MIGRATION AND ENVIRONMENTAL CHANGE IN THE SUSTAINABLE DEVELOPMENT GOALS

Soumyadeep Banerjee[1] and Arabinda Mishra[2]

Abstract

The Sustainable Development Goals (SDGs) are at risk from environmental change. People respond to the impacts of environmental shocks and stressors with a combination of in situ and ex situ strategies, including mobility. Human mobility manifests in various forms (e.g. displacement, migration and resettlement) in the communities affected by environmental change. This article explores the implications that different forms of mobility in the context of environmental change could have on the SDGs. It also suggests that achieving some of the SDG targets could create enabling conditions that could reduce the risk of displacement and/or unleash potential of migration. This article advocates the mainstreaming of human mobility within climate change adaptation, disaster risk reduction and SDG mechanisms at the national and local levels. For a better integration of these policy domains, there is a fundamental need for the various narratives on these themes to converge and identify multi-stakeholder forums at the national level to discuss the approaches for such integration.

1. Introduction

The Sustainable Development Goals (SDGs) are at risk from environmental change. The adverse impacts of environmental shocks and stressors will be disproportionately high in developing countries, especially among the poor and vulnerable populations. People will respond to these impacts with

a combination of in situ and ex situ strategies, including mobility. Human mobility will manifest in various forms (e.g. displacement, migration and resettlement). The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) recognizes that complex patterns of migration are shaped by economic, political, social and demographic drivers. Hence, the establishment of a causal relationship between climate change and migration is extremely complex (IPCC, 2014). However, the weight of evidence would suggest that patterns of mobility can be modified or exacerbated by climate events and trends, even though an environmental stimulus in the decision to migrate is not the sole criterion that determines whether a migrant would contribute towards adaptation and development of the family left behind (Banerjee, 2017).

Rather than limiting this discussion only to "environmental migrants",[3] this paper explores the implications that different forms of environmentally-induced mobility could have on the SDGs. The SDG targets have been organized around themes, such as migration governance, food, decent work, inclusive cities and social protection, skills development, gender and enabling conditions (see Table 1). The challenges and opportunities associated with environmental change and human mobility are discussed in the context of these themes. The paper is organized in sections. Section 2 provides a brief overview of different forms of mobility associated with environmental change and highlights the divergence of opinion among stakeholders regarding the relationship between mobility and environmental change. Section 3 discusses the ways in which various forms of mobility associated with environmental change will affect the attainment of certain SDGs. This section also suggests that achieving some of the SDGs could result in a reduction of the risk of displacement and/or unlock the development potential of migration. The mobility outcomes and their consequences are contingent upon the local demographic, environmental, socioeconomic, institutional and political context. Section 4 suggests an approach that aims to reduce risks and maximize benefits from mobility in the context of environmental change and SDGs. This article advocates the mainstreaming of human mobility within the climate change adaptation (CCA), disaster risk reduction (DRR) and SDG mechanisms at the national and local levels.

2. Environmental change and migration

The Working Group II report of the IPCC Fifth Assessment (AR5) discusses the difficulty in categorizing any individual as a climate migrant because of the complex motivations for migration decisions (IPCC, 2014). The complex patterns of migration are shaped by economic, political, social and

demographic drivers. These patterns are likely to be modified or exacerbated by climatic events and trends. Therefore, the establishment of a causal relationship between climate change and migration was extremely complex (ibid.). It is worth noting that even when climate change has a disruptive impact on the livelihoods of a community, not everyone would be expected to migrate.

The loss of place of residence or economic disruption due to extreme weather events results in population displacement of a largely temporary nature (ibid.). In 2015, nearly 19.2 million people across 113 countries were displaced by disasters (IDMC, 2016:5). Nearly 85 per cent of these displacees were from South and East Asia regions and the Pacific (ibid., 15). Though most of the people displaced by disasters remain within their country, some persons may move across border to a neighbouring country (The Nansen Initiative, 2015). The IPCC AR5's Working Group II report recognizes that "climate change over the 21st century is projected to increase displacement of people" (IPCC, 2014:20). Disasters triggered by weather-related hazards (primarily flooding and storms) accounted for 14.7 million displacees in 2015 compared with 4.5 million for geophysical disasters (IDMC, 2016:20). Melde (2015) suggests that the poorest are at a higher risk of displacement due to natural disasters. They often lack access to socioeconomic, cultural, social and other resources to migrate.

