the loans. The damaged projects impose a *double burden* on borrowers (i) pay the existing loans taken for all those damaged projects, and (ii) seek more funds, as well as more loans, and technical support for repairing the damaged projects. The existing literature does not answer the question – why do the developing countries take the loans while the projects further damage their economic system.

The rationale of the book: How will this book fill the knowledge gaps?

This book will fill the knowledge gaps by demonstrating that since 2010 there has been no tension or conflict between refugee-group and migrant-group in defining climate change-induced uprooted people. Instead, the actors have unanimously replaced the term *climate refugees* with that of *climate change-induced displaced people*. Furthermore, a group of *multi-scalar knowledge brokers* have played a key role in reconciling the conflicting interests of refugee-group and migrant-group. This book defines the *multi-scalar knowledge brokers* as the individuals who play multiple roles at different levels, local, national, and international. Their primary task is to work on behalf of the donors and international institutions to produce, promote, and transmit specific knowledge in a way that can be institutionalized in international regimes and national policies, and that ultimately politically and economically benefit all these parties (state actors, non-state actors, and international organizations) including themselves. In doing so, the knowledge brokers maintain a transnational network between donors, international institutions, and national governmental and non-governmental organizations.

The existing literature on International Relations (IR), Global Political Economy (GPE), and Political Science is under-theorized in that it does not give sufficient emphasis to *how* the individual actors, such as knowledge brokers, can produce knowledge that serves the interests of donors, states, international institutions, and local NGOs, and themselves, by maintaining transnational networks. *Constructivism* in IR and Critical Political Ecology (CPE) both explain how knowledge is produced by powerful or weak actors to serve their interests (see details in Chapter 3). However, these two fields do not sufficiently address *how* the knowledge is promoted and transmitted across nations and then institutionalized in international regimes and national policies by a transnational network maintained by individuals such as knowledge brokers (more on this in Chapter 3). Stone's (2002, p. 6) analysis of *knowledge network* highlights how *policy entrepreneurs* or *experts* act as intermediaries 'between the (social) scientific/intellectual community and policy domain' in the co-funded projects, financed by national governments and international organizations, for the communication and dissemination of knowledge. Haas (1992, p. 3) describes how individual members of an epistemic community can insert themselves into a network of professionals to disseminate and institutionalize particular knowledge. However, Haas (along with Stevens) argues that 'scientific knowledge should be separated from the policy process', or in other words that science can influence policy only if it is autonomous from the political process (Lidskog and Sundqvist, 2015, pp. 1–4). This book does not consider that knowledge is separate from the political process. So, this book will not analyze Haas's view of knowledge.

On the other hand, Finnemore and Sikkink (1998, p. 895 and p. 910) describe how transnational norm entrepreneurs produce a norm in order to achieve their own goals and to convince state actors to institutionalize the norm. The authors

also add that the norm entrepreneurs are self-interested individuals who produce the norm to support their own interests.

The analysis of knowledge brokers in this book is close to the description of knowledge networks and individual actors (policy entrepreneurs, experts, members of epistemic community, and norm entrepreneurs) provided by Stone (2002) and Finnemore and Sikkink (1998) regarding how they produce and disseminate particular knowledge and help it to be institutionalized. However, the main difference between Stone's (2002) and Finnemore and Sikkink's (1998) individual actors and the knowledge brokers studied in this book is that the knowledge brokers do not hold a single identity but rather have multiple identities. For example, knowledge brokers might work simultaneously as experts, academics, NGO executives, members of a transnational epistemic community and consultants to the national government (see Chapters 3 and 5). The multiple identities of the brokers are the key tools that help them in producing, disseminating, and institutionalizing knowledge at local, national, and international levels by connecting all the actors of these levels.

Chapter 3 will discuss the multiple roles of the knowledge brokers within a hybrid theory, which I label knowledge network theory. The hybrid theory is a combination of (i) the analyses of *knowledge* from the perspective of critical constructivism and CPE, (ii) Stone's (2002) knowledge network, and (iii) Finnemore and Sikkink's (1998) transnational self-interested norm entrepreneurs. This hybrid theory will help analyze how a transnational network of actors has facilitated the replacement of the term 'climate refugees' with that of 'climate change-induced displacement'. Chapter 3 thus sets out and analyzes the knowledge network theory.

3 Knowledge and knowledge network theory

Introduction

This book examines why and how political–economic actors came to replace the knowledge of *climate refugees* with that of *climate change-induced displaced people/migrants*, in the particular context of Bangladesh. Two key concepts are, therefore, important for this book: *knowledge* and *political–economic actors*. This chapter first engages in a detailed conceptual and theoretical analysis of *knowledge* from the perspective of IR and its sub-field GPE and Critical Political Ecology (CPE). Second, this chapter presents a hybrid theory − Knowledge Network Theory. The Knowledge Network Theory incorporates the previously discussed knowledge analysis and the conceptual and theoretical analysis of political–economic actors from the perspective of IR and GPE.

The existing literature on *International Relations (IR)* and *Global Political Economy (GPE)* conceptualize and theorize *knowledge* from the perspective of liberal and constructivist tradition. According to liberal tradition, *knowledge* is a kind of idea, belief, norm, practice, and information which exists independently, and which can influence various actors (such as state actors, non-state actors, donors, and international institutions) to change their existing behaviour (Moravcsik, 1997, p. 513, pp. 524–535). The constructivist tradition views *knowledge* as the idea which is given specific meaning in a particular social context. The constructivist account of knowledge has three sub-variants: conventional, critical, and post-structural. All three variants argue that the relationship between knowledge and actors is reciprocal. Conventional constructivism maintains that knowledge produces actors' identities. Critical constructivism explains that knowledge is not power-neutral because its form and content depend on the power of the actors who produce it to serve their interests. Finally, post-structural constructivism focuses on linguistic analysis or symbolic interpretation of certain facts or realities, which are employed in the production of knowledge regarding that fact or reality.

This book does not adhere to liberal tradition that the knowledge of climate refugees and climate change-induced displacement acts independently and can influence actors' behaviour. Instead, this book demonstrates that certain actors

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produced the knowledge of climate refugees and then replaced it afterwards for serving their political and economic interests. Similarly, the field of *CPE* describes that knowledge, from the perspective of ecology or environmental issues including climate change, is not free from politics and political/social power. Instead, as Forsyth (2004) stated, 'social and political framings are woven into both the formulation of scientific explanations of environmental problems and the solutions proposed to reduce them' (Forsyth, 2004, p. 1). So, the way knowledge is used in this book better fits with critical constructivism of IR/GPE and CPE because this book demonstrates that knowledge of climate refugees and climate change-induced displacement has been produced for serving the political and economic interests of certain actors.

Critical constructivism also describes *how* knowledge can be transmitted and institutionalized at local, national, and international levels. Stone (2002, pp. 2–7 and 2008, pp. 30–31) describes individuals such as think-tanks, experts, academics, NGO executives, members of an epistemic community, and policy entrepreneurs act as intermediaries between intellectual communities and policy domains in the co-production of a particular knowledge and then help institutionalize the knowledge at the policy level as best practices. Thus, the intermediaries play major roles in maintaining a network of knowledge production through connecting the intellectual community and policy domain. They can also help transmission of knowledge across nations. Stone (2002) also observes that *policy entrepreneurs* can act as intermediaries 'between the (social) scientific/intellectual community and policy domain' in co-funded projects, financed by national governments and international organizations (IOs), for the dissemination of knowledge (Stone, 2002, p. 6).

In a similar manner, the literature on Transnational Advocacy Networks analyzes how a group of activists, policy entrepreneurs, or civil society organizations can promote specific knowledge (such as knowledge regarding human rights and the natural environment) by institutionalizing that knowledge in the national and international policy arena (Keck & Sikkink, 2014, pp. 1–217; Hadden, 2015, p. 11). On the other hand, according to neo-Gramscian authors such as Parmar (2002), organic intellectuals play the central role in producing specific sets of knowledge/ideas which are funded, generated, and disseminated by foundations, think-tanks, publishing houses, and NGOs (Parmar, 2002, pp. 13–26; Stone, 2002, p. 10). Some of the literature on IR and GPE describes how the members of an epistemic community also help to produce, promote, and institutionalize specific knowledge across nations (Haas, 1992, p. 3; Haas, 1990b, p. 350).

Although the literature mentioned above describes the roles of policy entrepreneurs, civil society organizations, and organic intellectuals as intermediaries, it does not analyze how and by using what tools the individual actors play their roles in promoting, transmitting, and then institutionalizing the knowledge at local, national, and international levels. Finnemore and Sikkink's (1998) concept of norm entrepreneurs can fill the gap. According to Finnemore and Sikkink (1998):

> empirical research on transnational norm entrepreneurs makes it abundantly clear that these actors are extremely rational and, indeed, very sophisticated in their means-ends calculations about how to achieve their goals. They engage in something we would call 'Strategic Social Construction': these actors are making detailed means-ends calculations to maximize their utilities, but the utilities they want to maximize involve changing other players' utility function in a way that reflect the normative commitment of the norm entrepreneurs. (Finnemore & Sikkink, 1998, p. 910)

They also add:

> Certainly, some norm conformance may be driven by material self-interest… Actors construct and conform to norms because norms help them get what they want. (Finnemore & Sikkink, 1998, p. 910)

So, for Finnemore and Sikkink (1998), transnational norm entrepreneurs actively produce certain norms to achieve their goals/interests and influence other actors to comply with them (Finnemore & Sikkink, 1998, p. 895 and p. 910). In this way, the appeal to transnational norm entrepreneurs helps explain how actors can produce knowledge and institutionalize that knowledge at local, national, and international levels in order to serve their interests, thus filling the lacuna we identified earlier. However, Finnemore and Sikkink's (1998) analysis of norm entrepreneurs is also incomplete, failing to describe how and with what tools the actors work as intermediaries in promoting, transmitting, and institutionalizing their knowledge/ideas.

This book fills the knowledge gap by introducing the idea of multi-scalar knowledge brokers (MKBs): these are the individual actors who reconcile the interests of various actors – state actors, NGOs, international organizations (IOs) – in a way that serves the interests of all the actors, including themselves. In reconciling the interests of the actors, the multi-scalar knowledge brokers perform multi-tasks at international, national, and local policy levels. These multi-tasks are the key to maintaining the transnational network in promoting, transmitting, and institutionalizing the knowledge at local, national, and international levels (more on this below).

By introducing the multi-scalar knowledge brokers, this book presents a hybrid theory – Knowledge Network Theory. It is a combination of (i) the analyses of knowledge from the perspective of critical constructivism and CPE, (ii) the analysis of networks from Stone's (2002) account of knowledge networks and Finnemore and Sikkink's (1998) concept of norm entrepreneurs, and (iii) the conceptual and theoretical analysis of political–economic actors, including the multi-scalar knowledge brokers. This hybrid theory will demonstrate how a transnational network of actors succeeded in replacing the term climate refugees with that of climate change-induced displacement within international climate change knowledge and policy.

Before delving into the hybrid theory, this chapter first engages in a brief conceptual and theoretical analysis of knowledge. The second part of this chapter

explains why critical constructivism (from the perspective of IR and CPE) is the best fit for this book. Third, by integrating this knowledge analysis into Stone's (2002) concept of knowledge networks and Finnemore and Sikkink's (1998) analysis of norm entrepreneurs, the third part of this chapter presents the hybrid theory in detail.

Conceptual and theoretical analysis of 'knowledge' definitions

The fields of IR and GPE use the terms *knowledge* and *ideas* synonymously. For decades the theorists of IR and GPE ignored the distinctive role of knowledge/ideas, particularly in cases of considering how knowledge/ideas contribute to the operations of IR/GPE and influence political outcomes or policy choices (Woods, 1995, pp. 163–165). Scholars such as Karl Marx and EH Carr argued that ideas and ideational elements were epiphenomenal; too vague to define and to measure because ideas are not quantifiable or observable (Berman, 1998, pp. 16–17). Berman (1998, p. 15) and Parsons (2007, pp. 105–121), the two political science scholars, offered three main reasons to explain why those theorists ignored the role of knowledge/ideas. First, knowledge/ideas is difficult to define. Second, even if it is possible to define knowledge/ideas, it may not be possible to identify how it influences political outcomes or policy choices. Third, knowledge/ideas cannot be tested empirically (Berman, 1998, p. 15; Parsons, 2007, pp. 105–121).

However, since the 1990s, the theorists of IR, GPE, and Political Science have given significant attention to the role of knowledge/ideas (O'Brien and Williams, 2016, p. 263). Political scientist Parsons (2007, p. 121) has argued that political actors can define ideas through practices, norms, beliefs, grammar, models, symbols, and identities, and then they can use these preconceived ideational factors in shaping policy choices. Similarly, Béland and Cox (2011, pp. 3–4) argue that ideas are causal beliefs that can guide the action of policymakers to shape policy choices. Jacobs (2009, pp. 253–255) defines ideas as mental models or pre-existing beliefs and ideologies of actors. He compares the mental models of German policymakers between two time frames, the 1880s and the 1950s, and finds that the policymakers of the 1880s view pension provision as an insurance mechanism while the policymakers of the 1950s consider pension policies as redistribution mechanism within the economic system (Jacobs, 2009, pp. 260–261).

Some scholars differentiate *ideas* from *norms*, stating that ideas are beliefs and commitments whereas norms are codified ideas – a system, method, or rule – that guide us in following those beliefs and commitments (Ropp et al., 1999, p. 7). For example, Ropp, Risse, and Sikkink (1999, p. 7) explain that human rights were first an idea and then became a norm when the UN had codified it in the Universal Declarations of Human Rights. Scholars of GPE, such as Goldstein and Keohane (1993, pp. 3–30) and Woods (1995, p. 162), describe ideas as causal beliefs, principled beliefs, and world views. Woods (1995, p. 162) states:

> A causal economic belief would be, for example, a belief that an increase in interest rates will diminish inflation. A principled economic belief might be that it is morally preferable to tax everyone by the same amount. The term world view refers to a belief in, say, free-trade theory or in a neoliberal model of development. (Woods, 1995, p. 162)

According to Pierre Bourdieu (1986) (as cited in Hughes, 2015, p. 88), a French sociologist, 'all knowledge, and in particular, knowledge of the social world, is an act of construction of implementing schemes of thought and expression', and so the act of knowledge construction is a political act because 'all construction originates from and promotes a particular social order' (see also Hughes, 2015, p. 88). For Susan Strange (1994, p. 121), a scholar of GPE, knowledge depends on 'what knowledge is discovered, how it is stored, and who communicates it by what means to whom and on what terms'. On the other hand, for Tim Forsyth (2004, p. x), a scholar of CPE, knowledge regarding environmental science, ecology, and climate change is not separated from social and political construction, and 'political factors underlie the formulation, dissemination, and institutionalization of scientific knowledge and networks'.

Based on Strange's (1994), Bourdieu's (1986), and Forsyth's (2004) knowledge analyses, this book uses *knowledge* as the ideas created/constructed by a group of actors. The knowledge is produced to serve the interests of the group of actors. The actors systemically transmit the knowledge across nations to make other actors comply with it, and they institutionalize the knowledge in international regimes and national/local policies in such a way that the small group of actors can reap the benefits of the knowledge at all these levels – international, national, and local. The ultimate goal of this knowledge is not to trickle down its benefits to the mass of people but to trickle up its outcomes to serve the interests of the group of actors. As a result, as Hughes (2015, p. 90) stated, knowledge can become an object of struggle between different groups of actors, because different groups may want to promote their preferred sets of knowledge in a particular field and to establish their authoritative claims over the knowledge in the field by undermining the non-preferred sets of knowledge. For this reason, knowledge is always contested by different groups of actors; and hence, knowledge is also potentially replaceable by the group of actors which dominates the contest.

An example of this kind of knowledge can be drawn from Vanhala and Hestbaek's (2016, pp. 115–127) article *Framing Climate Change Loss and Damage in UNFCCC Negotiations*. The article demonstrates the intense contestation between the powerful and less powerful countries regarding how to interpret the Loss and Damage initiative in the UNFCCC negotiations. The powerful countries' preferred view was to interpret Loss and Damage as a risk and risk reduction mechanism, whereas the less powerful actors interpreted it under the framework of compensation, rehabilitation, and liability model.

Theoretical analysis of knowledge/ideas in the existing literature

Knowledge/ideas as an independent variable

The liberal approach of the GPE and IR uses knowledge/ideas as an independent variable, which can influence actors' behaviour (Moravcsik, 1997, p. 513). For Risse-Kappen (1994, p. 191), 'Liberal accounts take the role of ideas in foreign policy seriously and emphasize that perceptions, knowledge, and values shape the response of state actors to changing material conditions in the domestic and international environment'. An excellent example of knowledge/ideas functioning as an independent variable is precisely the knowledge produced by the Intergovernmental Panel on Climate Change (IPCC). The IPCC is considered a leading international body that produces scientific knowledge on climate change and publishes it through their Assessment Reports and its online data portal – Data Distribution Centre (IPCC, para. 4; IPCC, para. 1). The IPCC is funded in part by the UNFCCC (UNEP, 2012, pp. 1–3). The UNFCCC plays a significant role in disseminating the scientific knowledge about climate change, produced by the IPCC, via its annual meeting – the Conference of Parties (COPs) – and in advising national governments to adopt/implement relevant climate change-related adaptation and mitigation policies (UNEP, 2012, pp. 1–3; UNFCCC, 1992, Article 9). In this way, the knowledge produced by the IPCC acts as an independent variable because it tries to influence the behaviour of the policymakers to respond to the issues of climate change at national and international levels through the UNFCCC (see Figure 3.1).

The literature on advocacy coalitions also shows how knowledge/ideas work as an independent variable. According to Heinmiller (2013, p. 528) and Sabatier (1988, pp. 131–133, p. 142), ideas are a set of normative and causal beliefs held by the advocacy coalitions and the advocacy coalitions press for translating their normative and causal

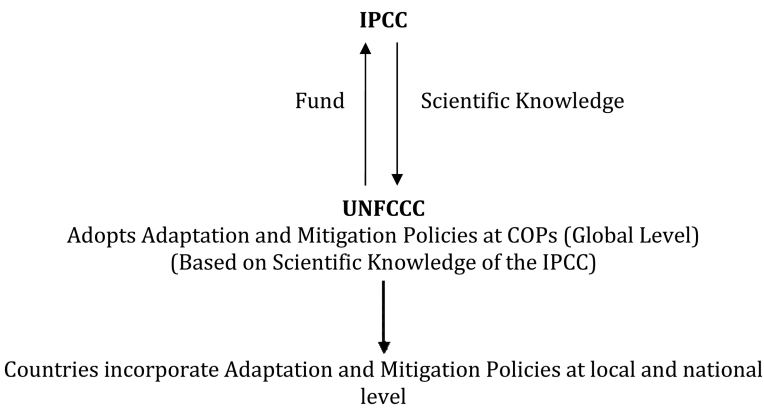

Figure 3.1 The working relations between the UNFCCC and the IPCC.

beliefs into policy outcomes. Sabatier (1988, pp. 140–141) describes the advocacy coalitions' belief systems as regards the 1970s' issue of air pollution in the United States. There were two prominent advocacy coalitions in that period: the Clean Air Coalition and the Economic Feasibility Coalition. The environmentalists dominated the Clean Air Coalition, which believed that pro-environmental, anti-pollution, and anti-health-hazard policies should be adopted. On the other hand, corporations dominated the Economic Feasibility Coalition, which focused on economic benefits rather than environmental impacts. The Clean Air Coalition pressed for the pro-environmental policy option to be adopted while the Economic Feasibility Coalition demanded policies that maximized their economic benefits.

However, the constructivist tradition within IR/GPE and CPE is critical about using *knowledge/ideas* as an independent variable (Hansen, 2013, pp. 1–14). For constructivism, knowledge/ideas cannot act independently: They cannot be considered free from the influence of the actors who produce the ideas, because these knowledge/ideas, as Robert Cox stated (1981, p. 128), are produced by '*someone* for *some* purpose'. For these reasons, knowledge/ideas are considered to be *dependent* on the context in which they were produced and *influenced* by the actors who produced them.

Hanna Hughes's (2015 pp. 94–98) article *Bourdieu and the IPCC's Symbolic Power* sets out how the knowledge produced by the IPCC is indeed not free from context or the influence of actors who produce the knowledge. She argues that the knowledge that the IPCC produces includes the contestation and influence of various groups of actors. For instance, the First Assessment Report (FAR) of IPCC included the knowledge preferred by the industrialized and developed countries, for which reason the developing countries were reluctant to accept the knowledge. The knowledge produced by the IPCC is also challenged by the climate sceptics who have vested interests in fossil fuel industries. Many governmental and non-governmental organizations also engaged in debate at the COPs as the IPCC's knowledge might go against their interests. In this way, knowledge is considered as the dependent variable, because it depends on context and the roles of the actors who produce the knowledge.

This book does not consider that knowledge is an independent variable. Instead, this book considers that actors produce knowledge by reference to their interests. So the way knowledge is analyzed in this book fits with the constructivist tradition of IR and CPE.

Knowledge/ideas, actors, and their reciprocal relations

Constructivist tradition in IR/GPE

The role of knowledge/ideas and norms is central to the analysis provided by the constructivist tradition in IR/GPE. For the constructivists, the relationship between knowledge/ideas and actors is contextual, and their influence on each other is reciprocal (Hopf, 1998, p. 173). As we mentioned above, there are three variants of constructivism in IR and GPE: conventional, critical, and post-structural/interpretive (Checkel, 2004, p. 230).

For the conventional constructivists, the key to understanding knowledge is the social process by which ideational elements or normative structures (i.e. ideas, norms and values) evolve, and these ideational elements or normative structures construct the actors' identity and interests (or preferences) in shaping international and national political outcomes (Checkel, 2004, p. 230; Katzenstein et al., 1998, p. 675). For example, the idea of the Polluter Pays Principle (PPP) has evolved from the social demand that the polluters of the environment or climate must be penalized for the pollution they produce. The PPP also identifies who the polluters are.

Critical constructivism, on the other hand, views that knowledge/ideas is not power-neutral, because actors, whether powerful or weak, produce certain ideas at a particular time and space that ultimately serve their interests (Strange, 1994, p. 121; Cox, 1986, p. 207). For example, the ideas that the powerful actors produce can rule the world through some form of world order, regime, or hegemony (1983, pp. 171–172; 1987, p. 254). The trade-related rules of the World Trade Organization (WTO) are a prominent example. The wealthy industrialized countries (who are considered as the powerful actors) shaped the trade-related rules expressed in the WTO. By using the rules, the wealthy and industrialist countries can continue to subsidize their farms and agricultural sectors but prohibit the developing countries from doing so (Pakpahan, n.d., para. 2). On the other hand, James Scott's *Weapons of the Weak: Everyday Forms of Resistance* (1985, p. 137) includes a good example of the knowledge/ideas produced by weak actors: the Malaysian peasants. The peasants' idea was to use rumour, gossip, disguises, linguistic tricks, metaphors, euphemisms, folktales, ritual gestures, etc., against their oppressors to resist them. Their idea was reflected in their actions.

Post-structural constructivism or interpretative constructivism focuses on linguistic interpretation, discourse analysis, or symbolic representation of a fact or reality (Checkel, 2004, p. 231). The discourse analysis of 'Self and Other' or 'Us versus Them' is a prominent example of post-structural constructivism, which involves the systematic study of texts to find evidence of their meaning and reveal how this meaning translates into a social reality (Hansen, 2013, pp. 14–83).

Critical Political Ecology

As Peter Walker (2005, p. 74) describes, CPE focuses on the unequal and conflicting power relations between human and the environment in which the human exploitation and mismanagement of the environment, maladaptation to environmental problems/climate change, and the politics around environmental issues are the main concerns. The *knowledge* analysis in CPE focuses on *how/why the knowledge has been produced*. Forsyth (2004, p. 10) remarks that 'scholars of environment need to focus on the mechanisms by which knowledge about environment is produced and labelled, then used to construct "laws," and the practices by which such laws and lawmakers are identified as legitimate in political debate'. So, for Forsyth (2004), actors such as lawmakers produce certain knowledge, give a name to that knowledge, institutionalize the knowledge as law, and

then justify the legitimacy of that knowledge by reference to the fact that it is law. So, the knowledge analysis of CPE does not focus on the status-quo-biased technocratic approach[1] to solving the problems of environmental, ecological, and climate change. Rather, it offers a radical approach that challenges the biased processes of knowledge production, which benefit some but deprive others (Khan, 2013, p. 35).

As mentioned in the previous section, this book considers knowledge as the production of a group of actors, which tries to reap benefits through producing, disseminating, and institutionalizing the knowledge at local, national, and international levels. The knowledge analysis of this book fits with critical constructivism within IR/GPE and CPE. These two fields consider that knowledge is not power-neutral; actors exercise their power to serve their interests in producing, disseminating, and institutionalizing the knowledge at local, national, and international levels. The following section further explains why the critical constructivism of IR/GPE and CPE is the best fit for the book.

Why critical constructivism of IR/GPE and CPE is the best fit for this book

Critical constructivism of IR/GPE and CPE views knowledge as not power-neutral, because actors – whether powerful or weak – produce specific ideas at a particular time and place with the ultimate goal of serving their interests (Cox, 1986, p. 207; Forsyth, 2004, pp. x-10). Cox and Sinclair (1996, pp. 85–117) voice the same argument, adding that as 'reality and time changes, old concepts need to be changed or adjusted'.

The knowledge analysis of critical constructivism of IR/GPE and CPE is a valuable tool, which supports the way the knowledge of climate refugees and climate change-induced displacement is analyzed in this book. This claim can be further supported via a brief history of the evolution of the knowledge of climate refugees and its replacement with that of climate change-induced displaced people.

The history of the knowledge of climate refugees and its replacement with that of climate change-induced displaced people illustrates the three core components of critical constructivism – power, interests, and time-space – as well as CPE's power-based analysis of knowledge.

As mentioned in Chapter 1, Methmann and Oels (2015, p. 52) note that the policy papers and documents of climate science from the 1980s and 1990s discussed the issue of climate change-induced migration by labelling them *climate refugees*. Then, in the early 2000s, *refugee-group* – who are considered as weak actors – called upon the advanced Western-industrialized countries to give *refugee* status to the climate change-induced uprooted people, demanding that the high carbon emitters take responsibility for saving the climate refugees because these emitters are liable for anthropogenic global warming.

In response to this demand, migrant-group took a different position when the issue of the legal recognition of climate refugees came into discussion. The high carbon emitters agreed to offer funds to the climate-affected countries via some

international development organizations (such as the World Bank, the ADB, and the International Monetary Fund [IMF]) by branding the climate change-induced uprooted people as climate change-induced migrants or displaced people (Methmann & Oels, 2015, pp. 58–62). Since the 2010s, the climate-affected countries, which are prone to create uprooted people, have given consent to it, and the official/government documents of these countries have replaced the term climate refugees with that of climate change-induced displacement (Methmann & Oels, 2015, pp. 58–62).

For Bettini (2013, pp. 4–21), these resilience projects have the character of neoliberal development projects or broader bio-political projects by which the donor countries and the recipient countries both can reap political and economic benefits. The funds are adjusted with the previous loans that the fund-recipient countries owe to the lenders. The condition of the adjustment is – funds will be implemented in some profit-generating projects, which will create revenues and with the revenues the recipient countries will pay back the loans. In addition, the recipient country will have to implement the projects in collaboration with organizations whose origins are in the donor countries, and in doing so, the recipient countries will get some concessional debt relief. Examples of such projects include ecotourism and forestation projects in Bangladesh (see Chapter 7 for details). Thus, on the part of the recipient countries, the donor-funded resilience projects give them the opportunity of a concessional debt relief. They can demonstrate to the world that they are implementing adaptation projects, which teach their climate-affected people about being resilient (see Chapter 7 for the example of Bangladesh regarding the nature of donor-funded resilience projects).

These resilience funds also help the Western industrialized countries in two ways. First, the countries no longer have to give shelter to the climate change-induced uprooted people within their national borders, and by giving the loans, the lending countries can demonstrate that they are helping the climate-affected countries with the funds. Second, as Methmann and Oels (2015, p. 64) observe, 'the responsibility for resilience is placed on the potential victims of the effects of climate change. This might, in fact, enable Western industrialized countries to withdraw their direct financial assistance to affected populations' – which means that the Western industrialized countries retain the option not to give the funds at all! Thus, the Western industrialized countries keep the fund-recipient countries in a constant state of fear that the resilience funds might be discontinued at any time.

Therefore, both countries – donors and recipients – co-benefit from the resilience fund and project.

In this way, as Methmann and Oels (2015, p. 58) state, 'The liberal biopolitics of climate refugees has increasingly been replaced by a resilience discourse of climate change-induced migration.' So, the historical evolution of the labelling of the climate change-induced uprooted people indicated that the co-benefiting resilience projects were the key issue behind its replacement by the knowledge of climate change-induced migration/displacement. Thus, the migrant-group's

knowledge of climate change-induced migration/displacement has become, in Robert Cox's term, hegemonic. (Cox 1983, p. 171)

For Cox (1983, pp. 171–172; 1987, p. 254), hegemony refers to a combination of social, political, and economic orders founded by powerful states, executed within a world economy that contains a common ideological framework, and penetrated into all countries. The powerful states create international institutions to execute the hegemonic order in other countries, in particular, the developing countries. In doing so, the powerful countries do not exercise coercion but achieve a consensus of the developing countries. The international institutions recruit elites from the developing countries to spread the hegemonic order and to absorb counter-hegemonic ideas. The developing countries give consent to execute the hegemonic order within their national policies and practices; thus, the hegemonic order penetrated into other countries.

Cox's theoretical analysis of hegemonic order fits with the analysis of how migrant-group's knowledge of climate change-induced migration/displacement has become dominant/hegemonic. This book finds that the Western-industrialized countries founded the neoliberal character of resilience projects, which branded the climate change-induced uprooted people as climate change-induced migrants or displaced people. They were able to execute the resilience projects in climate-affected developing countries via the World Bank, ADB, and IMF. The developing countries gave consent to implement the resilience projects by replacing the knowledge of climate refugees with that of climate change-induced migrants or displaced people.

However, neither Cox nor other literature of IR and CPE explains how and by using what tools the international institutions, as well as the Western-industrialized countries, influenced the developing countries to give the consent. This book fills the gap by introducing and explaining the role of multi-scalar knowledge brokers in world politics.

In addition, critical constructivism of IR/GPE and CPE is unable to provide a framework for analyzing how actors are bonded together within a transnational network for producing, conveying, transmitting, and advocating a particular knowledge across local, national, and international levels. The following section presents the Knowledge Network Theory, which meets the knowledge gap.

Knowledge Network Theory

The proposed Knowledge Network Theory is a combination of the following:

(i) Knowledge analysis of critical constructivism of IR/GPE and CPE. Power dynamics of actors and their interests in producing, disseminating, and institutionalizing particular knowledge is the main focus here.
(ii) Stone's (2002) knowledge networks and Finnemore and Sikkink's (1998) transnational norm entrepreneurs.
(iii) The original contribution of this book – the multi-scalar knowledge brokers.

The Knowledge Network Theory is described below in three sections. First, the major political–economic actors who are involved in producing the knowledge of

climate refugees and climate change-induced migrants/displaced people, in the particular context of Bangladesh, are introduced. Second, the power dynamics of the actors and their interests are analyzed. Third, this section describes how a transnational network plays a key role in replacing the knowledge of climate refugees with that of climate change-induced migrants or displaced people.

Political–economic actors

This book considers the following as political–economic actors:

(i) State actors
(ii) Non-state actors
    - Non-governmental organizations
    - Members of epistemic communities, in particular the IPCC
(iii) International institutions and donor agencies

(i) State as an actor

The realist tradition of IR and the discussion of economic nationalism of GPE predominantly focus on the role of the *state* as the primary actor in global affairs. The state exercises its supreme authority within its territory by implementing national security strategies and engaging in economic protectionism/mercantilism. States have control over immigration law, citizenship law, taxes and tariffs, provisions of subsidies to domestic industries (including infant industries), and welfare services (Rygiel, 2011, p. 1). States adopt various border control systems, detention practices, and mass surveillance to fight terrorist attacks and other challenges to state power (Rygiel, 2011, pp. 6–7). States hold the authority to title a migrant as an illegal immigrant and deport them forcefully to their home country (Benhabib, 2004, pp. 115–128). States also hold full control of the status of citizenship of their people and can cease the status under certain conditions (Rygiel, 2011, pp. 8–9). States control capital movement more effectively than they did previously to avoid illegal financial transactions and sudden financial volatility (Helleiner, 1995, pp. 315–342).

In contrast, liberal theories of IR/GPE and hyper-globalists argue that market forces are stronger than state authority. States have to comply with regulations of the free market economy and to open national borders for free movement of goods and services, and therefore, states' authority is declining (Strange, 1996, p. 4). On the other hand, transformationalists, such as Scholte (2000, p. 431), advanced the notion of supraterritoriality that explains states' role has not been confined within territorial boundaries but has been extended across national borders. For example: (i) state authorities formulate and implement rules and regulations on certain issues at international level, (ii) the rules and regulations create a level of standardization, (iii) the standardization of rules and regulations are supposed to be obeyed by the states, and in this way, states create the space of supraterritoriality (Rygiel, 2011, p. 3).

The major limitation of the above-mentioned theoretical analysis of 'state' is that it overlooks the status of states regarding their economic and political influences on international political outcomes. It overlooks the power dynamics between states in which Western-industrialized countries are considered as more powerful states than the major climate-affected countries – which are mainly developing countries. This book portrays the power dynamics between countries in shaping climate change-related uprooted people.

States also use their specific departments to promote particular knowledge and ideas internationally. For example, the United States Agency for International Development (USAID) – a part of the Department of the State of the United States – develops and promotes the ideas of development in developing countries and provides funds for implementing the development projects (USAID, n.d., para. 4–5). Similarly, the DFID is a government body of the United Kingdom that promotes ideas about sustainable development and strategies for eliminating poverty (DFID, n.d.). DFID provides funds to developing countries for implementing projects of sustainable development and eradication of poverty (DFID, n.d.). The Australian Agency for International Development (AusAID) is an Australian government's agency that promotes the knowledge about sustainable development and poverty reduction and provides funds for projects related to implementing the knowledge (Livelihood and Food Security Trust Fund, n.d., para. 1). This book considers both states and their departments as state actors.

