



ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tsdw20

# Freedom of choice to migrate: adaptation to climate change in Bangladesh

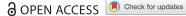
Mohammad Assaduzzaman , Tatiana Filatova , Frans Coenen & Jon Lovett

**To cite this article:** Mohammad Assaduzzaman , Tatiana Filatova , Frans Coenen & Jon Lovett (2020) Freedom of choice to migrate: adaptation to climate change in Bangladesh, International Journal of Sustainable Development & World Ecology, 27:7, 652-661, DOI: 10.1080/13504509.2020.1754959

To link to this article: <a href="https://doi.org/10.1080/13504509.2020.1754959">https://doi.org/10.1080/13504509.2020.1754959</a>

9	© 2020 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.
	Published online: 13 May 2020.
	Submit your article to this journal 🗹
ılıl	Article views: 746
Q	View related articles 🗗
CrossMark	View Crossmark data ☑
4	Citing articles: 1 View citing articles ☑







# Freedom of choice to migrate: adaptation to climate change in Bangladesh

Mohammad Assaduzzaman<sup>a</sup>, Tatiana Filatova<sup>a,b</sup>, Frans Coenen<sup>a</sup> and Jon Lovett (D<sup>c</sup>

<sup>a</sup>Faculty of Behavioural Management and Social Sciences, University of Twente, Enschede, Netherlands; <sup>b</sup>School of Information, Systems and Modelling, Faculty of Engineering and IT, University of Technology, Sydney, Australia; 'School of Geography, University of Leeds, Leeds, United Kingdom

#### **ABSTRACT**

Adaptation is an essential part of climate change policy. In areas where impacts are likely to be severe, migration is considered to be an adaptation option. In Bangladesh coastal areas migration due to climate change is contingent on people's freedom of choice at individual and household level. Following Amartya Sen's capability approach, we argue that there should be a line drawn between migrations by free choice versus forced migration. Sen's capability approach focuses on the importance of people's freedom of choice to act, and the ability to achieve what they consider valuable in their life. In this paper, we use an extensive empirical work engaging 22 focus groups discussions (8-12 individuals in each group) and 14 Key Informants Interviews in South-West Bangladesh to elicit how freedom of choice changes with the economic class and social status of an individual. Using these data we apply Sen's capability approach to understand the role of the freedom of choice when considering migration as an adaptation option. We argue that the capability approach is essential in revealing a thin border between migration as a (planned) adaptation option and forced migration.

#### **ARTICLE HISTORY**

Received 1 April 2020 Accepted 8 April 2020

#### **KEYWORDS**

Climate Change; adaptation; freedom of choice; income class: migration drivers

#### 1. Introduction

Migration is a complex decision, influenced by many factors, with climate-related environmental change being just one of them. It can be seasonal, temporal and permanent, and there is a delicate balance between the push and pull dynamics that trigger a migration decision. Motives range from making a free choice in a search for better opportunities; to being forced by complete loss of livelihood, for example, because of cyclone damage or seawater inundation. Yet, Individual's and capability expansion and freedom of choice has important role to play in climate adaptation (Biggeri and Ferrannini 2014; Clark et al. 2019). This paper uses the 'capability approach' of Amartya Sen to provide a framework to investigate the attributes that people who consider migrating may either have or lack (Sen 1992). According to Sen, the capability of an individual depends on a person's ability to choose and achieve the functioning they need to live a life they have reason to value (Sen 2000a; Robeyns 2005). To realise their capabilities, they need access to basic resources, including food, employment, social networks, education and mobility. A fully functioning human life depends on a good socio-ecological, economic, political and personal conversion factors, together with human, physical and financial capital (Nambiar 2013). Freedom of choice is intrinsically valuable to people as it gives them the ability to achieve their own destiny both as a person and as part of relevant communities (Alkire 2009).

Bangladesh is densely populated with 163 million people living in a land area of 147,570 km2 and an average annual rate of population growth of 1.2% (UNFPA 2016). It is also disaster-prone with high risk of cyclones and floods (IPCC AR5; Parry 2007; Maplecroft 2011; Shaw and Mallick 2013; IPCC 2014; Islam et al. 2014). One-third of the country has an average elevation of 4-6 m above mean sea level (Khan et al. 2004; CCC 2016; World Bank & GFDRR 2018). This land floods during the monsoon and is susceptible to tidal inundation (SRDI 2010; World Bank 2015). Sea level rise threatens infrastructure, livelihoods, food production and access to drinking water. Millions of people are at risk of becoming climate migrants from low-lying areas, thereby putting pressure on land and resources in other parts of Bangladesh (World Bank 2000; MoEF 2009; McAdam 2011; Mahmood 2012). However, not all migration is forced, it is also a general coping strategy to reduce livelihood vulnerability, increase livelihoods resilience and improve wellbeing, especially in rural areas (Mallick 2011; Shah et al. 2018; Fuchs and Thaler 2018).