Migration for work is a household strategy to reduce the impact of environmental stressors. In the aftermath of Hurricane Gilbert in Jamaica, the inflow of remittances from workers abroad increased as a response to rainfall shock-related income losses in the Philippines, (Foresight, 2011). It is well established that global remittance flows have been growing steadily and are a stable source of income in times of crisis (Ratha, 2003). Internal remittances are important for the poor households that adopt migration as a strategy to spread risks, seek employment, increase income and accumulate investment capital (Castaldo, Deshingkar and McKay, 2012). Moreover, the circulation of ideas, practices and identities between the destination and origin communities is facilitated by migrants (Levitt and Lamba-Nieves, 2011). Within the environmental change and migration discourse, migration has been considered by some stakeholders as a form of adaptation (e.g. McLeman and Smit, 2006; Foresight, 2011). Others have considered migration to be a failure to adapt or an option of last resort (e.g. Baro and Deubel, 2006). A few have considered the framing of migration as an adaptation strategy to be mismatched with the intended objective since autonomous actions of individuals or households are envisaged to address structural determinants of vulnerability to climate change (e.g. Felli and Castree, 2012).

In small island developing States and along the coasts, livelihoods are affected by salinization and coastal erosion, and sea-level rises will lead to the physical loss of land. People may have to move to avoid severe deterioration in habitat and risk to lives, and may be unable to return (Wilkinson et al., 2016). Previous studies (e.g. IPCC, 2014; Kelpsaite and Mach, 2015) have reported that some governments are considering relocation and resettlement as potential strategies to address observed climate changes and projected changes in resource productivity and risks. The experience of past resettlement programmes suggests negative social outcomes for the resettled, psychological stress, community dislocation, and perception of cultural loss (IPCC, 2014). The Asian Development Bank (ADB, 2012) suggests that there is a need to strengthen and enforce international protection frameworks with specific arrangements developed for resettlement and relocation.

3. Mobility, environmental change and SDGs

Achieving the SDGs is expected to be challenging due to the current trends in environmental shocks and stressors. Since mobility is one of the human responses to the impacts of environmental shocks and stressors, it is necessary to assess the challenges or opportunities that mobility may pose for the SDGs. The SDGs 8 and 10 refer to migration and remittances. Other SDGs do not directly address either migration or the relationship between climate change and migration. However, the Declaration accompanying Agenda 2030 identifies refugees, internally displaced and migrants among actors whose needs are reflected in the Agenda (United Nations, 2015:6). None of the SDGs make any explicit reference to displacement or resettlement in the context of environmental change.

3.1. Migration governance

SDG 10 considers the implementation of planned and well-managed migration policies and reduction in transaction costs of remittances among the means to reduce inequality within and among countries.[4] Since the recognition of migration as a form of adaptation to climate change in the Cancun Adaptation Framework during the Conference of the Parties (COP16) in 2010, the deliberations on migration have continued in global processes associated with climate change and DRR. The Summary for Policymakers in the IPCC AR5's Working Group II report states that the vulnerability of populations at risk of being displaced by the impacts of climate change could be reduced if opportunities for mobility could be expanded (IPCC, 2014). This report suggests that there could be changes in migration patterns in response

MIGRATION AND ENVIRONMENTAL CHANGE
IN THE SUSTAINABLE DEVELOPMENT GOALS

to extreme weather events, as well as longer-term climate variability and change, and migration could be an effective adaptation strategy (ibid.). The Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR) suggests that as part of a broader and a more people-centred preventive approach to disaster risk, governments will have to engage relevant stakeholders, including migrants, in the design and implementation of policies, plans and standards (United Nations Office for Disaster Risk Reduction, 2015). The SFDRR recognizes that knowledge, skills and capacities of migrants could contribute to the resilience of communities and societies (ibid.). Paragraph 50 of the COP21 agreement recommends that a task force be established by the Executive Committee of the Warsaw International Mechanism to "develop recommendations for integrated approaches to avert, minimize, and address displacement related to the adverse impacts of climate change" (United Nations Framework Convention on Climate Change, 2015:50). Warner et al. (2015) suggest that a better integration of human mobility within national and regional adaptation planning processes could help to avoid displacement. However, the mainstreaming of mobility within the national adaptation programmes remains a work in progress. For example, migration is negatively perceived in the six MECLEP pilot countries, and there is a lack of "concrete strategies and actions to address such migration due to environmental change" (Kelpsaite and Mach, 2015:7). Banerjee (2017) reports that environmental change and migration remains at the fringe of migration research in the Hindu Kush Himalayan region. Here, issues associated with migration, especially internal migration, remain at the periphery of policy discourse in most of the countries.