In two ways, this book considers states as an actor – domestic and foreign. First, this book considers Bangladesh and its government organizations as state actors because the country is the main focus of this book as a climate-affected country, which receives funds from donors and international institutions for implementing climate change resilience projects. Second, some Annex-II countries[2] give Bangladesh funds for implementing climate change resilience projects. The United States, the United Kingdom, Australia, Sweden, Denmark, Switzerland, and members of the European Union give funds to Bangladesh. These countries are considered state actors in this book. The roles of the USAID, DFID, AusAID, and the European Commission are also important because the United States, the United Kingdom, Australia, and members of the European Union provide funds/loans to Bangladesh through these state-led agencies. This book mainly analyzes the USAID-funded projects in Bangladesh.

(ii) International institutions and donors

According to neoliberal institutionalism of IR, states establish international institutions and regimes and cooperate within them to gain mutual benefits from the free market economy (Keohane, 1989, p. 2). The World Trade Organization (WTO) is an international institution in which states cooperate to achieve their trade-related interests. On the other hand, the realist tradition of International Relations (IR) views that states establish international institutions and regimes to ensure collective security against a common threat (Mearsheimer, 1994/95,

pp. 5–49). The North Atlantic Treaty Organization (NATO) is a good example of this kind of international institution. Thus, neoliberal institutionalism and realism both see that states are playing a significant role in institutionalizing the rules and regulations of international institutions.

For some constructivists, international organizations are autonomous actors; for them, international institutions can produce a particular idea and then develop rules and regulations to implement that idea (Barnett & Finnemore, 1999, p. 699). For example, the United Nations High Commissioner for Refugees (UNHCR) produces the knowledge about refugees and the regulations about how to deal with the refugees. States comply with the rules regarding refugees. Similarly, the World Bank advances the knowledge of development and policies related to development, and many states are now implementing development policies prescribed by and funded by the World Bank (Barnett & Finnemore, 1999, pp. 699–732). However, this view of the constructivists' approach can be criticized because: (i) it is not the international institutions but the nation states who play the principal role for producing the idea of refugees and development, and (ii) the rules and regulations of international organizations are not mandatory for states to follow. As a result, states sometimes violate the rules of the international institutions. For example, states send back many refugees, thereby disobeying Article 33(1) of the UNHCR that states:

> No contracting state shall expel or return (refouler) a refugee in any manner whatsoever to the frontiers of territories where his life or freedom would be threatened on account of his race, religion, nationality, membership of a particular social group or political opinion.
>
> (UNHCR, Article 33)

The critical analyses of international institutions find that Western-industrialized countries dominate international institutions. As a result, the voice of the developing countries is not reflected in the decision-making process of these institutions. For example, the World Bank and IMF employ a *weighted voting system* in taking a decision. The voting system is based on the monetary contribution of their member countries (O'Brien and Williams, 2016, p. 235). The United States holds the largest voting share, 16.38%, while 47 countries of Africa jointly hold 6% votes (Glenn, 2008, p. 219). In the IMF, the G7 countries possess 43.7% votes and sub-Saharan countries possess 4.6% votes (Glenn, 2008, p. 219). The WTO practices a one country one vote policy and decisions are taken by consensus. However, there exists a 'Green Room' tradition of non-transparent decision-making procedure (Shukla, 2000, p. 33; Glenn, 2008, p. 223). The 'Green Room' refers to a meeting where the Director General (of WTO) sometimes selects members of particular countries to take decisions and the chosen countries are most often from developed countries (Shukla, 2000, p. 33). In this way, the organizations are biased in favour of developed countries. Consequently, the developed countries remain principal actors in the international institutions.

This book considers that the UNFCCC (including its annual conference, the COPs), the ADB, and the World Bank are directed mainly by the political and economic interests of the Western-industrialized countries. The Western-industrialized countries do not accept liability for climate change-induced uprooted people from developing countries and do not want to let them enter into their national borders. The Western-industrialized countries do not recognize the concept of climate refugees because using the term 'refugee' would lay blame on the Western-industrialized countries for making the world warmer, which resulted in creating climate refugees. However, the Western-industrialized countries agreed on Article 4(4) of the UNFCCC (1992) to give funds for implementing climate change adaptation and resilience projects in developing countries so as to curb the effects of climate change. The Western-industrialized countries give the funds to the developing countries via the World Bank. The nature of the funds is as mentioned above: (i) funds are given not solely as grants but also as loans, and (ii) the developing countries have to use the funds to implement the resilience projects in collaboration with the organizations whose origins are in the donor countries (Chapters 6 and 7 provide a detailed analysis of this). A closer examination of the fund disbursement demonstrates that the funds are not used for implementing climate change adaptation projects, but those are given to the implementing organizations for spending in their administrative costs of the adaptation projects (see Chapter 7). The administrative costs do not include any action related to making the climate change-uprooted people adaptive (see Chapter 7). However, through giving the funds, the Western-industrialized countries can demonstrate that they are helping the climate-affected countries to be adaptive; however, in practice, they are hiding the information that the funds have not been used for the so-called resilience/adaptation projects. So, in practice, the funds are actually contributing nothing to make the climate-affected countries to be resilient.

(iii) Non-state actors

An excellent description of non-state actors is found in Hall and Biersteker's (2002) analysis of private authorities. The authors divided private authorities into three categories: market, moral, and illicit (based on their emergence, nature, and functions) (Hall & Biersteker, 2002, pp. 4–203). Market authorities include market-based actors, such as firms and corporations. These actors set market-based standards such as International Capital Mobility Regimes, accounting standards, and business regulations. On the other hand, moral authorities include particular NGOs, transnational advocacy networks, global civil society, and neutral actors that adopt responsibilities for human rights and other ethical issues that states are not willing to take on (Hall & Biersteker, 2002, pp. 4–5 and pp. 203–205). Lastly, the illicit authority includes mafias, mercenaries, and private armies who provide (or offer) public goods to citizens (or their target people), which might not be provided by the state as a public authority (Andreas, 2011, p. 405–419). An illicit authority holds control of the

use of violence against others. The main example of such an authority is transnational criminal organizations.

This book does not focus on all types of non-state actors but only the members of a specific epistemic community (i.e. the IPCC) and NGOs. These two are relevant in this book for analyzing how the climate change data have been interpreted by the members of epistemic communities and what is the role of NGOs in conveying the knowledge. The other non-state actors, such as market and illicit authorities, are not referenced in this book because this book does not seek to analyze the actors who set market standards or provide public goods to citizens.

The following is a brief description of the epistemic community and NGOs.

- *Epistemic community*

Haas (1992) explains that 'an epistemic community is a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue area' (Haas, 1992, p. 3). For Haas (1990), the epistemic community is politically influential because this community consists of a group of experts or specialists who share a common world view or believe in the same set of cause-and-effect relations, and therefore, they resist any political temptation that runs contrary to their advice (Haas, 1990, p. 350). The epistemic community has some specific characteristics, for example: (i) an epistemic community may consist of professionals from a variety of disciplines, (ii) the members of an epistemic community hold a shared set of normative/principled beliefs or causal beliefs, (iii) the members justify the validity of their knowledge, (iv) the members maintain an agreed policy framework by which they seek to institutionalize their knowledge in international regimes (Haas, 1992, p. 3). The IPCC is an excellent example of an epistemic community. It contains scientists from around the world who review scientific studies on climate change and publish reports on the knowledge of climate change and global warming (O'Brien and Williams, 2016, p. 264). This book analyzes the role of some of the authors of the IPCC Assessment Reports: specifically, Dr. Ainun Nishat, Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ahsan Uddin Ahmed, and Dr. Qazi Kholiquzzaman Ahmed.

O'Brien and Williams (2016, p. 126) describe the members of an epistemic community as knowledge brokers because they 'articulate conceptions of a problem, propose solutions based on their knowledge and facilitate national and international community to adopt certain policies, standard or rule'. This book takes into account knowledge brokers who are not independent actors, thus extending O'Brien and Williams' (2016) account. Specifically, this book considers knowledge brokers to be the people who are chosen and paid by donors and international institutions to produce, promote, transmit, and institutionalize knowledge in international regimes and national and local policies. The 'knowledge brokers' produce the knowledge, which politically and financially benefits all these actors (donors, state actors, international institutions, and local NGOs and themselves (more on this below).

- *NGOs*

The term non-governmental organization, in general, refers to a self-governing non-profit organization, which is composed of civil society members and volunteers. Sometimes, the terms civil society organizations (CSOs) and NGOs are used synonymously. For example, Lewis and Kanji (2009) stated that

> Civil society is usually taken to mean a realm or space in which there exists a set of organizational actors which are not a part of the household, the state or the market. These organizations form a wide-ranging group which include associations, people's movements, citizen's group, consumer associations, small producer associations, women's organizations, indigenous peoples' organizations- and of course NGOs. (Lewis & Kanji, 2009, p. 121)

When the UN was established, the term NGOs referred specifically to those international non-state actors, which did consultative works for the UN (Lewis & Kanji, 2009, p. 8). Later on, NGOs became a useful tool/entity for many national governments and international organizations to implement development agendas and projects in many countries with the financial and technical support of the national governments and international donors (O'Brien and Williams, 2016, p. 97 and p. 230).

In this book, NGOs are treated not only as consultants to the international institutions but also as (i) implementing organizations of the donor-funded climate change resilience projects and (ii) the venues of policy advocates. Policy advocates and consultants both are defined as policy entrepreneurs. According to Kingdon (1995, p. 180–181), policy entrepreneurs are politicians, leaders of interest groups, lobbyists, activists, lawyers, or bureaucrats; these individuals advise the national government and lobby with international institutions on particular issues based on their expertise, thus investing their resources – time, energy, reputation, and money – and expecting a future return. This book considers the future return as the economic interests of the policy advocates and consultants. They use NGOs as their venues to advance their ideas and beliefs (Baumgartner & Jones, 1991, p. 1047).

The policy advocates and consultants develop their ideas and beliefs the way they frame an issue. According to Cobb and Rochefort (1993, pp. 56–71), framing refers to dramatizing an issue by its actors for its potential use in the policy processes or action. For example, Greenpeace and Friends of the Earth work on environmental issues and climate justice, and therefore, they frame or dramatize the matters in a way that put pressure on national government and international organizations to respond to the issues. Similarly, Amnesty International works on human rights issues, Transparency International operates on corruption of national governments, 350.org works on the movements on climate change problems and its solutions, etc. In Bangladesh, the Bangladesh Centre for Advanced Studies (BCAS), the Campaign for Sustainable Rural

Livelihoods (CSRL), and EquityBD work on climate change issues and promote the ideas of climate refugees and climate change-induced displacement nationally and globally. This book analyzes the role of these three local NGOs in promoting those ideas.

This book also includes another actor – multi-scalar knowledge brokers – whose role has been explained in the 'network' section.

Interests and power dynamics of the actors

Interests, in this book, refer to the mutual political and economic benefits of the actors. The mutual political and economic interests cannot be served if the term 'climate refugees' is used, since the term 'climate refugees' in effect blames the carbon-based Western neoliberal economic system for making the world warmer and demands compensation from the high carbon emitters for this displacement. However, Article 52 of the adoption of the 2015 Paris Agreement in COP 21 exempted the high carbon emitters from any compensation and liability question. Therefore, the term 'climate refugee' does not bring any political or economic benefit for migrant-group.

Instead, using the term 'climate change-induced displacement/migrants' is politically and economically beneficial for all the actors except the climate change-induced uprooted people themselves. The high carbon emitters branded the climate change-induced uprooted people as climate change-induced migrants or displaced people and agreed to offer funds to the climate-affected countries for implementing climate change resilience projects (Methmann & Oels, 2015, pp. 58–62). The climate change-affected countries gave consent to it (Methmann & Oels, 2015). As mentioned earlier, by receiving the funds, the fund recipient developing countries (and their NGOs too) get some concessional debt relief from the donors and can demonstrate that they are helping the climate victims to be resilient in facing the adverse effects of climate change. On the other hand, by giving the funds, the donors are relieved from giving shelter to the climate change-induced uprooted people. They also keep the fund-recipient countries in fear that the funds can be terminated anytime.

The funds are released as loans from the developed countries, international institutions, and donor agencies to the developing countries under the fiduciary management of the World Bank. According to most of the elite participants/respondents of this research, there is a significant power imbalance between the World Bank and the fund-receiving countries, because the World Bank, as well as the developed countries, international institutions, and donor agencies, would stop releasing the funds if the developing countries refused to take the funds as loans. For example, as the participants stated, the World Bank stopped the Bangladesh Climate Change Resilience Fund (BCCRF) in December 2016 to Bangladesh because Bangladesh did not agree to take the funds as loans but demanded grants[3]. However, in most cases, the developing countries comply with the World Bank and take the funds as loans, because the multi-scalar knowledge brokers negotiate with both the parties – the World Bank and the governments of

the developing countries – to compromise with each other, which means taking the loans. In return, the multi-scalar knowledge brokers receive a certain share of the funds as their service charges (see Chapter 6). The following funds are in operation in Bangladesh:

- The 2008 Bangladesh Climate Change Resilience Fund (BCCRF)
- The 2010 Bangladesh Climate Change Trust Fund (BCCTF)
- The 2010 Pilot Programme for Climate Resilience (PPCR)
- The 2015 Green Climate Fund (GCF)

If the governments of the developing countries receive funds, they give the contract of the projects to some specific ministries who work on climate change issues and to some NGOs who work on climate change-induced displacement and resilience projects. The economic interests of those actors include (i) securing the contract of the climate change resilience projects and (ii) receiving the funds for implementing the projects. To secure the economic interests, the state actors, non-state actors, international institutions, and donor agencies maintain a transnational network.

Network

Network, in general, refers to the alliances of the actors by which the actors want to achieve their interests. Hadden (2015) stated, 'a network is a structure of relations in which actors are embedded' and 'networks are commonly regarded as communicative structures through which resources and information flow' (Hadden, 2015, pp. 40–41). According to Rudy and Gareau (2005), a stable network consists of the actors who are capable of 'being extended widely across space' (Rudy & Gareau, 2005, pp. 88–89).

This book also considers that, as mentioned by Hadden (2015) and Rudy and Gareau (2005), a network is a stable transnational/cross-border alliance of the state actors, non-state actors, international institutions, and donor agencies.

This book mainly focuses on a knowledge network. In such a network, as Avant, Finnemore, and Sell (2010, p. 3) state, 'it is not the type of actors but the character of relationships … that is the key to understanding' how knowledge is transmitted from the very top level (namely, international negotiations and policy arenas) to the very bottom level (namely, the national and local levels of a country). Stone (2002, p. 2) explains that a 'knowledge network incorporates professional associations, academic research groups, and scientific communities that organize around a special subject matter or issue' and that '[t]he primary motivation of such network is to advance, share and spread knowledge'. Stone's (2002, pp. 2–7 and pp. 30–31) analysis of knowledge networks mainly revolves around how the knowledge actors – who produce the knowledge – can translate their knowledge into the national policy arena and global regimes by convincing the national and international policymakers to take certain courses of action. In order to convince the policymakers, as Stone (2002) explains, policy entrepreneurs can

act as intermediaries for establishing communication between knowledge actors and policymakers. Thus, by connecting knowledge producers and policymakers, policy entrepreneurs as *intermediaries* help establish a global/transnational knowledge network. The role of intermediaries is important because their roles help in maintaining the fluidity of the network through softening the organizational boundaries of the knowledge producers and policymakers and in translating the knowledge into public policy (Hadden, 2015, p. 7; Lecy et al., 2010, p. 242). However, this book does not consider policy entrepreneurs as intermediaries for the reasons described below.

The literature of Political Science defines policy entrepreneurs as 'advocates who are willing to invest their resources-time, energy, reputation, money- to promote a position in return for anticipated future gain in the form of material, purposive, or solidary benefits' (see details in Kingdon, 1995, pp. 179–181). Policy entrepreneurs can be politicians, leaders of interest groups, lobbyists, activists, lawyers, or bureaucrats. They have three qualities. First, policy entrepreneurs listen to the people who want a specific policy on certain issues, and they also dramatize the demands of the people in such a way that the demands can be included into the policy agenda. Second, they use their political connections, negotiation skills, and technical capacity to set the agenda. Third, the policy entrepreneurs persistently maintain their connections or networks with people, by which they boost the uptake of their ideas. However, no single policy entrepreneur is solely responsible for setting an agenda in the policy cycle. Rather, the entrepreneurs create a team along with other individual actors/experts, NGOs, or other organizations to put forth an agenda.

Unlike policy entrepreneurs, the intermediaries considered in this book only listen to the demands of the people and organizations, which can secure their economic and political interests. So, the intermediaries in this book are selective in choosing whose voice they will take into account. The intermediaries do not listen to the climate change-induced uprooted people or the mass of people, but prefer the World Bank, the UN, and UNFCCC and donors. The intermediaries help produce, transmit, and institutionalize knowledge, which benefits all these actors (donors, states, international institutions, and local NGOs) as well as themselves. So, the intermediaries are self-interested actors. They do not want to include anybody within the decision-making arena who can dismiss their knowledge and block benefits accrued from the knowledge.

The self-interested character of the intermediaries makes them close to the norm entrepreneurs as defined by Finnemore and Sikkink (1998). Norm entrepreneurs are individual actors who produce specific knowledge and help institutionalize that knowledge at local, national, and international levels by convincing state actors (Finnemore and Sikkink, 1998, p. 895). However, as mentioned earlier, Finnemore and Sikkink's (1998) analysis does not describe how and by using what tools the norm entrepreneurs connect the global and national actors and how they eliminate disruptions to the process of achieving their interests. This book introduces an intermediary – which we have named multi-scalar knowledge brokers – which fills the gaps.

It is important to note that the term *broker* is often used in social network analysis. For Hadden (2015):

> [a[broker is an actor that links two otherwise unconnected actors… The presence or absence of brokers is an important part of what determines overall network connectivity. (Hadden, 2015, p. 44)

Drawing on Hadden's (2015) definition of a broker, this book understands knowledge brokers as follows. The *knowledge brokers* are the individuals who connect states, non-state actors, international institutions, and donors for producing, transmitting/conveying, and institutionalizing specific knowledge in international regimes and national policies. For the smooth fluidity of knowledge networks and for ensuring the achievement of their benefits/interests, the *multi-scalar* knowledge brokers play multiple roles at a time by moving back and forth between different levels – local, national, and international. They hold important positions in the decision-making process at all these levels for producing, transmitting/conveying, and institutionalizing specific knowledge in international regimes and the national policy arena. The main task of the knowledge brokers is to reconcile the interests of state actors, non-state actors, international institutions, and donors in a way that politically and financially benefits all the actors and themselves. Thus, the multi-scalar knowledge brokers maintain a stable transnational/cross-border network of state actors, non-state actors, international institutions, and donors. For example, a member of an epistemic community such as the IPCC (e.g. an author of the IPCC Assessment Reports) can also fulfil the following tasks: a consultant or employee of international institutions/donor agencies, a representative of a country at the COPs (annual conferences organized by the UNFCCC in which the decisions about the allocation of climate change adaptation and resilience funds are taken), a consultant to the government at national policy levels, and director of local NGOs. In this way, a single individual can play the roles of a state actor, non-state actor, and representative of international institutions. Figure 3.2 shows an example of a multi-scalar knowledge broker, A, who plays multiple roles across nations. These actors work at all three levels – international, national, and local. The multiple roles of the actors make them well equipped and well skilled to work at all these three levels and to create a transnational network for securing their political and economic interests. Given their multiple roles at local, national, and international levels, this book considers the knowledge brokers as multi-scalar knowledge brokers.

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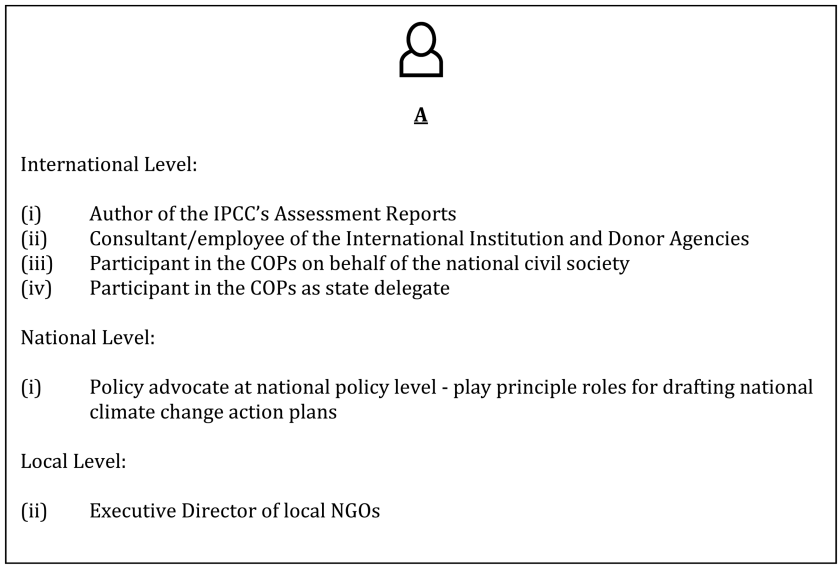

Figure 3.2 Multi-scalar knowledge broker.

give the short names A, B, C, D, and E in Figure 3.3. Figure 3.3 portrays a visual expression of the roles of the knowledge brokers across three levels: local, national, and international.

The knowledge brokers secure the contracts for big-budget climate change resilience projects funded by the Western-industrialized countries, international institutions, and donors. The donors give the funds via the World Bank. The knowledge brokers, working at the different levels, know how to submit applications to receive the funds and understand how the funds are released from the very top level (i.e. from the World Bank) to the very bottom level (i.e. in the climate vulnerable countries and to the local NGOs of those countries). By employing their practical knowledge of the flow of funds, the knowledge brokers maintain the network for securing the contracts for the projects and reap political and economic benefits of these projects at each level – international, national, and local.

The knowledge brokers perform the following tasks for maintaining the network.

Multiple tasks of the knowledge brokers

The knowledge brokers are the authors of the IPCC Assessment Reports (see Figure 3.3). Although it is widely perceived that 'the IPCC is the voluntary

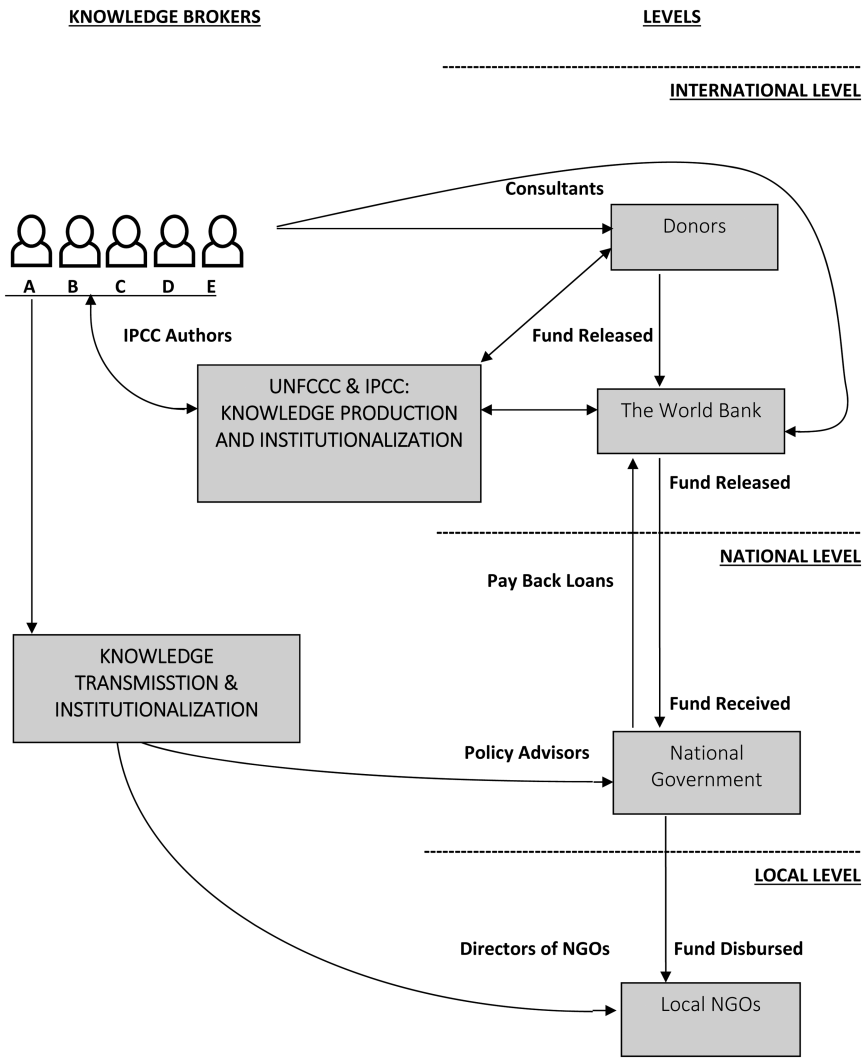

Figure 3.3 Mechanism for maintaining the network.

contributions of thousands of dedicated scientists from all over the world', a closer look at the IPCC's structure reveals a different scenario (Zorita, 2010, p. 731). The national government of each country selects which scientists from that country can contribute to the IPCC (Lidskog & Sundqvist, 2015, pp. 4 and 12; Zorita, 2010, p. 731). So, the scientists who have a good connection with the national government and who can express the national government's political views in the IPCC Assessment Reports are selected (Christy, 2010, p. 732).

This book studies the roles of five knowledge brokers. For the convenience of analysis, I have given the following names to the knowledge brokers in this book:

Original name	*Given name in this book*
Dr. Atiq Rahman	A
Dr. Saleemul Huq	B
Dr. Ainun Nishat	C
Dr. Ahsan Uddin Ahmed	D
Dr. Qazi Kholiquzzaman Ahmed	E

All of them have a good connection with the national government of Bangladesh, and all of them were selected by the government of Bangladesh to contribute to the IPCC Assessment Reports (see Chapters 5–7). It is worth noting that national governments also review the drafts of the IPCC Assessment Reports before publication. Christy (2010) thus observes that 'homogeneity of thought' is apparent in the IPCC, whereby 'dissenting comments' are ignored (Christy, 2010, p. 732). So, it is evident that the knowledge brokers do not contribute anything to the Assessment Reports, which goes against the interests of the national government. Thus, the knowledge that the IPCC produces is not value-free but is political knowledge, which serves the interests of national governments.

The UNFCCC distributes the scientific knowledge produced by the IPCC via the COPs and advises national governments to adopt/implement the IPCC's prescribed climate change-related adaptation and mitigation policies (UNEP, 2012, pp. 1–3; UNFCCC, 1992, Article 9). The UNFCCC established an expert team, the LDC Expert Group (LEG), which guides the most climate-affected countries to draft National Adaptation Plan of Action (NAPA) to address the immediate adaptation needs of the countries and then implement the adaptation projects at the national level accordingly (UNFCCC, n.d., paras 1–2). At the global level, the five knowledge brokers discussed in this book mainly contribute to producing *knowledge of adaptation as resilience* in Working Group II of the IPCC (detailed analysis in Chapters 4 and 5). At the national level, four knowledge brokers – A, B, C, D (except E) – contributed to the team of drafting Bangladesh's NAPA (Ministry of Environment and Forest, 2005, p. iii; Ministry of Environment and Forest, 2009, p. v). In this way, the knowledge brokers help to convey the knowledge of adaptation, which they produced in the IPCC Assessment Reports, from the IPCC and the UNFCCC to the national policy level of Bangladesh (see detailed analysis in Chapters 4–6).

The knowledge brokers also participate in the COPs as national delegates of Bangladesh. E, who was not on the drafting committee of the NAPA, works as the coordinator of the Bangladesh Climate Change Negotiating Team at the national level (UNFCCC, n.d). The main task of the Team is to select delegates who can participate in the upcoming climate change conferences of the COPs. E's major task is to advise the government in selecting the potential participants of the

COPs from Bangladesh (UNFCCC, n.d.). The Team selects all these five knowledge brokers as participants of the COPs. The COP participants are to uphold the knowledge of Bangladesh's climate-change-related vulnerability at the COPs and demand more funds from the developed countries for implementing climate change adaptation projects. In this way, the Team, E, and other knowledge brokers help to transmit the knowledge of adaptation needs and demands of Bangladesh at the global level, i.e. the COPs.

All the knowledge brokers also work as consultants of the international institutions, particularly the World Bank, which is in charge of the fiduciary management of the multi-donor fund: *the Bangladesh Climate Change Resilience Fund* (*BCCRF*). The World Bank produces documents on Bangladesh's climate change and adaptation to which the knowledge brokers contributed as authors. An example of this is the World Bank's document *Bangladesh Climate Change and Sustainable Development*, which was published in 2000 (World Bank Report 21104-BD, 2000). In this document, the knowledge brokers urge the implementation of infrastructure development projects (such as making dams and forestation) as a suitable adaptation strategy for Bangladesh.

At the local level, the knowledge brokers also hold important decision-making positions (such as directors or executive directors) of the implementing organizations of the adaptation projects (a detailed analysis of this is provided in Chapter 6). For example, the knowledge brokers considered in this book have the following roles:

> **A** – Executive Director of the BCAS, Member of the Governing Body of Arannayk Foundation (2003–2007) and Chairperson of the Governing Body of Arannayk Foundation in 2008. (BCAS, n.d., para. 1)
> **B** – Founder and Executive Member of the BCAS; Research Fellow of IIED (International Institute of Environment and Development); Director of ICCCAD (International Centre for Climate Change and Development). (IIED, n.d., para. 1–2; ICCCAD, n.d., para. 1)
> **C** – Country Representative of IUCN (International Union for Conservation of Nature. (IUB[4])
> **D** – Founder of BCAS and Technical Assistant of GCF (Green Climate Fund). (UNFCCC).
> **E** – Chairman of PKSF (Palli Karma Shahayak Foundation). PKSF is not the direct implementing organizations of the adaptation projects. However, it is in charge of distributing the resilience funds to the local NGOs in Bangladesh, which implement the resilience projects.

It is worth noting that these knowledge brokers actively played roles at national and international levels for producing the idea of climate refugees. They also help replace the term with that of climate change-induced displacement later. The detailed story of the knowledge brokers' roles in producing the knowledge of climate refugees and replacing it with that of climate change-induced displaced people/migrants is described in Chapter 6.

Conclusion

The discussion above sets out the conceptual and theoretical analysis of knowledge and Knowledge Network Theory regarding climate refugees/climate change-induced displacement and political–economic actors. However, in order to understand how the knowledge has been implemented in the climate change discussions in Bangladesh, we need to understand, first, the climate change scenario in Bangladesh. For this reason, Chapter 4 analyzes the climate of Bangladesh, the relations between global warming and the climate, and how the issue of climate change impacts on people's decision to migrate. Chapters 4–6 demonstrate the empirical application of the Knowledge Network Theory through discussing a climate change knowledge network.

Notes

1 A technocratic approach is one that preferentially employs managerial, regulatory, and governance techniques to solve a problem.
2 The UNFCCC enlisted some countries as Annex-II countries (UNFCCC, 1992, pp. 7–24). More on this is in Chapter 5.
3 Participant 7, Official of an international non-governmental organization, face-to-face interview, January 2017, Dhaka, Bangladesh.
4 IUB refers to Independent University Bangladesh.

4 Climate change and population movement in Bangladesh

Introduction

The knowledge of climate refugees and climate change-induced displacement/migrant was framed on the basis of the idea that maximum lands of Bangladesh are going underwater due to the *slow-onset event*[1] of global warming – *sea level rise.* Some dominant actors in migrant-group – the IPCC, the UNFCCC, and the World Bank – produce the knowledge that global warming-induced sea level rise uproots people in the coastal areas of Bangladesh. However, the critics of the dominant actors took a different position. They do argue that the knowledge that global warming-induced sea level rise caused population movement is based on incorrect and exaggerated data (see details below). The conflicting views influenced this chapter to examine the impacts of climate change and subsequent population movement in Bangladesh. This chapter is important because it helps understand the argument of the critics and reveals that state actors and international institutions interpret climate change data in a way that better serves their political and economic interests. The following discussion uncovers the story.

This chapter conducts a close examination of the impacts of climate change in Bangladesh and its relation to population movement. It finds that it is difficult to establish the connection between the two – sea level rise and population movement. Instead, climate change-induced quick-onset events such as increased numbers of cyclones and tropical depressions have a direct connection to uprooting people, in particular, uprooting the fishermen who live near coastal areas of the country. However, in the case of knowledge production of Bangladesh's climate refugees and climate change-induced migration, the dominant actors and existing publications do not focus on the quick-onset event. So, it is questionable *why* the dominant actors of migrant-group – the IPCC, the UNFCCC, and the World Bank – produced the knowledge of climate refugees and climate change-induced migration on the basis of the assumption of sea level rise but not on the idea of cyclones and tropical depressions.

The author of this book asked this question to the participants of this research who answered the question as follows. The solution to the problem of slow-onset events of climate change (such as sea level rise) and the solution to the problem of quick-onset events (such as cyclone and tropical depression) are different. The

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former one can be managed or prevented by *resilience as adaptation project*s. Examples of the *resilience as adaptation projects* include building sea walls/embankments/polders and planting trees across the sea level. It is assumed that the sea wall/embankment/polders and trees would prevent the sea level rise.

According to Participant 3[2], the adaptation projects are not new prescriptions but the same kinds of development projects and their associated lending procedure, which the World Bank and Western-industrialized countries have promoted in developing countries since the 1980s. Examples of the projects include planting trees, building polders, and embankments across coastal areas and river ways to prevent flood. It was beneficial on the part of the World Bank and Western-industrialized countries to continue the development projects and the lending procedure in the name of climate change, the participant added. In order to serve this political interest, the World Bank, IPCC, and UNFCCC promoted the knowledge of sea level rise in Bangladesh as the Western-industrialized countries could spend their money on similar kinds of projects. On the other hand, the *resilience/adaptation* projects lack the capacity to prevent climate change-induced *quick-onset weather events – cyclone* and *tropical depression.* In this circumstance, if the World Bank, IPCC, and UNFCCC highlighted the knowledge of cyclone and tropical depression, they might not continue the development projects in Bangladesh.

On the other hand, the knowledge brokers, their affiliated NGOs, and the government of Bangladesh are in charge of implementing the donor-funded resilience as adaptation projects. So, if they put forth the issue of cyclone and tropical depression at the different international and national venues, donors would not implement the projects in Bangladesh, and consequently, they would not win/get the contracts of resilience/adaptation projects because the projects do not prevent cyclones and tropical depressions (more on this is in Chapters 6 and 7). Therefore, for the participants, the knowledge brokers, their affiliated NGOs, and the government of Bangladesh overstate the climate change data to produce the knowledge of sea level rise (i.e. the IPCC, the UNFCCC, the World Bank) for producing the knowledge of climate change-induced population movement in Bangladesh (detail on this is in the last portion of Chapter 6).

