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COMMUNITY RESILIENCE AND DISASTER-RELATED DISPLACEMENT IN SOUTH ASIA

RESEARCH PAPER

April 2015

DISASTERS
CLIMATE CHANGE AND
DISPLACEMENT  **EVIDENCE
FOR ACTION**

PARTNERS

**THE
NANSEN
INITIATIVE**

DISASTER-INDUCED CROSS-BORDER DISPLACEMENT

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KEY TERMS

RESILIENCE

There are many definitions of resilience, including:

1. UN Office for Disaster Risk Reduction (UNISDR): The capacity of a system, community, or society potentially exposed to hazards to adapt, by resisting or changing in order to reach or maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising itself to increase its capacity for learning from past disasters for better future protection and to improve reduction measures.¹
2. EU: The ability of an individual, a household, a community, a country or a region to resist, adapt, and quickly recover from a disaster or crisis such as drought, violence, conflict or natural disaster.²

For this report, resilience is defined as the result of an integrated approach to DRR, climate change adaptation and poverty reduction.

DISPLACEMENT

All forced population movements caused by the immediate threat of, or actual disaster, regardless of the length of time displaced, distance moved and subsequent patterns of movement.³

RESILIENCE = DISASTER RISK REDUCTION + CLIMATE CHANGE ADAPTATION + POVERTY REDUCTION

CLIMATE CHANGE

A change in the state of the climate that persists for decades or longer, arising from either natural causes or human activity.⁴

DISASTER

The serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses that exceed the ability of the affected community or society to cope using its own resources (UNISDR). For this report, disasters provoked by natural hazards are relevant.

NATURAL HAZARDS

Events or conditions that originate in the natural environment and may pose a severe or extreme threat to people and assets in exposed areas. The impact of natural hazards is often strongly influenced by human activities. They vary greatly in terms of their magnitude, intensity, speed of onset, duration and area affected.

¹ UNISDR, 2005, *Hyogo Framework for Action 2005-2015, Building the Resilience of Nations and Communities to Disasters*. World Conference on Disaster Reduction, p.4, <http://goo.gl/UKRW6c>

² ECHO, 2014, *Humanitarian Aid and Civil Protection - Resilience*, <http://goo.gl/fXbQh5>

³ IDMC/NRC, 2014, *Technical Paper: The risk of disaster-induced displacement, South Pacific island states*, p.8, <http://goo.gl/wheeHk>

⁴ This is an adapted IPCC definition, which is broader than the UNFCCC's. The latter excludes climate change attributable to natural causes. See <http://goo.gl/03KMmx>



1. EXECUTIVE SUMMARY

This report examines the resilience of communities in South Asia to disasters and the displacement they cause. It considers their risk landscape and resilience capacity in Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. The research analyses the multidimensional risks communities face, their assets, and the institutional and legal frameworks in which they operate. It considers communities' capacity to prevent displacement, their ability to mitigate protection risks during displacement and their options in terms of durable solutions. The report offers a resilience building framework that incorporates common principles, while retaining flexibility and adaptability to communities' specific risk environments.

Countries in South Asia face a range of disasters and natural hazards in the form of torrential rains, tornadoes, cyclones, earthquakes, drought and famine. The observed effects of climate change include risks that threaten lives, food security, health and wellbeing, and that trigger displacement.

The region is home to the world's largest population of poor and malnourished people, and several countries are politically fragile or in transition. South Asia has undergone rapid economic growth over the past decades and significant improvements in human development have been made, but the region's vulnerability to disasters has the potential to undermine these advances.

1.1 DISPLACEMENT

Between 2008 and 2013, South Asia ranked second behind East Asia and the Pacific in the number of people displaced by disasters in both absolute and relative terms. Such displacement peaked in the region in 2010 at 13.25 million. Floods, storms and earthquakes were the most common events to cause displacement, and forced the largest numbers of people to flee their homes.

The scale of displacement caused by disasters is largely determined by communities' underlying vulnerability to shocks or stresses. Disasters take place in an embedded context of social, economic and political realities. Displacement puts communities at greater risk of impoverishment and discrimination, and creates specific needs among those affected. It also increases

the risks associated with future natural hazards and makes pre-existing vulnerabilities worse. Homes and livelihoods are destroyed, social support networks disintegrate and displaced people face heightened protection risks such as family separation, child protection challenges, and gender-based violence. The more often people are displaced and the longer displacement goes on, the greater the risks.