3.2. Food

To strengthen capacity for adaptation to climate change, extreme weather and other disasters, SDG target 2.4 prescribes sustainable food production systems and the implementation of resilient agricultural practices that increase productivity and maintain ecosystems.[5] Findings from South-West China, North-East India and Eastern Nepal suggest that remittance-recipient households are more likely to reduce their farm size in the long-term than non-recipient households, and in turn their dependence on agriculture would decline (Banerjee et al., 2016; Banerjee, 2017). Ensuring food security also involves access to food commodity markets and timely access to market information (see target 2.C). Warner and Afifi (2014) reports that migration is a common strategy adopted by poor households from Central India and small-holder farmers and livestock keepers from Northern Tanzania for food security. However, the impact of migration on access to food is not a foregone conclusion. In a study in Viet Nam, Entzinger and Scholten (2016) finds that though remittances were primarily spent on food and consumer

goods, migrant households are less likely than non-migrant households to have sufficient access to food.

3.3. Decent work

SDG 8 envisages the promotion of sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all. SDG 10 aims to reduce inequality within and among countries.[6] Many migrant workers from rural communities vulnerable to extreme weather events are part of the informal economy at their point of arrival (Banerjee, 2017). During a crisis, the first workers to be laid off in labour-intensive sectors are usually the temporary workers, many of whom are migrants. Many among the unemployed in India during the global financial crisis of 2008 were migrant workers with short casual contracts (Ghosh, 2009). These informal sector workers do not have access to social security benefits or legal protection. Moreover, migrant workers' access to social protection at their destination is curtailed due to regulations or administrative procedure (Price and Chacko, 2012). For example, a migrant's access to social protection entitlements such as grain rations, public housing, health care and school education in destination used to be heavily restricted under the hukou system (ibid.), although reforms are gradually being introduced.

3.4. Inclusive cities and social protection

Target 11.5 envisages a reduction in the number of people affected and economic losses due to disasters, with a special focus on people residing in vulnerable situations.[7] Foresight (2011) identifies environment change and population growth as the twin challenges that will pose an increasing threat to urban areas in the future. Newly arrived and/or low-income migrants and their families often live in substandard housing at high risk from extreme weather events, with poor access to clean water, sanitation, heath care and education (Deshingkar and Anderson, 2004; Liang and Ma, 2004). There could be downward pressure on wages and undermining of labour rights due to migrant inflows in specific segments of labour markets, particularly among low-skilled groups. These could lead to resentment within the host population (Foresight, 2011). Migrants may be seen, not only as competition in the struggle for employment and resources, but equally as a threat to the local sense of identity and a potential source of conflict. This is particularly likely to occur when the new arrivals belong to a different ethnic, cultural or social group (Mahajan et al., 2008). Despite the short-term benefits, the vulnerability of the migrants and their families to new risks may increase in the long-term from migrating to urban destinations.

3.5. Skills development

SDG target 4.4 aims to enhance the size of the skilled workforce by 2030.[8] A large number of migrant workers from and within developing countries are either semi-skilled or unskilled. A joint study by the GIZ and the International Labour Organization (2015) reports that the labour demand in Gulf Cooperation Council countries will continue to focus on largely low-skilled foreign labour in the construction and service sectors. ADB (2012) considers low-skilled migrants among the most vulnerable people in society. These workers are in a weak position to bargain for better working conditions and higher wages. A 2014 government study in Nepal reports that semi-skilled and skilled workers respectively earn NPR 10,000 and NPR 13,250 more per month than low-skilled workers (CTEVT, 2014, cited in Thami and Bhattarai, 2015:3). In cities of low-income countries, these migrant workers often live in congested environments and in informal settlements with limited access to health, water and other services (Foresight, 2011). The "migration with dignity" policy of Kiribati aims to improve the levels of educational and vocational qualifications in the country to support migrants to seek economic opportunities abroad and build expatriate communities in receiving countries. In the long-term, this would enhance remittance inflow and the expatriates could then support new migrants (McNamara, 2015).