This chapter consults various climate change data, produced by the government of Bangladesh (such as Climate Change Cell [CCC], National Adaptation Programme of Action, Bangladesh Meteorological Department) and international institutions (mainly documents of the World Bank, the 2007 Fourth and 2013 Fifth IPCC Assessment Reports), to understanding Bangladesh's climate, its relation to climate change, and population movement. This chapter also used information collected from three participants in this research. The participants are Participant 3, Participant 4, and Participant 9.

This chapter, *at first,* demonstrates how the dominant actors in global climate politics – the IPCC, the UNFCCC and the World Bank – produce the knowledge of sea level rise-induced population movement in Bangladesh in their official documents and how the critics of these actors dismiss the knowledge. Second, this chapter analyzes the monsoon climate, global warming, and its

impacts on Bangladesh. This analysis helps understand the weather and climate of Bangladesh. *Third*, this chapter describes the relationship between climate change-induced sea level rise and population movement in Bangladesh. *Fourth*, this chapter also analyzes the impacts of temperature rise, rainfall patterns, and floods on population movement in Bangladesh. *Fifth*, this chapter describes the pattern of cyclones in Bangladesh which can have an impact on sea level rise. It concludes with the *argument* that connecting climate change-induced slow-onset events of sea level rise with population movement is very difficult. Instead, global warming-induced cyclones and tropical depressions directly influence population displacement in Bangladesh.

Climate change and population movement: Conflicting views

The official documents of the IPCC, the World Bank, and the government of Bangladesh include the analysis that the anthropogenic global-warming-induced slow-onset event *sea level rise* will submerge land in Bangladesh, leading to subsequent population movements. The key documents on which the analysis of *sea level rise* and *population movement* depends are the 1990 IPCC First Assessment Report, the 2001 IPCC Third Assessment Report, the 2000 World Bank document *Bangladesh Climate Change and Sustainable Development*, and the 2005 and 2009 Bangladesh National Adaptation Plan of Action (NAPA). The 1990 First Assessment Report of the IPCC, for example, states:

> In coastal lowlands such as in Bangladesh, China and Egypt, as well as in small island nations, inundation due to sea-level rise and storm surges could lead to significant movement of people. (IPCC, 1990, p.3)

The 2001 IPCC Third Assessment Report summarizes Bangladesh's vulnerability to sea level rise as follows:

> The Sundarbans of Bangladesh, which supports a diversity of wildlife, are at great risk from rising sea level. These coastal mangrove forests provide habitat for species such as Bengal tigers, Indian otters, spotted deer, wild boars, estuarine crocodiles, fiddler crabs, mud crabs, three marine lizard species, and five marine turtle species (Green 1990). With a 1-m rise in sea level, the Sundarbans are likely to disappear, which may spell the demise of the tiger and other wildlife (Smith et al. 1998). (IPCC, 2001, p. 556)

The 2000 World Bank Report 21104-BD, titled *Bangladesh Climate Change and Sustainable Development*, describes sea level rise as reaching 10 cm by 2020 inundating 2% of the country's land area (World Bank, 2000, p. 40). The document also explains that the situation for Bangladesh will continue to worsen, with sea level rise of as much as 25 cm by 2050, with land inundation up to 4% (including 40% of the Sundarbans, the largest mangrove forests of Bangladesh) and increase in storm surges (World Bank, 2000, p. 40). The same document also

estimates that the sea level rise will be 100 cm in 2100, which will inundate 17.5% of the country's land area, including the entire Sundarbans, with the associated increase in storm surges causing the displacement of 20 million people (World Bank, 2000, p. 40).

The official documents of the government of Bangladesh, produced with the assistance of the UNFCCC and the World Bank, also include the analysis of the connection between sea level rise and population movement. The UNFCCC established the Least Developed Countries Expert Group (LEG) at its annual meeting – the 2001 Seventh Conference of Parties (COP7). The primary task of the LEG is to provide technical support and advice to the Least-Developed Countries (LDCs) in drafting their National Adaptation Plan of Action (NAPA) (UNFCCC, n.d., paras 1–2). With the technical assistance of the UNFCCC, the World Bank, and the United Nations Development Programme (UNDP), Bangladesh adopted its first NAPA in 2005 and revised it in 2009. The 2009 Bangladesh NAPA states:

> It is predicted that for 45 cm rise of sea level may inundate 10–15% of the land by the year 2050 resulting over 35 million climate refugees from the coastal districts. (Ministry of Environment and Forest, 2009, p. xvii)

For implementing its NAPA, the government of Bangladesh and the UNDP signed an agreement on a Comprehensive Disaster Management Programme (CDMP) Phase II (Comprehensive Disaster Management Programme [CDMP] Phase II, 2009, p. 1). The agreement states:

> Coastal and river bank erosion and saline water intrusion in coastal areas are likely to displace hundreds of thousands of people who will be forced to migrate. If sea level rise is higher than currently expected and coastal polders are not strengthened and or new ones build, six to eight million people could be displaced by 2050 and would have to be resettled. (Comprehensive Disaster Management Programme [CDMP] Phase II, 2009, p. 7)

Besides the documents mentioned above, many academic books and journal chapters make reference to the likelihood of sea level rise and population movement in Bangladesh. For example, Guzman (2013) states:

> For many small island nations (e.g., Tuvalu, the Maldives), climate change may cause the entire country to disappear beneath the waves. In other places, rising sea will flood tracts of land, displace people, and interfere with existing infrastructure. In Bangladesh, for example, it is likely that millions will be displaced from their homes, very possibly creating the largest humanitarian crisis the world has ever faced. With nowhere else to go, they will no doubt try to move to already overcrowded cities. Some will try to leave the country in search of a better existence, creating international tensions. (Guzman, 2013, p. 12)

The literature on climate change makes clear that sea level rise takes place in Bangladesh in two ways. First, global warming induces the melting of the Himalayan glaciers, and the run-off water will cause the major river basin of Bangladesh – the Ganges-Brahmaputra-Meghna river delta – to overflow and consequently merge into the Bay of Bengal (Dastagir, 2015, p. 49; Naser, 2012, pp. 63–64; Leckie et al, 2011, para. 7). The merging of the excess water into the Bay of Bengal raises the level of the sea. Second, global warming causes thermal expansion of the Indian Ocean and the thermal expansion raises the level of the sea (Docherty & Giannini, 2009, p. 356; National Geographic, n.d, paras 7–9).

However, critics of the IPCC, the UNFCCC, and the World Bank oppose the argument that global warming-induced sea level rise can cause population movement. The critics heavily criticize the 2007 Fourth IPCC Assessment Report because the Report claims that the Himalayan glacier might melt by 2035; however, the estimation of the glacier melt was later proven to be based on incorrect data (Beck, 2012, pp. 152–163). The critics argue that there is no evidence that the Himalayan glaciers have been melting so rapidly, and therefore, the glaciers might not raise the level of the sea in Bangladesh (Beck, 2012, pp. 152–163). The IPCC, on the other hand, was reluctant to admit its errors. The then Chairman of the IPCC, Rajendra Kumar Pachauri, advised 831 scientists to avoid the media so as to avoid such questions about how the IPCC produces the climate change data (Pachauri, 2010, p. 1). The intentional media avoidance is evidence that the IPCC does not want to be accountable to the people for its overstatement of climate change data.

Brammer (2014), on the other hand, also remarks:

> The physical geography of Bangladesh's coastal area is more diverse and dynamic than is generally recognised. Failure to recognize this has led to serious misconceptions about the potential impacts of a rising sea-level on Bangladesh with global warming…There is a misconception that a rising sea-level with global warming will overwhelm Bangladesh's coastal area contour by contour and will thereby displace as many as 10–30 million people in the 21st century… Those assumptions and descriptions are incorrect. (Brammer, 2014, p. 51)

In interviews with local climate change researchers in Bangladesh, the participants also claimed that the IPCC had used incorrect and exaggerated data in postulating climate change-induced sea level rise and associated population movement. Interviewees also criticized the World Bank's (2000) document, *Bangladesh Climate Change and Sustainable Development,* for making exaggerated claims. This document claimed that 2% of the total land area of Bangladesh would be underwater by 2020 due to climate change-induced sea level rise (World Bank, 2000, p. 40). The author of this book also found that 2020 is already over, and there is no proof that 2% of the total land area of the country went under water. No study or official document of the government of Bangladesh or international institutions such as the World Bank includes evidence that the country lost its

2% land masses. However, the participants do support the argument that climate change increases the number and severity of cyclones and tropical depressions in Bangladesh, and that these quick-onset[3] events do uproot many people from their homelands, especially in the coastal areas.

Given conflicting views about the impacts of climate change on population movement, the rest of the analyses of this chapter examines: *how climate change data are interpreted to produce the knowledge about climate change and population movement in Bangladesh.* The analyses find that the construction of the knowledge of sea-level-rise-induced population movement is overstated. However, climate change-induced tropical depressions and cyclones are found to be related to population movement, which is not stated in the official documents of the actors, mentioned above.

The impact of global warming on monsoon weather in Bangladesh

Location of Bangladesh and monsoon weather

Bangladesh is a low-lying, flat, and riverine country, positioned between the foothills of the Himalayas and the Indian Ocean (the Bay of Bengal). The country is situated on the Brahmaputra, Ganges, and Meghna river delta, which is one of the largest river deltas on the planet. These large rivers and their tributaries make up a total of 230 rivers in Bangladesh, and these rivers cause seasonal flooding and riverbank erosion, while also carrying vast quantities of silt from the Himalayas (Ahmed, 2009, p. 3).

The country is bordered on the west, north, and east by India; on the south-east by Myanmar; and on the south by the Bay of Bengal. Most of the lands of the country have an elevation of <10 m above sea level. The average elevation of the south-west coastal zone ranges from 1 to 2 m and 4 to 5 m in the south-east coastal zone (CCC, 2016, p. xix). In much of the relevant literature on climate change, it is mentioned that the low elevation of the coastline of Bangladesh puts the country in a precarious position, exposing the country to sea level rise and storm surges.

Monsoon

Bangladesh has a humid, warm, and subtropical monsoon climate. The monsoon is a seasonal wind that reverses its direction with the season, which is accompanied by the corresponding changes in precipitation. According to the 2013 IPCC Fifth Assessment Report:

> A monsoon is a tropical and subtropical seasonal reversal in both the surface winds and associated precipitation, caused by different heating between a continental-scale land mass and the adjacent ocean. Monsoon rain occurs mainly over the land in summer. (IPCC, 2013, p. 1458).

The monsoon in South Asia, and Bangladesh in particular, is categorized into two phases depending on the direction of the rain-bearing winds: (i) the south-west monsoon wind which blows in summer and (ii) the north-east monsoon wind which blows in winter.

The south-west monsoon wind in Bangladesh

The south-west monsoon wind blows from the Bay of Bengal into Bangladesh during the summer (June–September), bringing with it a considerable quantity of rain (see Figure 4.1) (CCC, 2016, pp. 16–17). According to a report, *Assessment of Sea Level Rise on Bangladesh Coast through Trend Analysis* – published by the Ministry of Environment and Forest, the temperature rise impacts on the south-west monsoon wind pattern in two ways (see CCC, 2016, pp. 18–19). First, global warming is causing more evaporation of the seawater of the Indian Ocean; the south-west monsoon wind bears away the excessive evaporated water, producing heavy rainfall in Bangladesh, which results in massive flooding. Second, the global temperature rise causes thermal expansion of the water of the Indian Ocean, which then overflows the coastal areas of Bangladesh. The south-west monsoon wind then pushes the higher seas so as to penetrate into Bangladesh's coastal river ways, which discharge into the Indian Ocean. Where the coastal rivers have sufficient water, they flow extremely fast towards the sea, and the water flow then pushes the sea water back, preventing the sea water from penetrating into the rivers. On the other hand, if the rivers are dry, the sea water of the Indian Ocean rapidly enters into the coastal river ways. The seawater intrusion into the rivers is then interpreted as sea level rise[4].

The 2000 World Bank Report 21104-BD, titled *Bangladesh Climate Change and Sustainable Development*, which sets out the sea level rise scenario for Bangladesh also admits that the apparent sea level rise occurs due to reduced

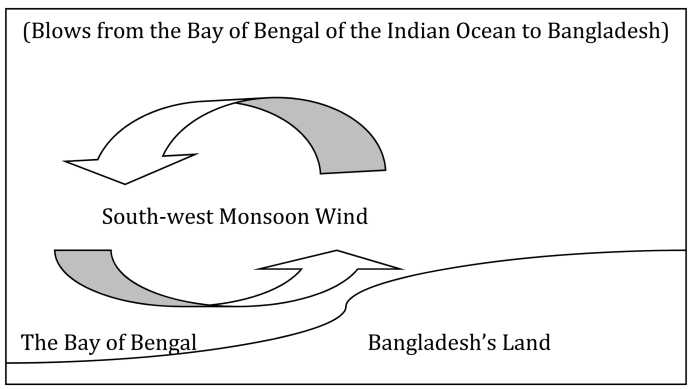

Figure 4.1 South-west monsoon wind. Source: CCC, 2016, p. 17.

water flows in the upstream rivers (World Bank, 2000, p. 25). The reduced water flows from the upstream rivers increase the pushing effects of the seawater that enters the coastal rivers (World Bank, 2000, p. 22).

Three interviewees in this research did not accept that global warming alone can raise the level of the sea in Bangladesh; they claimed instead that the reduced water flow in the rivers should also be considered causally relevant. Participant 3[5] explained:

> India and Bangladesh share 54 trans-boundary rivers whose origins are the Himalayan glaciers. India is the upper riparian country. The rivers, at first, flow over India and then reach in Bangladesh. The rivers meet the sea—the Bay of Bengal—after flowing over Bangladesh. In this geographical context, India diverts the water of two major transboundary rivers—the Ganga and the Teesta. India's water diversion from the rivers reduces the sufficient amount of water flows in the rivers of Bangladesh. Consequently, the rivers become dry. The dry rivers do not have enough water to deter the sea water to be penetrated into the coastal rivers of Bangladesh. Therefore, the seawater, without confronting river waters, enters into the dry rivers of the coastal areas of Bangladesh. The penetration of the sea water into the coastal rivers is interpreted as sea level rise in Bangladesh.

For Participant 9,[6] Bangladesh is not facing climate change-induced sea level rise. Instead, Bangladesh's problem is the increase in incidence and frequency of cyclones, which is caused by the south-west monsoon wind. The participant explained:

> The climate-change-induced global warming and temperature rise heat up the surface temperature of the Bay of Bengal. The warm sea expands the seawater (of the Bay of Bengal) and air on top of the Bay of Bengal that results in frequent low pressures. The low pressures produce a circular wind flow that bears thunderstorms and moisture… Extreme temperature rise strengthens the wind flow of the South-west monsoon wind (including more thunderstorms and moisture) on a massive scale that results in frequent tropical depressions and severe cyclones.

The latest cyclone caused by the south-west monsoon was Cyclone Mora, which hit Bangladesh, India, and Sri Lanka in May 2017. The later part of this chapter will discuss cyclones.

The north-east monsoon wind in Bangladesh

The north-east monsoon wind, the second of the seasonal variations in the prevailing winds, blows in winter from the Himalayas to Bangladesh. The north-east monsoon wind bears cooler wind from the Himalayan glaciers, carrying it from

the Himalayan region towards the Indian Ocean, giving rise to cooler weather (see Figure 4.2) (CCC, 2016, pp. 16–17). According to Participant 9[7], global warming is raising the temperature of the cooler north-east monsoon wind and consequently, delaying its reverse in direction. Until the north-east monsoon wind does begin, the south-west warmer wind continues, thus being active for a more extended period (CCC, 2016, p. 17). Subsequently, as the participant added, 'the winter comes late which means that Bangladesh is experiencing extended summer and shortened winter due to the impact of global warming'. During these extended summers, if the south-west monsoon wind does not bring rains, it results in droughts (CCC, 2016, p. 17).

The above discussion provides sufficient reason to believe that the country faces extended summers that result in the reduction of precipitation, increased droughts, and cyclones.

The following discussion presents the findings of other selected studies.

Sea level rise

In 2016, the Climate Change Cell (CCC) of the Department of Environment, the Ministry of Environment and Forest of Bangladesh, published a document titled *Assessment of Sea Level Rise on Bangladesh Coast through Trend Analysis*. The document states that climate change 'will result in an increased rate of rising sea levels with subsequent tidal flooding, accompanied by more intense tropical cyclones, storm surges and drought' in Bangladesh (CCC, 2016, p. 1). The study also states that the consequence of climate change is already evident in the coastal areas, particularly in the frequency of devastating cyclones, and in sea level rise in the coastal areas. The study conducted a short-term (30 years: 1980–2010) trend analysis of tidal water levels in three areas vulnerable to sea level rise. The water level trends in those areas are:

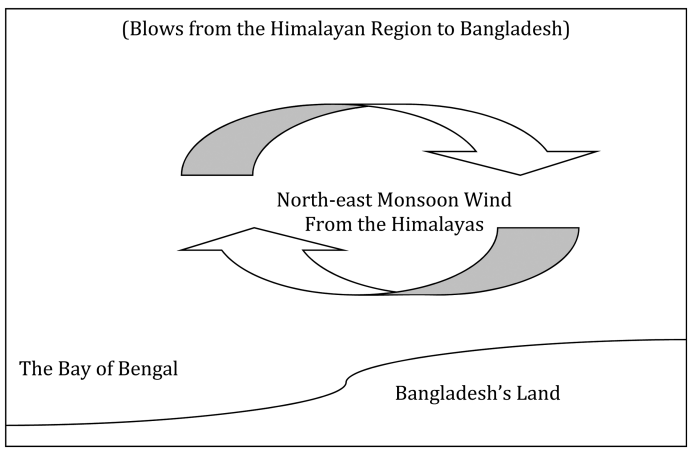

Figure 4.2 North-east monsoon wind. Source: CCC, 2016, p. 17.

- 7–8 mm/year in the Ganges tidal floodplain
- 6–10 mm/year in the Meghna Estuarine floodplain
- 11–21 mm/year in the Chittagong coastal plain areas (CCC, 2016, p. 53)

The analysis also stated that 'the range of sea level rise on Bangladesh coast over the 30 years is 6–21 mm/year' (CCC, 2016, p.53).

On the other hand, according to the 2013 Fifth Assessment Report of the IPCC, one of the principal consequences of global warming is the rise of the Global Mean Sea Level (GMSL) (IPCC 2014:4–18). The GMSL rose 1.9 mm/year between 1901 and 2010, which is much less than the trend of sea level rise of Bangladesh's coastal areas (Bangladesh's mean sea level rise is 6–21 mm/year as mentioned above) (IPCC 2014:4). The GMSL rose 3.1 mm/year between 1993 and 2003, which is also less than the trend of sea level rise of Bangladesh's coastal areas (IPCC 2007, p. 30). For this reason, it is evident that the sea level in Bangladesh's coastal areas has been rising faster than the global mean. This might issue in a number of questions: How is it possible that one country's sea level should rise faster than that of another? Would the seas not level out as water flows from one sea to the lower one?

The National Geographic's Encyclopaedic entry gives answers to the questions as follows:

> Sea level is the base level for measuring elevation and depth on Earth. Because the ocean is the one continuous body of water, its surface tends to seek the same level throughout the world. However, winds, currents, river discharges, and variations in gravity and temperature prevent the sea surface from being truly level. (National Geographic's Encyclopedic Entry, n.d., paras 1–2)

So, the seas may not be at the same level due to variation in river discharges. In the case of Bangladesh, the rivers are not able to discharge due to the lack of water in the upstream river basin, and therefore, the country's sea level would appear to be rising faster than that of other countries because the seawater is encroaching into the dry rivers.

The Climate Change Cell (CCC) claims that none of the reports produced up until 2016 (including the IPCC Assessment Reports, the documents of the UNFCCC, the World Bank and the government of Bangladesh) contain *any systemic trend analysis* or *mathematical technique* for analyzing future sea level rise in the coastal areas of Bangladesh (CCC, 2016, p. 2). For this reason, one might wonder about *how*, lacking any systematic trend analysis or strong evidence of sea level rise in the coastal areas, the IPCC, the UNFCCC, the World Bank, and the government of Bangladesh have produced the knowledge that the sea level rise in the coastal areas of Bangladesh would inundate much of the land and cause subsequent population movement. The answer to the *how* question can be found in Forsyth and Beck, (2015, p. 115) and IPCC's (2007, p. 365) writings. It is mentioned in Chapter 3 that the IPCC is not free from the influence of national governments. Drawing on the influence of national government, Forsyth and Beck

(2015, p. 115) stated that the 'IPCC does not conduct research itself but organizes synthesis reports of climate-related research based in consultation and discussions involving scientists', and thus, IPCC produces the climate change data on which the national government and IPCC's scientists give consensus. So, it means that the knowledge on the sea level rise in Bangladesh was produced on the basis of consultation and agreement of the national government and climate scientists of the IPCC but not on the basis of IPCC's own scientific research. The 2007 Fourth Assessment Report of the IPCC also agreed that '[e]stimates of the number of people who may become environmental migrants are, at best, guesswork' (IPCC, 2007, p. 365). So, it is evident that the knowledge of climate change-induced sea level rise and subsequent population movement was not produced on the basis of any trend analysis or scientific research, but on guesswork, consultation, and agreement between the government of Bangladesh and IPCC.

The impact of global warming on floods in Bangladesh

Two documents – the 2005 NAPA and the 2009 NAPA – detail the various climate change models used for analyzing the impacts of climate change on the pattern of rainfall in Bangladesh (Ministry of Environment and Forest, 2005, p. 10; Ministry of Environment and Forest, 2009, p. 19). The models include the General Circulation Model (GCM)[8] and the17 General Circulation Models, directed by the OECD (Organization of Economic Co-operation and Development). The OECD-directed models were run in collaboration with the IPCC, and all these models estimate that there is a steady increase of temperature in Bangladesh in which the winter temperature is higher than that of the previous year (Ministry of Environment and Forest, 2005, p. 10; Ministry of Environment and Forest, 2009, p. 19). The models also estimate that the temperature rise would result in an extended summer – as mentioned above.

According to the two government documents – the 2005 and 2009 NAPA – during the extended summer, the south-western monsoon would bring more moisture from the Bay of Bengal and cause massive flooding due to *excessive rainfall* (Ministry of Environment and Forest, 2005, p. 10; Ministry of Environment and Forest, 2009, p. 19). Many scholars, such as Parks and Roberts (2008, pp. 625–626), interpret the floods in Bangladesh as climate change-induced disasters which uproot people from their homes. However, a close analysis of the data in the World Bank's Climate Change Knowledge Portal regarding temperature rise and rainfall patterns of Bangladesh contradicts the claim of excessive rainfall in the summer which results in floods (see analysis below).

I have computed the average temperature from 1916 to 2015 from the World Bank's data and put the results in a graphical form. The graph shows that from 1916 to 1975 the average temperature of Bangladesh was 25°C, whereas the average temperature from 1976 to 2015 was 25.22°C: the average temperature since 1976 has thus increased by 0.22°C. Second, I have also computed the average winter temperature in Bangladesh from 1916 to 2015, finding that from 1916 to 1975 the average winter temperature was 20.2°C whereas the average winter

temperature from 1976 to 2015 was 20.6°C, and average winter temperature from 2000 to 2015 was 20.61°C. This indicates that the average winter temperature since 1976 has increased by 0.41°C.

In the case of rainfall, the adverse impact of climate change is evident in the period 2006 to 2015. During this decade, the average rainfall in *winter* was 11

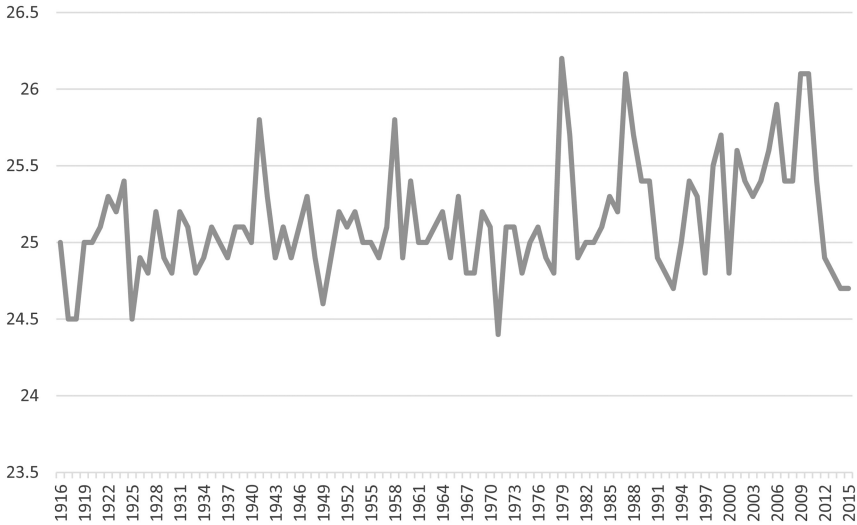

Figure 4.3 Average temperature (°C) from 1916 to 2015. Source: The World Bank's Climate Change Knowledge Portal.

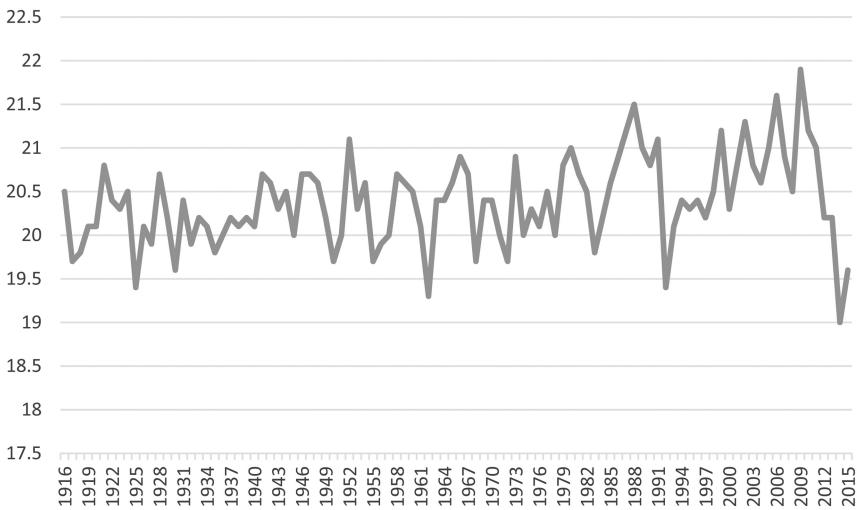

Figure 4.4 Average temperature (°C) in winter from 1916 to 2015. Source: The World Bank's Climate Change Knowledge Portal.

mm/year, whereas from 1916 to 2005 the average rainfall was 17 mm/year. In *summer*, from 2006 to 2015 the average rainfall was 340 mm/year, whereas from 1916 to 2005 the average rainfall was 381 mm/year.

From the rainfall data of the World Bank, we calculate that the average rainfall from 1916 to 1985 (a period of 70 years) was 205 mm/year, whereas the average rainfall from 1986 to 2015 (30 years) was 192 mm/year. Therefore, the data show that the average rainfall has decreased since the early 20th century. However, between 2005 and 2009, NAPA presented evidence from GCM and

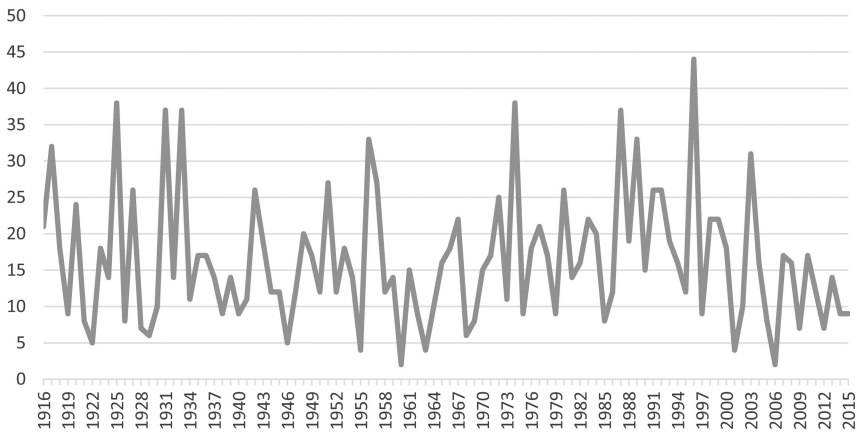

Figure 4.5 Average rainfall (in mm) in winter from 1916 to 2015. Source: The World Bank's Climate Change Knowledge Portal.

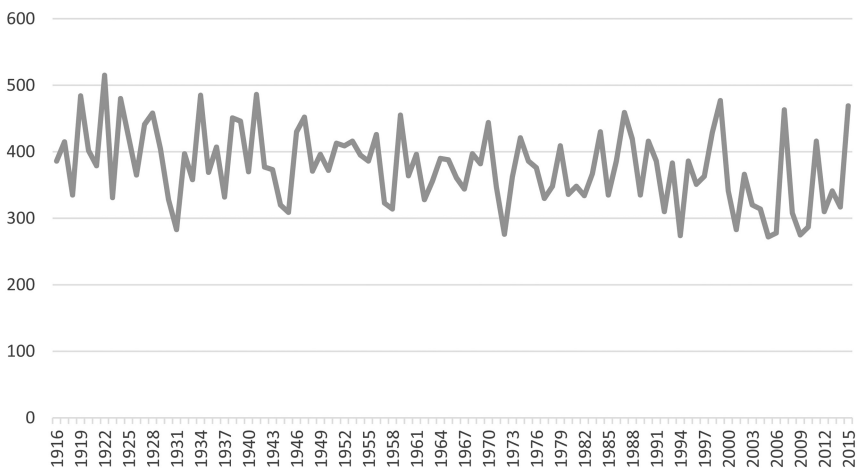

Figure 4.6 Average rainfall (in mm) in summer from 1916 to 2015. Source: The World Bank's Climate Change Knowledge Portal.

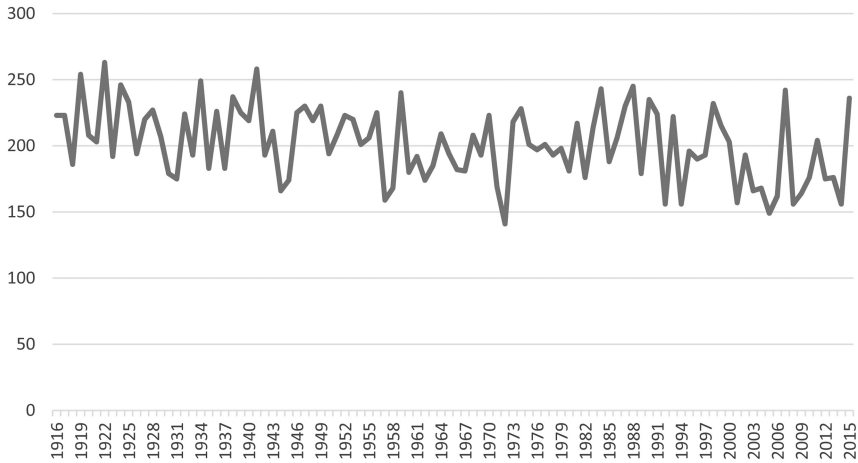

Figure 4.7 Yearly rainfall (in mm) from 1916 to 2015. Source: The World Bank's Climate Change Knowledge Portal.

OECD research that there is excessive rainfall in the summer which will cause massive flooding, whereas the World Bank's climate change data show that the average rainfall in Bangladesh has been decreasing over the years (Ministry of Environment and Forest, 2005, p. 10; Ministry of Environment and Forest, 2009, p. 19). The discussion above demonstrates that the analysis of global warming-induced rainfall data is disputed.

Participant 9[9] disputed the statement that climate change caused heavy rainfall and subsequent flood by giving the following explanations for such floods.

> Global warming is not connected to the increased rainfall which causes floods in Bangladesh. The recent massive floods are taking place due to the lack of the proper drainage system which results in water congestion of rain water. Also, India diverts the trans-boundary river water which results in flood. The origins of the rivers of Bangladesh are the Himalayan glaciers. India is the upper riparian country and it shares 54 trans-border rivers with Bangladesh. At first, the rivers flow in India and then, reach in Bangladesh. In winter, India—an upper riparian country—withdraws water from the trans-boundary river the—Ganga. This water withdrawal weakens the water flows in the rivers of Bangladesh. The weak river flows cannot push its silts into the sea (i.e., the Bay of Bengal). Therefore, the silts are deposited as sediments on the riverbeds and the riverbeds rise high. In this situation, in summer, when India does not withdraw water, the higher riverbeds overflow the rivers of Bangladesh because the rivers cannot hold the water as its riverbeds are higher than its original situation. The higher riverbeds cannot hold as much water as its previous lower riverbeds could hold. As a result, floods and river-bank erosions take place.

All these individual pieces of evidence and associated explanations by the participants help build a case that climate change does not cause heavy rainfall and subsequent floods in Bangladesh. The water withdrawal by India and subsequent sedimentations on the riverbed together can produce floods. Therefore, it is misleading to argue that Bangladesh is facing population movement due to climate change-induced heavy rainfall.

The impact of global warming on cyclones and tropical depressions in Bangladesh

The 2007 IPCC's Fourth Assessment Report states, 'Worldwide, from 1980 to 2000, a total of more than 250,000 deaths were associated with tropical cyclones of which 60% occurred in Bangladesh' (IPCC, 2007, p. 338). The National Adaptation Program of Action (NAPA) of 2005 and 2009 claims that climate change is causing a significant increasing trend in the cyclone frequency over the Bay of Bengal (Ministry of Environment and Forest, 2005, p. 16; Ministry of Environment and Forest, 2009, p. 23). Participant 9[10] stated:

> The frequency and intensity of cyclones have increased a lot because the sea surface temperature of the Bay of Bengal has risen 0.4–0.6 degrees since the last 50 years. The warm sea expands the seawater and air in the Bay of Bengal that results in frequent low pressures. The low pressures produce a circular wind flow that bears thunderstorms and moisture. These frequent low pressures result in frequent tropical depression and severe cyclones. By *severe*, it means that when the cooler high-latitude gets warmer, the circular winds earn more energy and hit the landfill with intense wind speed, rain and tidal flood.

Climate change not only increases the number of severe cyclones but also makes the sea surface warm and rough. Chowdhury et al (2012) states:

> It is recognized that sea surface temperature (SST) in the Bay of Bengal shows an increasing trend in all the seasons. The increasing SST fulfils one of the major preconditions of the formation of an increased number of depressions and low pressure systems in the Bay of Bengal. Increasing numbers of low pressure systems means that for an increasing number of days per annum the sea will be rough along with high tides. (Chowdhury et al, 2012, p. 25)

The warm and rough sea produces more tropical depressions in the Bay of Bengal. The difference between a cyclone and a tropical depression depends on the wind speed of the storms. A tropical depression is classed as having wind speeds between 31 and 61 km/h, and a cyclone as having wind speeds above 61 km/hr. A severe cyclonic storm is categorized as having wind speeds in excess of 88 km/h (Saha & Khan, 2014).