In some parts of South Asia, particularly Pakistan and Afghanistan, conflict and insecurity are the primary causes of displacement. That said, communities in areas exposed to conflict are increasingly displaced by a combination of violence and disasters, and as such they face cumulative risks. Development-induced displacement and resettlement is an emerging issue. In Nepal and Bhutan, hydropower projects intended to increase the country's resilience have, ironically, increased the vulnerability of local communities who are displaced to make way for construction.

Recent reconceptualising of disasters has led to anticipatory thinking about preparedness. This approach, encapsulated in the 2005 Hyogo Framework for Action, makes disaster risk reduction (DRR) a public policy priority. The impact of displacement is largely determined by communities' underlying vulnerability to shocks or stresses. As such, better disaster preparedness and climate change adaptation can prevent, or at least reduce, displacement. When it does occur, more resilient communities are able to reduce the associated risks because they are more efficient in restoring their essential structures and functions. In some cases, migration and planned relocation may be adaptive strategies that strengthen community resilience.

1.2 RESILIENCE

There is a growing consensus that resilience measures should incorporate DRR, climate change adaptation and poverty reduction. The three areas, however, have developed as distinct realms of action. Policy frameworks across South Asia tend to compartmentalise them, tasking them to different institutions and departments, and there is a lack of integration among diverse stakeholders.

Operationally, adhering to separate domains can lead to contradictory and counterproductive interventions and the duplication of efforts. It is also confusing for communities in multi-risk environments to engage with diverse stakeholders working separately and with different approaches.

A resilient community is one that can prepare for, adapt to and absorb shocks while retaining its basic assets, structure and functions. The building blocks of resilience differ from place to place, depending on geography, climate, economy, politics, people and so on. The specifics of each community must be considered. Despite the wide-ranging issues facing South Asian communities, several recurring themes have emerged that form the basis of a resilience building framework.

1.3 RESILIENCE BUILDING FRAMEWORK

Secure existing asset base

The security of a community's asset base has a direct impact on its ability to absorb the shocks and stresses associated with disasters and displacement. The two most pressing issues for South Asia are water resources and agricultural productivity, and strategies must be implemented to protect them. The security of existing assets requires long-term thinking and investment. Resource management and sharing mechanisms must be developed.

Displacement as disaster response, migration as adaptive strategy

Displacement as a disaster response is often associated with impoverishment and vulnerability, communities are uprooted from their places of origin and assets are lost. Protracted displacement can also lead to the depletion of any preserved assets and reduced ability to generate income through traditional livelihoods. However, our research found that in many communities affected by disasters, selected members of a family migrate as an adaptive strategy to reduce the risk and impact of displacement. Many leave to work in urban centres, permanently or seasonally, and their number tends to increase in the aftermath of a disaster. In this way, families and communities diversify their asset base away from that derived from their land. Diversified asset base

and income streams through migration can also help displaced communities as well as those at risk to recover more quickly. Migrants often return to their places of origin to help during the harvest and planting seasons, or with the post-disaster reconstruction of homes.

Understand community perceptions of risks and trade-offs

Communities may be aware of disasters, but many do not link sudden-onset events to long-term climate change. They also tend to have fewer strategies to deal with slow-onset disasters, and give less priority to risks that have not yet materially affected their lives. This affects their ability to adapt. The impact of climate change needs to be made more vivid to communities, but humanitarian and development practitioners must first determine their perceptions of risk and the trade-offs they are willing to make.

Build on traditional resources, knowledge and practice

South Asian communities are no strangers to natural hazards and disasters, and many have traditional practices and knowledge that mitigate their risks. These can serve as a foundation for resilience measures to avoid the duplication of training efforts. The development of, or return to traditional practices can also be effective in terms of resources, particularly in cases where communities are already familiar with the techniques involved. Resilience programming can support the continuation or scaling up of such practices. Community-based solutions are also likely to have more local ownership.

Show the way on climate change adaptation

Communities are more likely to change their behaviour if they have confidence in the adaptation strategy. Practical demonstrations, such as experimental farming plots, can help to show the benefits. Experiential learning allows communities to adjust and develop methods for their own purposes, and can create advocates of the benefits, helping to generate momentum for change.