3.6. Gender

Several SDG targets acknowledge the necessity of empowering and building the capacities of women. The IPCC AR5's Working Group II suggests that displacement due to extreme weather events could disrupt the social network of women, resulting in a loss of their social capital, and adverse effects on their mental health (IPCC, 2014). Migration may empower female migrants (ADB, 2012) under certain conditions, but the picture is complex. In Viet Nam's Mekong River Delta, Entzinger and Scholten (2016) found that women were unable to continue their economic activities after relocation. They considered these women to be potentially more vulnerable to future environmental shocks. The outmigration of men could increase the vulnerability of women due to an increase in their workload (IPCC, 2014), unsafe working conditions, exploitation and loss of respect (Pouliotte et al., as cited in IPCC, 2014:13). At the same time, the male outmigration could also empower women to revamp traditional roles, increase their access to public decision-making forums, and seek new livelihood opportunities (IPCC, 2014). However, if these new roles are not accepted by the community, women might find it difficult to enforce their de facto decision-making power and protect their goods against others (ADB, 2012). The working conditions and wage rate are likely to influence the remittance behaviour of female

migrant workers, income of the family-left behind, and to an extent influence the type of risk management strategies adopted by the family-left-behind. However, the female migrants in lower-end informal sector occupations earn a lower wage than male migrants, do not enjoy any maternity entitlements, lack access to proper sanitation, and are vulnerable to exploitation from illegal placement agencies (Price and Chacko, 2012).

3.7. Enabling conditions

While exploring the impact of migration on development, de Haas (2012:19) found that "migration was not the factor that triggered development, but rather that development enabled by structural, political, and economic reforms unleashed the development potential of migration". Several SDGs (e.g. 1, 6, 9, 13 and 15) aim to create enabling conditions that include climate actions, water security, restoration of degraded land (including land affected by desertification, drought and floods), creation of resilient infrastructure, supporting economic development and human well-being, and increasing access to information and communications technology (ICT). An improvement in generic development conditions and community resilience in the origin and destination communities would reduce the risks of displacement and forms of mobility that erode assets, and may permit the migrants and their families to benefit from new opportunities.

4. Opportunities, solutions and the SDGs

This section suggests an approach that would reduce risks and maximize benefits from mobility in the context of environmental change and SDGs. Fundamentally, this approach advocates the mainstreaming of human mobility within the CCA, DRR and SDG mechanisms at the national and local levels. The key elements of this approach are presented below.

4.1. Mainstreaming of human mobility in the CCA, DRR and SDGs

There should be a shared understanding and common approach regarding human mobility among different government agencies that deal with CCA, DRR and SDGs. This is best done through a multi-stakeholder forum to facilitate regular interaction between these stakeholders at different levels (i.e. local, provincial and national). The operational guidelines on human mobility in policy domains associated with CCA, DRR and SDGs could be harmonized. This could be further strengthened through the development of an evidence base (e.g. data and inventory of good practices). Experts on human mobility could be involved in the CCA, DRR and SDG planning.

Concrete inputs on ways to incorporate human mobility in these processes could be useful to the policymakers and practitioners. For example, national stakeholders could explore ways to mobilize and invest remittances in public or community activities (e.g. disaster preparedness, drinking water supply, food security and infrastructure). In addition, the scope of existing migration programmes could be expanded to disseminate information about strategies to manage environmental risks and contribute to the SDGs.

4.2. Planning mobility

At an operational level, programmes on adaptation and development could assist the migrant-sending households to better plan strategies that would reduce risks from environmental and non-environmental stressors. This could involve supporting the migrant workers and/or their households to: (a) benefit from employment opportunities that guarantee decent working conditions; (b) receive orientation and skill training; (c) access information about travel documents and work permits; (d) prepare a monthly budget (that includes expenditure on CCA and DRR); (e) access formal financial institutions (including digital payment systems) and adopt risk management tools (e.g. insurance); (f) invest financial and social remittances to diversify the livelihoods of family left-behind; and (g) adopt CCA and DRR strategies to increase the resilience of their communities. In addition, these programmes could aim to reduce displacement due to disasters associated with climate change and variability. A durable solution to displacement is the gradual, complex and long-term process that focuses on the return of the displaced persons to their place of origin, local integration with the host population or resettlement in another part of the country.