In addition to the severe cyclones, the numbers of less severe cyclones such as tropical depressions have also increased in recent years. The cyclone data collected from the Bangladesh Meteorological Department also provides evidence for an increased trend in tropical depressions. The Department maintains a chart of the early warning signals for cyclones and tropical depressions: it announces the signal numbers in the media to alert people to take precautionary measures as needed. Among the signals, the Local Cautionary Signal No. III (see Number 3 in the Table 4.1) is used to inform people that a tropical depression with a wind speed of 40–50 km/h will soon take place. This chapter particularly focuses on the Local Cautionary Signal No. III (LC III) in the following discussion.

Since 1998, the Bangladesh Meteorological Department has announced LC III more frequently. Table 4.2 shows the increased number of signals for Tropical Depressions from 1998 to 2009.

From Table 4.2, it is evident that tropical depressions have increased in number. Tabassum (2019b, p. 86) also wrote, 'In the three consecutive years 2007,

Table 4.1 Warning signals for cyclones

No	*Warning signal*	*Meaning of the signal*
1	Distant Cautionary Signal No. I	I) There is a region of squally weather (wind speed of 61 km/h) in the distant sea where a storm may form
2	Distant Warning Signal No. II	II) A storm (wind speed of 62–88 km/h) has formed in the distant deep sea. Ships may fall into danger if they leave harbour
3	Local Cautionary Signal No. III	III) The port is threatened by squally weather (wind speed of 40–50 km/h).
4	Local Warning Signal No. IV	IV) The port is threatened by a storm (wind speed of 51–61 km/h)
5	Danger Signal No. V	V) The port will experience severe weather from a storm of slight or moderate
6	Danger Signal No. VI	VI) The port will experience severe weather from a storm of slight or moderate
7	Danger Signal No. VII	VII) The port will experience severe weather from a storm of light or moderate
8	Great Danger Signal No. VIII	VIII) The port will experience severe weather from a storm of great intensity
9	Great Danger Signal No. IX	IX) The port will experience severe weather from a storm of great intensity
10	Great Danger Signal No. X	X) The port will experience severe weather from a storm of great intensity (wind speed of 89 km/h or more) that is expected to cross over or near the port
11	Failure of Communication No. XI	XI) Communications with the Storm Warning Centre have broken down and local officers consider that a devastating cyclone is following

Source: Bangladesh Meteorological Department Website.

Table 4.2 The numbers of warning signals for cyclones and tropical depressions in Bangladesh

Year	*Total number of warning signals*	*Number of LC III signals*	*Percentage of LC III signal (%)*
1998	22	11	50
1999	17	11	64.7
2000	23	12	52
2001	12	11	91.6
2002	23	15	65.2
2003	17	11	64.7
2004	11	7	63.6
2005	24	12	50
2006	17	14	82.3
2007	38	29	76.3
2008	30	20	66
2009	30	21	70

Source: Saha and Khan (2014), p. 70 (data for tropical depressions between 2010 and 2017 are not available).

2008 and 2009 the numbers of tropical depressions were over 20, whereas in the previous years they had not exceeded 15. This indicates that the Bay of Bengal is warming up, the seawater and air are expanding, which results in increased tropical depressions'.

According to Chowdhury et al. (2012), cyclones in the Bay of Bengal will increase in future because global warming causes 'the cooler months to become warmer' and the warmer temperature produces new breeding zones for severe cyclones (Chowdhury et al, 2012, p. 20). Examples of such breeding zones for the severe cyclones are the latitudes 15° and 19° north: the zone absorbs the warmer weather faster and gathers more strength and moisture, producing severe cyclones (Chowdhury et al, 2012, pp. 12–20). Bangladesh experienced the severe Cyclone Aila in 2009: this was the first severe cyclone to have originated from the latitude 15° and 19° north (Chowdhury et al, 2012, pp. 12–20). Bangladesh had not experienced such a storm since records began; its cause was the unprecedented warm weather conditions (Chowdhury et al, 2012, pp. 12–20).

In 2009, Cyclone Aila displaced more than 70,000 families by destroying their homelands (Dastagir, 2015, p. 49). This, then, manifested a direct link to climate change-induced warming, because it was this warming which had produced the new cyclone breeding zone from which Aila emerged. For this reason, this chapter argues that the people displaced by Cyclone Aila constitute the actual climate change-induced population movement in Bangladesh.

In fact, the Bay of Bengal is producing *more* severe storms and tropical depressions due to the rising temperature. From 1986 to 2009, 'the Bay of Bengal produces on an average 5.84 storms per year and global warming, and climate change can increase the numbers of storms up to 7.35 per year' (Chowdhury et al, 2012, p.

20). The increased numbers of tropical cyclones severely affect the livelihood of fishermen. Participant 9[11] remarked, also quoted in Tabassum (2019b, pp. 86-87):

> When the Bangladesh Meteorological Department announces Local Cautionary Signal No. III, the fishermen in coastal Bangladesh (particularly, Chittagong), are prohibited to go fishing because the tropical depression makes the sea rough for fishing in the open sea, which can also be life-threatening. In this circumstance, if any fisherman goes fishing when the signal is on, the government of Bangladesh will not take any responsibility for losses and damages that the fisherman encounters. The increased numbers of tropical depressions already cut the numbers of days for fishing, and as a result they cannot earn [a living] by fishing when the sea is rough. Consequently, they have a lesser amount of catch and a lesser amount of income. The situation forces them to live on starvation due to lack of earnings. To avoid the starvation, the fishermen either take risks of their life, ignore the Cautionary Signal and go for fishing. Or, they migrate from the coastal areas to the high lands.

The migrant fishermen must also be counted among the climate change-induced population movements in Bangladesh, because the climate change-induced depression 'forces them to risk their lives to seek an income, or else to depart from their homelands' (Tabassum, 2019b, p. 86).

Conclusion

This chapter has demonstrated that global warming causes increased and frequent numbers of tropical depressions, severe cyclones, and the emergence of new breeding zones for cyclones in Bangladesh, but that there is no strong evidence that the slow-onset event of sea level rise and rainfall-induced flooding solely related to the anthropogenic global warming. Therefore, this chapter argues that the dominant actors of migrant-group – IPCC, UNFCCC, and the World Bank – overstate climate change data in constructing the knowledge that sea level rise causes population movement but understate the impact of global warming-induced frequent cyclones and tropical depressions which uproots people. For this reason, the knowledge climate refugees and climate-induced displacement which emerged from the idea that *Bangladesh is going under water due to climate change-induced slow-onset events – sea level rise* – are misleading.

As mentioned in the introductory section of this chapter, the participants of this thesis view that climate change resilience projects are not compatible enough to stop warming sea surface temperature and the subsequent emergence of tropical depressions and cyclones. However, in response to the effects of climate change, the dominant actors – IPCC, UNFCCC, and the World Bank – had to demonstrate that they are taking some initiatives for preventing the severe effects of climate change. The issue of sea level rise gives them the opportunity because the projects, undertaken for preventing sea level rise, are similar to the ongoing

development projects funded by the Bank and Western-industrialized countries. So, for the participants, the resilience projects give a political cover to implement development projects in the name of climate change resilience projects. For this reason, as the participants stated, the dominant actors overstate climate change data in constructing the knowledge that sea level rise causes population movement but understate the impact of global warming-induced frequent cyclones and tropical depressions. More on this is given in Chapters 6 and 7.

Notes

1 Slow-onset events include sea level rise, glacier retreat, and desertification (Vanhala and Hestbaek, 2016, p. 111).
2 Climate change researcher and activists, face-to-face interview, December 2016, Dhaka, Bangladesh.
3 Quick-onset events include cyclones/hurricanes/tropical depressions, storms, and wild fire (Vanhala and Hestbaek, 2016, p. 111).
4 Participant 9: IPCC member, face-to-face interview, November 2016, Dhaka, Bangladesh.
5 Climate change researcher and activist, face-to-face interview with a climate change researcher and climate change activist, December 2016, Dhaka, Bangladesh.
6 IPCC member, face-to-face interview with a climate scientist and IPCC member, November 2016, Dhaka, Bangladesh.
7 IPCC member, face-to-face interview with a climate scientist and IPCC member, November 2016, Dhaka, Bangladesh.
8 This model has been used by the US Climate Change Study team for Bangladesh.
9 IPCC member, face-to-face interview with a climate scientist and IPCC member, November 2016, Dhaka, Bangladesh.
10 IPCC member, face-to-face interview with a climate scientist and IPCC member, November 2016, Dhaka, Bangladesh.
11 IPCC member, face-to-face interview with a climate scientist and IPCC member, November 2016, Dhaka, Bangladesh.

5 Components of the knowledge network theory

Actors, knowledge brokers, and climate finance

Introduction

This book demonstrates that all the actors: the UNFCCC, donors, the World Bank, the government of Bangladesh, the local NGOs of Bangladesh, and knowledge brokers unanimously replaced the knowledge of climate refugees with that of climate-induced displaced people/migrants in the climate change discussion in Bangladesh. The knowledge brokers play key roles in maintaining the network between the actors. The proposed knowledge network theory explains the network as an alliance of different types of actors – state actors (both domestic and foreign), transnational actors (such as the IPCC, the UNFCCC, the World Bank, and the knowledge brokers), and non-state actors (such as local NGOs). The first part of this chapter introduces these actors. The second part explains climate finance in Bangladesh from which the actors attain their political and economic interests.

Actors

The actors play the following roles:

(i) State actors

This book divides the state actors into two categories:

- Foreign state actors: This includes the Western-developed countries and their various departments. They give funds to developing countries for implementing climate change resilience projects
- Domestic state actors: This includes the government of Bangladesh and its different organs such as ministries and departments. They implement climate change-related programmes and projects.

The UNFCCC labelled the Western-developed countries as developed countries in its 1992 treaty and divided the countries into two lists: Annex-I and Annex-II countries (UNFCCC, 1992, pp. 7–24). The Annex-I countries include all the

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countries of Annex-II and added some other East European countries, which had gone through economic transitions in the post-Cold War period (UNFCCC, 1992, pp. 32–33). This book particularly considers Annex-II countries as the Western-developed countries. The countries are Australia, Austria, Belgium, Canada, Denmark, European Economic Community, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland, and the United States (UNFCCC, 1992, p. 24). These Western-developed countries never recognized the concept of climate refugees, as discussed in Chapter 1. However, according to Articles 3–5 of the 1992 UNFCCC, these countries give funds to the poor climate change-affected countries for implementing climate change resilience projects (UNFCCC, 1992, pp. 3–9). Among the Annex-II countries, the United States, the United Kingdom, Australia, Sweden, Denmark, Switzerland, and members of the European Union give funds to Bangladesh for implementing climate change resilience projects (World Bank, 2012, para. 3). The following departments of these countries release the funds to Bangladesh under the fiduciary management of the World Bank, the ADB, and International Finance Corporation (IFC) (World Bank, 2012, para. 4; Rai and Smith, 2013, p. 12).

USAID – the United States Agency for International Development
DFID – the Department for International Development
SIDA – the Swedish International Development Cooperation Agency
KfW – German Government-Owned Development Bank

The United Nations Development Programme (UNDP) occasionally works as an intermediary for channelling the funds from the DFID, SIDA, Denmark, Switzerland, and the European Union to Bangladesh for implementing some climate change resilience projects (Comprehensive Disaster Management Programme [CDMP] Phase II, 2009, p. 1). For example, the UNDP channelled funds from DFID, SIDA, Denmark, Switzerland, and the European Union to Bangladesh for implementing the Comprehensive Disaster Management Programme (CDMP) (ibid.).

The countries have specific climate change-related funding for Bangladesh. An example is the government of the United Kingdom's *Strategic Fund*, a specific funding scheme, worth GBP[1] 3 million, for building climate change-related knowledge and skills in Bangladesh (Independent Commission for Aid Impact, 2011, p. 5).

On the other hand, the domestic state actors of Bangladesh are as follows:

Ministry of Environment and Forest: This Ministry adopts national action plans (such as NAPA and BCCASP) and implements projects related to climate change and environment. The Ministry is also in charge of managing the government-run Bangladesh Climate Change Trust Fund (BCCTF). The BCCTF Trustee Board accepts climate change-related project proposals from

government organizations and approves the proposals suitable for receiving funds on a regular basis (Bangladesh Climate Change Trust, 2016, pp. 1–5). The Board requests the Ministry of Finance to release the funds to the approved projects (Bangladesh Climate Change Trust, 2016, pp. 1–5). The Department of Forest is the most important organ of this Ministry for implementing USAID-funded climate change afforestation and reforestation projects.

Ministry of Disaster Management and Relief: This ministry implements some of the resilience projects such as the Comprehensive Disaster Management Programme (CDMP) Phase II. The Programme was implemented in partnership with the UNDP. The DFID, SIDA, and the European Commission are the major donors of the Programme. The goal of the Programme is to incorporate the knowledge of climate change resilience into Bangladesh's national development planning (see Comprehensive Disaster Management Programme [CDMP] Phase II, 2009, p. 1).

Ministry of Finance: The Ministry of Finance is in charge of distributing funds of the climate change resilience projects to its implementing organizations. The major funds are (i) Bangladesh Climate Change Trust Fund (BCCTF), (ii) Bangladesh Climate Change Resilience Fund (BCCRF), (iii) Global Environmental Facility's (GEF) Least Developed Countries Fund (LDCF) of the UNFCCC, (iv) Pilot Programme for Climate Resilience (PPCR) of the Climate Investment Fund (CIF), and (v) the Green Climate Fund (GCF). Details about the funds are discussed in the climate finance section.

Palli Karma-Sahayak Foundation (PKSF): The government of Bangladesh established the PKSF in 1990 for 'sustainable poverty reduction through employment generation' (Palli Karma-Sahayak Foundation, n.d., para. 1). The PKSF is registered as a 'non-profit company' of the government of Bangladesh (ibid.). The PKSF approves the proposal of climate change resilience projects submitted by the local NGOs in Bangladesh. It also recommends to the Ministry of Finance to release the funds to the approved projects. One of the knowledge brokers, Dr. Qazi Kholiquzzaman, works as the current chair of the PKSF. Dr. Kholiquzzaman plays a significant role in disbursing the climate change funds to the local NGOs of Bangladesh.

Bangladesh Unnayan Parishad (BUP): Bangladesh Unnayan Parishad (BUP) is a state-owned non-profit research organization. BUP works on research on environment, development, and socio-economic issues (Climate Action Network, n.d., para. 1). BUP is considered as one of the country's leading think-tanks for its seminal works on sustainable development, environmental, and climate change issues (Climate Action Network, n.d., para. 2). Some of the knowledge brokers of this book are current Executive Director and former Executive Director of BUP. One of the knowledge brokers, Dr. Kholiquzzaman, worked as the founding Executive Director before joining the PKSF. Another knowledge broker Dr. Ahsan Uddin Ahmed is its Executive Director.

(ii) International institutions/donors

This section analyzes the roles of climate change-related international organizations such as the UNFCCC and the IPCC; and international financial organizations such as the World Bank and ADB.

The annual conference of the UNFCCC, entitled COPs, is the main venue at the international level in which the issues of carbon emissions, Polluter Pays Principles (Loss and Damage Principles), climate finance, and climate change-related policies are discussed/debated. As mentioned in Chapter 2, there is a close working relation between the UNFCCC and IPCC (UNEP, 2012, pp. 1–3). The IPCC is funded in part by the UNFCCC (UNEP, 2012, p. 2). The main task of the IPCC is to publish Assessment Reports on climate change on a regular basis. Based on the IPCC Assessment Reports, the UNFCCC produces climate change-related adaptation and mitigation policies/proposals/action plans in the COPs and proposes its contracting parties to incorporate the policies/proposals/action plans into national and local levels (UNEP, 2012, p. 2).

Chapter 4 mentioned that the 1990 and 2001 Assessment Reports of the IPCC stated that a significant portion of Bangladesh land would go under water due to climate change-induced sea level rise (IPCC, 1990, p. 3; IPCC, 2001, p. 556). Based on the reports, the government of Bangladesh, its NGOs (such as EquityBD, CSRL, and BCAS), and knowledge brokers demanded in the COPs to give refugee status to the climate-induced sea level rise affected people during the early 2000s (see Chapter 6 for details). However, since 2010, the government of Bangladesh, NGOs, and the multi-scalar knowledge brokers have not been demanded the refugee status in the COPs. Instead, they propose at the national levels that the climate-induced displaced people must be resilient or adaptive in facing the climate change-related challenges (see Chapter 6 for details).

It is worth noting that the knowledge brokers of this book are also authors of the IPCC Assessment Reports (discussed later in this chapter). Among the knowledge brokers, Dr. Saleemul Huq criticized the early stages of the negotiations of the UNFCCC and the first two Assessment Reports of the IPCC because those discussions/reports did not include anything about climate change adaptation (Huq, 2005, pp. 5–8). Later on, Dr. Huq played a significant role in including the knowledge of adaptation in the next UNFCCC climate talks and IPCC Assessment Reports. Consequently, the Working Group II of the IPCC started to produce a separate segment on adaptation in the 2001 Third Assessment Reports of the IPCC in which Dr. Huq is also an author (Huq, 2005, pp. 5–8). Since then, the Bangladeshi knowledge brokers mainly contributed to shaping the knowledge of climate change adaptation in the IPCC Assessment Reports. This chapter analyzes the role of five knowledge brokers (Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ainun Nishat, Dr. Ahsan Uddin Ahmed, and Dr. Kholiquzzaman) who contributed to producing the knowledge of adaptation in the IPCC Assessment Reports since 2001. Their contributions in the IPCC reports mainly focus on adaptation as resilience or ecological resilience, which refers to infrastructural development projects (such as building dams and afforestation).

In the 2001 Marrakesh conference, COP7, the contracting parties agreed to sign an agreement with the UNFCCC to adopt a national action plan for implementing adaptation projects. The UNFCCC established the LDC Expert Group (LEG) in the 2001 COP 7 to provide technical support and advice to the Least Developed Countries (LDCs) to draft the National Adaptation Plan of Action (NAPA) (UNFCCC, n.d., paras 1–2). Bangladesh adopted its first NAPA in 2005 and revised it in 2009. The 2005 and 2009 versions of Bangladesh NAPAs were drafted on the basis of the guideline prepared by the LEG of the UNFCCC (Ministry of Environment and Forest, 2005, pp. 43–44; Ministry of Environment and Forest, 2009, pp. 43–44). Four of the knowledge brokers of this book contributed to producing NAPA. The brokers are Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ainun Nishat, and Dr. Ahsan Uddin Ahmed (Ministry of Environment and Forest, 2009, p. v–viii; Ministry of Environment and Forest, 2005, p. iii–v).

Articles 3–5 of the 1992 UNFCCC treaty played a significant role in identifying Western-developed countries as liable to provide funds to developing countries for implementing climate change adaptation and resilience projects (UNFCCC, 1992, p. 8). Table 5.1 shows the important decisions on climate finance taken in COPs since 1992.

Bangladesh receives the following four kinds of funds given from the UNFCCC: the 2008 BCCRF (Bangladesh Climate Change Resilience Fund), the 2001 GEF's (Global Environmental Facility's) Least Developed Countries Fund (LDCF), the 2010 GCF (The Green Climate Fund), and the 2010 PPCR (Pilot Programme for Climate Resilience) of the Climate Investment Fund (CIF).

The BCCRF has been channelled from the donor countries to Bangladesh via the World Bank. The UNDP is in charge of giving the GEF's (Global Environmental Facility's) Least Developed Countries Fund (LDCF) to Bangladesh. The World Bank, the Asian Development Bank, and International Financial Corporation (IFC) channel the PPCR's (Pilot Programme for Climate Resilience) funds from the developed countries to Bangladesh. More on the climate finance is discussed below.

Some of the international financial organizations, such as the World Bank and the ADB, play major roles in publishing research on climate change and in providing funds to developing countries for implementing climate change resilience projects (a detailed discussion about reports is in the next chapter). The World Bank provides funds to the projects which can make climate change-induced uprooted people resilient in encountering climate change-induced weather events (Methmann & Oels, 2015, p. 60). In this case, the resilience projects are mainly the *adaptive notion of resilience*, which means creating dams or providing new sorts of crops (see Chapter 2 for details). The Bank also seeks to provide funds to implement the *transformative version of resilience* projects in climate-affected countries. The projects teach the uprooted people entrepreneurial abilities and technical skills as these people can participate in the global labour market as skilled labourers (see Chapter 2 for details). In the case of Bangladesh, the Bank is in charge of the fiduciary management of channelling the BCCRF from the

Table 5.1 Important decision on climate finance at COPs

Year	*COP*	*Events*	*Important decision on climate finance*
1992		Earth Summit – The Rio Declaration, Rio de Janeiro, Brazil	The *Polluter Pays Principle,* also known as *Loss and Damage,* was included in the 1992 declaration in which the high carbon emitters were given the responsibility to pay the cost of adaptation and resilience projects in the developing countries (Global Environmental Facility, n.d., para. 1). The Global Environmental Facility (GEF) was established (Global Environmental Facility, n.d., para. 1)
1995	COP-1	Berlin Mandate, Berlin, Germany	The GEF fund was introduced to finance many climate change projects in developing countries. (Global Environmental Facility, n.d., paras 1–5)
1997	COP-3	Kyoto, Japan	Adaptation fund was created
2001	COP-7	Marrakech, Morocco	Two funds were created: (i) Global Environmental Facility's (GEF) Least Developed Countries Fund (LDCF) to support NAPA in developing countries; and (ii) Adaptation fund to support adaptation projects in developing countries (Transparency International Bangladesh, 2014, p. 7)
2007	COP-13	Bali Roadmap, Bali, Indonesia	Four priority areas had been selected- adaptation, mitigation, technology, and financing (Transparency International Bangladesh, 2014, p. 7)
2009	COP-15	Copenhagen Accord, Copenhagen	It was recognized that developing countries need additional financing for implementing adaptation and mitigation projects. Transparency International Bangladesh, 2014, p. 7)
2010	COP-16	Cancun Agreement, Cancun, Mexico	The Green Climate Fund (GCF) was established to finance projects, programmes, policies, and other activities in the developing countries (GCF) (Transparency International Bangladesh, 2014, p. 7)
2013	COP-19	Warsaw, Poland	100 million dollars was pledged to the Adaptation Fund. The Green Climate Fund (GCF) was prescribed to operate as soon as possible (Transparency International Bangladesh, 2014, p. 7)
2015	COP-21	Paris Agreement, Paris, France	The developed countries are exempted from any liability and compensation claims of the developing countries. (UNFCCC, 2015, Article 52)

developed countries to Bangladesh. The BCCCRF implements the projects of adaptive notion of resilience.

The ADB is an important player in handling climate change-induced migration through development policies. According to the ADB:

> The countries of Asia and the Pacific can choose to turn the threat of climate-induced migration into an opportunity to improve lives, advance the development process, and adapt to long-term environmental change by altering development patterns, strengthening disaster risk management, invest in social protection, and facilitating the movement of labor. (Asian Development Bank, 2012, p. 7).

In Bangladesh, the ADB and IFC have channelled the PPCR's (Pilot Programme for Climate Resilience) funds from the developed countries to Bangladesh. The PPCR's funds are given to implement the projects containing elements of *adaptation as resilience*.

(iii) Non-state actors

Three NGOs involved in framing climate refugees and climate change-induced displaced people: Bangladesh Centre for Advanced Studies (BCAS), EquityBD, and Campaign for Sustainable Rural Livelihoods (CSRL).

Bangladesh Centre for Advanced Studies

BCAS is one of the leading NGOs in Bangladesh, which was established in 1986. The NGO conducts research on climate change, environmental issues, and sustainable development and implements various kinds of climate change adaptation projects in the country. This NGO has secured the maximum number of contracts for the climate change adaptation projects in Bangladesh[2] (Shaptahik, n.d., para. 23). The projects are funded by the government of Bangladesh and developed countries. BCAS works in collaboration with various development organizations (BCAS, n.d.). The development organizations are the World Bank, the Asian Development Bank, the USAID, the DFID, and the IUCN (BCAS, n.d; BCAS, n.d., para. 2).

The five knowledge brokers of this book are involved in BCAS. Dr. Atiq Rahman and Dr. Saleemul Huq are the founders and Executive Directors of BCAS. Both are world-renowned climate scientists who promoted the idea of Bangladeshi climate refugees. Dr. Ainun Nishat and Dr. Ahsan Uddin Ahmed worked as consultants of the BCAS and were involved in promoting the idea of climate refugees. The brokers used the information of the IPCC Assessment Reports regarding the slow-onset event of sea level rise and subsequent submerging lands. They framed the idea of drowning Bangladesh and subsequent climate change-induced population movement (more on this is in Chapter 6).

EquityBD

The Equity and Justice Working Group Bangladesh, in short EquityBD, is an alliance of several NGOs and CSOs in Bangladesh (EquityBD, n.d., para. 1). Its main task is 'policy advocacy and campaign activism' in areas of 'trade and economic justice, human rights, democracy, public education, information and communication networking, climate change, disaster risk reduction, local governance, promotion of rural popular culture and other aspects of social life' (EquityBD, n.d., para. 1). In November 2009, EquityBD met the global leaders at the UNFCCC and called for adopting a legal framework to ensure social, cultural and economic rehabilitation of the 'climate refugees' through recognizing them as 'Universal Natural Persons' (McAdam, 2011, p. 6). However, EquityBD changed its position after a month and replaced the term 'climate refugees' with that of 'climate change induced forced migrants' (ibid.).

Campaign for Sustainable Rural Livelihoods

CSRL, established in 2007, is an alliance of more than 200 civil society organizations, including BCAS, in Bangladesh (CSRLBD, para. 1). Among the five knowledge brokers of this book, Dr. Qazi Kholiquzzaman is the president of the CSRL at the time of writing this book (Hasnat, 3 February 2018, para. 9 and 12). The main focus of CSRL is to work on agriculture, climate change, and trade (CSRLBD, para. 1). CSRL is well reputed for documenting the voice of the actual climate victims who have been uprooted from their place of living due to climate change-induced disasters and for advocating for the preferential status of the climate refugees (CSRLBD, para. 1). In 2010, the CSRL organized a mock *Climate Tribunal*, in partnership with Oxfam, in Dhaka (Vidal, 2010, para. 5). CSRL gathered actual climate change-induced uprooted people in the tribunal and documented their testimonies/stories regarding their experiences of encountering adverse effects of climate change (Vidal, 2010, para. 5). One of the knowledge brokers of this book, Dr. Ahsan Uddin Ahmed, played a key role in organizing the Tribunal. Another knowledge broker Dr. Qazi Kholiquzzaman Ahmed was one of the members of the jury panel of the tribunal (bdnews24.com[3], 2010, para. 16). The jury panel gave a verdict that the climate change-induced uprooted people, who have been uprooted due to climate change-induced disasters in the coastal regions of Bangladesh, could sue the high carbon emitters in a *world-court*, a court similar to the Hague-based International Criminal Court, for the crime of making the world warmer, for creating conditions which uproot people and for knowingly contributing to climate change by not reducing carbon emissions (bdnews24.com, 2010, para. 8; Vidal, 2010, para. 1).

The 2010 tribunal was the only public event in which the voice of the climate victims was heard/documented. Since then, CSRL organized several events like *climate hearings* but the climate change-induced uprooted people have not been invited, and their voices have not been documented. Instead, the *climate hearings* invited people such as climate scientists (who are mainly knowledge

brokers of this book), members of the parliament (MPs), university professors, and government officials to the hearings. An example of such an event is CSRL-organized *National Climate Hearing*, which took place on 2 February 2018 in Dhaka, Bangladesh (CSRLBD, n.d.). Except Dr. Saleemul Huq, the four knowledge brokers − Dr. Atiq Rahman, Dr. Ainun Nishat, Dr. Ahsan Uddin Ahmed, and Dr. Qazi Kholiquzzaman; MPs; and government officials participated in the hearing (CSRL). In the hearing, they claimed to include all stakeholders in the decision-making procedure regarding how to manage locally built embankments across rivers – which, this book finds, is not connected with climate change-related issues (CSRL, n.d.; Hasnat, 2018, para. 1).

Knowledge brokers

The multi-scalar knowledge brokers conduct the reconciliation between domestic, foreign, and transnational actors to bring the national interests in line with the global interests. At the international level, the brokers are all well reputed for their contributions of producing knowledge regarding climate change in the IPCC Assessment Reports and for implementing the knowledge through the UNFCCC-prescribed NAPA. However, critics claim that the brokers exaggerated the data of climate change to produce the knowledge of Bangladesh's vulnerability at the international level. It is also alleged that the brokers also help import the Western-born knowledge of adaptation and mitigation on Bangladesh and execute related projects. However, the projects do not curb the severe effects of climate change and reduce carbon emissions[4].

This book explains the roles of five knowledge brokers: Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ainun Nishat, Dr. Ahsan Uddin Ahmed, and Dr. Qazi Kholiquzzaman Ahmed who are also given names, in order, A, B, C, D, and E. They are identified as knowledge brokers because (i) they promoted the knowledge of climate refugees worldwide in the 1990s, and then, they replaced the term climate refugees with that of climate-induced displacement from 2010 onwards, (ii) they help the World Bank and the UNFCCC transmit the knowledge of *resilience as adaptation* from international venues (i.e. the IPCC Assessment Reports and the UNFFFC's prescribed NAPA) to the very local level in Bangladesh (locally implemented NAPA and BCCSAP). The following discussion and Table 5.2 explore how the knowledge brokers do their task across three different levels – international, national, and local.

A (Dr. Atiq Rahman)

The role of knowledge broker A

International level

Epistemic community/IPCC connection: A was one of the *lead authors* of Chapter 19 titled *Assessing Key Vulnerabilities and Risk from Climate Change* in the 2007 IPCC Fourth Assessment Report (IPCC, 2007, p. 779). Being a lead author of the

Table 5.2 A summary of the role of the knowledge brokers across levels

Knowledge brokers			*A*	*B*	*C*	*D*	*E*
International level	Authors/reviewers of the IPCC Assessment Reports	Third (2001)	No	√	√	√	√
		Fourth (2007)	√	√	No	√	√
		Fifth (2014)	√	√	No	√	No
	Consultant of the World Bank	Promoted adaptation	√	√	√	√	√
	Consultant of the UNFCCC	Promoted adaptation	No	√	No	√ (GCF)	√
	Consultant/member of the IUCN	Promoted adaptation	√	No	√	No	No
National level	Contributed to Drafting NAPA	Institutionalize the UNFCCC's prescription of adaptation	√	√	√	√	No
	Head/Chair of any Government body	Implementing adaptation projects	√ Arannayk Foundation	No	No	√ BUP	√ PKSF
	Participate at COPs as the delegates of the Bangladesh Government		No	√	√	No	√
Local level	Founder and/or Executive Directors/consultants/ President of NGOs	BCAS	√	√	√	√	√
		CSRL	√	No	√	√	√

IPCC's fourth assessment report, he is also a co-recipient of the Nobel Peace Prize of 2007 – jointly awarded to the IPCC and Al-Gore (BCAS, n.d., para. 1). A was also one of the authors of the IPCC's special report on *Renewable Energy Sources and Climate Change Mitigation* (IPCC, 2011, p. 1).

Consultant to the international institutions: A has a long history of working with the World Bank and USAID. A was one of the lead authors of the document *Bangladesh 2020: A Long-run Perspective Study* – prepared by the World Bank and BCAS (World Bank, 1998, Acknowledgement). This document prescribes to include participation of CSOs and NGOs in urbanization, human development, and industrial sectors and in water resource management in Bangladesh (pp. xix–xxi). A also contributed to the 2000 World Bank's document, entitled *Bangladesh Climate Change and Sustainable Development* (see World Bank Report 21104-BD and Chapter 4 about the document) (World Bank, 2000, p. v). This document particularly produced the knowledge that Bangladesh is vulnerable to climate change-induced slow-onset event *sea level rise*. It also urged that the World Bank's prescribed adaptation strategies help Bangladesh to overcome the vulnerability. A also contributed to the World Bank Group's publications *the Environment Matters series*. In the 2007 series, entitled *Climate Change and Adaptation*, he stated:

> The United Nations Framework Convention on Climate Change (UNFCCC) has provided the moral, ethical, and scientific basis- as well as structure- for advancing adaptation… The UNFCCC supports information exchange and awareness building, but this has not been adequately put into practice in sufficient scale. With the support of the World Bank, UN agencies, and others, local governments and competent NGOs should be engaged in awareness and capacity building initiatives. It would be appropriate to incorporate this into a broader framework of disaster risk reduction… The World Bank can play a key role in initiating and furthering this process in collaboration with appropriate research, policy, and extension organizations. (World Bank, 2008, p. 10).

A was also the Chairman of Executive Board of Tropical Forestry Action Plan, Arannayk Foundation, Dhaka, supported by the Government of Bangladesh and USAID. The Arannayk Foundation has been one of the principal implementing organizations of USAID-funded Climate Change Resilience Participatory Afforestation and Reforestation Projects (CRPARP) in Bangladesh since 2008 (Arannayk Foundation, para. 1). Chapter 7 describes the details about the projects.

National level

Policy advocate at the policy level: Bangladesh adopted the UNFCCC-prescribed NAPA in 2005 and then revised it in 2009. A was one of the *team leaders* of the drafting committee of the 2005 NAPA and a member of the steering committee of the updated 2009 NAPA (Ministry of Environment and Forest, 2005, p.

3; Ministry of Environment and Forest, 2009, p. v). However, A, who became well renowned for upholding the notion of climate refugees of Bangladesh, was not reported to be active or vocal enough to include any provision of the climate refugees in the 2005 NAPA Bangladesh. Instead, under the leadership of A, the 2005 NAPA drafting committee included provisions on adopting adaptations and resilience projects, advised by the LEG of the UNFCCC, in the NAPA. The drafting committee of the 2005 NAPA named itself 'Knowledge Management Team'.

Local level

NGO connections: A is one of the founders and current Executive Director of the local NGO – BCAS (BCAS, n.d., para. 1). As mentioned earlier, BCAS is one of the leading non-governmental organizations in Bangladesh that has secured the contracts of most of the donor-funded adaptation and resilience projects (BCAS) in Bangladesh.