Capacity of disaster management agencies

National and sub-national disaster management structures must be strengthened in order to fulfil their mandates. Disaster management agencies can be repositories of institutional knowledge, both on DRR, which looks back to the past to consider how not to repeat disasters; and on climate change adaptation, which looks forward to examine how to change behaviours to prevent or adapt to future disasters. In some countries, such as Afghanistan, agencies will need more political power to fulfil their mandate.

Risk and burden-sharing mechanisms

Risk and burden-sharing mechanisms need to be developed at the community level in order to distribute the costs associated with increasing resilience, particularly in terms of DRR and climate change adaptation, where different groups may be impacted differently. At the national level, governments should develop risk financing strategies with the support of donors such as the World Bank.

Information-sharing mechanisms

Some meteorological and disaster management institutions lack the technical skills and capacity to collect information and analyse risks. Information-sharing mechanisms need to be established, particularly between countries and communities that face similar risks and have similar geographical features. Lessons learnt and adaptive strategies can also be shared. Cross-border community resilience initiatives should also be explored.

1.4 REGIONAL RECOMMENDATIONS

Humanitarian and development organisations

- Integrate DRR, climate change adaptation and poverty reduction initiatives into programme design. Humanitarian and development organisations must work “across silos” to strengthen communities’ resilience to prevent and reduce the risk of displacement.
- Engage in multi-sectoral dialogue to develop guidelines and principles for comprehensive risk assessments, and to define strategies for humanitarian assistance that address displacement and the risk of it both during the emergency response and in development programming.
- Avoid disaster responses that entrench or replicate existing vulnerabilities such as those of ethnic minorities, women, children and the landless.
- Implement long-term planning and investment to secure and grow existing financial, natural and physical asset bases.
- Advocate with authorities and communities to prevent displacement through DRR and climate adaptation measures, including the long-term planning of relocation for communities faced with submergence. Facilitate consultations about planned relocation as a DRR strategy with those affected, and ensure that any such move is implemented with the full participation of both relocating and host communities, and with full respect for human rights and the principles of non-discrimination.
- Provide support and capacity building for families members left behind without their traditional head of household, particularly women who often have to take on increased workload. Such support should include alternative livelihood training, the introduction of more efficient methods of agriculture and livestock rearing, assistance in accessing markets and marketing methods.
- Help communities to make informed decisions about resilience strategies, particularly by providing information and knowledge about climate change adaptation and DRR measures to prevent and reduce the risk of displacement.
- Assist communities in developing burden and risk-sharing mechanisms, so that the costs of mitigation and resilience-building measures are distributed across community members who benefit whether directly or indirectly.
- Raise awareness among communities about the long-term effects of climate change and its potential impact on their lives, particularly in relation to risks that have not yet materialised.
- Strengthen the capacity of disaster management stakeholders including national and sub-national government authorities, NGOs and community-based organisations through training, advocacy and coordination based on needs assessments.
- Continue to engage with disaster management stakeholders to facilitate sustainable long-term approaches to the prevention of displacement and the pursuit of durable solutions.
- Acknowledge and build upon traditional resources, knowledge and practices to reduce duplication and increase communities’ confidence in measures introduced.
- Help communities to diversify their asset bases through alternative livelihoods in situ.
- Consider the introduction of new technologies to enhance existing knowledge and practices and to correct any mal-adaptations. These should include mixed farming and aquaculture; crop diversification; the use of livestock for draught power, manure and products; and alternative cultivation methods that increase yield and improve soil quality.
- Disseminate knowledge and build confidence in resilience measures through experiential learning methods such as trial plots and the modelling of townships and communities to encourage planned relocation.

Governments

- Develop the scaled integration of diverse stakeholders and institutional policies across DRR, climate change adaptation and poverty reduction, to prevent and reduce the risk of displacement.
- Develop national policies on displacement where none exist, and ensure that institutional mechanisms are in place for the implementation of those that do.
- Include displacement issues in legal and policy frameworks on climate change and DRR, and ensure that frameworks are complementary. Links between stakeholders should also be established across areas.
- Ensure that policies related to disaster response and displacement are implemented in accordance with the principles of non-discrimination and equality.
- Develop risk financing and transfer mechanisms such as disaster insurance through private-public partnerships.
- Undertake multidimensional risk assessments with communities affected by development projects.
- Engage in long-term resource planning, particularly for water, energy and land.
- Develop and implement bilateral and regional risk and resource-sharing arrangements, particularly between countries that have similar geographic features and resources.
- Develop and implement bilateral and regional arrangements for receiving people displaced across borders as a result of disasters and the risks associated with them.
- Establish a data collection system to collate reliable statistics and information on displacement associated with disasters. National meteorological agencies and their disaster management counterparts should cooperate and coordinate their efforts.
- Facilitate community consultations about planned relocation as a DRR strategy, and ensure that relocation is implemented with the full participation of both relocating and host communities, and with full respect for human rights and the principles of non-discrimination.