Table 1: Sustainable Development Goals and targets relevant for human mobility in the context of environmental change

	Goal	Targets
Migration governance	Goal 10. Reduce inequality within and among countries	10.7 – Facilitate orderly, safe, and responsible migration and mobility of people, including through implementation of planned and well-managed migration policies.
Food	Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	2.4 – By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
		2.C – Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.
Decent work	Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.2 – Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.
		8.3 – Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.
		8.5 – By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.
		8.8 – Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.
		8.10 – Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.

MIGRATION AND ENVIRONMENTAL CHANGE
IN THE SUSTAINABLE DEVELOPMENT GOALS

Goal		Targets
Inclusive cities and social protection	Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	11.1 – By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.
		11.5 – By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.
Skills development	Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.4 – By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
Gender	Goal 5. Achieve gender equality and empower all women and girls	5.A – Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.
	Goal 13. Take urgent action to combat climate change and its impacts	13.B – Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.

Goal	Targets
Goal 1. End poverty in all its forms everywhere	1.5 – By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.
Goal 6. Ensure availability and sustainable management of water and sanitation for all	6.4 – By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
	6.5 – By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.
	6.6 – By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.1 – Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
	9.C – Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.

Enabling conditions

MIGRATION AND ENVIRONMENTAL CHANGE
IN THE SUSTAINABLE DEVELOPMENT GOALS

Goal	Targets
Goal 13. Take urgent action to combat climate change and its impacts	13.1 – Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
	13.2 – Integrate climate change measures into national policies, strategies and planning.
	13.3 – Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.
Enabling conditions — Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	15.3 – By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.
Disaggregated data — Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	17.18 – By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.

4.3. Investment in urban infrastructure

Urban centres, especially those that are located within the country of origin, are likely to be favoured by most migrants. Policymakers and urban planners would have to recognize the migrant workers as stakeholders in urban planning. Urban development planning could focus on affordable public and private accommodation, education, health care, public transport, sanitation and water supply. Informal settlements would require special attention from the planners. Measures could be adopted to reduce the pressure on major cities. Investments in the tier II and III urban centres could be explored to reduce risks from extreme events, decongest residential areas, and enhance infrastructural capacity.

4.4. Awareness raising and capacity-building

There are several key stakeholders in this process, such as migrants, their families, origin and host communities, community-based organizations, government officials, multilateral organizations, non-governmental organizations, financial institutions, think tanks and academia. Awareness about the implications of different forms of mobility in the context of environmental change, and the challenges and opportunities that these would pose to the SDGs varies among these stakeholders. A long-term engagement to raise awareness and build capacity of these stakeholders would be a key to mainstreaming of mobility in the CCA, DRR and SDG programmes.

4.5. Reorienting agricultural extension services

Climate smart agricultural practices (e.g. drought-, flood-, or saline resistant crops) could be promoted among the migrant-sending households, and supplemented by incentives from the government. The capacities of these households to better manage the environmental and market risks to agriculture could be enhanced through emergency food storage, gender-sensitive training and extension services, as well as ICT-based solutions, particularly in remote and rural areas. The experts, technicians and extension workers from development partners and government institutions could support the households in adopting innovative strategies.

4.6. Stronger and more inclusive safety nets

Policymakers should focus on the creation of decent jobs that guarantee a minimum wage, safe working conditions and social security benefits (e.g. provident fund, insurance, health-care benefits, maternity benefits and paid

leave). The governments could also explore ways to extend social security benefits to the informal sector workers. For instance, incentives (e.g. tax break or subsidy) could be extended to the labour-intensive services to encourage employers to provide social security benefits to all the workers, including contractual or temporary workers. In countries where the federal nature of administration hinders the portability of social protection between provinces, the national government and governments of sending and receiving provinces could explore mechanisms to ensure that migrants could access social protection entitlements anywhere within the national territory. Existing mechanisms between sending, transit and receiving countries could be further strengthened to protect the rights of international migrants, as well as persons displaced across international borders.