We use Sen's capability approach as an analytical framework to explore how different dimensions of freedom of choice are associated with migration as an adaptation option. The paper seeks to address the following two research questions: how do pull and push migration factors differ among various socio-economic groups; and where is the border between migration as an adaptation option and forced migration? We synthesize data collected in a questionnaire survey during the period 2013–2015 in Bangladesh and analyse responses from 22 focus groups, consisting of 215 individuals who differ in gender, age and occupation. The paper treats freedom of choice explicitly when studying climate-driven migration as a path between an individual's socio-economic condition and their achieved functioning. The framework used emphasizes the conversion factors that affect an individual's ability to achieve their functioning and freedom of choice based on a set of individual capabilities. The following section outlines the conceptual framework and presents the migration decision through the lens of Sen's capability approach. Section 3 presents the details of the study area and methodology. The results are in Section 4 and conclusions in Section 5.

## 2. The capability approach and climate change migration

Amartya Sen's capability approach framework evaluates socio-economic arrangements based on the extent of freedom of choice to achieve the functioning necessary to lead a life an individual wants to value (Sen 1999a:75; Alkire 2002). Sen does not advocate a particular concept of a good life but rather emphasizes the importance of freedoms that each individual can exercise concerning the options that matter most to her or him. Human development is thus the expansion of the range of genuine freedoms and choices for each individual; and human well- being should be assessed in the light of an individual's social, economic and political environment (Mizohata 2011). The global environment is changing, and migration is one of the

possible adaptation options under conditions of climate extremes. Yet, not all individuals have access to the same choices. There is a high degree of income inequality in Bangladesh, which is determined by individual access to resources and services as well as a variety of social and economic conditions (Osmani and Sen 2011). This inequality affects people's ability to migrate as a climate adaptation option.

Planned migration in response to climate changerelated stresses is a potential adaptation strategy (Alarcón et al. 2011). It may be the most effective way for people to diversify their income and build livelihoods resilient to climate change and other environmental threats (Black et al. 2011b; Kartiki 2011). Although migration is considered one of the many adaptation options, it is not always available as a free choice for all individuals in a population vulnerable to adverse climate change impacts. This paper applies Sen's capability approach framework (Sen 1999a) to study individual migration decisions of individuals with varied entitlements (Box I in Figure 1), which are shaped through a set of conversion factors (push and pull, see Box II; Black et al. 2011b), potential capability set (Box III) and freedom of choice (Box IV). In the capability framework the focus shifts from current achievements (functionings, Box V; Sen 2000a; Robeyns 2005), which can be seen as an outcome of an individual decision to migrate or to stay, to a process that a person undergoes given his/her capability set and 'freedom' to make choices. A capability set depends on individual entitlements and conversion factors (Sebastianelli 2015). For example, income is the means but not the end; and neither is it a sufficient measure of capability. Different people have different

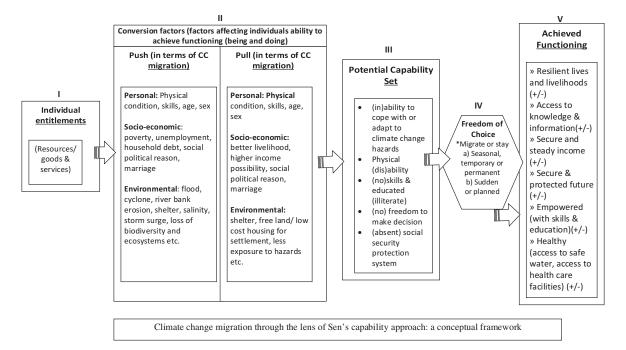


Figure 1. Climate Change (CC) migration and the capability approach framework. Understanding the relationship between climatic drivers and individual freedoms based on Amartya Sen's capability approach.

income requirements within and across societies, and higher levels of income and wealth do not always result in higher levels of well-being (Nussbaum and Sen 1993; Saito 2003). We used the conceptual framework in Figure 1 as the basis for the field work design and reporting of the results. The paper approaches climate-driven migration as a path between socioeconomic conditions and achieved functioning, while explicitly considering freedom of choice.

The relationships between different patterns of migration (seasonal, temporary or permanent) and the factors that influence and impact on the decision of individuals, communities and societies, who either chose or are forced to migrate, are an important topic for research in a changing world (Morton et al. 2008). These factors include personal characteristics (level of education, age, gender, physical health state), socioeconomic characteristics of an individual's household (household head, size and financial ability, etc.) or the nature of the community (availability of vital infrastructure such as schools, hospitals and other social institutions), and finally living and environmental conditions (Figure 1, Box II).

## 3. Methods and data

Data were collected in the field during the period March 2013- June 2015 from 22 focus groups (8-15 individuals in each group), with 215 individuals in total, in four coastal Upazila (sub-districts), Dacope, Shyamnagar, Mogla and Rampalin South-West Bangladesh (Figure 2). These sub-districts are among

the main areas of origin for people migrating to Khulna and Dhaka cities, which are the principle destination points for migrants from this region in Bangladesh. We chose these four sub-districts because they experience socio-economic problems such as unemployment and poverty, and are exposed to a variety of climatic and natural hazards including floods, cyclones, storm surges, salinity intrusion, and waterlogging (CDMP II 2014). In the study areas, there have been two recent severe cyclones, Mohasen in 2013 and Roanu in 2016, which had major impacts on lives and livelihoods. Sea level rise is a chronic effect of climate change and represents a long term and structural threat. Our assumption was that by conducting interviews in these sites it would be possible to encounter people who had migrated for various reasons, including slowonset climate impacts as well as sudden disasters. The interviews involved key informants, local government organizations, NGOs and local leaders in the four subdistricts. Respondents were selected following random sampling and stratification by wealth distribution (land ownership, non-land assets, etc.) and occupation of the respondents.