B (Dr. Saleemul Huq)

> Climate adaptation is one topic where insights from scholars have had a significant impact on public policy and on international climate governance. For example, Saleemul Huq has published articles where he argues for the value of local knowledge and adaptation strategies developed in the global South and for equity in climate financing (Ayers et al. 2014; Schipper et al. 2014). But he also participates in the climate negotiations – helping to draft text and advising negotiators and activists – and started a grassroots adaptation program in Bangladesh. (Liverman, 2015, p. 313)

The role of knowledge broker B

International level

Epistemic community/IPCC connection: B, in his many writings, expressed his frustrations with the lack of international attention in the 1980s and 1990s in promoting *adaptation* as a tool to deal with climate change. For B,

> adaptation (i.e., dealing with the actual impacts of climate change) received relatively little attention in the international negotiations perhaps rightly so as the initial task was seen to prevent the worst impacts of climate change through mitigation. (Huq, 2005, p. 5).
>
> The IPCC in its first and second assessments included hardly anything on adaptation to climate change. This reflected the lack of any such research being done in the eighties and early nineties. (Huq, 2005, p. 8).

Afterwards, B played a significant role in including writings on adaptation in the third, fourth, and fifth IPCC assessment reports. He was a lead author of Chapter 18 entitled *Adaptation to Climate Change in the Context of Sustainable Development and Equity* in the 2001 IPCC Third Assessment Report, prepared by the Working Group II of the IPCC (IPCC, 2001, p. 877). B also contributed to three different sections of the 2007 IPCC Fourth Assessment Report, Working Group II. These are (i) one of the drafting authors of the *Summary for Policy Makers*, (ii) one of the lead authors of *Technical Summary*, and (iii) one of the coordinating lead authors of Chapter 18 entitled *Inter-relationships between Adaptation and Mitigation* (IPCC, 2007, p. 7, p. 23, and p. 745). Being a lead author of the IPCC Fourth Assessment Report, like the knowledge broker A, B is also a co-recipient of the Nobel Peace Prize of 2007 – jointly awarded to the IPCC and Al-Gore (BCAS, n.d., para. 2). For his outstanding contribution to the knowledge of climate change adaptation policies, he won the Burtoni Award, named after the first recipient of the award Ian Burton (an Emeritus Professor, the University of Toronto who also contributed to the above-mentioned three Assessment Reports of the IPCC). B was also one of the lead authors (there were two lead authors) of Chapter 14 entitled *Adaptation Needs and Options* in the 2013 IPCC Fifth Assessment Report, Working Group II (IPCC, 2013, p. 833).

B played a key role in promoting the idea that Bangladesh is one of the most vulnerable countries of the world for sea level rise and subsequent climate refugees (see Chapter 6 for details). However, none of his contributions to the IPCC reflected his concerns about recognizing the climate refugees as refugees and protecting them.

Consultant to the international institutions: Like A, B was one of the lead authors of the document *Bangladesh 2020: A Long-run Perspective Study* prepared by the World Bank and BCAS. B is the founder of the NGO (World Bank, 1998, Acknowledgement). As mentioned earlier, the document demands to include CSOs' and NGOs' participation in urbanization, human development, and industrial sector and in water resource management. B also contributed to the World Bank published document *Bangladesh Climate Change and Sustainable Development* as an author (see World Bank Report 21104-BD) (World Bank, 2000, p. v). This report particularly put forth the knowledge of the vulnerability of Bangladesh in facing climate change and sea level rise, and urged that the World Bank's prescribed adaptation strategies help Bangladesh to overcome the vulnerability.

B has served as a consultant to the UNFCCC, the Global Environmental Facility of the UNFCCC, the SIDA (Swedish International Development Cooperation Agency), and NORAD (Norway on Developing Climate Change Programme) (BCAS, n.d., para. 4). B played a significant role in advocating the UNFCCC provide more funds for implementing adaptation and resilience projects in the most climate vulnerable developing countries (Ayers & Huq, 2009, pp. 675–689). B was a member of the advisory panel on Climate Change for Shell Canada (BCAS, n.d., para. 4).

Other international involvements: B works as the Director of the Climate Change Programme in the London-based International Institute for Environment and Development (IIED) since 2001 (IIED, n.d., para. 1). IIED is a policy and action-oriented research organization that promotes ideas of sustainable development goals and climate resilience policy options across the world (IIED, n.d., para. 1). It also advocates the government and non-governmental organizations of the LDCs adopt policy responses related to climate change resilience projects (ibid.). B's task in IIED is to train *negotiation skills regarding climate change issues* to the delegates from the LDCs (IIED, n.d., para. 1). The advocacy task involves training workshops, policy briefings and support for the Adaptation Fund Board, research on vulnerability, and adaptation to climate change in the LDCs (IIED, n.d., para. 4). It also includes negotiation training workshops for LDCs, policy briefings and support for the Adaptation Fund Board, and research into vulnerability and adaptation to climate change in the LDCs (IIED, n.d., para. 4). He runs a climate change programme at the IIED as an Adaptation Team Leader of South–North projects involving South Africa, Brazil, Bangladesh, and Indonesia (BCAS, n.d., para. 3). B oversees two DFID-funded projects:

(i) Habitat for humanity projects: This research is related to improve urban climate resilience in Bangladesh through improving water and sanitation sectors. (IIED, n.d., para. 5)
(ii) ICCCAD, Dhaka: ICCCAD is a research institute that conducts research on the impacts of climate change on urban utility services, and the implementation of the knowledge of resilience to a coastal urban centre in Bangladesh (Independent Commission for Aid Impact, 2011, p. 22). B is the Director of the ICCCAD (ICCCAD, para. 1).

National level

Policy advocate at the national policy level: As an expert of the knowledge *adaptation*, B worked as one of the team leaders of the drafting committee of the 2005 NAPA Bangladesh (Ministry of Environment and Forest, 2005, p. iii). In the drafting committee, he worked as an international consultant on behalf of the IIED (Ministry of Environment and Forest, 2005, p. iii). On behalf of the IIED, B helped the drafting committee of NAPA draft it by following the guideline prepared by the LEG (LDC Expert Group) of the UNFCCC regarding *resilience as adaptation*. As mentioned above, B works as the Director of ICCCAD, which is located at the Independent University, Dhaka, Bangladesh (BCAS, n.d., para. 1). ICCCAD is a three-way partnership between the Independent University of Bangladesh (IUB), BCAS, and the IIED (ICCCAD, n.d., para. 1). The IIED conducts research on sustainable development, and climate change resilience and adaptation projects in Bangladesh with the partnership of ICCCAD, and helps disseminate the research findings internationally (IIED, n.d., paras 1–2; Independent Commission for Aid Impact, 2011, p. 22). BCAS provides research support to ICCCAD to conduct the research in the local communities of Bangladesh (such

as for choosing field sites for field research, etc.) (ICCCAD, n.d., para. 2). The ICCCAD hosts many research projects on climate change adaptation and resilience including climate change-induced migration. One of such projects is the Bhola Slum project in Dhaka city (ICCCAD, n.d., para. 5). This project demonstrates that internal migration can be considered as the best adaptation strategy for the climate change-induced uprooted people.

Local level

NGO connections: B is the founding Executive Director of BCAS in Bangladesh for implementing climate change adaptation and resilience projects (BCAS, n.d., para. 1).

C (Dr. Ainun Nishat)

The role of knowledge broker C

International level

Epistemic community/IPCC connection: C was one of the contributing authors of the IPCC Third Assessment Report, Working Group II, *Impact, Adaptation and Vulnerability* (IPCC, 2001, p. 533).

Consultant to the international institutions and international NGO: C worked as the *country representative* of the international NGO − International Union for Conservation of Nature (IUCN) − between 1998 and 2009 (IUB[5], n.d., pp. 1–8). As the country representative of the IUCN, C worked as advisor and supervisor of the government of Bangladesh in many pilot projects on community-based wetland management, *resilience as adaptation* to climate change, and ecosystem-based livelihood (IUB, n.d., pp. 1–8). He also worked as a senior advisor of climate change of the Asia Region of the IUCN between 2009 and 2010. Although C was the country representative of the IUCN, he contributed as an expert in drafting the 2009 NAPA Bangladesh (Ministry of Environment and Forest, 2009, p. v). He also contributed to drafting the 2005 NAPA (Ministry of Environment and Forest, 2005, p. iii). C played a significant role in implementing the USAID-funded climate change resilience project in Bangladesh.

C is a member of the Compliance Committee of the Kyoto Protocol of the UNFCCC between 2006 and 2018 (IUB, n.d., p. 2). C was the former member of the Committee of Energy and National Resources Development (CENRD) of ECOSOC (the United Nations Economic and Social Council) of the UN (IUB, n.d., p. 2). The Committee works on energy and water resource management.

C also worked as a consultant to the World Bank (Shaptahik, n.d., paras 11–15). According to a weekly newspaper in Bangladesh – the *Shaptahik*, C played the main role for advocating the government of Bangladesh assign the World Bank in-charge of management of the Bangladesh Climate Change Resilience Fund (BCCRF) (Shaptahik, n.d., paras 11–15). In return, as the newspaper published, the Bank rewarded C by assigning him the top manager of implementing two

BCCRF-funded projects, valued at $3.2 million. The projects are (i) Urban Flooding of Greater Dhaka Area in a Changing Climate: Vulnerability, Adaptation and Potential Costs (Analytical Activities) and (ii) Impacts of Climate Change on Vector-borne Diseases and Implications for the Health Sector (Analytical Activities) (Shaptahik, n.d., paras 11–15).

University connection: C is an Adjunct Professor, Institute of Natural Resources Management, University of Manitoba, Canada between 2010 and 2018 (IUB, n.d., p. 3).

National level

Policy consultant at the national policy level: C is well reputed in Bangladesh for working as a policy consultant to the government of Bangladesh in cases of water resource management and flood control. It is mentioned earlier that the government of Bangladesh adopted the Flood Action Plan (FAP) in 1990, with technical and funding assistance from the World Bank (World Bank, 1990, pp. iii-iv). C was in the team of the government of Bangladesh in drafting the FAP and the 1995 National Environmental Management Action Plan of Bangladesh (NEMAP) (Ministry of Environment and Forest, 1995; World Bank, 1990, p. iv). As a country representative of the IUCN, C was one of the team leaders of the drafting committee of the 2005 NAPA (Ministry of Environment and Forest, 2005, p. iii). He was also a contributor and steering committee member of the 2009 revised version of NAPA (Ministry of Environment and Forest, 2009, p. v). At the time of writing this book, C is working as chairman of the panel of experts of the two World Bank-funded projects in Bangladesh (IUB, n.d., p. 1). His main task is to advise on planning, designing, and supervising the projects: (i) the River Management Improvement Projects, and (ii) the Coastal Embankment Improvement Project (IUB, n.d., p. 1).

C was a key member of the Climate Change Negotiation Team for Bangladesh and has represented Bangladesh in the United Nations Climate Change Conferences (COPs) since COP 13, 2007, Bali, Indonesia. C participated in many COPs as a negotiator on behalf of the government of Bangladesh. The selected COPs are Bali (2007), Copenhagen (2009), Cancun (2010), Durban (2011), Doha (2012), Warsaw (2013), and Paris (2015) (see IUB, n.d., pp. 2–8).

University connections: C is a Professor Emeritus, Centre for Climate Change and Environmental Research, BRAC University, Dhaka, Bangladesh. C was also a professor, Department of Civil Engineering, Bangladesh University of Engineering and Technology Bangladesh, between 1972 and 1998 (IUB, n.d., pp. 1–8).

Local level

NGO connections: C works as a consultant to the local NGOs BCAS and Bangladesh Environmental Lawyers Associations (BELA) (IUB, n.d., pp. 1–8).

D (Dr. Ahsan Uddin Ahmed)

The role of knowledge broker D

International level

Epistemic community/IPCC connection: D was one of the *contributing authors* of Chapter 2 entitled *Method and Tools* in the Working Group II, the 2001 IPCC Third Assessment Report, (IPCC, 2001, p. 105). He was also a reviewer of the Working Group II, the 2007 IPCC Fourth Assessment Report, (IPCC, 2007, p. 901). He also contributed to the Working Group II, the 2013 IPCC Fifth Assessment Report (IPCC, 2013, p. 1737).

Consultant to the international institutions: D is a member of the Technical Advisory Panel of the Green Climate Fund (GCF) of the UNFCCC (Green Climate Fund, 2016, p. 2). His main task is to examine the project proposals submitted for winning the Green Climate Fund and find its connectedness with climate change issues. C also contributed as an author in the 2000 World Bank published document *Bangladesh Climate Change and Sustainable Development* (see World Bank Report 21104-BD) (World Bank, 2000, p. v).

National level

Policy advocacy: D contributed to drafting the two action plans on climate change: the 2005 NAPA and the 2009 NAPA as Executive Director of BUP (Ministry of Environment and Forest, 2009, p. vii; Ministry of Environment and Forest, 2005, p. v). He holds the position of Executive Director of BUP – a state-owned research organization in Bangladesh – at the time of writing this book.

Local level

NGO connections: D is also a co-founder of the BCAS. He worked as the steering committee member of the local NGO – CSRL (Campaign for Sustainable Rural Livelihoods) (CSRLBD, n.d.). D played the key roles of organizing a mock Climate Tribunal in Bangladesh in 2010 and Climate Hearing in 2018 – mentioned earlier. At present, he is working as the Executive Director of the Centre for Global Change (CGC) − a non-profit policy research organization in Bangladesh.

E (Dr. Qazi Kholiquzzaman)

The role of knowledge broker E

International level

Epistemic community/IPCC connection: E contributed to drafting three chapters of the 2001 Third IPCC Assessment Report of the Working Group II entitled *Climate Change 2001: Impacts, Adaptation, and Vulnerability*. The chapters are *Summary of the Policy Makers*, *Technical Summary* (lead author), Chapter 2 *Method and*

Tools (IPCC, 2001, p. 1; IPCC, 2001, p. 19, p. 972, and p. 105). He was also a lead author of Chapter 20, *Perspective on Climate Change and Sustainability*, of the 2007 Fourth IPCC Assessment Report of the Working Group II entitled *Climate Change 2007: Impacts, Adaptation, and Vulnerability* (IPCC, 2007, p. 811). Being a contributor to the IPCC Fourth Assessment Report, he is also a co-recipient of the 'Nobel Peace Prize' of 2007 – jointly awarded to the IPCC and Al-Gore.

Consultant to the international institutions: E was a member of the UNFCCC Clean Development Mechanism (CDM)'s Executive Board from 2009 to 2014 (PKSF, n.d., para. 3). According to UNFCCC's website, 'The CDM Executive Board (CDM EB) supervises the Kyoto Protocol's clean development mechanism under the authority and guidance of the Conference of the Parties (COPs)' (CDM UNFCCC, n.d., para. 1)

National level

Policy advocate: Currently, E is working as Chairman of PKSF.

E also works as the coordinator of the Bangladesh Climate Change Negotiating Team (CDM UNFCCC, n.d., para. 2). The Team selects Bangladeshi delegates of attendants for the upcoming climate change conferences of the UNFCCC – COPs.

E played a key role in drafting the 2009 Bangladesh Climate Change Strategy and Action Plan (BCCSAP) (PKSF, n.d., para. 7). E also worked as a policy consultant to the Government of Bangladesh for drafting National Water Policy and National Water Management Plan during 1998–2001 (PKSF, n.d., para. 7).

Local level

NGO connections: E is the founder of BUP – introduced above (PKSF, n.d., para. 1). He contributed to the 2001 and 2007 IPCC Assessment Reports while he was the Executive Director of the BUP (IPCC, 2001, p. 972; IPCC, 2007, p. 885). Aside from BUP, E is also the President of CSRL. E helped in organizing a mock Climate Tribunal in 2010 and Climate Hearing in 2018 (Hasnat, 2018, para. 9 and 12). On the other hand, as the current chair of the PKSF, E is in charge of approving the proposal of climate change resilience projects submitted by the local NGOs in Bangladesh.

The discussions above on the knowledge brokers confirm that the brokers work at three levels – local, national, and international. That is why they are described as *multi-scalar knowledge brokers*.

Climate finance in Bangladesh

Climate change-related finance in Bangladesh is spent implementing *resilience as adaptation* projects in Bangladesh. This book identifies that the following four major funds are in operation in Bangladesh:

Table 5.3 The BCCTF-funded projects

No	*Climate change effects*	*Projects*	*Duration*
1	Flood	Flood control embankment building	2012–2016
2	Flood	River bank protection	2013–2015
3	Drought	Infrastructure development, river bank protection, river, and canal re-excavation	
4	Cyclone and flood	Building polder	2013–2014
5	Cyclone and salinity intrusion	River bank protection and rebuilding the embankment	2012–2016
6	Cyclone and salinity intrusion	Repairing of polders	2011–2015

Source: Bangladesh Climate Change Trust, 2016, pp. 1–33.

- The 2008 Bangladesh Climate Change Resilience Fund (BCCRF)
- The 2010 Bangladesh Climate Change Trust Fund (BCCTF)
- The 2010 Pilot Programme for Climate Resilience (PPCR)
- The 2015 Green Climate Fund

The following discussion focuses on the source of the funds, time of the creation of the funds, amounts of the funds, and their distribution mechanisms. This discussion is important because it will clarify how the funds work and how the actors accrue their political and economic benefits through the funds (the latter one is in the next chapter). A summary of the funds has also been shown in Table 5.3.

The 2010 Bangladesh Climate Change Trust Fund (BCCTF)

Source of Fund: According to Article 15 (1) of the 2010 Bangladesh Climate Change Trust Act, the sources of the BCCTF are

- Money granted by the Government from the National Budget
- Money received from the donor countries, organizations and institutions approved by the Government
- Money received from the local and foreign sources approved by the Government
- Income accrued from investment of the fund
- Money received from any other sources approved by the government

(Bangladesh Gazette, 2016, p. 2501)

Although the 2010 Act stated that the source of the fund is both – the government of Bangladesh/local sources and foreign donors – the author did not find the name of the foreign donors and the amount of money they donated. On the other hand,

although the issue of coastal afforestation tops the priority list of the NAPA Index, it has not been included in the priority list of the BCCTF.

Establishment: The BCCTF was established in the fiscal year of 2009–2010 for implementing adaptation and resilience projects of the BCCASP (BCCT, para. 3). The projects are related to the following six thematic areas (BCCT, para. 3):

1. Food security, social protection, and health
2. Comprehensive Disaster Management
3. Infrastructure
4. Research and knowledge management
5. Mitigation and low-carbon development
6. Capacity building and institutional strengthening

Amount of the fund: The government of Bangladesh donated around US$600 million in the Climate Change Trust Fund between 2009 and 2016 (BCCT, 2016, p. 5; BCCT, para. 1). The author of this book did not find any literature that stated how the government of Bangladesh collected the money – did it come from the taxpayers or any other sources? According to Participant 9[6], the government of Bangladesh collected the money from both the taxpayers and foreign donors who donated the money for implementing the Annual Development Plan in Bangladesh. Among the US$600 million of the fund, US$400 million has been allocated for implementing the projects of the six thematic areas of BCCSAP (BCCT, 2016, p. 5; BCCT, para. 1). The rest of the $200 million was unspent and saved for using the money for any emergency purposes in the future (BCCT, 2016, p. 5; BCCT, para. 1). Until July 2016, 431 climate change projects have been approved in which 161 projects have been implemented (BCCT, 2016, p. 5).

Fund flow: The BCCTF follows two different ways to disburse the fund: One is through government organizations and the other is through NGOs and CSOs. The Ministry of Environment and Forest in Bangladesh established a trustee board to manage how the funds would be disbursed through government organizations. The board includes 17 members, a technical committee, and a sub-technical committee. The trustee board, based on the pieces of advice of the technical committee, accepts the project proposals submitted by government organizations. The board also assesses the proposals and approves/rejects some proposals. The Ministry of Environment and Forest requests the Ministry of Finance to release the fund to the approved proposals. The Ministry of Finance releases the fund to the approved projects (see the information of the fund flow in Bangladesh Gazette, 2016, pp. 2496–2497; Bangladesh Climate Change Trust, 2016, p. 17; Transparency International Bangladesh, 2013, pp. 9–13).

In the case of NGOs and CSOs, the PKSF accepts project proposals from NGOs and CSOs (Transparency International Bangladesh, 2013, pp. 10–13). The PKSF reviews and approves/rejects the proposals and requests the Ministry of Finance to release the funds against the approved projects (Transparency International Bangladesh, 2013, pp. 10–13). Thus, the NGOs and CSOs received the fund.

Project Approval by BCCTF Trustee Board (Ministry of Environment and Forest)
↓
Ministry of Finance
↓
Implementing government organization

Flow Chart 5.1 Government organization fund flow summary.

PKSF
↓
Ministry of Finance
↓
Implementing organization (NGO+CSO)

Flow Chart 5.2 NGO and CSO fund flow summary.

In reality, the projects are not implemented solely by government organizations or NGOs/CSOs. Instead, the projects are implemented in a partnership or collaboration between the government organization and the NGOs and CSOs. For example, the BCCTF-funded project *Modelling Impacts of Climate Change Induced Sea Level Rise and Salinity on the Biological Diversity of the Sunderbans Ecosystems (2012–2014)* was implemented in partnership between the state-owned PKSF and local NGO BCAS (BCAS Annual Report, 2012–2013, p. 31).

Funded projects: The BCCTF-funded projects are listed in Table 5.3.

Bangladesh Climate Change Resilience Fund (BCCRF)

About the fund: The BCCRF is a multi-donor trust fund, established in 2008, that channels grants from some Annex-II countries to Bangladesh for implementing climate change resilience projects and programmes, particularly BCCSAP. The funds are given to Bangladesh under the fiduciary management of the World Bank (World Bank, 2012, paras 1–3).

Source of the fund: The following countries are the donors of the fund: Australia, Denmark, the European Union, Sweden, Switzerland, the United Kingdom, and the United States (World Bank, 2012, para. 3).

Establishment: BCCRF was established to support the implementation of the projects in six thematic areas of NAPA and BCCASP. The government of Bangladesh, the donors, and the World Bank established the BCCRF in the fiscal year of 2009–2010 for implementing adaptation and resilience projects of the BCCASP (World Bank, 2012, para. 3).

Amount of the fund: The initial amount of the fund was around US$170 million. The donors have contributed the following amounts of funds so far:

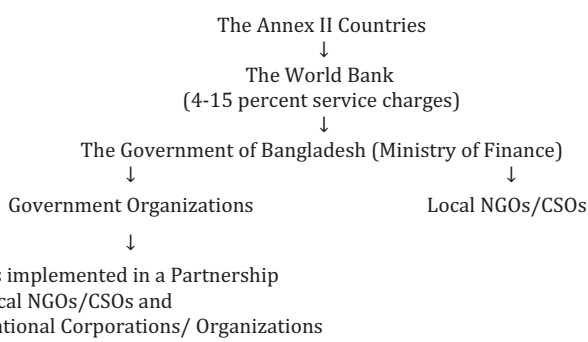
- Australia US$7 million (it donates money through AusAid)
- Denmark US$1.2 million
- Sweden US$13 million
- Switzerland US$3.4 million
- The European Union US$37 million
- The United Kingdom US$95 million
- The United States of America US$13 million (it donates money through USAID),

(World Bank, 2012, para. 3).

Fund flow: The BCCRF is not given directly to the government of Bangladesh, but via the World Bank. In return, the Bank charges almost 4% to 15% service charges (Independent Commission for Aid Impact, 2011, p. 13). The World Bank claimed that 'there are no special conditions attached to the disbursement of the fund by the donors or by the World Bank' (World Bank, 2012, para. 3). About 85% of the rest of the funds of BCCRF are supposed to be given to the government organizations of Bangladesh for implementing resilience projects. The NGOs/CSOs are supposed to receive 10% of the total funds for implementing community-based adaptation/resilience projects (World Bank, 2012, para. 3). However, after analyzing the role of the implementing organizations of the resilience projects, the author of this book found that none of the projects have been implemented solely by the government organization or by NGOs. Instead, as mentioned earlier, the government of Bangladesh implements the projects in a partnership with local NGOs/CSOs and the NGOs of the donating countries by following co-management approaches. Chapter 7 includes details about the co-managed resilience projects.

Drawing from the fund flow mentioned above, the local NGOs/CSOs receive two types of funds: one fund they receive to implement the projects solely by themselves, and the other fund they receive for working in a partnership with government bodies.

Funded projects: The BCCRF-funded projects are listed in Table 5.4.



Flow Chart 5.3 BCCRF fund flow summary.

Table 5.4 The BCCRF-funded projects

Project title	*Implementing agency*	*Grant Amount (US$)*
Constructing BCCRF Secretariat	Ministry of Environment and Forest	0.2 million
Urban Flooding of Greater Dhaka Area in a Changing Climate: Vulnerability, Adaptation, and Potential Costs (analytical activities)	Study conducted by the World Bank	0.5 million
Impacts of Climate Change on Vector-Borne Diseases and Implications for the Health Sector (analytical activities)	Study conducted by The World Bank	0.2 million
Detailed Design and Environmental Studies for Construction of Urir Char-Noakhali Cross-Dam (under construction)	Ministry of Water Resources	0.7 million
Bangladesh Modern Food Storage Facilities Project (BMFSFP) (under preparation)	Ministry of Food and Disaster Management	25 million
Solar Irrigation Programme – A Green Energy Initiative (under preparation)	Infrastructure Development Company Limited, Ministry of Power	25 million
Agricultural Adaptation in Climate Risk Prone Areas of Bangladesh (drought, flood, and saline prone areas)	Department of Agriculture Extension (DAE)< Food and Agricultural Organization of the United Nations (FAO)	22.8 million
Community Climate Change Project (under preparation)	Palli Karma-Sahayak Foundation (PKSF)	12.5 million
Climate Resilient Participatory Afforestation and Reforestation Project (under preparation)	Bangladesh Forest Department, Arannayk Foundation (support to alternative livelihood)	35 million
Multipurpose Cyclone Shelter Construction Project (under implementation)	Local Government Engineering Division (LGED)	25 million

Source: The World Bank, n.d.

The 2010 Pilot Programme for Climate Resilience (PPCR) of the Climate Investment Fund (CIF)

About the fund: This fund is given to developing countries to help them to 'integrate climate resilience into development planning' (Climate Investment Fund, para. 5). The fund is given not to implement full-scale projects but to conduct a preliminary study about a project before implementing the project.

Source of the fund: The funds are channelled from the UNFCCC's enlisted Annex-I countries to Bangladesh via the World Bank, the Asian Development

Table 5.5 The PPCR-funded projects

Project title	*Implementing agency*	*Amount (US$)*
Investment Project 1: Promoting Climate Resilient Agriculture and Food Security	MDB[a]: IFC GoB[b]: Department of Agricultural Extension (DAE) of the Ministry of Agriculture and Bangladesh Meteorological Department (BMD) was identified at the initial stage	Grant and loan: $25 million PPCR grant and $300 million IDA[c] credit
Investment Project 2: Coastal Embank Improvement and Afforestation	MDB: World Bank GoB: BWDB[d], the Forest Department (FD) and the Bangladesh Forestry Research Institute (BFRI)	Grant and loan: $25 million PPCR grant and $300 million IDA credit
Investment Project 3: Coastal Climate Resilient Water Supply, Sanitation, and Infrastructure Improvement Project 3a: Climate Resilient Infrastructure Improvement in Coastal Zone Project Project 3b: Coastal Towns Infrastructure Improvement Project	MDB: ADB[e] GoB: LGED[f], Department of Public Health and Engineering (DPHE), Ministry of Food and Disaster Management, Water Supply, and Sewerage Authority	Grant and loan: Total $71 million Total $90 million: $30 million PPCR fund ($10 million grant plus $20 million concessional loan), $20 million from ADB, $17 million (co-finance) from KfW, and $23 million from GoB Total $120.4 million: $40.4 PPCR ($30 million concessional loan plus $10.4 million grant), $60 million from ADB, $20 million from GoB
Technical Assistant 1: Climate Change Capacity Building and Knowledge Management	MDB: ADB GoB: MOEF[g] and ERD[h]	Grant only: Total $0.5 million
Technical Assistant 2: Feasibility Study for a Pilot Programme of Climate Resilient Housing in the Coastal Region	MDB: IFC GoB: MOFDM[i]/LGED	Grant only: Total $0.4 million

Source: Rai and Smith, 2013, p. 12.
[a] MDB refers to Multilateral Development Bank.
[b] GoB refers to Government of Bangladesh.
[c] IDA refers to International Development Association of the World Bank Group.
[d] BWDB refers to Bangladesh Water Development Board.
[e] ADB refers to Asian Development Bank.
[f] LGED refers to Local Government Engineering Department.
[g] MOEF refers to Ministry of Environment and Forest.
[h] ERD refers to Economic Relations Division of the Ministry of Finance.
[i] MOFDM refers to Ministry of Disaster Management and Relief.

Bank (ADB), and International Financial Corporation (IFC) (Rai and Smith, 2013, pp. 6–12).

Fund flow: The fund is channelled to the government of Bangladesh and local NGOs through the World Bank, the Asian Development Bank (ADB), and the International Finance Corporation (IFC). The funds are given in two stages. At the first stage, some funds are given to prepare proposals for the Strategic Programme for Climate Resilience (SPCR). The SPCR includes two types of investments: technical assistant and investment programme. Funds for technical assistance is given to the recipient countries for including climate resilience into national and sectoral development plans, policy reforms, capacity building, and institutional strengthening. Funds for investment programmes are given to implement the development plans. Table 5.5 shows the actual funds given to Bangladesh.

Funded projects: The PPCR-funded Projects are listed in Table 5.5.

The 2010 Green Climate Fund (GCF)

About the fund: The UNFCCC established GCF at the 2010 COP-17 in Cancun (GEF, para. 1). The GCF approved two projects for Bangladesh. One project was approved in November 2015, valued at about US$10 million, for building climate-resilient infrastructure in the country (Green Climate Fund, para. 1). The infrastructure refers to constructing 45 new cyclone shelters, renovating 20 existing cyclone shelters, and improving 80 kilometres roads and highways (Green Climate Fund, para. 3). PKSF received the second project, worth US$60 million, in October 2017 (The Independent, 13 October 2017, para. 1). Details about the projects are not publicly available.

Conclusion

This chapter has documented three core components of the knowledge network theory: (i) the actors (who are involved in replacing the idea of climate refugees with that of climate-induced displacement in the particular context of Bangladesh); (ii) knowledge brokers (who are an essential part of the network), and (iii) climate finance in Bangladesh by which the actors and knowledge brokers gain their economic and political interests.

However, this chapter has not discussed (i) when and how the actors replaced the term climate refugees with that of climate-induced displacement, (ii) how the network works, and (iii) how the knowledge brokers secure their economic interests from climate finance. The next two chapters will elaborate on these points. Chapter 6 discusses the story of the actors and knowledge brokers who introduced the term climate refugees and who replaced it with that of climate-induced displacement. Chapter 7 analyzes how the network works and how all the actors including the knowledge brokers achieve their political and economic interests from the climate change resilience projects.

Notes

1 GBP refers to Great British Pounds.
2 Participant 5, university professor and climate change activist, face-to-face interview, January 2017, Dhaka, Bangladesh.
3 bdnews24.com is a Bangladeshi newspaper.
4 Reference: Interviews with Participant 3, Participant 4, Participant 5, and Participant 7, face-to-face interview, November 2016–January 2017, Dhaka, Bangladesh.
5 IUB refers to Independent University Bangladesh.
6 IPCC member, face-to-face interview, January 2017, Dhaka, Bangladesh.

6 The shift from climate refugees to climate change-induced displacement

Introduction

> '[S]cience' cannot be separated from 'politics' but that political factors underlie the formulation, dissemination, and institutionalization of scientific knowledge and networks.
>
> (Forsyth, 2004, p. x)

Chapter 4 mentioned that the knowledge of climate refugees had been framed on the basis of the idea that most of the coastal areas in Bangladesh are drowning due to slow-onset events of climate change – sea level rise – and consequently that the people of the submerged lands have been uprooted. The knowledge of climate refugees tacitly claims that there is a direct connection between global warming-induced sea level rise and population movement. However, the knowledge of climate change-induced displaced people or migrants contains no such tacit claim; instead, it implies that climate change does not force people to migrate, and it is people's free choice to move from the climate-affected areas (Methmann & Oels, 2015, p. 60). In addition, the World Bank, ADB, IMF, and IFC re-conceptualized climate refugees as climate change-induced migrants and offered prescriptions to manage/govern the migrants through climate change resilience and adaptation projects (Methmann & Oels, 2015, pp. 59–62).

This chapter showcases evidences of how a number of political–economic actors used the climate change data on sea level rise to produce the knowledge of climate refugees in the 1990s, in the particular context of Bangladesh. The political–economic actors are (i) the five multi-scalar knowledge brokers in this book: Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ahsan Uddin Ahmed, Dr. Ainun Nishat, and Dr. Qazi Kholiquzzaman Ahmed; (ii) local NGOs in Bangladesh such as BCAS, EquityBD, and CSRL; and (iii) policymakers and official documents of the Bangladesh government such as the finance minister of Bangladesh and the climate change action plan NAPA and CDMP Phase II.

Second, the chapter focuses on how, since 2010, the same political–economic actors have replaced the knowledge of climate refugees with that of climate

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change-induced internal migration or displaced people. Finally, this chapter analyzes why the actors replaced the knowledge of the former with the latter.

In these three sections, this chapter presents evidences from various pieces of literature including the IPCC Assessment Reports, the documents and reports of the World Bank/UNDP, the studies conducted by the government of Bangladesh, and elite interviews. This chapter necessarily repeats some writings from Chapter 4. This chapter concludes by arguing that there exists a significant interconnection between all the actors as regards replacing the idea of climate refugees with that of climate change-induced displacement. The knowledge brokers play a crucial role in facilitating the interconnection between all the actors: the IPCC, the UNFCCC, the donors, the World Bank, the government of Bangladesh, and the local NGOs of Bangladesh.

How the actors used the idea of sea level rise for producing the knowledge of climate refugees (1990–2010)

Venues at international level

Bangladesh's vulnerability to sea level rise and its linkage to population movement have been described in the IPCC Assessment Reports and official documents of the World Bank. For example, according to the Working Group II of the 1990 First Assessment Report of the IPCC, 'In coastal lowlands such as in Bangladesh, China and Egypt, as well as in small island nations, inundation due to sea-level rise and storm surges could lead to significant movements of people' (IPCC, 1990, p. 3). The 2000 World Bank Report 21104-BD, entitled *Bangladesh Climate Change and Sustainable Development*, describes sea level rise reaching 10 cm by 2020 and inundating 2% of the country's land area (World Bank, 2000, p. 40). The document also explains that the situation for Bangladesh will continue to worsen, with sea level rise of as much as 25 cm by 2050, with land inundation up to 4% (including 40% of the Sundarbans, the largest mangrove forests of Bangladesh), and an increase in storm surges (World Bank, 2000, p. 40). The same document also estimates that the sea level rise will be 100 cm in 2100, which will inundate 17.5% of the country's land area, including the entire Sundarbans, with the associated increase in storm surges causing the displacement of 20 million people (World Bank, 2010, p. 40).