4.7. Skills and entrepreneur development programmes

Governments of origin could be encouraged to help international and internal migrant workers acquire skills that are in demand in prospective labour markets. Curricula for skills development programmes for migrant workers could be customized and lead to certification that would be recognized by prospective employers within and outside the country of origin. Destination countries could come together to harmonize their criteria for skill recognition and visa issue. These efforts could extend to the development of entrepreneurship programmes for the families left behind as well as the return migrants. The programmes could focus on the specific needs of marginalized populations, the poor, and women.

5. Conclusion

Environmental change will be a challenge to the achievement of the SDGs, particularly in least developed countries (LDCs). Large infrastructure developments will further contribute to environmental degradation. This is currently happening in most of the LDCs. Consequently, already vulnerable populations are exposed to new sources of risk. While countries pursue their development priorities, they ought to ensure that new risks are not created for the vulnerable communities. The development of enabling conditions in origin and destination communities is an essential pre-requisite to unlock the potential of human mobility to reduce risks from environmental change, and in turn contribute to SDGs. There should be an emphasis on development programmes that include aspects of social inclusion, social protection and adaptation planning. To make the policy response on human mobility comprehensive, ongoing development and adaptation planning process could explore opportunities to mobilize remittances to enhance adaptive capacity in origin communities located in environmentally fragile

areas. For a better integration of development, adaptation and migration agendas, there is a fundamental need for the various narratives on these themes to converge. An example of how such integration could be achieved is the process adopted by the Government of Nepal to produce the Climate Change and Migration Strategy Paper. A start can be made by identifying potential multi-stakeholder forums at the national level to discuss the approaches for such integration.

6. Acknowledgement

Endnotes

1. Corresponding author. Tel: +977 1 5003222 (Ext: 315). E-mail address: soumyadeep.banerjee@icimod.org. International Centre for Integrated Mountain Development, Kathmandu, Nepal, and University of Sussex, Brighton, United Kingdom.
2. International Centre for Integrated Mountain Development, Kathmandu, Nepal.
3. For a definition of environmental migrants, refer to www.iom.int/jahia/webdav/shared/shared/mainsite/about_iom/en/council/94/MC_INF_288.pdf
4. See https://sustainabledevelopment.un.org/sdg10
5. See https://sustainabledevelopment.un.org/sdg2
6. See https://sustainabledevelopment.un.org/sdg10
7. See https://sustainabledevelopment.un.org/sdg11
8. See https://sustainabledevelopment.un.org/sdg4

References

Asian Development Bank (ADB)
   2012   *Addressing Climate Change and Migration in Asia and the Pacific.* ADB, Mandaluyong City, Philippines.

Banerjee, S.
   2017   Understanding the effects of labour migration on vulnerability to extreme events in Hindu Kush Himalayas: Cases studies from Upper Assam and Baoshan County. Doctoral thesis, University of Sussex.

Banerjee, S et al.
   2016   Role of remittances in building farm assets in the flood affected households in Koshi sub-basin in Nepal. In: *Migration, Risk Management and Climate Change: Evidence and Policy Responses* (A. Milan, et al., eds.). Springer, Dordrecht, pp. 24–41.

Baro, M. and T.F. Deubel
   2006   Persistent hunger: Perspectives on vulnerability, famine, and food security in sub-Saharan Africa. *Annual Review of Anthropology,* 35:521–538.

Cai, F.
   2011.   Hukou system reform and unification of rural–urban social welfare. *China and World Economy*, 19(3):33–48.

Castaldo, A., P. Deshingkar and A. McKay
   2012   Internal migration, remittances and poverty: Evidence from Ghana and India. Working Paper No 7. Migrating out of Poverty Research Programme Consortium. University of Sussex, Brighton. Available from http://migratingoutofpoverty.dfid.gov.uk/files/file.php?name=wp7-internal-migration-remittances-and-poverty.pdf&site=354

de Haas, H.
   2012   The migration and development pendulum: A critical view on research and policy. *International Migration*, 50(3):8–25.

Deshingkar, P. and E. Anderson
   2004   People on the move: New policy challenges for increasingly mobile population. *Natural Resource Perspectives*, 92. Overseas Development Institute, London.

Entzinger, H. and P. Scholten

2016   *Adapting to Climate Change through Migration: A case study of the Vietnamese Mekong River Delta*. International Organization for Migration (IOM), Geneva. Available from https://publications.iom.int/system/files/vietnam_survey_report_0.pdf

Felli, R. and N. Castree

2012   Neoliberalising adaptation to environmental change: Foresight or foreclosure? *Environment and Planning A, international journal or urban and regional research*, 44(1):1–4.