Data collection methods included observation transects, Focus Group Discussions (FGD) and Key Informant Interviews (KII) using Participatory Poverty Assessment exercises (Chambers 1994a, 1994b) and Participatory Wealth Ranking (PWR). The FGDs (N = 22, 8-15 individuals in each group) were conducted with male, female, elderly and the ethnic people and covered several occupational groups (farmers, fishermen, non-timber forest resources collectors,

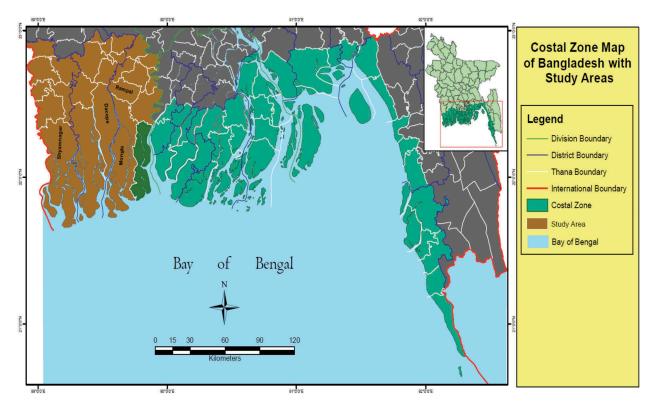


Figure 2. Map showing study areas (brown) in the coastal districts of Bangladesh.

petty traders). In the study areas, people are more or less dependent on the largest mangrove forest, the Sundarbans Reserve Forest. The discussions included sharing general information about the area, people's living and livelihood options, environment and climate changes, recent disasters, the impacts of past severe disasters and the understanding of poverty and alternative options. The PWRs were conducted according to criteria presented by the community/village people and were used to create the categories of households. The households were then divided into extreme poor, poor, medium poor, medium rich and rich. The participatory approach reflected the views and perspectives of poor people themselves in defining poverty (Chambers 1994a, 1994b, pp. 17–18; 2002). This included socio-economic conditions of households and their living standards, income, household landholding size, number of people in a household, education level, occupation, access to health issues, house condition (construction) and household assets. The major advantage of the PWR is its departure from externally imposed standards of poverty and offers the possibility for the poor to prioritize the dimensions that affect them and then offer solutions (Qizilbash 2004). The observations made during the field work helped to obtain insights into the impacts of climate change and migration issues. The KIIs (N = 14) covered climate change and environmental management issues and were conducted with key informants including university teachers (Khulna University), policy makers, government and non-government officials, and union council chairmen. The KII provided additional detailed insights for triangulating the focus group discussions and understanding local and regional level climate change and migration issues in the study areas.

The majority of our focus groups participants were female (more than 70%) and included 10-12% female headed households, primarily due to migration of male family members and family breakdown. The respondents were asked about their decision-making as a family in order to obtain the reasoning their households go through when facing disasters. We also interviewed community leaders and NGO workers who were engaged with climate change-related interventions in their areas. The average age of the respondents was reported to be 45 years (minimum 17 and maximum 85 years). The main types of occupation in our study area are fishing (60% of full-time and parttime jobs), farming labour and non-farm labour such as earth cutting and brickfield workers. This contrasts with the migrated population, whose primary jobs are mostly rickshaw-van pullers (approximately 65%), petty traders and non-farm labour for males, and household workers (65%) and workers at ready-made garment factories in Dhaka for females.

#### 4. Results and discussion

Our field work reveals different patterns of migration. Firstly, there are several types of migration: seasonal, temporary, or permanent; and forced or planned. Secondly, it can be an individual, a household head, an income earning member of a household, or an entire family who migrate to nearby cities, in particular to Dhaka. Some migrants also go temporarily to neighbouring countries (with or without proper documentation) to earn their livelihood incomes. Thirdly, there may be a range of push and pull factors behind a migration decision, and these vary across different socio-economic groups. Table 1 lists the most common push and pull factors influencing individual migration decisions reported by the respondents. In most cases, non-climatic factors that cause a loss of livelihoods and options to earn at least any income are the main factors for the migration, but almost always environmental change acts as a facilitator.

As with any relocation decision, migration is driven by a complex interaction of three groups of factors (Table 1). Both push and pull factors, which either trigger migration or stimulate people to stay, are not static. They change over time with seasons, climate variability, and individual life events. In general, a migration decision is costly both in terms of financial costs and loss of social capital. Thus, households carefully consider a decision on permanent migration and often make the move gradually though other types of seasonal and temporary migration. Each type of migration is triggered by a combination of factors. Results from the discussions show that people choose to migrate only when push factors dominate. The question is whether there are regularities in what factors are the key drivers of a specific type of migration. Black et al. (2011a) identify five drivers of migration: economic, political, demographic, social and environmental, arguing that it is not one driver that triggers a decision to migrate but the interaction of five drivers. As Table 1 illustrates, the migration drivers are the capability approach conversion factors. In most of the cases, seasonal (S) and temporary (T) migration are observed when attempting to secure livelihoods aspects, such as income, and also for social-political and environmental security. People prefer seasonal and temporary migration because of their social attachments and household assets. Seasonal migration is a common income diversification strategy and is a standard livelihood option in the context of the study area. The focus group discussions reveal that there has to be disturbance to the normal way of life to cause temporary migration. It often occurs after a hazard event that is more severe than usual. Permanent (P) migration is an extreme measure and is usually observed in two different types of situations.