Donors

- Take a comprehensive approach to community resilience that helps to prevent displacement and facilitates the achievement of durable solutions. Donors, including the UN, should consider more flexible funding mechanisms. Innovative funds that combine humanitarian and development aid could provide implementing partners with the flexibility to move between DRR, climate change adaptation and poverty reduction. This is particularly relevant in regions with shifting political realities and objectives, as realities may change and priorities may need to be adjusted during the course of programming.



2. SOUTH ASIA

South Asia is home to around 1.5 billion people.⁵ Over the last 20 years, the region has experienced a long period of robust economic growth, at an average of six per cent a year. That said, it is home to 44 per cent of the world's poor; 571 million people live below the international poverty line and survive on less than \$1.25 a day.⁶ As of 2010, around a third of the world's 1.2 billion extreme poor lived in India alone, and another five per cent in Bangladesh.⁷ Thirty-eight per cent of South Asia's children under five suffer from stunted growth as a result of chronic malnutrition. Around 28 per cent of children are born underweight.⁸

South Asia's population has grown rapidly in recent years, doubling over the last four decades. Sixty-five cities are home to more than a million people, and the region's five megacities – Delhi, Dhaka, Karachi, Kolkata, and Mumbai – each have populations of around 20 million.

Population growth means that many communities are increasingly concentrated in hazard zones. People live in densely populated areas along the fertile river valleys of the Ganges, Indus and Brahmaputra, which are prone to frequent and intense flooding. Nearly half of Bangladesh's and all of the Maldives' population live on the coast, where they face substantial cyclone and flood risks.⁹ Low-lying islands in the Maldives and the Sundarbans delta of India and Bangladesh are already exposed to slow-onset submergence. Large numbers of people also live in the Himalayan belt transition zone, which is prone to earthquakes, landslides, and excessive rainfall.

The prognosis for the region in terms of the effects of disasters related to climate change is worrying. The Intergovernmental Panel on Climate Change (IPCC) predicts that climate change over the 21st century will increase displacement.¹⁰ South Asia is particularly vulnerable to rising sea levels and reduced agricultural yields caused by changing weather patterns. Rising sea levels are likely to threaten rice cultivation in Bangladesh and the Maldives.

The flooding anticipated in the region's low-lying urban areas is expected to be accompanied by the effects of drought and changes in seasonal rainfall on food production. The majority of South Asian countries are low or lower-middle income, and poorer households dedicate more of their budgets to food, making them more vulnerable to weather-related shocks. IPCC projects that as a result of climate change, the region will have the largest number of food insecure people in the world by the middle of the century.

⁵ South Asia is defined as Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

⁶ World Bank, 2012, *South Asia Regional Brief*, <http://goo.gl/1HgnGw>

⁷ UN, 2014, *The Millennium Development Goals Report*, p.9, <http://goo.gl/yQHAT>

⁸ UN, 2014, *Bollywood star shines bright for UNICEF's South Asia child nutrition campaign*, <http://goo.gl/W7mnLf>

⁹ World Bank/GFDRR, 2012, *Disaster Risk Management in South Asia: A Regional Overview*, p.13-14, <http://goo.gl/mTXpBZ>

¹⁰ IPCC, 2014, *Climate Change: Impacts, Adaptation, and Vulnerabilities*, <http://goo.gl/8YKzCT>

2.1 PURPOSE OF THE REPORT

In recent decades, disasters have been reconceptualised not only as natural, but as phenomena whose causes include socio-economic and political factors. With this reframing has come a shift from retrospective, post-disaster approaches to an anticipatory way of thinking and the emergence of a new public policy objective: disaster risk reduction (DRR). The 2005 Hyogo Framework for Action (HFA), a ten-year plan to reduce the risk of disasters globally, reflects this approach and is endorsed by the UN General Assembly.