The scenario of sea level rise is central to producing the knowledge of climate refugees (see below). The following evidence will show how the political–economic actors, listed above, painted the idea of climate refugees. An example is Kunnie's (2015) description:

> The South Asian country of Bangladesh, which is surrounded by water and fed by a sprawling delta, experiences major flooding each year. About 30 million Bangladeshis out of 130 million live close to coastal areas that are under significant threat by rising sea levels… By 2050, 17 percent of the land area of Bangladesh is expected to be flooded by rising sea levels and 18 million

> people could be homeless, part of the hundreds of millions who will become the world's future "climate refugees," prompting Atiq Rahman, the country's leading climate scientist, to declare that these "refugees" should be entitled to migrate to the U.S. where much of the greenhouse gases emanate. (Kunnie, 2015, pp. 251–252)

Dr. Atiq Rahman remained very vocal in international climate change conferences for classifying the displaced persons as climate refugees and for giving shelters to the refugees in the country that is the most responsible for the excessive emission of carbon – the United States. Dr. Rahman is not only a world-renowned climate scientist but also a member of the IPCC, an executive director, and founder of BCAS, as well as a policy consultant in national and international policy arenas for adopting climate change resilience (resilience as adaptation) actions/projects (see Chapter 5). Dr. Rahman's speech about climate refugees has been quoted in many academic books, journal articles, and newspaper articles. Some selected quotes are as follows:

- *The Guardian* published an article in 2009 which quoted: 'The refugee crisis has already begun,' says Atiq Rahman. 'People are already on the move.' (Ahmed, 2009, para. 13)
- *Nature* published an article in 2009 that stated: 'Already, climate change is having enough of an impact here that it's partly responsible for pushing some people off their land, says Rahman of BCAS: "I believe there are climate change refugees already"'. (Inman, 2009, para. 26)
- *The Daily Star*, a local newspaper in Bangladesh, published an article written by Dr. Rahman in which he stated: 'Bangladesh delegation could successfully draw the attention of negotiators in Cancun and global communities regarding the vulnerability of the country to climate change and urgent adaptation needs for Bangladesh. In Bangladesh, the question of climate refugee is a central concern' – Atiq Rahman. (Rahman, 2011, para. 4)
- Gwynne Dyer's (2010) book *Climate Wars: The Fight for Survival as the World Overheats* quoted Dr. Rahman's speech: '… From now on, we need to have a system where, for every 10,000 tonnes of carbons you emit, you have to take a Bangladeshi family to live with you. It is your responsibility'. (Dyer, 2009, p. 58)
- Roberts and Parks's (2006) book *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy* quoted the following extract: 'If climate change makes our country uninhabitable', Rahman warned, 'we will march our wet feet into your living rooms'. (Roberts & Parks, 2006, p. 2)

The position of *the government of Bangladesh* was similar to what Dr. Rahman had stated in different venues. At the 2009 United Nations Bonn Climate Change talk, the government called for including provisions for climate refugees in the immigration policies of the industrialized countries (IRIN, 2009, para. 2). The talk opened up a forum regarding the protection of the climate change-induced

uprooted people, which was supposed to debate the issue over the following months until the next conference at Copenhagen, Denmark (IRIN, 2009, para. 3).

Dr. Saleemul Huq pointed out that the provisions of the 2009 Bonn climate change talk provided a framework to speak about climate refugees in the formal talks (IRIN, 2009, para. 4). Dr. Huq also stated that the issue of climate refugees and their protection needed a separate regime, or it should be part of the global climate deal (IRIN, 2009, para. 4).

Following the 2009 Bonn Climate Talk, the *finance minister* of Bangladesh asked for a revision of the current UNHCR's refugee regime for including provisions for climate refugees in the 2009 Copenhagen Conference on Climate Change (McAdam, 2011, p. 6). In a similar tone, a Bangladeshi NGO network, *EquityBD*, called for the adoption of a new protocol in the 2009 Copenhagen Conference for ensuring the social, cultural, and economic rehabilitation of the climate refugees through recognizing them as 'Universal Natural Persons' (McAdam, 2011, p. 6).

CSRL (Campaign for Sustainable Rural Livelihoods) – a Bangladeshi NGO – also advocated for the preferential status of the climate refugees at the national and international levels in the 2000s. The then steering committee member of the CSRL, Dr. Ahsan Uddin Ahmed, participated in the 2009 UNFCCC Climate Change Conferences and argued that climate refugees must be given shelter in the high carbon emitter countries because the countries were responsible for the climate change which had subsequently uprooted these people, who now had no other options but to take refuge in other parts of the world (Ahmed & Neelormi, 2010, paras 14–15).

Venues at national level

With the technical assistance of the UNFCCC's Least Developed Countries Expert Group (LEG), the World Bank, and the UNDP, the Ministry of Environment and Forest of Bangladesh adopted its first NAPA in 2005 and revised it in 2009. The 2009 Bangladesh NAPA states:

> It is predicted that for 45 cm rise of sea level may inundate 10–15% of the land by the year 2050 resulting over 35 million climate refugees from the coastal districts. (Ministry of Environment and Forest, 2009, p. xvii)

The three multi-scalar knowledge brokers – Dr. Atiq Rahman, Dr. Ahsan Uddin Ahmed, and Dr. Ainun Nishat – were involved in the drafting committee of the two government documents of Bangladesh: the 2005 and the 2009 NAPA (Ministry of Environment and Forest, 2009, pp. v–viii).

To implement the NAPA, the government of Bangladesh developed another action plan *Bangladesh Climate Change Strategy and Action Plan (BCCSAP)* in 2010. The knowledge broker Dr. Ainun Nishat was one of the contributors to formulating the 2008 BCCSAP. The 2008 BCCSAP has been supported by BCCRF. To implement the BCCSAP, the Ministry of Disaster Management and Relief and the UNDP adopted the Comprehensive Disaster Management Programme

(CDMP) Phase II in 2010 (Comprehensive Disaster Management Programme [CDMP] Phase II, 2009, p. 1). The contract of the CDMP Phase II was signed between the Ministry of Food and Disaster Management and the country director of the UNDP on 25 November 2009 (Comprehensive Disaster Management Programme [CDMP] Phase II, 2009, p. 1). The contract of the CDMP Phase II summarized the most common hazards in Bangladesh and addressed the term climate refugees as follows:

> **Climate refugees:** Coastal and river bank erosion and saline water intrusion in coastal areas are likely to displace hundreds of thousands of people who will be forced to migrate. If sea level rise is higher than currently expected and coastal polders are not strengthened and or new ones built, six to eight million people could be displaced by 2050 and would have to be resettled. (Comprehensive Disaster Management Programme [CDMP] Phase II, 2009, p. 7)

The contract of CDMP also called for (i) developing a national strategic plan to address the challenges of climate change migration, refugees, and displaced persons, and (ii) developing a contingency plan that addresses the long-term relocation of populations living in very high-risk areas (Comprehensive Disaster Management Programme [CDMP] Phase I, 2009, p. 7).

In 2010, CSRL's mock tribunal[1] gathered over 1200 lawyers, including British lawyers, politicians, and economists, to hear the testimonies of actual climate victims who had been uprooted due to the effects of climate change in Bangladesh (Vidal, 2010, para. 2; bdnews24.com, 2010, para. 8). Dr. Ahsan Uddin Ahmed played a key role in organizing the Tribunal (mentioned in Chapter 5). Another knowledge broker Dr. Qazi Kholiquzzaman Ahmed was one of the members of the jury panel of the tribunal (bdnews24.com, 2010, para. 16). The focus of the tribunal was documenting the voices of the climate victims who have been uprooted due to climate change-induced disasters (bdnews24.com, 2010, para. 8). The climate victims were termed 'climate refugees'. The tribunal gave a verdict that the high-carbon-emitting countries should be bound by international laws to protect the lives and livelihoods of the climate victims whose lives and livelihoods were at risk due to the impact of climate change (Vidal, 2010, para. 2).

From the discussion above, the main actors involved in promoting the knowledge of sea level rise and the subsequent emergence of climate refugees in Bangladesh are:

1. Individuals: Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ahsan Uddin Ahmed, Dr. Ainun Nishat, Dr. Kholiquzzaman Ahmed, and the then finance minister of Bangladesh
2. Non-governmental organizations: BCAS, CSRL, and EquityBD,
3. Government: The Ministry of Environment and Forest (for mentioning climate refugees in the 2009 NAPA) and the Ministry of Disaster Management and Relief (for adopting CDMP).

Actors involved in replacing the term climate refugees with the climate change-induced displacements (time after 2010)

In the previous section, I have mentioned how some political–economic actors used the scenario of sea level rise and its relation to displaced people to produce the knowledge of climate refugees. This section discusses how the same political–economic actors replaced the knowledge of climate refugees with that of climate change-induced displacement by stating that people do not move solely because of climate change and its effects in Bangladesh.

As mentioned in the previous section, the contract of the CDMP Phase II (2009), signed between the Ministry of Food and Disaster Management and the UNDP, described the displaced people[2] as climate refugees (Comprehensive Disaster Management Programme [CDMP] Phase II, 2009, p. 7). However, the CDMP Phase II team published a study report in June 2014, five years after signing the CDMP contract, entitled *Trend and Impact Analysis of Internal Displacement Due to the Impact of Disaster and Climate Change*, which contains the opposite view regarding climate refugees. This report was prepared by the Ministry of Disaster Management and Relief of the government of Bangladesh in partnership with the local NGO CEGIS (Center for Environmental and Geographic Information Services), UNDP, DFID, the EU, the Embassies of Sweden and Norway, and AusAid (UNDP Bangladesh, para. 3). This report stated:

> A number of terms and concepts such as "environmental or climate change migrants", "environmentally induced or forced migration", "ecological or environmental refugee or climate change refugee", and "environmental displacement" are used in literature. However, there is no generally agreed definition on environmental displacement to pinpoint the issue. (Comprehensive Disaster Management Programme [CDMP] Phase II, 2014, pp. 1-2).

This report also stated:

> Critics argue that there is "no evidence that environmental change leads directly to mass refugee flows, especially flows to developed countries." They also argue that such estimates have a large margin of error and mostly depend on faulty assumptions about population growth, economic development, temperature increase, or the degree and timing of climate change. (Comprehensive Disaster Management Programme [CDMP] Phase II, 2014, p. 10).

In addition to this government document, non-state actors such as Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ahsan Uddin Ahmed, Dr. Ainun Nishat, and Dr. Kholiquzzaman and their affiliated non-governmental organizations BCAS, EquityBD, and CSRL, all of whom played prominent roles in national and international venues for promoting the idea of climate refugees until 2009, have not used the term climate refugees in international climate change conferences after

2010. Since 2010, they have been arguing that climate change has no direct relation to population movement. The examples are as follows:

Dr. Saleemul Huq, one of the founders and current chair of BCAS, stated in an article, published on 20 January 2017:

> the term 'climate change refugee or migrant' was disputed, because it is very difficult to disentangle the reasons why someone might migrate. But … tens of millions of people living in coastal areas of Bangladesh will definitely have to move because they will be unable to pursue the livelihoods that their forefathers have done. (McVeigh, 2017, para. 28)

However, as discussed earlier, Dr. Huq's view was different before 2010 when he demanded that the issue of climate refugees and their protection needed a separate regime or should be part of the global climate deal (IRIN, 2009, para. 4).

Dr. Atiq Rahman has likewise not been using the term climate refugees since 2010. Nor has he identified climate change as the sole cause for population movement. He also does not demand the relocation of climate refugees in high-carbon-emitting countries. An example of this is as follows:

> rising sea level will inundate some 17 percent of the land and displace about 18 million people, Dr. Rahman said. Bangladeshis have already started to move away from the lowest-lying villages in the river deltas of the Bay of Bengal … People move for many reasons, and urbanization is increasing across South Asia, but rising tides are a big factor. (Harris, 2014, para. 13–14)

In addition, the other local NGOs who supported the recognition of climate refugees before 2010 also changed their views of climate refugees. Jane McAdame (2011) – a distinguished professor of Law at the University of New South Wales (Australia) and an expert of Refugee Law – interviewed two employees of EquityBD. The interviewees stated that EquityBD stopped using the term climate refugees but climate change-induced displacement since 2010 (McAdam, 2011, p. 6 and 11). Evidence of it is also mentioned by McAdam (2011) in her writing. She stated that EquityBD published a document entitled *Climate Refugees: Requires Dignified Recognition under a New Protocol* in April 2009, and then the NGO changed the title in December 2009 to *Climate Change Induced Forced Migrants: In Need of Dignified Recognition under a New Protocol* by stating that the NGO no longer use the term climate refugees (McAdam, 2011, p. 6).

CSRL is a little different from EquityBD. CSRL's current website shows that the NGO advocates for the preferential status of climate refugees (see the website at http://csrlbd.org/) (CSRLBD, n.d., para. 1). However, for Participant 9[3], CSRL does not use the term climate refugees in practice, and it will not use the term until or unless UNHCR/UNFCCC or any other jurisdiction recognizes the climate victims as such.

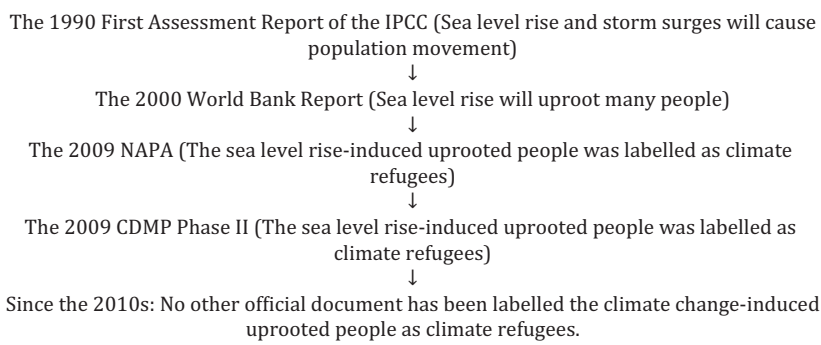
From the discussion above, the main political–economic actors in Bangladesh involved in replacing their previously produced knowledge of climate refugees with that of climate change-induced displacement/migrants are:

1. Individuals: Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ahsan Uddin Ahmed, Dr. Ainun Nishat, and Dr. Kholiquzzaman Ahmed.
2. Non-governmental organizations: BCAS (in particular its two members Dr. Atiq Rahman and Dr. Saleemul Huq), CSRL, and EquityBD.
3. Government: The Ministry of Disaster Management and Relief (for adopting the 2014 CDMP study report) (the previous name of the ministry was the Ministry of Food and Disaster Management).

Flow chart 6.1 shows the official documents that help produce the knowledge of sea level rise-induced climate refugees.

The drastic shift of the political–economic actors raises a number of questions:

(i) Is it credible that climate change and its effects have no connection to population movement in Bangladesh? Why did the actors originally press for the recognition of the climate refugees if there is no connection between the impact of climate change and population movement? Why did the actors demand compensation from the high-carbon-emitting countries for producing the preconditions for creating the climate refugees?
(ii) It is mentioned above that the government of Bangladesh, its NGOs, and the individuals will not recognize the term climate refugees unless the UNHCR or the UNFCCC or any other international organizations recognize it. Can a country not recognize its very own climate refugees without the recognition of international forums? In addition, if any international organization recognizes the term climate refugees today, will the actors in Bangladesh shift their position once again and argue that climate change has a real connection to producing refugees?



Flow Chart 6.1 Official document: Rise and fall of the knowledge climate refugees.

While I was conducting field research in Bangladesh, I was looking for official documents, produced by the government of Bangladesh and NGOs, to find the answers to the above-mentioned questions, but could not find a single document which could help. However, elite participants gave me some information from which the author could draw a picture concerning why the actors changed their position and how these actors have developed a transnational network for maintaining compatible decisions at the local, national, and international levels regarding actions related to climate change, climate refugees, and climate change-induced displacement. The following discussion explains this.

The story behind the shift: Views of the participants

This section includes the views of six elite participants of this book who described why the political–economic actors replaced the knowledge climate refugees with that of climate change-induced displaced people/migrants. The participants are Participant 1, Participant 2, Participant 3, Participant 4, Participant 5, and Participant 6.

I have categorized the participants' views into two main points (see below).

Point 1: Top-down knowledge – national versus international interest

According to Participant 1[4] and Participant 2[5], if the issue of climate change-induced population movement was so crucial for Bangladesh, the government of Bangladesh could have adopted a specific policy or action regarding the population movement. However, the participants added, the issue of climate change-induced population movement was never high in the policy agenda in Bangladesh. The government of Bangladesh, the multi-scalar knowledge brokers, and the NGOs never pressed for adopting any action or policy related to climate change-induced population movement, the participants added.

Participant 3[6] described *the knowledge of climate refugees* was never a familiar concept to the local and rural people in Bangladesh. The government of Bangladesh, the multi-scalar knowledge brokers, and the NGOs discussed the knowledge of *climate refugees* at the international level and demanded compensation from the high-carbon-emitting countries to support the climate victims, whereas the local and rural people were completely disconnected from the discussion. The reason for the disconnection is, as the participant explained:

> The knowledge of climate change – including climate change-induced slow onset events, quick onset events, carbon emission, emission reduction, greenhouse gasses, renewable energy, climate refugees and climate change-induced displaced people – is a top-down knowledge, produced by some world-renowned climate scientists in international venues such as the IPCC, and then transmitted the knowledge from the international venues to the national and local level of a country. The climate scientists played a significant role in promoting, transmitting and institutionalizing the knowledge

> in international regimes and national policies in collaboration with national governments and local/international NGOs. However, local and rural people remained completely disconnected from the production of the knowledge. Even though the people who have been uprooted due to climate change-induced reasons, are not involved in naming themselves climate refugees or climate change-induced displaced people or migrants (in the particular context of Bangladesh).

Participant 1[7] explained the political difficulties of Bangladesh for recognizing climate refugees at the national level and for adopting a policy for the protection of climate refugees. The participant stated:

> The economy and policy sector of Bangladesh is heavily dependent on the funding of the foreign donors, particularly on the loans given by the World Bank and the developed countries. The developed countries are mainly high carbon emitting countries. The government of Bangladesh does not adopt any policy which is not supported by the donors. As a result, Bangladesh cannot take any decision at the national level by bypassing the donors. If Bangladesh tries to do so, the donors withdraw their funds from Bangladesh, and consequently, Bangladesh faces severe economic loss. The issue of climate refugee is not supported by the donors: the World Bank and developed countries. Therefore, the actors who were very vocal in international forums for recognizing the climate refugees, remained silent at the national level and did not press for adopting a policy related to the issue of climate refugees.

For Participant 5[8]:

> The individuals – Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ahsan Uddin Ahmed, Dr. Ainun Nishat, Dr.Kholiquzzaman – who promoted the idea of climate refugees in international forums, work as consultants to the foreign donors such as the World Bank, the USAID, DFID etc. For this reason, it is not possible for the individuals and for their affiliated NGOs (such as BCAS and CSRL) to overlook the interests of the donors. As the donors have not agreed on the recognition of the climate refugee issues and their protection, these individuals did not promote the issue of climate refugees as an agenda in the policy arena of Bangladesh.

For Participant 4[9],

> the government of Bangladesh has not adopted any climate change action plans and strategies without the influence of foreign donors (which are mainly high carbon emitters) and the UNFCCC who do not support the cross-border migration of climate refugees and therefore, it was not possible to include any provisions in NAPA for supporting the climate refugees in Bangladesh.

The evidence of the participant's statement is found in the history of the adoption of NAPA in Bangladesh.

It is worth noting that the government of Bangladesh did not adopt NAPA or any other climate change-related actions as a response to the internal public pressure or the pressure created by policy entrepreneurs/pressure groups of the country. Even, the issue of climate change was never on the policy agenda of the country before adopting NAPA. The UNFCCC, at the 2001 Marrakesh Conference of Parties (COP-7), recognized *adaptation* as a solution to the problem of climate change issues (UNFCCC, 2002, p. 6). It created the Least Developed Countries Fund (LDCF) to support the Least Developed Countries (LDCs) for preparing NAPA by focusing on their major adaptation needs (UNFCCC, 2002, p. 6). The UNFCCC established the LDC Expert Group (LEG) in the 2001 COP-7 to provide technical support and advice to the Least Developed Countries (LDCs) to draft NAPA (UNFCCC, n.d., para, 1–2). The 2005 and 2009 versions of the Bangladesh NAPA were drafted by following the guidelines of the LEG of the UNFCCC (Ministry of Environment and Forest, 2005, pp. 43–44; Ministry of Environment and Forest, 2009, pp. 43–44).

Among the many contributors to drafting the 2005 and 2009 NAPAs, the five knowledge brokers of this book played major roles in drafting NAPA (see details in Ministry of Environment and Forest, 2005, p. iii). Dr. Atiq Rahman was the only one team leader for drafting the 2005 NAPA. Dr. Ainun Nishat was a team member of the drafting committee of the 2005 NAPA. He was in the team as the country representative of IUCN (NAPA, 2005, p. iii). Dr. Saleemul Huq contributed as an *international consultant* (being a senior research fellow of the IIED – International Institute for Environment and Development) for drafting the 2005 NAPA. Dr. Ahsan Uddin Ahmed was a member of the 2005 drafting committee. Dr. Ainun Nishat was also included in the drafting committee of the 2009 revised NAPA as an expert and the country representative of IUCN (Ministry of Environment and Forest, 2009, p. v). Dr. Atiq Rahman and Dr. Ahsan Uddin Ahmed were also contributors to the 2009 revised NAPA (Ministry of Environment and Forest, 2009, pp. v–viii).

The history of the 2005 and 2009 NAPAs, Bangladesh makes it evident that the NAPA was prescribed by the UNFCCC and the donors of the LDCF, and the government of Bangladesh and its climate scientists *complied* with it. Therefore, it is not surprising that the provision of supporting climate refugees is absent from the existing policies. Bangladesh may not be able to include a provision for supporting climate refugees on top of its existing climate change action plans until and unless agreed by the UNFCCC or the donors.

Point 2: Sea level rise is more significant than cyclones – it serves all actors' interests

Recall from Chapter 4 that the knowledge about sea level rise is disputed in Bangladesh, with some scholars arguing that the level of the sea is not only rising due to global-warming-induced Himalayan glacier melt and thermal expansion of

water. Instead, in the particular context of Bangladesh, the sea level is rising due to the lack of sufficient water flow from the upstream rivers and its consequential effects. However, the idea of climate refugees, particularly in the context of Bangladesh, emerged primarily from the knowledge of climate change-induced sea level rise. Participant 6[10] stated:

> Climate change can be connected to almost 400 changing weather events of the world. However, in Bangladesh, not all the weather events have a one-to-one connection with climate change. Scientists could prove that two events, out of the 400 weather events, are directly connected to climate change in Bangladesh: one is increased temperature, and the subsequent changing pattern of rainfall and the other one is frequent and severe cyclones, but not the sea level rise. The changing pattern of rainfall has not been reported to have any impact on climate-affected people's decision on migration. However, the frequent and severe cyclones make the sea so rough that it directly impacts people's migration decision.

Chapter 4 of this book analyzes the cyclone data of Bangladesh and finds that the numbers of severe cyclones and tropical depressions have increased significantly due to climate change-induced global warming and it uproots people from their homeland. However, the issue of cyclones is under-represented in defining climate refugees in the climate change literature. The knowledge brokers, NGOs, and government of Bangladesh, who once took the leading role in promoting the idea of climate refugees, did not mention the issue of the increased severity of the cyclones in addressing climate refugees in international conferences. Why did the knowledge brokers ignore the cyclone data and overemphasize sea level rise in Bangladesh in defining climate refugees? The following discussion suggests an answer to this question.

According to Participant 5[11], 'the knowledge brokers – who acted the leading roles in promoting the idea of Bangladesh's sea level rise and subsequent creation of climate refugees – used some documents, produced by the IPCC and the World Bank, as pieces of evidence to support their argument related to the emergence of climate refugees'. The documents, the participant added, are mainly the Policy Makers' Summary Report of the Working Group II of the 1990's IPCC Report (quoted above), the 2000 World Bank Report and the IPCC- CZMS (the Coastal Zone Management).

Following the statement of the 1990 IPCC Report (i.e. inundation due to sea level rise will cause population movement), the Coastal Zone Management (CZMS) – a subgroup of the Working Group III of the 1990 IPCC Report – initiated a study to assess the vulnerability of Bangladesh in facing the climate change (Ministry of Environment and Forest, 1994, p. 1). The Ministry of Environment and Forest of Bangladesh and Ministry of Foreign Affairs of the Netherlands conducted the study in collaboration with BCAS, Resource Analysis (the Netherlands), and Approtech Consultants Ltd. (Ministry of Environment and Forest, 1994, pp. i–v). This study was published in 1994 entitled *Vulnerability of*

Bangladesh to Climate Change and Sea Level Rise. In the published study, the Ministry of Foreign Affairs of Bangladesh, BCAS, and the knowledge brokers involved in producing the knowledge of Bangladesh's vulnerability to climate change stated that the future impact of climate change in Bangladesh would be sea level rise and subsequent coastal and river bank erosion, inundation in the major rivers, saltwater intrusion into the rivers, changed patterns of precipitation which may result in flash floods, and droughts in the dry season (Ministry of Environment and Forest, 1994, p. 13).

On the other hand, the Ministry of Environment of Bangladesh, BCAS, BUP, and the three knowledge brokers of this book (Dr. Saleemul Huq, Dr. Atiq Rahman, Dr. Ahsan Uddin Ahmed) were involved in drafting the 2000 World Bank Report. The Report estimated that the sea level rise of the Bay of Bengal would be 10 cm, 25 cm, and 1 m in 2020, 2050, and 2100 consecutively. The sea level rises of 1 m in 2100 would inundate 17.5% of the land of the country – including the entire Sundarbans – with an increase in storm surges and salinity, causing the displacement of 20 million people (World Bank, 2010, p. 40).

The World Bank study was conducted in three phases. In the first phase, Stratus Consulting Inc., a US-based consultancy firm that provides services on environmental research, and BCAS signed contracts with the World Bank for producing the first draft of the document (World Bank, 2000, p. v). The focus of the first draft was to summarize the available knowledge on the potential impacts of climate change in Bangladesh and identify relevant adaptation needs by which the impacts of climate change can be minimized. The University of Waikato, New Zealand, also contributed to this first phase by analyzing flood risks in Bangladesh (World Bank, 2000, p. v).

In the second phase, the Resource Analysis Group revised the draft and included the latest development in the relevant sectors (World Bank, 2000, p. v). The Resource Analysis Group consists of Saskia Werners[12], Rob Koudstaal[13], and Bushra Nishat[14] (World Bank, 2000, p. v). They collaborate with the above-mentioned NGOs BCAS – particularly with its two executive directors Dr. Saleemul Huq and Dr. Atiq Rahman – and BUP – particularly with its then head Dr. Ahsan Uddin Ahmed.

At the third phase, the South Asia Rural Development Unit of the World Bank (SASRD) revised the last draft, with the Ministry of the Environment and Forest, providing editing suggestions (World Bank, 2000, p. v).

This World Bank report laid particular emphasis on the vulnerability of Bangladesh to climate change and sea level rise and urged that the World Bank's prescribed adaptation strategies be used to help Bangladesh to overcome the vulnerability.

The discussion above makes it clear that the knowledge brokers of Bangladesh, the local NGO BCAS, Ministry of Foreign Affairs, and Ministry of Environment and Forest were involved in drafting the 1994 IPCC CZMS Report and the 2000 World Bank Report. These two reports produced the knowledge that sea level rise will inundate many lands in Bangladesh, will uproot many people from their

homelands, and that the World Bank's prescribed adaptation strategies can help Bangladesh to overcome the vulnerability.

However, the Climate Change Cell (CCC) of the Ministry of Environment and Forest of Bangladesh also published a report in 2016 entitled *Assessment of Sea level Rise on Bangladesh Coast through Trend Analysis*, *which* claimed that none of the reports, produced up until 2016 (including the 2013 IPCC Fifth Assessment Report), used *any systemic trend analysis* or *mathematical technique* for analyzing the future sea level rise in the coastal areas of Bangladesh (CCC, 2016, p. 2).

Therefore, it is puzzling that without having the systematic trend analysis or strong evidence of the sea level rise in the coastal areas in Bangladesh, why the Ministries of Bangladesh, NGOs, knowledge brokers, IPCC, and World Bank produced the knowledge that the sea level rise in the coastal areas of Bangladesh would inundate many lands in Bangladesh and subsequent population movement, and ignored the issue of frequent and increased cyclones and subsequent population movement.

Drawing on the discussion of Chapters 3 and 4 regarding how the IPCC and the UNFCCC work, it is evident that the knowledge of climate change-induced sea level rise and subsequent population movement was not produced on the basis of any trend analysis or scientific research, but guesswork, consultation, and agreement between the government of Bangladesh, the UNFCCC, and the IPCC. Similarly, the final draft of the 2000 World Bank document was also shaped with the consultation and suggestion of the government of Bangladesh and its NGO (see World Bank, 2000, p. v). Drawing on this, it can be argued that all the actors – Ministries of Bangladesh, NGOs, knowledge brokers, IPCC, and World Bank – agreed to promote the knowledge of sea level rise instead of cyclones and tropical depressions, no matter whether there is any trend analysis or strong evidence of sea level rise.

For Participant 5[15], the knowledge brokers and their affiliated NGOs, IPCC/UNFCCC, and the World Bank had vested interests in publishing the 1994 IPCC CZMS Report and the 2000 World Bank document. The participant explained that both the reports proposed the adoption of adaptation strategies to manage the risk related to sea level rise. The IPCC/UNFCCC and the World Bank's interests were to influence Bangladeshi policymakers to admit that the country was extremely vulnerable to climate change and to adopt the guidelines provided by the IPCC/UNFCCC and the Bank to save the country from the severe effects of climate change. The 2000 World Bank document declared that the country needed three types of adaptation strategies. All of these fall into the category of *resilience as adaptation*[16] (discussed in Chapter 2). The prescribed strategies are projects that involve (i) infrastructural adaptation (such as planting trees, raising of dikes, and construction of tidal basins); (ii) institutional adaptation (such as changing socio-economic practices through crop diversification and sustainable shrimp cultivation, changing economic planning, etc.); and (iii) adaptation to climatic factors such as negotiating water sharing issues and participating in international mitigation activities for reducing greenhouse gases (World Bank, 2010, pp. 1–85).

For Participant 5[17], the adaptation strategies prescribed by the World Bank were nothing new: they were simply continuations of the development projects for which the Bank had lent money to Bangladesh since the 1980s in the name of Integrated Water Resource Management (IWRM). However, for the participant, by proposing the *climate change adaptation strategies*, the Bank wanted to continue their previous development projects in the name of climate change resilience projects. The Bangladeshi knowledge brokers and NGOs drafted 'what exactly the World Bank wanted' in the 2000 World Bank report regarding sea level rise, population movement, and adaptation strategies, the participant added.

The prescribed adaptation projects are compatible with the solution to the problem of the global warming-induced sea level rise but not with frequent and intense cyclones and tropical depressions. Evidence of this can be found in Rawlani and Sovacool (2011, p. 860) who stated that in Bangladesh (a) polders and embankments may severely be damaged by increased attacks of cyclones and (b) the coastal afforestation project might not work because most of the plants have been washed away/destroyed by the frequent cyclones. Therefore, if the IPCC, the World Bank, and the knowledge brokers had raised the issue of cyclones and tropical depression-induced population movement in the climate change negotiations or wrote the issue of cyclone in the official documents of the IPCC, UNFCCC, and the World Bank, there was a chance that the Bank would not continue their development projects (in the name of climate change adaptation projects) in Bangladesh. Consequently, the government of Bangladesh, its NGOs, particularly BCAS, and knowledge brokers would not be able to secure the contracts.

Participant 3[18] stated about the role of the knowledge brokers (he mentioned them as individual actors and experts) in producing knowledge as:

> The adaptation as well as development projects – such as building dams and embankments – destroyed many rivers in Bangladesh because those projects diverted water from the river and consequently the river became dry. However, these individual actors[19] remained silent about the deleterious effects of the project and never advised the government of Bangladesh to reject the Bank-funded deleterious projects. Instead, the individuals rationalized the projects on behalf of the Bank by stating that the projects are beneficial for the development of water resource management of Bangladesh. It is worth noting that the Bank recruits these people as 'experts on environment and development issues' and the 'experts' deliver their knowledge of the environment in those projects. In return, the 'experts' earn a huge salary for being experts of those projects. The experts were never accountable for the damages the projects produced, and therefore, the experts do not care about the environmental damages of those projects. The most interesting fact is that the UNFCCC repeatedly invites all these experts as participants in their annual conferences – COPs – because the experts uphold the voices of the UNFCCC, donors and developed countries. The whole selection process, regarding who will participate in the COPs, is filtered by the UN, donors and

the national government of Bangladesh. As a result, the same experts from Bangladesh attend all the UNFCCC's conferences COPs every year.

For the four participants[20] of this research – mentioned above – the term *expert* is a misnomer and should be replaced by *knowledge broker*. They argued that an expert would also advise on the damaging effects of a project, whereas these individuals advised the government of Bangladesh about adopting the projects – no matter whether the projects are problematic or incompatible with the problem to be solved. On the other hand, for the participants, knowledge brokers are people who produce and spread certain knowledge on behalf of somebody or some institution – in this case the World Bank, donors, and the UN. For the participants, the individual actors worked as knowledge brokers on behalf of the Bank, the UNFCCC, and the donors to produce the knowledge of Bangladesh's vulnerability to climate change in such a way that it appeared the Bank's prescribed adaptation strategies could solve it.