Conversion factors  Individual Skills/trai Higher ec Marriage Socio-economic Poverty Unemplo	Push Skills/training Higher education	Type of migration	Constitute forting	=::	
	training r education	i ype oi iiiigi atioii	COLIVEISION IACTORS	Pull	Type of migration/
	r education	T&P	Individual	Access to better health care	Ь
		T&P		Access to better education	۵
	ebi	۵			
Unemp	, A	S,T & P	Socio-economic	Better livelihoods	S,T & P
Indebte	Jnemployment	S&T		Higher income possibilities	S,T & P
	Indebtedness	S,T & P		Building network and strength	T&P
Socio-p	Socio-political reasons (security, protection & participation)	T&P		Protective security	Ь
				Better Living Condition	۵
Environmental & Physical Flood s	Flood scarcity	S&T	Environmental & Physical	Less exposure to hazards	۵
Cyclone	- a-	S,T & P		Better communications	Ь
River b	River bank erosion	Ь		Free land for settlement	۵
Tidal surge	urge	S&T		Available shelter	۵
Shelter		T&P		Better infrastructure	Ь
Salinity	×.	S&T		Livable environment	Ь
Drought	ht	5&⊤			

Firstly, when people lose their permanent settlements after sudden on-set disasters (severe natural disasters, like a cyclone, riverbank erosion, etc.), which act as push factors. Secondly, in search for better opportunities and under expectations of better lives and livelihood, which act as pull factors. While there is a balance of these factors that may eventually lead to a decision on whether to migrate, not all of them have the same weight for our population of respondents. During the focus group discussions, we asked the respondents to identify and rank these preventive and stimulating factors (see Table 2).

As noted by Brown (2008), the push and the pull factors of migrations are often highly subjective. Our data shows that the push and pull factors of migration differ from place to place, across individuals, communities and regions. Drivers of migration also vary across different socio-economic groups (see supplementary information). Individual entitlements (Box I in Figure 2) define whether economic factors outweigh others in a set of conversion factors (Box II) when defining an individuals' capability sets (Box III). Socio-economic & environmental (& ecological) factors are one of the main conversion factors included both in push and pull factors that influence migration (Box II in Figure 1). These include unemployment, income possibilities and socio-economic security. Considering the potential capability set (Box III), an individual can have secure and steady income and resilient livelihoods as achieved functioning (Box V). Yet, even given the conversion factors of the individuals, the achieved functioning is influenced by freedoms of choice (Box IV). Our FGDs demonstrate that social capital and level of community involvement varies significantly among economic classes. As might be expected, the rich possess an ability to provide sufficient, or good quality, food and shelter, better schooling, health care and other necessary factors of family wellbeing. They

**Table 2.** Factors that prevent migration, information collected through FGD. (22 FGD  $\approx$  215 respondents).

Preventive Factors	Ranked (according to FGD respondents)
Secure and steady income/livelihood (availability of alternative livelihood options)	1
2. Agricultural land (fertile, multi-cropping)	3
3. Hazard-free homestead (e.g. above flood level)	2
4 Small family size (food security, good health)	8
5. Lack of network (or no network outside the community/region)	4
Social liabilities (specially the religious leaders, teachers, doctors, local institutional leaders, etc.)	9
7. Fear for insecure future (lack of information and knowledge)	5
8. Financial incapability (not able to start new living)	6
9. Physical inability (disability, no outside support available)	7

usually have more durable assets than other economic classes, which allows them to be more resilient to climate change variability and hazards. The middle economic income class also has the ability to provide food and can bear educational, healthcare, clothing and other expenses for family members. This economic class has moderately durable houses, which need repairs or renovation every 2-5 years. There are generally two types of middle-class population in the country: lower-middle class and upper-middle class. Both middle classes have been experiencing shrinking income levels in recent years. Gradual environmental and ecological degradation and other conversion factors unbalance their status, stimulating migration decisions, especially in the lower-middle class population that has just fallen below the poverty line. The lowermiddle-class also experiences a decrease in consumption expenditure and difficulties in maintaining quality of life. The poor or chronically poor economic classes are below the poverty line, live in poverty for longer and cannot afford expenses for the basic needs of their family members. Their housing conditions are not hygienic and often require rebuilding every year or two. They have poor asset bases, weak social networks and higher vulnerability to poverty. The extreme poor and destitute live with low economic activity, low levels of productivity and lack of employment opportunities. They report serious economic as well as social problems in their origin location and often choose to migrate, often for long distances. There is very little holding them in their place of origin.

The main attributes of different socio-economic groups in the study area are summarised in the supplementary information and are divided into five economic classes. For the 'rich' migration is temporary for sake of higher and better education, better health care and better jobs leading to surplus wealth. For the 'middle-class' migration is mainly for income generation activities and access better services in terms of health, education and security. For the 'lower-middleclass/moderate poor' migration is mainly for income generation; once their savings reach their target, they return to their village to be with their family. The 'poor' are pushed out in search of subsistence, and so migration is therefore unplanned, and can be temporary or permanent. The 'extreme poor/destitute' are pushed out in search of subsistence, so migration is unplanned, and can be temporary or permanent.