HFA's mid-term review in 2011 noted significant improvements in the mainstreaming of DRR through national legislation, early warning systems and the strengthening of disaster preparedness and response. It also, however, identified a lack of systematic multi-hazard risk assessments and early warning systems that take into account existing social and economic vulnerabilities; and shortfalls in the mainstreaming of DRR into sustainable development policies and planning at the national and international level. The review found that it "remains difficult to increase resilience to hazards, especially in the most vulnerable segments of society".¹¹ As HFA comes to its conclusion, consultations on a post-2015 DRR framework, informally known as HFA2, have begun.¹²

The Norwegian Refugee Council (NRC) commissioned this research to support the Nansen Initiative's regional consultations in South Asia. The Nansen Initiative is a state-led, bottom-up consultative process. It aims to build a consensus on the development of a protection agenda to address the needs of people displaced across international borders by drought, flooding and other natural hazards, including those linked to climate change.¹³

This report provides an evidence-based analysis of community resilience in South Asia. It makes recommendations for improving it and preparing for the challenges of increasing risks, so preventing or at least reducing the impact of displacement.

2.2 DISASTERS AND DISPLACEMENT

Between 2008 and 2013, South Asia ranked second behind East Asia and the Pacific in the number of people displaced by disasters in both absolute and relative terms. Such displacement peaked in the region in 2010 at 13.25 million people. Flooding, storms and earthquakes were the most common events to force people to flee their homes, and did so in the largest numbers. Over the same period, Pakistan, Bangladesh and Sri Lanka had the highest levels of displacement caused by disasters in both absolute and relative terms. India ranked second behind China in absolute terms.¹⁴

The scale of displacement caused by disasters is largely determined by communities' underlying vulnerability to shocks or stresses. Natural hazards may be the trigger, but social, economic and political realities also come to bear. Displacement puts communities at greater risk of impoverishment and discrimination, and creates specific needs among those affected. It also increases the risks associated with future natural hazards and can worsen pre-existing vulnerabilities. Homes and livelihoods are destroyed, social support networks disintegrate and displaced people face heightened risks such as family separation, child protection challenges and gender-based violence. These protection risks increase the more often people are displaced and the longer displacement goes on.

Resilient communities can reduce their vulnerability to displacement by better preparing for disasters and the effects of climate change. They are also better able to preserve their basic structures and functions, and to restore them when displacement does occur, so reducing the associated risks. If migration is used as an adaptive strategy, its voluntary nature can be preserved.

Put simply, the more resilient a community, the less the risk and impact of displacement.

¹¹ UNISDR, 2011, *Hyogo Framework for Action 2005-2010, Building the Resilience of Nations and Communities to Disasters Mid-term Review 2010-2011*, p.10, <http://goo.gl/mEZV4E>

¹² UNISDR, *Post-2015 Framework for Disaster Risk Reduction*, <http://goo.gl/YiJxSA>

¹³ See: www.nanseninitiative.org

¹⁴ IDMC/NRC, 2014, *Global Estimates 2014*, p.32, <http://goo.gl/SDe0X6>

2.3 THE MANY FACES OF RESILIENCE

Individuals, communities and governments can act to reduce the likelihood of disasters occurring, and to minimise their impacts. Disasters are no longer perceived as “acts of God”, but as phenomena over which communities exert some influence. There is an emerging consensus that to improve their resilience, pro-active and pre-emptive measures that integrate DRR, climate change adaptation and poverty reduction are required.¹⁵

For communities exposed to disaster risks, such integration better reflects their experience of disasters. Their vulnerability is related to issues such as livelihoods, land rights, healthcare and conflict. The conceptual distinctions between DRR, climate change adaptation and poverty reduction are academic. They also mask the degree to which the issues are inter-related, and it can be confusing for communities to engage with different organisations working separately in each area. The cultivation of indigenous rice species in India, for example, can be seen as a climate change adaptation measure in response to increasing soil salinity; a DRR measure that minimises losses caused by saline water floods, and a poverty reduction measure that increases income.

There are challenges to the integration of stakeholder activities, in part the result of the way in which the three fields have developed as distinct realms of action. They tend to be tasked separately to different institutions, or to segregated departments within institutions. Afghanistan’s environmental agency is mandated to improve climate change adaptation, disaster management authorities are tasked with DRR, and the Ministry of Rural Rehabilitation and Development is responsible for poverty reduction.