However, in the case of promoting the term climate refugees in Bangladesh, there remains a significant disagreement between the Bank, IPCC/UNFCCC, and Western developed countries, on the one hand, and the government of Bangladesh, the five knowledge brokers, and NGOs (BCAS, CSRL, and EquityBD) on the other. Participants 1, 3, 4, and 7 described the disagreement between the two groups of actors as follows:

- In the discussion of the Polluter Pays Principle – particularly the question of compensation and reparation – the donors, developed countries, and international institutions never concurred. In the COP-21, they managed to exempt themselves from any climate-related liability and compensation claims from the developing countries. As a result, the knowledge brokers found that bargaining with the developing countries, donors, and international organizations would not bring any result. The individual actors, particularly Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ahsan Uddin Ahmed, Dr. Ainun Nishat, and Dr. Kholiquzzaman – who became renowned for producing the knowledge of Bangladeshi climate refugees – acknowledged that they could not reflect their views about climate refugees in the IPCC Assessment Reports. All these individual actors contributed to the Third and Fourth Assessment Reports of the IPCC. However, while the 1990 First Assessment Report of the IPCC stated that sea level rise could lead to human migration, the tone of the 2007 Fourth IPCC Report completely changed regarding the issue of climate change-induced displacement. The 2007 Report stated that climate change-induced migration is not among the 'gravest' effects of climate change and the 'estimates of the number of people who may become environmental migrants are, at best guesswork' (IPCC, 2007, p. 365; also cited in Bettini, 2013, p. 65).
- Dr. Atiq Rahman, Dr. Saleemul Huq, Dr. Ainun Nishat, Dr. Ahsan Uddin Ahmed, and Dr. Kholiquzzaman work as consultants to the donors and the government of Bangladesh. These individuals also use the NGO – BCAS – as the venue for their consultancy or advocacy services. These individuals

have found that the term 'climate refugees' never served the interests of the donors (mainly the developed countries) and international institutions (the World Bank and UNFCCC). In addition, the knowledge brokers acknowledged that it was beneficiary for all the actors if they advised the government of Bangladesh (as policy consultants) to receive the UNFCCC-prescribed multi-donor trust funds from the foreign donors for implementing adaptation and resilience projects. This is because the knowledge brokers would get a certain amount of payment from the donors for working as their consultants in dealing with the government of Bangladesh and for working as policy advisors for the government. Moreover, the government of Bangladesh then can demonstrate to the world that it is doing *something* to save the climate victims by receiving funds from foreign donors and by implementing the resilience/adaptation projects.

It is also beneficial for the knowledge brokers because they get the contracts for implementing the foreign-funded adaptation and resilience projects. In this way, the knowledge brokers can make money from multiple sources by moving between different levels – local, national, and international – and bringing together the interests of state actors, donors, international institutions, and non-governmental organizations. By giving out funds for implementing the climate change adaptation projects in Bangladesh, the UNFCCC, the World Bank, and the donors demonstrate that they are doing *something* to save the people uprooted by the climate change-induced disasters in Bangladesh. For all these reasons, the knowledge brokers and non-governmental organizations have stopped promoting the concept of climate refugees in international forums since 2010.

Conclusion

From the above discussion, this book finds that there exists a significant interconnection between the IPCC, the UNFCCC, the donors, the World Bank, the government of Bangladesh, and the local NGOs of Bangladeshi as regards replacing the idea of climate refugees with that of climate change-induced displaced people. The interconnection is facilitated by the five multi-scalar knowledge brokers. It is also evident from the discussion that these parties unanimously moved from using the concept of climate change refugees to that of climate change-induced displacement, and that no one party has imposed its decision on any other. Instead, the reconciliation between these parties is affected by individuals: multi-scalar knowledge brokers. It was argued in Chapter 2 that the proposed knowledge network theory is the best fit for analyzing how the transnational network or interconnectedness of the actors is maintained by the knowledge brokers in order to serve the mutual political and economic interests of donors, states, international institutions and local non-governmental organizations, and themselves. The following chapter analyzes how the knowledge brokers and other actors pursue their *political* and *economic interests* through the operations of climate finance in Bangladesh.

Notes

1 Chapter 4 has information about the tribunal.
2 Who had been uprooted due to sea level rise, river bank erosion, and saline water intrusion into coastal areas.
3 IPCC member, face-to-face interview, November 2016.
4 Consultant to the government of Bangladesh, Skype interview, August 2016, Hamilton, Canada.
5 Official of an international organization, face-to-face interview, November 2016, Dhaka, Bangladesh.
6 Climate change researcher and activist, face-to-face interview, December 2016, Dhaka, Bangladesh.
7 Consultant to the government of Bangladesh, Skype interview, August 2016, Hamilton, Canada.
8 University professor and climate change activist, face-to-face interview, January 2017, Dhaka, Bangladesh.
9 University professor, face-to-face interview, November 2016, Dhaka, Bangladesh.
10 University professor, face-to-face interview, December 2016, Dhaka, Bangladesh.
11 University professor and climate change activist, face-to-face interview, January 2017, Dhaka, Bangladesh.
12 Saskia Werners worked as Advisor in Integrated Water Management, Resource Analysis Group, the Netherlands, from 1997 to 2001 when the World Bank produced the report. Projects were in Europe, India, Bangladesh, and the Caribbean. (for more information, see http://www.mungo.nl/CV.htm.
13 Rob Koudstaal worked as a consultant of the World Bank in 1999. He also worked as Resource Analyst, the Netherlands. For more information, see https://sites.google.com/a/da-bd.org/www/associates/r-koudstaal.
14 Bushra Nishat worked as Resource Analyst when the document of the World Bank produced the report.
15 University professor and climate change activist, face-to-face interview, January 2017, Dhaka, Bangladesh.
16 A brief description of resilience as adaptation has been described in Chapter 2.
17 University professor and climate change activist, face-to-face interview, January 2017, Dhaka, Bangladesh.
18 Climate change researcher and activist, face-to-face interview, December 2016, Dhaka, Bangladesh.
19 The individual actors refer to the knowledge brokers.
20 The participants are Participant 1, Participant 3, Participant 4, and Participant 7.

7 Transnational network

Bringing national and local interests in line with the donors' interests

Introduction

As discussed in the previous chapter, there exists a significant interconnection between the actors involved – IPCC, UNFCCC, donors, the World Bank, the government of Bangladesh, local NGOs of Bangladesh, and multi-scalar knowledge brokers. The interconnection creates a transnational network of actors. The transnational network serves the actors' *political* and *economic interests*.

This chapter will discuss how the actors pursue their *political* and *economic interests* through the operations of two climate change-related funds – BCCRF and BCCTF – in Bangladesh. The analysis of climate finance is important because it will demonstrate how funds are spent for securing the mutual interests of the actors involved, and how the multi-scalar knowledge brokers move back and forth at all three levels – local, national and international – in maintaining the transnational network and in serving the political and economic interests.

This chapter focuses on the BCCRF's Climate Change Resilience Participatory Afforestation and Reforestation Projects (CRPARP) as the main example for analyzing how all the actors maintain a transnational network for securing their political and economic interests. The reason to choose CRPARP as the main example is twofold. First, the author of this book has gathered much more information on CRPARP than other projects during her field research. Second, information regarding the fund flow of the projects related to BCCTF is not publicly available. In addition, other funds such as PPCR and GCF have been approved/released recently, and information related to those funds is still not publicly available. So, this chapter has dropped BCCTF, PPCR, and GCF.

This chapter proceeds in three sections. The first section provides a brief description of the political and economic interests of the actors – donors, the World Bank, the government of Bangladesh, local NGOs, and multi-scalar knowledge brokers. The second section examines how the monies of BCCRF and BCCTF are spent to serve the political and economic interests of the actors involved. The third section demonstrates how multi-scalar knowledge brokers play significant roles in managing the funds for maintaining the transnational network and in serving mutual interests. This chapter concludes by restating the argument of this book.

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Political and economic interests of the actors

> Early science and policy documents from the 1980s and 1990s discussed 'climate refugees' as a pathology to be prevented. In the early 2000s, scientists and policy makers advocated the responsibility of Western emitters to 'save' climate refugees and offer them refugee status, without implementing any legal instruments to grant refugee rights. In the last five years, the debate has clearly shifted towards resilience. Science and policy papers now argue that the affected populations know best how to prepare for the unavoidable effects of climate change. In the face of climate 'terror', at-risk populations are called upon to prepare themselves for disruptive shocks of various kinds. They are given responsibilities for becoming resilient.
>
> (Methmann & Oels, 2015, p. 52).

The people labelled as climate refugees in the 1990s and early 2000s are at present expected to be resilient. The World Bank, ADB, International Financial Corporation (IFC), and Western-industrialized countries give funds to the climate-affected countries for implementing various climate change resilience projects and for making the people resilient through implementing the projects (Methmann & Oels, 2015, pp. 58–62). Chapter 2 presented a brief analysis of three types of resilience: resilience as maintenance, resilience as adaptation, and transformative resilience. Western-industrialized countries give funds to Bangladesh to implement climate change resilience projects that are based on the knowledge of *resilience as adaptation*. The donor-funded resilience projects help all the actors secure their political and economic interests through the following ways:

Donors: The donors of the climate change resilience funds do not have to take any liabilities of the climate change-induced uprooted people. Liabilities include sheltering the uprooted people within their national borders and bearing the cost of their relocation and livelihood. Some donors such as the United States adjusted the climate change resilience funds with their previous lending to Bangladesh. The USAID-funded CRPARP is implemented through this kind of fund. On the other hand, DFID did not provide the resilience funds to Bangladesh until or unless Bangladesh agreed to implement the resilience funds in a way that the UK government wanted. The UK government wanted to invest in the projects, which have no connection to climate change. Thus, the donor countries exercise their power over the government of Bangladesh by controlling how their donations will be used (see McVeigh, 2016, para. 1 for details).

Moreover, while giving the climate change resilience funds, the donors add conditions to Bangladesh that the resilience projects must be implemented in partnership with the organizations, NGOs, or companies whose origins are in donors' countries. For example, the government of Bangladesh implements USAID-funded CRPARP in partnership with two US-based organizations – International Resources Group (IRG) and Winrock International – as it was the condition of the funds (USAID, n.d., para. 1).

The World Bank: The World Bank is in charge of managing BCCRF and some other funds of the Pilot Programme for Climate Resilience (PPCR). The World Bank received 4% to 15% service charges for releasing BCCRF to Bangladesh (Independent Commission for Aid Impact, 2011, p. 13).

The Government of Bangladesh: The government of Bangladesh receives foreign funds for implementing various climate change adaptation and resilience projects. The funds benefit the government in two ways. First, the donors of the funds are mainly the countries from which the government of Bangladesh borrowed money previously. The donors adjusted the funds with the pre-existing debts in a way that the funds are invested in profit-generating projects by which the government of Bangladesh can pay back the loans. The USAID-funded CRPARP is this kind of project. In this way, the government of Bangladesh is relieved from severe debt-burden. Second, the resilience projects are designed on the basis of the knowledge of *resilience as adaptation*. The government can demonstrate to the world that they are diligent about the problem of climate victims and they are helping the victims to be resilient in encountering the severe effects of climate change.

The knowledge brokers and local NGOs in Bangladesh: The government of Bangladesh implements the climate change adaptation and resilience projects by subcontracting the projects to the local NGOs in Bangladesh, which are founded and owned by the knowledge brokers. Therefore, the political and economic interests of the knowledge brokers are (i) to demonstrate that the knowledge of *resilience as adaptation* is applicable as a solution to the problem of climate victims, and (ii) to secure the contracts of the climate change resilience projects.

The following discussion will reveal, in order, how the funds are spent and how the knowledge brokers maintain a transnational network in securing their interests.

BCCRF expenditure

The donors of BCCRF are Australia (US$7 million), Denmark (US$1.2 million), Sweden (US$13 million), Switzerland (US$3.4 million), the European Union (US$37 million), the United Kingdom (US$95 million), and the United States (US$13 million) (World Bank, 2012, para. 3). It is difficult to determine which donor contributed to what kind of the resilience projects because (i) all the information regarding BCCRF was not publicly available, (ii) the donor countries did not release the exact amount of money they were supposed to give to BCCRF, (iii) the donors withdrew BCCRF in 2016 and shut down their websites, removing BCCRF information (Siddique, 2016, paras 1–5). However, the author of this book collected some information from local newspapers of Bangladesh and secondary sources (such as an unpublished Ph.D. thesis[1]). From the sources, I collected information on five projects and their donors. Table 7.1 shows a summary of the projects. The five projects are (i) USAID-funded CRPARP, (ii) DFID-funded Multipurpose Cyclone Shelter Construction Project, (iii) DFID-funded Constructing BCCRF Secretariat, (iv) the World Bank-funded study Urban

Table 7.1 BCCRF-funded projects

Project title	*Donors*	*Amount US$*
Constructing BCCRF Secretariat	DFID	0.2 million
Urban Flooding of Greater Dhaka Area in a Changing Climate: Vulnerability, Adaptation, and Potential Costs (analytical activities)	The World Bank	0.5 million
Impacts of Climate Change on Vector-Borne Diseases and Implications for the Health Sector (analytical activities)	The World Bank	0.2 million
Detailed Design and Environmental Studies for Construction of Urir Char-Noakhali Cross-Dam (under construction)	Not known	0.7 million
Bangladesh Modern Food Storage Facilities Project (BMFSFP) (under preparation)	Not known	25 million
Solar Irrigation Program – A Green Energy Initiative (under preparation)	Not known	25 million
Agricultural Adaptation in Climate Risk-Prone Areas of Bangladesh (drought, flood, and saline-prone areas)	Not known	22.8 million
Community Climate Change Project	Not known	12.5 million
Climate Resilience Participatory Afforestation and Reforestation Project (CRPARP)	USAID	35 million
Multipurpose Cyclone Shelter Construction Project	DFID	25 million

Flooding of Greater Dhaka Area in a Changing Climate: Vulnerability, Adaptation and Potential Costs (analytical activities), and (v) the World Bank-funded study on Impacts of Climate Change on Vector-Borne Diseases and Implications for the Health Sector (analytical activities).

Among the ten projects, the author of the book has received the maximum amount of information about USAID-funded CRPARP. The next section of this chapter discusses CRPARP first and then DFID and World Bank-funded projects.

USAID-funded CRPARP

The USAID has been funding BCCRF for implementing CRPARP in Bangladesh since 2010. The CRPARP includes two projects: Integrated Protected Area Co-management (IPAC) (2008–2013) and Climate Resilience Ecosystem and Livelihoods (CREL) (2012–2017). The principal implementing organizations of the projects are the Bangladesh Forest Department (FD) and Arannayk Foundation (AF) with the fiduciary management of the World Bank (Bangladesh Forest Department, n.d., para. 1). The Bangladesh Forest Department is a government body that works under the Ministry of Environment and Forest of Bangladesh.

AF is a joint initiative (established on 26 July 2003) between the governments of Bangladesh and the United States. USAID is in charge of operating the functions of AF. The joint initiative was signed for working in Bangladesh

by following the 1998 US Tropical Forest Conservation Act (TFCA). The 1998 TFCA states:

> The Tropical Forest Conservation Act (TFCA) was enacted in 1998 to offer eligible developing countries options to relieve certain official debt owed the U.S. Government while at the same time generating funds in local currency to support tropical forest conservation activities. In addition to conserving forest and relieving debt, TFCA is intended to strengthen civil society by creating local foundations to support small grants to NGOs and local communities. The majority of TFCA agreements to date have included funds raised by U.S.-based NGOs, a unique public-private partnership
>
> (USAID, n.d., para. 1).

The government of Bangladesh also signed the 2000 Debt Reduction Agreement with the United States in which Bangladesh 'agreed to be pursuant to the US Tropical Forest Conservation Act of 1998 in lieu of gaining reduction of certain debts that it owed to the United States' (Arannayk Foundation, n.d., p. 1). So, AF was founded to relieve Bangladesh from concessional debts which the country owed the United States and to generate some revenues for forest conservation activities. According to the agreement, about US$7 million would be paid to the United States over the next 19 years (Chemonics International Incorporation, 2001, p. II-1).

Aside from AF and USAID, some US-based NGOs and local NGOs of Bangladesh are involved in implementing CRPARP. Therefore, the actual implementing organizations of the IPAC are (i) the US-based International Resources Group (IRG), (ii) the IUCN Bangladesh (IUCNB) and its national committee members, and some Bangladeshi local NGOs such as Community Development Centre (CODEC), Nature Conservation and Management (NACOM), and the Rangpur-Dinajpur Rural Development Service (RDRS), (iii) BCAS, (iv) CNRS, and (v) the Wildlife Trust Bangladesh (WTB) (Khan, 2013, p. 4). The implementing organizations of CREL are AF, Forest Department, Winrock International, IUCNB, and local NGOs – BCAS, CNRS, CODEC, and NACOM (Winrock International, 2013, p. 1).

Before the establishment of the AF, USAID was also involved in biodiversity conservation projects. An example of such projects is Management of Aquatic Ecosystems through Community Husbandry (MACH) – implemented between 1998 and 2003 (see details in Forest Department, 2010, pp. 1-110). After the establishment of the AF, USAID funded the Nishorgo Support Project (NSP) from 2003 to 2008. The NSP established ecotourism as well as ecoparks in the locations where the CRPARP has been implemented today. The aim of the establishment of ecotourism and ecopark is to earn revenue from the tourism industry and pay back the loans to the United States out of the revenue. Thus, ecotourism and ecoparks were profit-generating projects. Later on, since 2008, the CRPARP (IPAC and CREL) has been merged with NSP and MACH, under the 1998 TFCA (USAID, 2013, p. iv, 2, 34).

The following discussion reveals how the actors of the knowledge network gain their political and economic benefits from the IPAC and CREL.

IPAC budget

Some anomalies exist regarding the amount of money spent on implementing IPAC (2008-2013). The IPAC's total budget was over US$75 million[2] (Forest Department, 2010, p. 3). However, according to the World Bank's websites regarding BCCRF, the budget does not match with the amount of money that the USAID gives to BCCRF – i.e. US$13 million – and with the list of the World Bank's website on BCCRF – i.e. US$35 million (World Bank, 2012, para. 3; World Bank, n.d.).

During my field research, the author of the book had been looking for the audit reports of the projects to get a clear picture about the exact amount of the fund. None of the implementing agencies agreed to provide the audit reports. Two participants, Participant 5[3] and Participant 7[4] stated that USAID employed its own auditors for auditing the costs of the IPAC and CREL, and the audit reports were not publicly available. However, I have collected a doctoral thesis that confirms that the actual amount of money allotted for IPAC was over US$75 million (see Table 7.2, which shows the breakdown of the money spent on IPAC). Therefore, it is not clear why the World Bank's website stated two different figures of the budget. This anomaly regarding the amount of money drove the author to investigate further. The investigation reveals that no money has been invested in implementing actual forestation or tree plantation. The following discussion will reveal this.

Bangladesh receives the money in two different ways: Direct Project Aid (DPA) and Reimbursable Project Aid (RPA). DPA means that IRG – as a subcontracting party of USAID – will directly pay the monies for implementing IPAC. RPA means that the Forest Department of Bangladesh will pay the initial costs for implementing some projects; and later on, USAID, as well as the IRG, will pay back the money to the Forest Department.

Table 7.3 indicates that 83.28% of the DPA funds have been allocated for supplies and services. The Institutional Linkage and Collaborative Programme

Table 7.2 IPAC budget

Component	*Amount in BDT*	*In percentage*
1. Pays and allowances	111,856,700	18.5
2. Supplies and allowances	346,198,900	57.27
3. Asset collection and purchase and others	145,932,800	24.14
4. Physical contingency	200,000	0.03
5. Price contingency	300,000	0.05
Total	610,688,400	100

Source: Khan, 2013, p. 320.

Table 7.3 DPA budget

Component	*Amount in BDT*	*In percentage*
1. Institutional linkage and collaborative programme (ILAC)	44,000,000	12.81
2. Supplies and services (SS)	285,988,800	83.28
3. Repairs, maintenance, and rehabilitation	2,204,000	0.64
4. Grant allocation (GA)/landscape development fund (LDF)	5,000,000	1.46
5. Vehicles, equipments, accessories, and furniture (VEAF)	6,104,000	1.78
6. Others (Oth)	96,000	0.03
Total	*343,392,800*	*100*

Source: Khan, 2013, p. 321.

includes 12.81%, which is the second highest expenditure for the IPAC. Both the projects consist of 96.90% of the total budget of the IPAC.

The DPA budget for supply and services of the IPAC suggests that there is no money for planting trees (see Table 7.4, which demonstrates the components in which the money was spent; the breakdown of each component of the budget has been listed in Tables 7.5 and 7.6, which will clarify this further). Most of the money – 66.84% of the total budget of the DPA – has been spent on consultancy and other support (Cos) purposes. A maximum share of the money has been spent for paying the employees of the implementing organizations as their consultancy fees. In the case of IPAC, the IRG employees received BDT 64,842,400 as their consultancy fees, which is 18.88% of the total DPA budget (i.e. BDT 343, 392, 800 or US$4,259,399.65). On the other hand, the employees of local NGOs received BDT 126, 313, 800, which is 36.78% of the total budget of the DPA. In this way, the IRG and local NGOs of Bangladesh received more than half, 55.66% (18.88 plus 36.78), of the total budget of the DPA.

Table 7.4 IPAC'S DPA allocation for supply and services (in BDT)

Components	*Amount*	*Percentage of the DPA*
1. Traveling and office rent (TnOR)	11,800,000	4.13
2. Stationary, fuel, and others (SFO)	14,126,000	4.94
3. Film, communication, and advertisement (FCA)	11,920,000	4.17
4. Honorarium and survey (HnS)	2,200,000	0.77
5. Occasion celebration (OC)	750,000	0.26
6. Uniform, CMC, and AIG support (Un/CM/AIG)	11,347,000	3.97
7. Research, training, seminars (RTS)	42,340,500	14.8
8. Consultancy and other supports (CoS)	191,155,900	66.84
9. Other project inputs (OPI)	349400	0.12
Total	*285,988,800*	*100.00*

Source: Khan, 2013, p. 322.

Table 7.5 Consultancy fee of the IRG employees (in BDT)

Position	*No. of persons*	*Months worked*	*Monthly rate*	*Total cost*
1. Team Leader/Chief of Party (TL/CoP)	1	23	983,280	22,615,400
2. Protected Area Mgt. Specialist (PAMS)	1	12	793,696	9,524,400
3. Program Manager (PM)	1	5	790,092	3,950,500
4. Design Specialist (DS)	1	1	911,064	911,100
5. Co-management Specialist (CMS)	1	1	863,192	863,200
6. NRM/Conservation Funding Specialist (NRM/CFS)	1	1	965,600	965,600
7. Applied Research/Training/Governance Expert (AR/Tr/Gov.)	2	4	897,600	3,590,400
8. Value Chain Analysis Specialist (VCAS)	1	1	934,456	934,400
9. Socio-economic and Communications Advisers (SCAs)	1	2	860,812	1,721,600
10. Strategic Program Mgt Specialist (SPMS)	1	1	897,396	897,400
11. Other short term: biodiversity, social forestry, tropical forestry, conflict mediation, technical specialists (OST)	3	6	983,280	5,899,700
Total	*14*	*57*	*9,880,468*	*51,873,700*
12. Airfare, per diem, shipping, and other direct costs				12,968,400
Grand total				*64,842,100*

Source: Khan, 2013, p. 323.

The second highest expenditure of DPA's supply and services was 14.8% of the total budget of the DPA, which was spent on Research, Training, and Seminars (RTS) purposes. The expenditure includes costs related to research grants, short courses, study tours, training the employees of the Forest Department and NGO workers regarding the knowledge of forestation. The training includes overseas training as shown in Table 7.7.

The consultancy fees of the IRG and local NGOs and the Research, Training, and Seminars include 70.46% (55.66% plus 14.8% of the total DPA budget).

The institutional linkage includes the cost associated with building a connection with other institutions in the world for providing them grants to work on the knowledge production of forestation, co-management, and carbon projects in Bangladesh. The institutions which received the funds are listed in Table 7.8.

The collaborative programmes of the IPAC include initiating certificate courses in conservation biology and co-management and carbon project preparation in the institutions shown in Table 7.9.

Therefore, from the breakdown of the DPA, it is evident that the funds were allocated for paying the consultancy fees of its implementing organizations but not for forestation or tree plantation.

On the other hand, the RPA budget of the IPAC was allotted for afforestation projects under the heading Afforestation, Habitat, and Maintenance (AFHRM);

Table 7.6 Consultancy fee for the local NGO employees (in BDT)

Position	*No. of persons*	*Monthly rate*	*Total cost*
1. Local Governance/Program Adviser/Director/ Senior Coordinator	4	80,200	7,699,200
2. Communication Specialist/Capacity Building/Training Specialist/ Sociologist/ Environmentalist/Enterprise	7	55,200	9,273,600
3. Cluster Service Coordinator/Site Coordinator/ Sr. Site Facilitator/Biologist/Sociologist/Wildlife/Biodiversity	24	40,800	211,34,400
4. Site Facilitator/ Communication Officer/ Enterprise/Capacity Building Officer/Monitoring Officer, etc.	27	35,900	209,29,700
5. Field Level Trainer (Social, AIG, Environment, Enterprise, Credit)/ Community Members Group Trainer/Trainer for Skill Training/Trainer for AIG (FLT)	4	31,600	27,17,600
6. Field Organizer/field sociologist/Field Biologist/ Environmentalist/Technical Assistant/Field Surveyor/Enumerator/Field Investigator/Data Collector, etc.	20	26,000	11,700,000
7. Short-Term Senior Consultant/Economist/Biologist/Environmentalist/Ecologist/Sociologist/AIG specialist/NRI specialist/Gender/NTTF/Social Forestry, etc.	8	85,100	5,106,000
8. Short Term Field Assistant/Enumerator/ Data Entry Operator/Field Investigator/ Surveyor/Training Associate/Field Level Organizer	10	18,700	2,057,000
Total	104		806,17,500
Managerial support			15,869,800
Utility			4,826,500
Social charge			10,000,000
Overhead			10,000,000
Sundry			5,000,000
Administrative and other support			456,96,300
Grand total			*1263,13,800*

Source: Khan, 2013, p. 324.

it received the highest amount (BDT 48,391,900), 50.83%, of the total budget of RPA (BDT 57,465,200) (see Table 7.10).

However, USAID never refunded the Forest Department for implementing AFHRM. Instead, USAID gave the money, which it was supposed to give to the AFHRM, to another organization – International Centre for Diarrheal Disease Research (ICDDRB) which conducts research on cholera. Therefore, as Khan (2013) stated, 'IPAC project virtually has no money for afforestation and habitat restoration' (Khan, 2013, p. 305).

Table 7.7 IPAC budget allocation for overseas training (in BDT)

Type	*No. of persons per course/event*	*Allotted amount*	*Duration (days)*
1. Study Tour to Montana University, USA	2	1,496,000	4 weeks
2. Diploma Courses	4	1,292,000	3 months
3. Regional Study Tour to Thailand/ Indonesia/ Cambodia/Vietnam	23	4,692,000	10
4. Cross-Site Visit to Nepal/India	15	1,575,000	8
5. Cross-Site Visit to Nepal/India	10	680,000	8
Total	–	*97,35000*	–

Source: Forest Department, 2010; Khan, 2013, p. 328.

Table 7.8 IPAC's DPA allocation for institutional linkage (in BDT)

Institute	*Amount*	*In percentage*
1. East West Centre, USA (EWC, USA)	7,612,800	34.60
2. Centre for Bio-Social Advancement, India (CBSA, India)	499,600	2.28
3. Wildlife Institute of India (WII, India)	449,400	2.04
4. Development Training and Services Inc. (DTS, USA)	3,750,700	17.05
5. Environmental Law Institute, USA (ELI, USA)	4,614,000	20.97
6. Epler-Wood International, USA (EWI, USA)	2,596,700	11.80
7. World Wildlife Fund, USA (WWF, USA)	1,800,000	8.18
8. Other Institutions (Thailand, Nepal, Indonesia, Cambodia, Vietnam)	676,800	3.08
Total	*22,000,000*	*100.00*

Source: Khan, 2013, p. 329.

Table 7.9 Estimated cost for collaborative programmes of IPAC (in BDT)

Institution	*Amount*	*In percentage*
1. Independent University Bangladesh (IUB)/Jahangirnagar University (JU)	76,50,000	34.77
2. Bangladesh Scouts (BS)	5,25,000	2.39
3. OASIS International Ltd. (OASIS)	68,88,000	31.31
4. CEGIS	21,46,000	9.75
5. Bangladesh Forest Research Institute (BFRI)	6,21,000	2.82
6. Others	41,70,000	18.96
Total	*2,20,00,000*	*100*

Source: Forest Department, 2010; Khan, 2013, p. 330.

Table 7.10 IPAC's RPA budget

Component	*Amount*	*In percentage*
1. Asset collection and purchase (ACP)		
a. Vehicles, equipments, accessories, and furniture (VEAF)	8,381,800	8.80
b. Afforestation, habitat restoration, and maintenance (AFHRM)	48,391,900	50.83
c. Other related cost (Oth)	*691,500*	0.73
Sub-total (ACP)	57,465,200	60.36
2. Civil works (CW)	37,234,800	39.11
3. Price contingency (PrC*)*	200,000	0.21
4. Physical contingency (PhC)	300,000	0.32
Total	*95,200,000*	*100.00*

Source: Khan, 2013, p. 331.

CREL budget

CREL (2012–2017) is a continuation of IPAC. The CREL has been implemented by the US-based Winrock International, IUCN, and the same local NGO and government organizations mentioned above. Its original budget was over US$35 million (International Business and Technical Consultants, Inc., 2015, pp. 2–100). The *Annual Progress Monitoring Report of CREL 1 October 2012–30 September 2013*, prepared by Winrock International on 31 October 2013, mentioned the following expenditure of the first year of CREL. However, the Report did not show the breakdown of the components in which the monies were allocated. The Report divided the first year's (2012–2013) expenditure of the CREL as listed in Table 7.11.

The second year's Annual Progress Monitoring Report of CREL (1 October 2013–30 September 2014) includes some expenditures and earning of projects such as grants for training the employees of the implementing organizations of CREL (the amount of money was not mentioned in the Report), research grant (US$50,000) to some Bangladeshi universities and research units, funding leverage from public and private sources (US$20,000), market revenues collected

Table 7.11 CREL expenditure Year 1 (2012–2013)

Quarters	*Amount US$*
Quarter 1	244,758
Quarter 2	786,905
Quarter 3	776,053
Quarter 4	1,459,147

Source: Winrock International, 2013, p. 35.

from ecoparks built in the locations of the CREL (US$4.5 million) (Winrock International, 2014, p. 62 and pp. 102–103)

International Business and Technical Consultants, Inc. produced a report on CREL in 2015 entitled *Midterm Performance Evaluation Climate-Resilient Ecosystems & Livelihoods Final Report* (International Business and Technical Consultants, Inc., 2015). This report evaluated the project CREL for the duration 2012–2015. The report mentioned that the annual administrative cost was US418,750 (p. 32). The items of the costs are (i) accounts and administrative salary, (ii) travel and per diem (meeting, training), (iii) annual development plan and programme activities, and (iv) office overhead costs. The report also includes annual budgets for arranging meetings of the implementing organizations' committees in the locations of the CREL. The annual budget was in total US$154,611, which was received from USAID as grants (p. 79). This report also mentions revenues that were collected from three sites of the CREL by selling tickets of ecotourism in four fiscal years (2011–2012, 2012–2013, 2013–2014, and 2014–2015). The sites are Lawachara National Park (LNP), Satchari National Park (SNP), and Rema-Kalenga Wildlife Sanctuary. The implementing organizations of the CREL share the revenues with each other.

The fourth year's Annual Progress Monitoring Report of CREL (1 October 2015–30 September 2016), prepared by Winrock International, includes a financial summary of CREL. However, the summary is shaded with black ink in a way that none of the amount is visible to the public (Winrock International, 2016, p. 85).

The discussion above indicates that the resilience projects were not used for making people resilient but for paying service charges of the employees of the implementing organizations of the projects. Therefore, the beneficiaries of the CRPARP are its implementing organizations but not the climate change-induced uprooted people.

One important point to note is that the annual budgets on CREL in the two fiscal years (2012–2013 and 2013–2014) demonstrate that US-based corporation Chevron also provided financial supports for planting trees in the climate-resilient forestation projects (Winrock International, 2013, p. 7; Winrock International, 2014, p. 43). Why is Chevron, which is one of the largest fossil fuel producers in the world, involved in financing tree plantations? It may seem that Chevron provided the funds for its corporate social responsibility (CSR). However, this research found that Chevron has been exploring gas in some locations of CREL by violating the 1974 Bangladesh Wildlife Preservation Act. Chevron's activities raised the questions: (i) how did Chevron get access to the locations of CRPARP – which are supposed to be anti-fossil fuel production projects? And, (ii) is CRPARP designed to support climate change-related resilience projects or to provide political cover for oil and gas producing projects?

The discussion below will reveal how Chevron has been involved in exploring oil and gas in the locations of CRPARP.

DFID and World Bank-funded projects

DFID contributes the highest amount of money to BCCRF – US$95 million or GBP 60[5] million – for implementing two projects: Multipurpose Cyclone Shelter

Construction Project and Constructing BCCRF Secretariat (World Bank, n.d.). The World Bank is in charge of the fiduciary management of the funds. According to the World Bank's BCCRF website[6], the budget for constructing the cyclone shelter is US$25 million, and the secretariat is US$0.2 million (World Bank, n.d.). However, no information is available regarding the cyclone shelters. The author has not found any other sources that could show what happened to the rest of the money. Some of the rest of the funds were unspent, and Bangladesh had to return the unspent money to the UK government (McVeigh, 2016, para. 1).

According to an article, published by *The Guardian* (2017), the government had to send back GBP 13 million (McVeigh, 2016, para. 2). There are two conflicting explanations about why the funds were unspent and why the funds were sent back to the United Kingdom. First, according to the 2017 DFID Annual Report, the delivery of the fund was delayed due to the lack of understanding between the UK government and the World Bank (McVeigh, 2016, para. 16). The UK government found that the government of Bangladesh was not committed enough to use the funds and the country was also at high risk of corruption; that is why, the UK government claimed to send back GBP 13 million (McVeigh, 2016, para. 16). Therefore, it is not clear how much money was spent to make the climate change-induced uprooted people resilient. Second, the Bangladesh High Commission in London stated that the relationship between the government of Bangladesh and the World Bank soured which ultimately drove the donors to shut down the funds (McVeigh, 2017, para. 16). The donors and the World Bank wanted to give the funds as loans, whereas the government of Bangladesh did not agree to take the funds as loans but as grants.

According to a local newspaper in Bangladesh, *Shaptahik*, one of the knowledge brokers of this book, Dr. Ainun Nishat, worked on behalf of the World Bank to convince the government of Bangladesh to agree with what the World Bank demanded regarding BCCRF. For working on behalf of the World Bank, the Bank awarded Dr. Nishat by making him the head of implementing Bank-funded two projects – Analytical Activities of Urban Flooding of Greater Dhaka Area in a Changing Climate: Vulnerability, Adaptation, and Potential Costs and Impacts of Climate Change on Vector-Borne Diseases and Implications for the Health Sector – value US$3.2 million (see more on Shaptahik, n.d., para. 10–11).

BCCTF expenditure

The BCCTF-funded projects are listed in Table 7.12.