When matched with the push and pull migration factors in Tables 1 and 2, the differences in triggers of migration decisions per income class become clear. As such, each socio-economic group, given its relative entitlements (Box I in Figure 2) and a set of conversion factors to which it is exposed (Box II), has a different propensity for one of the types of migration (seasonal, temporal or permanent). Yet, independently of an income class, there is a threshold that needs to be crossed to push people to migrate because, with all things equal, people would prefer to maintain their normal way of living. For a better access to health and education opportunities, the rich and the middle economic class have the tendency to migrate on the basis of a plan (planned permanent migration) to achieve health and education wellbeing (Box V). In contrast, the other three economic classes put their effort into attempting to achieve relatively secure livelihoods. They often choose seasonal and temporary migration to support their daily lives. Only when a sudden onset disaster occurs do they chose sudden and unplanned migration, which can be either temporary or permanent. Poverty is an agent of capability deprivation (Sen 2000b); this is not only with respect to income but also as an obstacle to achieve one's capabilities. Thus, while a particular population is exposed to the same environmental factors, vulnerability varies among different socio-economic groups making a decision to stay or to migrate either a free choice for a better future or a forced outcome.

According to Sen (2002), a potential capability set (Box III, Figure 2) serves to represent an idea that different people are able to generate different levels of capabilities to achieve certain functionings from the same distribution of commodities. Sen (1985, 1999) emphasizes that capabilities reflect a person's real opportunities or positive freedom of choice between possible life-styles. Freedom (Box IV) has two aspects: the process and the opportunity (Alkire 2002). The process aspect is the ability to act upon what matters; the opportunity aspect is the real opportunity to achieve valued functionings (being and doings) selected from among various good possibilities. Consequently, we argue here that freedom in this case is to have the ability to decide whether to migrate or not, and if to migrate then being able to choose the form of the migration (temporary, seasonal or permanent). It also depends on conversion factors, which affect achieving functioning.

The conversion factors (Box II) are closely intertwined in achieving an individuals' functionings (Box V). They bring individual freedom or exercise of choice into focus. In the study, we find that economic class is one of the criteria that influences an individuals' decision-making strategy for migration, in other words effecting the freedom of choice of migration. The poor migrate in an attempt to reduce their poverty and vulnerability; while the rich migrate to gain better opportunities for the life they want to live and they have a comparatively free choice of whether to migrate or not.

Figure 3 schematically summarizes the qualitative information collected during the focus group discussions, which discussed how freedom of choice and migration potential depended on the capability set (Robeyns 2006). Based on their capability set, individuals have a choice to stay or migrate based on the freedom of choice, and this

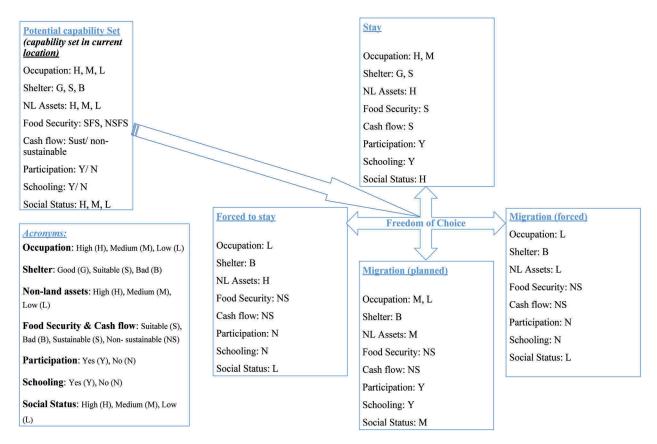


Figure 3. Freedom of choice and migration potential depending on the capability set.

decision can be either planned or entirely forced by circumstances. In other words, Figure 3 describes the typical logic of migration decision-making, while differentiating between individual entitlements, conversion factors, and a degree of freedom of choice that individuals experience. For example, people can plan to stay when they have better or higher occupation or medium occupation, good and suitable shelter in place with sustainable food security and cash flow; and also have high social status and participation. Similarly, people can plan to migrate when they have medium or low occupational level, bad shelter (vulnerable to disaster) and nonsustainable food security with medium assets and social status. Rich and medium class people have a good chance of having free choice for a planned migration or not to migrate at all while maintaining a decent life. On the contrary, people are forced to migrate when they have a low level of occupational livelihood and nonland assets with low social status and no participation, non-sustainable food security and vulnerable shelter (B in Figure 3); and in similar circumstances, they are forced to stay in the place of origin. Instead of a free choice, these people – who are mostly from medium poor, poor and extreme poor classes – are forced to stay in a vulnerable condition with no choice. The effect of environmental and climate change on household migration decision is outlined in Figure 6 and illustrates a households' socioeconomic situation. Individual or household migration decisions are affected not only by a single factor but a combination of multiple factors of personal, socioeconomic and environmental nature (Black et al. 2011a). Thus, environmental and climate change stress has a significant influence on displacement and migrationrelated decisions (Renaud et al. 2011).