Foresight

2011   *Migration and Global Environmental Change Future Challenges and Opportunities*. Final Project Report. The Government Office for Science, London.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and International Labour Organization (ILO)

2015   *Labour Market Trends Analysis and Labour Migration from South Asia to Gulf Cooperation Council Countries, India and Malaysia*. GIZ and ILO, Nepal.

Ghosh, J.

2009   Global crisis and the Indian economy. In: *Global Financial Crisis: Impact on India's Poor – Some Initial Perspectives* (R. Kumar et al.). United Nations Development Programme, India pp. 25–35.

Internal Displacement Monitoring Centre (IDMC)

2016   *Global Report on Internal Displacement*. IDMC, Geneva.

Intergovernmental Panel on Climate Change (IPCC)

2014   *Climate Change 2014: Impacts, Adaptation and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge and New York.

Kelpsaite, L. and E. Mach

2015   Migration as adaptation? A comparative analysis of policy frameworks on the environment and development in MECLEP countries. *Migration, Environment and Climate Change (MECC) Policy Brief Series*, 5(1). IOM, Geneva. Available from https://publications.iom.int/system/files/policy_brief_series_issue5.pdf

Levitt, P. and D. Lamba-Nieves

2011   Social remittances revisited. *Journal of Ethnic and Migration Studies*, 37(1):1–22.

Liang, Z. and Z. Ma

    2004   China's floating population: New evidence from the 2000 census. *Population and Development Review*, 30(3):467–488.

Mahajan, D. et al.

    2008   *Climate Change Induced Migration and Its Security Implications in India's Neighbourhood*. Project Report No. 2008RS10. The Energy Research Institute, New Delhi.

McLeman, R. and B. Smit

    2006   Migration as an adaptation to climate change. *Climatic Change*, 76(1):31–53.

McNamara, K.E.

    2015   Cross-border migration with dignity in Kiribati. *Forced Migration Review*, 49:62.

Melde, S.

    2015   The poor pay the price: New research insights on human mobility, climate change and disasters. *MECC Policy Brief Series*, 9(1). IOM, Geneva. Available from https://publications.iom.int/system/files/policy_brief_series_9.pdf

The Nansen Initiative

    2015   Linking human mobility, disasters and disaster risk reduction. Nansen Initiative Secretariat, Geneva. Available from http://disasterdisplacement.org/portfolio-item/linking-human-mobility-disasters-and-drr/

Price, M. and E. Chacko

    2012   Migrants' inclusion in cities: Innovative urban policies and practices. Conference paper prepared for UNESCO and UN-Habitat.

Ratha, D.

    2003   Chapter 7: Workers' Remittance: An Important and Stable Source of External Development Finance. In: *Global Development Finance: Striving for Stability in Development Finance* World Bank, Washington, D.C., pp. 157–176. Available from http://siteresources.worldbank.org/INTRGDF/Resources/GDF2003-Chapter7.pdf

Thami, P. and A. Bhattarai

    2015   Labour migration and skills training. *Centre for the Study of Labour and Mobility (CESLAM) Policy Brief* 7. CESLAM, Kathmandu.

United Nations

2015 *Transforming Our World: The 2030 Agenda for Sustainable Development*, A/RES/70/1. n.p.

United Nations Framework Convention on Climate Change (UNFCCC)

2015 Adoption of the Paris Agreement: Proposal by the President. Draft decision -/CP.21, FCCC/CP/2015/L.9/Rev.1. Available from http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf

United Nations Office for Disaster Risk Reduction (UNISDR)

2015 The Sendai Framework for Disaster Risk Reduction 2015-2030. UNISDR, Geneva.

Warner, K. et al.

2015 National Adaptation Plans and human mobility. *Forced Migration Review*, 49:8–9.

Warner, K. and T. Afifi

2014 Where the rain falls: Evidence from 8 countries on how vulnerable households use migration to manage the risk of rainfall variability and food insecurity. *Climate and Development*, 6(1):1–17. DOI: 10.1080/17565529.2013.835707

Wilkinson, E. et al.

2016 Climate change, migration and the 2030 Agenda for Sustainable Development. Overseas Development Institute (ODI) Briefing. ODI, London.