Among the funded projects, the Bangladesh Water Development Board (BWDB) – a state-owned water resource management body has received the highest portion of the Fund – around 40% of the total fund – for implementing 141 climate change projects; percentage wise, the funds have been allocated as follows (Transparency International Bangladesh, 2017, p. i and 9):

River bank protection – 35%
Canal re-excavation – 12%

Table 7.12 The BCCTF-funded projects

No	*Climate change effects*	*Projects*	*Duration*
1	Flood	Flood control embankment building	2012–2016
2	Flood	River Bank Protection	2013–2015
3	Drought	Infrastructure development, river bank protection, river, and canal re-excavation	
4	Cyclone and flood	Building polder	2013–2014
5	Cyclone and salinity intrusion	River bank protection and rebuilding the embankment	2012–2016
6	Cyclone and salinity intrusion	Repairing of polders	2011–2015

Source: Bangladesh Climate Change Trust, 2016, pp. 1–33.

River re-excavation – 8%
Cross-dam building – 4%
Flood control, irrigation, and drainage system development – 6%
Embankment and infrastructure development – 15%

The district-wise fund distribution raised serious criticisms in Bangladesh because the two divisions (Dhaka and Chittagong), which are not considered as climate vulnerable areas, received 47% (Dhaka 19% and Chittagong 28%) of the climate change adaptation funds allocated to the BWDB. In contrast, Khulna, one of the most climate change-affected areas in Bangladesh and the most potential site for generating climate change-induced uprooted people, received only 10% of the fund (Transparency International Bangladesh, 2017, p. 17; Shaptahik, n.d., para. 4).

The role of multi-scalar knowledge brokers and transnational network

It is mentioned earlier that the beneficiaries of resilience projects are its implementing organizations because the funds of resilience projects are used to pay the service charges of the organizations. The multi-scalar knowledge brokers play principal roles in securing the interests of the organizations. In order to understand how they reconcile the interests of donors, national government, and local NGOs, a brief analysis of the roles of multi-scalar knowledge brokers and the nature of implementing organizations need to be discussed.

The multi-scalar knowledge brokers work at multiple levels across local, national, and international levels, and thus they serve political and economic interests of all the actors involved (except the climate change-induced uprooted people). They work as IPCC's authors, national delegates or delegates of the civil society organizations to the UNFCCC annual conferences, consultants to donors and the World Bank, consultants

to national government in drafting climate change-related action plans, and directors or consultants to local NGOs. Through these multiple tasks, the brokers produce the knowledge of resilience as adaptation in the IPCC's Assessment Reports and disseminate it in the UNFCCC's annual conference, they draft NAPA at the national level by following the knowledge of adaptation, they work as consultants on behalf of donors and World Bank for implementing resilience projects in a way that the latter want, and they win the contracts of adaptations projects via their affiliated NGOs at local level. Thus, by working in multiple organizations, they soften the organizational boundaries[7] for transmitting and institutionalizing the knowledge of adaptation from very top level (i.e. international level) to the very bottom level (i.e. local level). Thus, the knowledge brokers make a transnational network for producing, transmitting, and institutionalizing the knowledge of *resilience as adaptation*.

The following section analyses how the multi-scalar knowledge brokers maintain a transnational network via working in multiple levels by summarizing the CRPARP and BCCTF connections.

Climate Change Resilience Participatory Afforestation and Reforestation Projects

The nature of the implementing organizations of IPAC and CREL are as follows:

WINROCK INTERNATIONAL

One of the implementing organizations of CREL is the US-based Winrock International. Winrock International is popular worldwide as a non-profit organization for implementing projects regarding development, environmental, agricultural, and climate change issues (Winrock International, n.d., para. 1). However, this organization is controversial in many parts of the world. The causes of the criticisms against the organization are that it produces palm oil in the guise of environmental and climate change projects. An example of such a project is Indonesia's sustainable palm oil production (Winrock International, n.d., p. 1–2). It is worth noting that the founder of Winrock International is one of the famous political figures of the USA – Winthrop Rockefeller, the grandson of Standard Oil's John D. Rockefeller. Standard Oil is the predecessor of Chevron and Exxon. Winrock International works in partnership with Chevron and Exxon to implement many environmental projects around the world.

INTERNATIONAL RESOURCES GROUP (IRG)

The USAID-funded NSP (2003-2008) and IPAC (2008-2013) have been implemented by the US-based International Resources Group (IRG). The IRG was acquired by the US-based RTI International in 2017 (RTI International, 2017, para.1). Prior to the acquisition, IRG worked closely with USAID and provided professional services globally to help governments and NGOs in areas of energy, environment, conservation, and extract industries. IRG worked in partnership

with Chevron, Ashland Oil, Sun Oil Company, Texaco, Duke Energy, Exxon and Royal Dutch Shell, World Bank, ADB, the African Development Bank, and World Wildlife Fund (WWF) (Khan, 2013, pp. 121–123).

IUCN-BANGLADESH (IUCNB) AND ITS MEMBERS IN BANGLADESH

Khan (2013, p. 4) noted, '[IUCN] globally advocates and implements co-management model of natural resource conservation and management' and for which IUCN-Bangladesh has been involved in USAID-funded forest conservation projects in Bangladesh. However, the IUCN is also not free from criticism of having partnerships with fossil fuel corporations. The selective fossil fuel corporations are Shell, Chevron, ExxonMobil, and Rio Tinto. Khan (2013, pp. xxi, 105, 148–166, 295–335) explained that IUCN helps fossil fuel corporations produce oil and gas in the forest conservation projects by manipulating EIA (Environmental Impact Assessment Reports) and environmental clearance certificate on behalf of the corporations. In return, the IUCN received a certain amount of profit generated from the oil and gas production. In his research, Khan also demonstrated that Chevron lobbied the government of Bangladesh and IUCN to give EIA an environmental clearance certificate on behalf of Chevron so it can extract oil and gas in IPAC and CREL locations. It is worth noting that when the contract of IPAC and CREL was signed, Dr. Ainun Nishat – a knowledge broker of this book – was the country representative of the IUCN-Bangladesh and he signed the EIA (Environmental Impact Assessment Reports) in favour of Chevron.

Aside from IUCN, the previously mentioned implementing organizations of CRPARP also help fossil fuel industries to extract oil and gas in the guise of environmental and climate change projects. Drawing on this discussion, it can be stated that the USAID-funded CRPARP is a complete departure from its original goals (i.e. to make the climate change-induced people resilient) and it has been merged into US-based fossil fuel production projects via Chevron in the name of climate change-induced resilience projects.

LOCAL NGOS OF BANGLADESH

The local NGOs of Bangladesh, who work in partnership with IRG and Winrock International, are NACOM, RDRS, CODEC, and BCAS. Among the local NGOs, the NACOM, RDRS, and CODEC are not permanent NGOs (Khan, 2013, p. 153). These NGOs were established under the conditions of the 1998 TFCA that Bangladesh needed to establish some local NGOs for implementing the projects. The NGOs will conclude their operations when the time period of the TFCA treaty ends. BCAS is the only independent local NGO that had been established long before USAID-funded forest conservation started its operation in Bangladesh (BCAS, n.d., para. 1).

Having the critical features of CRPARP in mind, the following discussion demonstrates how the knowledge brokers maintain the connection, as well as the transnational network, in implementing the CRPARP (see Chapter 5 for references).

A Dr. Atiq Rahman was the Executive Director of the BCAS which secured the contract of IPAC and CREL. A was the member of the Governing Body of AF between 2003 and 2007, and the Chairperson of the Governing Body of AF in 2008[8] when the CRPARP was signed to be implemented.

B Dr. Saleemul Huq was the Chairman of the BCAS while IPAC and CREL were implemented in Bangladesh. BCAS was the local NGO that implemented IPAC and CREL.

C Dr. Ainun Nishat worked as Country Representative of IUCN-Bangladesh in 2008 (IUB). Dr. Nishat signed the environmental clearance report on behalf of the Chevron for producing gas and oil in the implementing locations of the IPAC and CREL. He also worked as a consultant of the BCAS.

D Dr. Ahsan Uddin Ahmed worked as the consultant of the BCAS while CRPARP was signed.

E Dr. Qazi Kholiquzzamana Ahmed was Chairman of the state-owned PKSF (Palli Karma Sahayak Foundation). Dr. Kholiquzzaman has been criticized in Bangladesh for approving the projects – submitted by the local NGOs, in this case, it is BCAS – without considering whether the projects are related to climate change or not (Shaptahik, n.d., para. 23). Such projects include IPAC and CREL (Shaptahik, n.d., para. 23).

So, the contributions of the knowledge brokers, in case of implementing CRPARP, can be summarized as follows:

International level	Knowledge production of resilience as adaptation in the IPCC Assessment Reports and in the World Bank documents (A, B, C, D, E).
National level	Institutionalize 'resilience' in NAPA and BCCSAP by being in the drafting committee of NAPA and BCCSAP (A, B, C, D). NAPA and BCCSAP are supported by BCCRF and BCCTF.
National level (USAID)	Implement CRPARP which is based on the knowledge of resilience via AF (A) and BCAS (A, B, C, D).
National level	PKSF (E) helps BCAS for getting the contract of the CRPARP.
Chevron connection	IUCN (C) helps Chevron to achieve EIA and environmental clearance certificate.

The connections are illustrated in Figure 7.1.

The multiple activities of the knowledge brokers create a transnational network of all the actors – donor country (USAID), the recipient country (Bangladesh), local NGOs (BCAS), and knowledge brokers (A, B, C, D, and E) by which the actors secure their political and economic interests:

(i) Western-industrialized countries are exempted from giving compensation to the climate change-induced uprooted people by arguing that the people should be self-responsible by being resilient or adaptive in facing climate change-induced calamities.

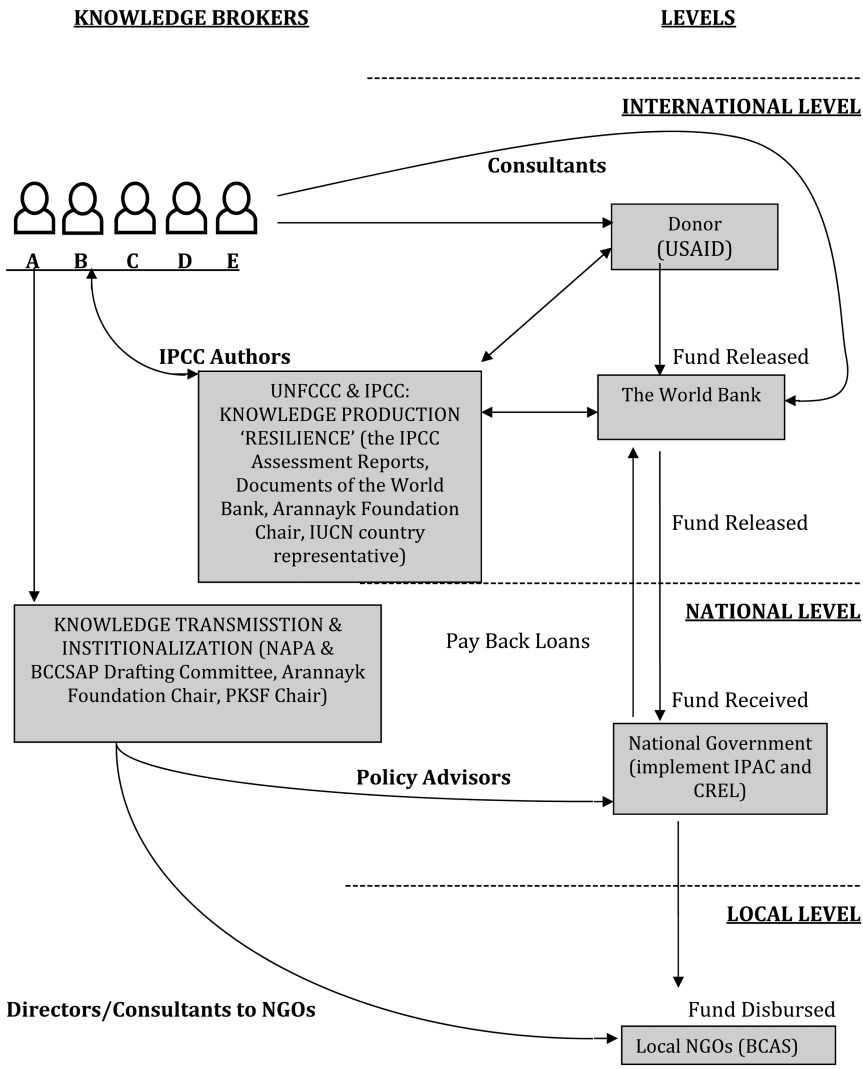

Figure 7.1 Mechanism for maintaining the network in case of CRPARP (BCCRF).

(ii) All the actors (in particular, the Western-industrialized countries as donors and the World Bank) justify that their funded adaptation/resilience projects are the best solution to the problems of the uprooted people. Western-industrialized countries demonstrate to the world that they are helping the climate victims via providing resilience funds and implementing resilience projects. The countries can also adjust their previous lending to the borrowing

countries via the resilience funds and achieve permission for their NGOs and corporations to extract oil/gas in the guise of the climate change resilience projects.

(iii) Bangladesh receives the funds, provided by the Western-industrialized countries, and implements resilience projects. The projects benefit the government of Bangladesh demonstrating that they are diligent about the climate change-induced uprooted people and the projects are implemented to help the people. Bangladesh can also pay back its current loans to the donors as the funds are adjusted to the current loans.

(iv) Local NGOs secure the contracts of big-budgeted climate change adaptation/resilience projects.

(v) The multi-scalar knowledge brokers become very powerful individual actors that they are hired by the World Bank, the UNFCCC/IPCC, and the national government (of Bangladesh) for producing, transmitting/conveying, and institutionalizing specific knowledge (i.e. resilience in this book). In doing so, the brokers play key roles to reconcile the interests of states, non-state actors, international institutions, and donors.

However, in practice, none of the resilience projects help climate change-induced uprooted people to be resilient because the money is diverted from authentic resilience building initiatives – the funds have been used for paying the administrative costs of the implementing organizations of BCCRF and training purposes related to the knowledge production of resilience in which none of the uprooted people are involved.

Bangladesh Climate Change Trust Fund

According to most of my participants and some Bangladeshi newspapers, the Trustee Board of the BCCTF approves the climate change adaptation projects by following proper public procurement procedures in Bangladesh. For example, according to Participant 5[9] and Participant 7[10], the concerned authority of Bangladesh asked for tenders in public-media for submitting climate change adaptation and resilience projects. However, for them, the selected projects are highly controversial because these projects had been assigned in locations in which the effects of climate change are minimal or where there is no climate change impact at all. Most of the projects were allocated to BCAS, BUP, and CEGIS. PKSF is in charge of allocating the funds to NGOs, whereas Dr. Kholiquzzaman – a knowledge broker of this book – is PKSF's Chairman and also the founding Executive Director of the BUP. At present, another knowledge broker of this book – Dr. Ahdan Uddin Ahmed – is the Executive Director of the BUP. On the other hand, other knowledge brokers – Dr. Atiq Rahman, Dr. Saleemul Huq, and Dr. Ainun NIshat – are also involved in BCAS. According to the participants, the official positions of Dr. Kholiquzzaman made it possible to allocate the money to those NGOs.

The knowledge brokers played the following roles in implementing the BCCTF.

International level	Knowledge production of resilience as adaptation in the IPCC Assessment Reports and in the documents of the World Bank (A, B, C, D, E).
National level	Institutionalize 'resilience' in NAPA and BCCSAP by being in the drafting committee of NAPA and BCCSAP (A, B, C, D). NAPA and BCCSAP are supported by BCCRF and BCCTF.
National level	Help BCAS and BUP for getting the contract of the BCCTF-funded projects and implement resilience projects at the local level of Bangladesh (E).

Conclusion

The original goal of the projects discussed in this chapter was to make the climate change-induced affected/uprooted people resilient. However, the projects implemented by BCCRF (Bangladesh Climate Change Resilience Fund) and BCCTF (Bangladesh Climate Change Trust Fund) do not include any strategy for making the people resilient. Instead, BCCRF was spent to meet the administrative cost of the implementing organizations of the projects; costs related to research, training, and knowledge production and dissemination of *resilience*. CARPARP also permits Chevron to produce oil and gas in the locations of climate change resilience projects. BCCTF is spent in areas where the climate change-related effects are minimal. By implementing the projects, the government of Bangladesh, its local NGOs, donors of the projects – including the World Bank, the United States, the United Kingdom, Australia, Sweden, Denmark, Switzerland and members of the European Union – and the knowledge brokers served their political and economic interests – mentioned in the first section of this chapter – but completely ignored the interests of the climate change-induced uprooted people. The projects do not include anything which can make the uprooted people resilient. Instead, they stress research, training and knowledge production of resilience and fossil fuel production. So, the climate change resilience projects are a complete departure from their original goals.

Full information regarding the climate change resilience funds and projects is not publicly available. Therefore, this research is unable to paint a complete picture of the projects and climate finance. However, the insights, which are drawn from multiple sources, are sufficient to draw the conclusion that the actors are driven by their political and economic interests for replacing the concept of climate refugees with that of climate change-induced displacement.

Notes

1 Khan, T. (2013). *The Project in Bangladesh Gas Forest and Livelihood*, University of New England, Australia.

2 In Bangladeshi currency, it is BDT 610,688,400. BDT refers to Bangladeshi Taka.
3 University professor and climate change activist, face-to-face interview, January 2017, Dhaka, Bangladesh.
4 Official of an international non-governmental organization, face-to-face interview, January 2017, Dhaka, Bangladesh.
5 The conversion rate at the time of the money was US 1 = GBP 0.6481 (Independent Commission for Aid Impact, 2011, p. 13).
6 The website is http://siteresources.worldbank.org/SOUTHASIAEXT/Resources/223546-1214948920836/bccrf-projects.pdf. Date accessed 3 January 2018
7 I.e., the boundaries of the IPCC, UNFCCC, national government, donors, the World Bank, and local NGOs.
8 Official of an international non-governmental organization, face-to-face interview, January 2017, Dhaka, Bangladesh.
9 University professor and climate change activist, face-to-face interview, January 2017, Dhaka, Bangladesh.
10 Official of an international non-governmental organization, face-to-face interview, January 2017, Dhaka, Bangladesh.

8 The present and the future

Summary of the book

This book has examined why and how have the political–economic actors replaced the knowledge of *climate refugees* with that of *climate-induced displaced/migrants* in the discussions of climate change in Bangladesh. The political–economic actors refer to state actors, non-state actors, international institutions, and donors. This book also introduced another actor – the multi-scalar knowledge brokers – who played key roles at three levels: international, national, and local. They connected all the other actors and developed a *transnational network* by which the interests of the actors were served. The transnational network refers to a cross-border network of state actors, non-state actors, international institutions, and donor agencies.

The political–economic actors replaced the knowledge of climate refugees with that of climate change-induced displaced people because the latter ones help the actors develop a transnational network to secure their political and economic interests. These interests are:

- Western-industrialized countries are exempted from giving compensation to the climate victims by arguing that the climate change-induced uprooted people should be self-responsible by being resilient or adaptive in facing climate-induced calamities.
- All the actors (in particular, the Western-industrialized countries as donors and the World Bank) justify their prescribed adaptation/resilience projects as the best solution to the problems of climate change and climate victims. The Western-industrialized countries give funds to the climate-affected countries (i.e. Bangladesh) for implementing the projects and for demonstrating to the world that they are helping the climate change-induced uprooted people to be resilient.
- Bangladesh receives the funds, provided by the Western-industrialized countries, and implements the resilience projects. The projects facilitate the government of Bangladesh to demonstrate that they are diligent about the climate victims and the projects are implemented to help the victims. Bangladesh can

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also pay back its current loans to the donors as the funds are adjusted to the current loans.

- Local NGOs can secure the contracts of big-budgeted 'climate change adaptation/resilience projects'.
- The multi-scalar knowledge brokers become very powerful individual actors. They work as consultants to the World Bank, the UNFCCC/IPCC, and the national government (of Bangladesh) for producing, transmitting/conveying, and institutionalizing specific knowledge (i.e. resilience in this book). In doing so, the brokers play key roles to reconcile the interests of state actors, non-state actors, international institutions, and donors.

This book also analyzed the adaptation/resilience projects and found that the money allotted for implementing the projects was mainly spent for the knowledge production, dissemination, and training related to *climate change resilience*; the administrative cost of the knowledge production; and payments to the implementing organizations of the projects. None of the projects could demonstrate that they helped the climate change-induced uprooted people become resilient. Therefore, it is not clear how the resilient projects prescribed by the migrant-group are a solution to the problem of the climate change-induced uprooted people.

The argument was established through six chapters (excluding the first and last chapters). Chapter 2 included the discussion of three debates – legal, political–economic, and security concerns – regarding conceptualizing the uprooted people. The debates around political–economic and security concerns put forth the knowledge of resilience in the discussion of climate refugees and climate change-induced displacement. The rest of the chapter focused on how the idea of resilience helped to replace the term climate refugees with that of climate change-induced displacement. This chapter also has discussed the significant limitations of the existing literature which typically depend on (i) North–South division for analyzing climate change issues, (ii) the inadequacies of adaptation and resilience projects, (iii) oversimplification of the analysis of climate change data regarding sea level rise, and (iv) the role of some individuals, whom this book labelled multi-scalar knowledge brokers, in the whole story of climate refugees and climate-induced displacement.

Chapter 3 filled these knowledge gaps of the existing literature by proposing a new hybrid theory – a combination of knowledge analysis from the perspective of critical constructivism of IR/GPE and Political Ecology; Stone's (2002) knowledge networks, Finnemore and Sikkink (1998)'s transnational norm entrepreneurs, and the conceptual analysis of political–economic concerns from the perspective of IR. This book has entitled the theory as Knowledge Network Theory.

Chapter 4 included a brief analysis of the impacts of climate change in Bangladesh. This chapter was important because it demonstrated how some dominant actors in global climate politics – the IPCC, the UNFCCC, and the World Bank – interpreted climate change data to produce the knowledge of population movement in Bangladesh. This chapter argued that the dominant actors overstated climate change data in constructing the knowledge that sea level rise causes

population movement but understated the impact of global warming-induced frequent cyclones and tropical depressions which uproots people because the former one helps them to implement climate change resilience projects in Bangladesh.

Chapters 5–7 explored the Knowledge Network Theory through a single case study – Bangladesh. Chapter 4 introduced the components of knowledge network theory – actors, five multi-scalar knowledge brokers, and climate finance. Chapter 5 introduced five knowledge brokers and the existing nature of climate finance in Bangladesh from which the actors, including the knowledge brokers, gain their political and economic interests.

Chapter 6 portrayed the actors involved in framing the knowledge of climate refugees as the same actors who replaced it with that of climate change-induced displacement. The chapter included an explanation of why the same actors replaced the previous term and for what *interests*.

The issue of *interest* leads us to read Chapter 7, which describes two existing climate change-related finance in Bangladesh – BCCRF and BCCTF – from which all the actors secure their political and economic interests. This chapter also focuses on how the knowledge brokers worked at the multiple levels – international, national, and local – and helped maintain a transnational network to gain their interests. This chapter also revealed that the implementation process of the climate change resilience projects – funded by the BCCRF and BCCTF – is very critical. In the case of CRPARP, funds are allocated for administrative purposes and for paying the implementing organizations of the resilience projects but not for any *climate change resilience purposes* (such as tree plantation or forestation). Chevron is also producing gas/oil in the locations of CRPARP in the guise of the climate change resilience projects. The World Bank is awarding the knowledge brokers, who try to convince the government of Bangladesh to take loans from the Bank for implementing the resilience projects, by assigning them *in-charge* of the resilience projects. In the case of BCCTF, some funds have been distributed in some locations which are not climate-affected areas such as Dhaka and Chittagong.

Contribution to knowledge

The original contribution to knowledge of this book is twofold – theoretical and empirical. Theoretically, this book presents a hybrid theory – knowledge network theory – a combination of the analyses of 'knowledge' from the perspective of critical constructivism and Critical Political Ecology, Stone's (2002) knowledge networks, Finnemore and Sikkink (1998)'s transnational norm entrepreneurs and conceptual analysis of political–economic actors from the perspective of IR. The critical constructivism of IR/GPE explains that knowledge is not power-neutral and value-free. Instead, knowledge is produced to serve the particular interests of actors who produced it. Similarly, Critical Political Ecology describes that scientific knowledge regarding environment, ecology, and climate change has its roots in power politics between actors involved in producing the knowledge. Drawing on the political nature of knowledge, this book demonstrates that the knowledge

of climate refugees and climate change-induced displaced people/migrants are not value-neutral. Instead, the knowledge of climate refugees was introduced to serve certain sets of interest of climate change-induced uprooted people in Bangladesh. However, it was replaced afterwards by the knowledge of climate change-induced displaced people for serving the interests of the government of Bangladesh, its local NGOs, donors, UNFCCC/IPCC, and the knowledge brokers– at the cost of the interests of the actual climate change-uprooted people.

This book also introduced the idea of *multi-scalar knowledge brokers.* The multi-scalar knowledge brokers are the individual actors who work at three levels – local, national, and international – for producing, transmitting, and institutionalizing certain kinds of ideas/knowledge at national and international policy levels. This book demonstrates that knowledge brokers played a significant role in replacing the term climate refugees with that of climate-induced displaced people. The brokers work as intermediaries to bring consensus between different actors who have conflicting interests. In this book, the brokers help bring the interests of, at the one hand, (i) the Western-industrialized countries (who is mainly donors of climate change resilience projects in Bangladesh), the UNFCCC/IPCC, the World Bank, (ii) the government of Bangladesh and local NGOs, on the other. However, in bringing the consensus between these two groups of actors, the knowledge brokers eliminate the interests of the people whom they labelled *climate refugees* from the 1990s to the early 2000s.

This book is indebted to Stone's (2002) knowledge networks and Finnemore Sikkink (1998)'s transnational norm entrepreneurs because those helped this book to develop the idea of multi-scalar knowledge brokers. Stone's knowledge network helped to understand how individual actors can act as intermediaries for connecting domestic and foreign actors and for transmitting and disseminating specific knowledge across borders. Finnemore and Sikkink (1998)'s transnational norm entrepreneurs go further in analyzing how the individual actors can be rational and strategic in producing and transmitting certain norms internationally which helps them to attain their interests.

The main difference between Stone's intermediary and Finnemore and Sikkink's transnational norm entrepreneurs and multi-scalar knowledge broker is that the knowledge brokers have multiple identities. They work as IPCC members, national delegates to the UNFCCC and any other international climate change conferences, consultants to the international organizations and national government, and executive director and founder of a local NGO.

By working across scales or levels, the knowledge brokers are able to build a consensus on policy issues. They serve a vital role in cementing the hegemony of particular ideas as they encourage subordinate groups to adopt the perspective of those groups with more resources. They are the key actors in aligning the interests of different groups from the local to the international.

Second, empirically, this book demonstrates a better understanding of *why* the knowledge of climate refugees has been dropped and a better understanding of *why* it has been replaced by climate change-induced displaced people. The knowledge of climate refugees only serves the interests of Bangladeshi climate

change-uprooted people, whereas the knowledge of climate change-induced displaced people serves the interests of the government of Bangladesh, donors, local NGOs, and the multi-scalar knowledge brokers. This book demonstrates the role of five knowledge brokers who derive their influence from holding important positions at local, national, and international *policy levels* in particular, in drafting the knowledge of climate change in the official documents of the IPCC/UNFCCC, the World Bank, the national governments (in this case, it is the government of Bangladesh), and local NGOs. The multi-tasks of these brokers make them well equipped and well skilled to work at all three levels and to create a transnational network, which help them to secure the political and economic interests of the other actors, except the actual climate change-induced uprooted people.

Counter-force or counter-argument against the powerful actors-driven terminologies

This book demonstrates that the knowledge of climate refugees was abandoned and replaced by the knowledge of climate change-induced displaced people/migrants. As mentioned in Chapter 7, the original goals of the climate change resilient projects were to make the climate change-induced affected/uprooted people resilient. However, the projects implemented by BCCRF (Bangladesh Climate Change Resilience Fund) and BCCTF (Bangladesh Climate Change Trust Fund) do not include any strategy for making the people resilient. Instead, the funds were spent to meet the administrative cost of the implementing organizations of the projects and costs related to research, training, and knowledge production and dissemination regarding resilience. The projects do not include anything which can make the affected/uprooted people resilient but research, training, and knowledge production of resilience. So, the climate change resilience projects are a complete departure from their original goals.

The deviation of the resilience projects from their original goals mainly hurt the interests of the climate change-induced uprooted people. These people whose protection and relocation were the primary concerns of the knowledge of climate change-induced uprooted people are completely left out from any international and national climate change discussions. The international society assumes that the people are well protected by the climate change resilience projects; however, in practice, it is not the case.

The knowledge brokers could reconcile the interests of different actors. However, the brokers did not bring the interests of the uprooted people to the table. So, from the perspective of global climate politics, these people and their voices are completely ignored.

Is the finding of the book generalizable? What about future research?

The finding of the book is generalizable in the following three topics, which can also be explored in future research:

1. The multi-scalar knowledge brokers are world-renowned climate scientists, authors of the IPCC Assessment Reports, and award-winning environmentalists. They play major roles at the UNFCCC and World Bank (and, even at national policy level) as experts of environmentalists. However, these knowledge brokers facilitated Chevron producing oil/gas in Bangladesh in the guise of CRPARP while these brokers are popular worldwide for protesting against excessive carbon emissions in COPs.

The dual-but-conflicting roles (i.e. on the one hand, environmentalists and on the other hand, facilitator of fossil fuel producers) of the multi-scalar knowledge brokers are seen not only in the case of Bangladesh but also in parts of the world. The former IPCC chairman Rajendra Pachauri worked as director general of TERI (The Energy and Resource Institute – which is known as an energy research institute in India) (Hughes, 2015, p. 96). TERI's work is supported[1] by the national government of India, coal and petroleum companies of India (such as Northern Coal Field Limited, Hindustan Petroleum Corporation Limited, Bharat Petroleum), International Financial Corporation, the World Bank, and funds from some of the Western-industrialized countries such the United Kingdom (Teri, n.d.). On the other hand, the Canadian oil and energy businessman Maurice Strong also worked as the Secretary-General of the 1972 United Nations Stockholm Conference on the Human Development, first Executive Director of the UNEP, commissioner of the World Commission on Environment and Development, leader of IUCN, and Chief Executive Officer of Petro-Canada (Khan, 2013, p. 65; Hickman, 2010)[2]. So, these kinds of multi-scalar knowledge brokers exist in other countries in the world. For this reason, the conceptual and theoretical analysis of multi-scalar knowledge brokers is generalizable.

In the future, the author of this book wants to conduct research on these kinds of knowledge brokers who exercise a dual-but-conflicting role – environmentalists and facilitators of fossil fuel producers – in Canada, the USA and other parts of the world. My aim is to explore their networks and source of power in the international policy community. The starting point of this research can be to observe the work of non-profit environmental organizations which work on environmental and climate change issues, and thier executive directors/founders who are reputed worldwide. An example of this kind of non-profit organization is the Rockefeller Family's – Winrock International. Although this organization is reputed for implementing pro-environmental and climate change projects, it produces palm oil in different parts of the world (Winrock International, n.d., p. 1–2). Palm oil production contributes 4% of total global carbon emission, and thus, helps global warming (Green Peace, 2007, para. 2).

2. The Western-industrialized countries provide climate change resilience funds, but they do not disclose that the funds have been distributed between the implementing organizations *only* for their administrative costs and service charges. The funds are not in use for the projects to fight against climate change. The funds are also given as loans, and Bangladesh has to pay back

> the loans. Therefore, the climate change funds appear to be a new tool for the Western-industrialized countries to make Bangladesh more indebted than before and to earn money (via the interests of the loans) from the loan. In a similar way, the funds are given as loans to other least developed countries through the UNFCCC's LDCF. In this sense, this book is generalizable because the funds are also implemented in similar ways in those developing countries; examples include Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, and Zambia; six Caribbean island countries; and three Pacific Island countries (Rai & Smith, 2013, p. 6).

The analysis above can lead us to conduct a future-research on: How can Bangladesh or other developing countries ignore the loans by undermining the roles of the knowledge brokers – who negotiate on behalf of the donors to take the loans?

3. Another important research project can be to find out whether there is any counter-transnational network that works against the political and economic interests of the domestic and foreign state actors, non-state actors, and multi-scalar knowledge brokers, but for the interest of saving the nature or climate or the people who are severely affected by the impacts of climate change? If yes, what are their activities?

An idea of this kind of counter transnational network can be found in Patrick Bond's (2012) book *Politics of Climate Justice Paralysis above Movement Below*. The book demonstrated that although the elite individual actors (whether they are from the Western-industrialized countries or from the developing countries) are not successful enough in international climate change negotiations to support the climate victims and to stand against fossil fuel industries, the local people, local communities, and local climate change activists are organizing various kinds of movements/protest against fossil fuel industries and carbon emissions. These local movements, for various reasons, have not achieved global momentum to raise their voices against fossil fuel industries (pp. 185–209). Many local movements have been brutally suppressed by the law enforcement agencies in Bangladesh, India, Malaysia, Thailand, and the Philippines. Many local issues have not caught global attention. Geographical distance is also a reason for which the grassroots' movements and activists could not establish a transnational network. From an ideological point of view, ecosocialism and ecofeminism have not created an appeal worldwide, which can bring the environmentalist under a single transnational network. That is why Bond stated, 'climate justice movements across the world have not solidified a coherent set of tactics, much less strategy, principles, ideology and foundational philosophy' (p. 200).

However, in spite of all these difficulties, Bond is hopeful that climate justice movements, including Climate Action Network, will continue to grow. This growing network can be considered as a counter-network which works for serving the political and economic interests of the domestic and foreign state actors,

non-state actors, and multi-scalar knowledge brokers. However, unlike Bond, the author of this book is suspicious about Climate Action Network because my research shows that Dr. Atiq Rahman – a multi-scalar knowledge broker – is the convenor of this Climate Action Network in South Asia (BCAS, n.d., para. 3). So, the Network cannot be considered as a counter-transnational network but the same network which works for serving the political and economic interests of the actors mentioned above.

For the above-mentioned reasons, the author of this book thinks that a counter-transnational network can be a network established by weak actors who are non-elites and the actual climate change-induced uprooted people. How these kinds of weak actors establish a counter-transnational network can be discovered in future research.

Notes

1 See more on this in Teri's website here: http://www.teriin.org/projects/teddy/support.html#; and http://lightingasia.org/india/what_new/launch-of-the-ifc-supported-teri-solar-lighting-laboratory-in-new-delhi.

2 For more information on Maurice Strong, please see Mayor, F., Ostojić, N. & Savio, R. (2018). *Legacy for the future and future generations: Remembering Maurice F. Strong tributes and reminiscences*. European Centre for Peace and Development, University for Peace Est. by the United Nations.

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