We used the capability approach framework to discern the decision-making strategy within a household (medium poor and poor) on migration (seasonal, temporary, forced or permanent). Seasonal migration (S) takes place when people face environmental and climatic disasters and they try to recover and adapt by borrowing money/taking loans as micro-credit, and try to increase income by alternative livelihood options. In such cases, income earning members (particularly male) also migrate for short time following agricultural seasonality. It is important to note that there are differences in decision-making at household level when contrasting their normal life, and life after a disaster happens. It is hard to find a sustainable solution for disaster recovery for most poor and middle-income families due to their limited savings and poverty in general (Rahman et al. 2013). They also decide to opt for temporary migration (T) when they have short-term livelihood alternative solutions (for example, fishing, day labour) in the locality and income earning members migrate for a short period (usually less than 6 months) to known places, mostly in the nearby cities.

Based on the data from our focus group discussions, we outline the typical decision paths that lead

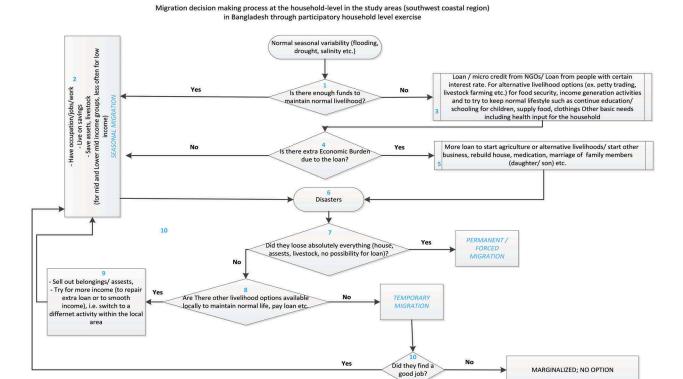


Figure 4. Household-level migration decision-making in the study areas for the people who decided to not to undertake the planned migration decisions (usually rich households).

households towards a particular type of migration: seasonal, temporal or permanent (Figure 4) when they are differentiated by entitlements and prone to various conversion factors. In the study areas, people try to maintain a normal life for their household firstly by taking alternative livelihoods, for example, outside the main agricultural seasons people try to find nonfarm jobs (rickshaw van pulling) to obtain local income. If that is not possible, the main earner of a household migrates temporarily (T) to get work in the brickfields. In the case of temporary migration, formerly a male family member would travel to nearby cities (such as Satkhira and Khulna) to earn a cash income by any means so that their families can survive. However, in the past 10 years (mainly after severe cyclone Sidr in 2007) there is a new emerging trend of young women migrating temporarily to work at ready-made garment (RMG) factories.

In the case of a sudden onset disaster when households lose their homestead, house, assets and livestock and have nowhere to find living and income opportunities, they are forced to migrate permanently together with all family members. The forced migration is never planned, therefore there is no certainty for getting a good job in a new location. In this case, households forced to permanently migrate either manage to find a job for living a normal life or they become marginalized again in the new place.

Our focus group discussions showed that freedom of choice is a key element in the discourse on migration as

a climate adaptation option. It is not only forced migration that is problematic. A forced option to stay is, perhaps, even worse. If an individual does not migrate from an area that is under threat of environmental shocks and deprivation of resources, it may lead to a downward spiral when people are already poor and vulnerable to climate change and households affected by disasters become even poorer. This category is referred to as the 'trapped population' (IPCC 2014). This applies usually to poorer households whose livelihoods are adversely affected by environmental change but who do not have any resources to move (NCEA 2015).

#### 5. Conclusions

Mass migration, either seasonal or temporal, of labour from the rural agriculture sector to urban nonagricultural sectors is a common strategy used by households to diversify their livelihood options; and is increasing due to the impacts of climate change (Tacoli et al. 2015). This type of migration creates unemployment, homelessness and poverty in cities. Lack of city planning results in the creation of urban slums and the industrial sector cannot absorb large numbers of migrants. Permanent migration was also recorded in study areas among wealthier families (rich and middle class) seeking better education, income and livelihood opportunities. The focus group discussions revealed that freedom of choice is intrinsically

valuable to the individuals, enabling the ability and opportunity to achieve their own destiny both as a person and as part of various communities. Yet, migration is often a forced action rather than a free choice. Freedom of choice with respect to migration, and a migration decision itself, have long-term multidimensional consequences for human lives and livelihoods. Migration is an adaptive response to changes in people's circumstances (Tacoli 2007; Mortreux and Barnett 2009; Tacoli et al. 2015) and the effect of a single factor (e.g. climate variability) is not the only cause of a migration decision and other factors (e.g. socio-economic condition) are interlinked.

In the future, increasing probability and severity of climate-related disasters is expected to cause more migration than currently observed. This paper studies migration in coastal regions in Bangladesh through the conceptual lens of Sen's capability approach, highlighting the role of the freedom of choice. Our focus group discussions engaging 215 respondents in the period from 2013–2015 reveal a number of conversion factors (both push and pull) that influence migration decisions. The article outlines the differences among economic classes with respect to a variety of reasons driving a decision on whether to migrate or to stay. Our study indicates that in addition to conversion factors it is freedom of choice that is important to achieve certain functionings (being or doing) in Sen's terminology. According to the capability approach framework, people choose functionings for a life they want to live, and freedom of choice in pursuit of well-being is central to this. In the context of migration in coastal Bangladesh, which is fuelled by increasing climate variability, the concept of the freedom of choice is instrumental in drawing the line between migration as an adaptation option and forced migration. We synthesize the qualitative data from the focus group discussions to outline the typical decision paths leading to seasonal, temporal and permanent migration decisions. Our findings provide support for the conceptual premises of Sen's approach.

Some challenges were experienced during the field work. A general problem is that although the participants of the study were informed about the objectives of the study, they still frequently hoped for benefits resulting from their participation, and that these would come to them at a later point in time. We informed them and stated clearly that this was not the case, but due to the difficult socio-economic condition of the people living in these areas with limited livelihood opportunities and the prevalence aid programs from various NGOs, private, government and international organizations, some of the participants expected at least for some support.

## **Acknowledgments**

This paper is a part of a PhD study that was carried out with a limited budget. The field work was possible only with the support and cooperation of the local people, especially the participants who freely engaged with the project and helped with information collection. Through their sacrifice of time, we could successfully complete the study. We offer our sincerest thanks to all the respondents of the study for their assistance.

#### Disclosure statement

No potential conflict of interest was reported by the author.

#### **ORCID**

Jon Lovett (b) http://orcid.org/0000-0002-5839-3770

#### References

Alarcón JCC, Laczko F, Aghazarm C. 2011. Migration, environment and climate change: assessing the evidence. Geneva, Switzerland: International Organization for Migration (IOM).

Alkire S. 2002 Sep. The capability approach and human development. In: Wadham College and Queen Elizabeth House Seminar. 9: 455-474. Oxford Poverty and Human Development Initiative (OPHI).

Alkire S. 2009. Concepts and measures of agency. In: Basu K, Kanbur SMR, Sen A, editors. Arguments for a better world. Essays in honor of Amartya Sen Vol. 1, ethics, welfare and measurement. Oxford (New York): Oxford University Press; p. 455-474.

Biggeri M, Ferrannini A. 2014. Opportunity gap analysis: procedures and methods for applying the capability approach in development initiatives. J Hum Dev Capabiliti. 15 (1):60-78. doi:10.1080/19452829.2013.837036.

Black R, Adger WN, Arnell NW, Dercon S, Geddes A, Thomas D. 2011a. The effect of environmental change on human migration. Global Environ Change. 21:S3-S11. doi:10.1016/j.gloenvcha.2011.10.001.

Black R, Bennett SR, Thomas SM, Beddington JR. 2011b. Climate change: migration as adaptation. Nature. 478 (7370):447-449. doi:10.1038/478477a.

Brown O. 2008. Migration and climate change IOM migration research series 31. Geneva: International Organization for Migration.

CCC. 2016. Assessment of sea level rise on Bangladesh Coast through trend analysis. Bangladesh: Climate Change Cell Department of Environment, Ministry Environment and Forests. http://gobeshona.net/wp-content /uploads/2016/08/SLR-Report final July-2016.pdf.

Chambers R. 1994a. The origins and practice of participatory rural appraisal. World Dev. 22(7):953-969. doi:10.1016/ 0305-750X(94)90141-4.

Chambers R. 1994b. Participatory Rural Appraisal (PRA): analysis of experience. World Dev. 22(9):1253-1268. doi:10.1016/0305-750X(94)90003-5.

Chambers R (2002). Relaxed and participatory appraisals: notes on practical approaches and methods for participants in PRA? PLA-related familiarisation workshops. [accessed 2004 Nov 8]. http://www.ids.ac.uk/ids/particip/ research/pra/pranotes02.pdf.

Clark DA, Biggeri M, Frediani AA, editors. 2019. The capability approach, empowerment and participation: concepts, methods and applications. Palgrave Macmillan, UK: Springer.

[CDMP II] Comprehensive Disaster Management Programme. 2014. Policy brief: local level hazard maps for flood, storm



- surge & salinity. Dhaka:Ministry of Disaster Management and Relief.
- Fuchs S, Thaler T, editors. 2018. Vulnerability and resilience to natural hazards. Cambridge, UK: Cambridge University
- IPCC. 2014. Climate change 2014: synthesis report. Contribution of working Groups I, II and III to the fifth assessment report of the intergovernmental panel on climate change. Geneva (Switzerland): IPCC; p. 151. [Core Writing Team, R.K. Pachauri and L.A. Meyer, editors].
- Islam MM, Sallu S, Hubacek K, Paavola J. 2014. Migrating to tackle climate variability and change? Insights from coastal fishing communities in Bangladesh. Clim Change. 124(4):733-746. doi:10.1007/s10584-014-1135-y.
- Kartiki K. 2011. Climate change and migration: a case study from rural Bangladesh. Gend Dev. 19(1):23–38. doi:10.1080/13552074.2011.554017.
- Khan MJ, Iqbal MT, Mahboob S. 2004. A wind map of Bangladesh. Renewable Energy. 29(5):643-660. doi:10.1016/j.renene.2003.10.002.
- Mahmood SAI. 2012. Impact of climate change in Bangladesh: the role of public administration and governments integrity. J Ecol Nat Environ. 4(8):223–240.
- Mallick B. 2011. Migration as an adaptation strategy and its consequences on coastal society: experience from Bangladesh. Bielefeld: COMCAD.
- Maplecroft V. 2011. Climate change vulnerability index 2016. Climate change and environmental risk atlas. The United Kingdom and Northern Ireland.
- McAdam J. 2011. Swimming against the tide: why a climate change displacement treaty is not the answer.
- Mizohata S. 2011. Amartya Sen's capability approach, democratic governance and Japan's Fukushima disaster. Asia Pac J. 9(39). https://apjjf.org/-Sachie-Mizohata/3648/article.pdf
- MoEF. 2009. Bangladesh climate change strategy and action plan 2009. Dhaka (Bangladesh): Ministry of Enviornment and Forests, Government of the People's Republic of Bangladesh; p. Xviii + 76.
- Morton A, Boncour P, Laczko F. 2008. Human security policy challenges. Forced Migr Rev. 31(5):05-07.
- Mortreux C, Barnett J. 2009. Climate change, migration and adaptation in Funafuti, Tuvalu. Global Environ Change. 19 (1):105-112. doi:10.1016/j.gloenvcha.2008.09.006.
- Nambiar S. 2013. Capabilities, conversion factors and institutions. Prog Dev Stud. 13(3):221-230. doi:10.1177/ 1464993413486547.
- [NCEA] Netherlands Commission for Environmental Assessment. 2015. Advisory reports. 7152. Country Profiles on Climate Change and Water/Food Security. Retrieved June 15, 2016, http://api.commissiemer.nl/ docs/os/i71/i7152/climate\_change\_profile\_bangladesh. pdf.
- Nussbaum M, Sen A. 1993. The quality of life. USA: Oxford University Press.
- Osmani SR, Sen B. 2011. Inequality in rural Bangladesh in the 2000s: trends and causes. Bangladesh Dev Stud. 34(4):
- Parry ML, editors. 2007. Climate change 2007-impacts, adaptation and vulnerability: working group II contribution to the fourth assessment report of the IPCC. Vol. 4. New York, NY: Cambridge University Press.
- Qizilbash M. 2004. On the arbitrariness and robustness of multi-dimensional poverty rankings. J Hum Dev Capabiliti. 5 (3):355-375. doi:10.1080/1464988042000277242.

- Rahman PMM, Matsui N, Ikemoto Y. 2013. Dynamics of poverty in rural Bangladesh. Japan: Springer Science & Business Media.
- Renaud FG, Dun O, Warner K, Bogardi J. 2011. A decision framework for environmentally induced migration. Int Migrat. 49 (s1):e5-e29. doi:10.1111/j.1468-2435.2010.00678.x.
- Robeyns I. 2005. The capability approach: a theoretical survey. J Hum Dev. 6:93-114.
- Robeyns I. 2006. The capability approach in practice. J Pol Philosophy. 14(3):351–376. doi:10.1111/j.1467-9760.200 6.00263.x.
- Saito M. 2003. Amartya Sen's capability approach to education: a critical exploration. J Philosophy Educ. 37(1):17-33. doi:10.1111/1467-9752.3701002.
- Sebastianelli M (2015). Freedom and choices: a new conversion factors taxonomy. Academia.edu.
- Sen A. 1999a. Commodities and capabilities. New Delhi, India: Oxford University Press Catalogue.
- Sen AK. 2000a. Development as freedom. Oxford, UK: Oxford University Press.
- Sen AK. 1985. Commodities and capabilities. Lectures in economics: theory, institutions. Policy, p. 97.
- Sen AK. 1992. Inequality reexamined. USA: Oxford University
- Sen AK. 1999b. Development as freedom. USA: Oxford University Press; p. 75.
- Sen AK. 2000b. Social exclusion: concept, application and scrutiny, social development papers 1. Manila: Office of Environment and Social Development, Asian Development
- Shah AA, Ye J, Abid M, Khan J, Amir SM. 2018. Flood hazards: household vulnerability and resilience in disaster-prone districts of Khyber Pakhtunkhwa province, Pakistan. Nat Hazard. 93(1):147–165. doi:10.1007/s11069-018-3293-0.
- Shaw R, Mallick F. 2013. Disaster risk reduction approaches in Bangladesh. A. Islam, editors. New York (NY): Springer.
- SRDI. 2010. Saline soils of Bangladesh. Soil Resource Development Institute (SRDI). Dhaka, Bangladesh: Government of the People's Republic of Bangladesh.
- Tacoli C. 2007. Migration and adaptation to climate change. In: Sustainable development opinion. London, pp. 1-3, (UK): IIED.
- Tacoli C, McGranahan G, Satterthwaite D. 2015. Urbanisation, rural-urban migration and urban poverty. Human Settlements International Group, Institute **Environment and Development**
- [UNFPA] United Nations Population Fund. 2016. Bangladesh country programme evaluation. [Accessed March 10, 2017], http://www.unfpa.org/news/bangladesh-countryprogramme-evaluation.
- World Bank. 2000. Bangladesh: climate change and sustainable development. Washington (DC): © World Bank. [Accessed June 12, 2016]. https://openknowledge.world bank.org/handle/10986/15706.
- World Bank. 2015. Salinity intrusion in a changing climate scenario will hit coastal Bangladesh hard. [Accessed June 12, 2016], http://www.worldbank.org/en/news/feature/ 2015/02/17/salinity-intrusion-in-changing-climatescenario-will-hit-coastal-bangladesh-hard.
- World Bank and GFDRR. 2018. Climate risk and adaptation country profile. vulnerability, risk reduction, and adaptation to climate change, Bangladesh. [Accessed June 12, 2019], https://climateknowledgeportal.worldbank.org/ sites/default/files/2018-10/wb\_gfdrr\_climate\_change\_ country\_profile\_for\_BGD.pdf.