There is also an absence of guidelines and training materials to enable those intervening at the local level to determine the risks to be assessed and define appropriate action. In providing shelter assistance after floods in Afghanistan, for example, the humanitarian community has not reached a consensus on how to integrate DRR and climate change adaptation measures into post-disaster reconstruction.

To assess communities’ resilience, this study focuses on three areas for each country:

(a) Communities’ key assets, including agricultural and livestock, migrant remittances and other income streams: Maintaining such assets increases resilience, while any losses undermine it and increase vulnerability.

(b) Legal and institutional frameworks for disaster management and climate change adaptation: Policies and laws and their implementation shape the risks communities face and their capacity to adapt. Well-coordinated early warning systems can significantly mitigate disaster risk, while dysfunctional stakeholder dynamics can reduce the effectiveness of disaster response and increase risks.

(c) Communities’ knowledge, resources and actions that might strengthen their resilience: Risk perception can determine levels of concern and willingness to adapt. Many communities have traditional DRR knowledge and have benefited from training and capacity-building programmes run by NGOs and government authorities. That said, mal-adaptations have sometimes occurred and need to be addressed.

Such an approach looks at adaptive capacity through a diversity of lenses and leads to a multidimensional assessment of communities’ resilience.¹⁶

Risk environments are also mapped to delineate the multidimensional nature of communities’ vulnerability. Beyond natural hazards themselves, food security, disease, livelihoods, tenure security, property rights and violence are all relevant. These underlying factors determine both how communities respond to shocks and opportunities to improve their resilience. Risk landscape analysis also helps bring to light how individuals, families and communities perceive risks and the trade-offs they may be willing to make in trying to balance risk exposure with their short-term needs or negotiate multiple risks.

In Afghanistan the expediency of building temporary shelters underground outweighs the risk of flash floods in the short term. Communities on Ghoramara island in the West Bengal Sundarbans, which has lost two-thirds of its land mass, have to balance a mid to long-term risk of displacement against a more immediate loss of livelihoods and traditional land if they relocate now.

¹⁵ CARE, Groupe URD, Wageningen University, 2012. *Reaching Resilience, Handbook Resilience 2.0 for aid practitioners and policymakers*, p.5-6, <http://goo.gl/42uEfH>

¹⁶ The study draws on the adaptive capacity framework developed by the Africa Climate Change Resilience Alliance (ACCRA)

Table 1: Comparative country level data: economic indicators

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Land area (sq km)	652,860	130,170	38,117	2,973,190	300	143,350	770,880	62,710
Agricultural land as of 2012 [%]	58.1	70.1	13.6	60.3	23.3	28.7	35.1	42.9
Arable land as of 2012 [%]	11.9	59.0	2.6	52.5	10.0	14.8	27.5	19.9
Forest as of 2012 [%]	2.1	11	85.8	23.1	3.0	25.4	2.1	29.2
Population as of 2014 [millions]	31.28	158.51	0.77	1,267.40	0.35	28.12	185.13	21.33
Rural population as of 2014 [%]	74	66	62	68	56	82	62	82
Population density as of 2013 [people per sq km]	47	1,203	20	421	1,150	194	236	327
GDP in \$ as of 2013 [billions]	20.31	149.99	1.78	1,876.80	2.30	19.30	232.29	67.18
GNI per capita in \$ (ATLAS method) as of 2013	690	1,010	2,330	1,570	5,600	730	1,360	3,170
Agriculture, as % of GDP as of 2013	24	16	17	18	4	35	25	11
Migrant remittances as % of GDP as of 2013	3.5	10.7	0.6	3.7	0.1	28.8	6.2	9.6

Source: World Bank Data and UNDP

Table 2: Comparative country level data: development Indicators

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
2013 HDI ranking (of 187)	169	142	136	135	103	145	146	73
Mortality rate for children under five (per 1,000)	99	41	45	56	11	42	86	10
Adult (15+) literacy rate [%]	ND	57.7	52.8	62.8	98.4	57.4	54.9	91.2
Percentage of women (15+) in labour force	15.7	57.3	66.4	28.8	55.9	54.3	24.4	35
Percentage of men (15+) in labour force	79.7	84.1	76.9	80.9	77.1	63.2	82.9	76.4
Average household size ¹⁷	7.3	4.68 ↓	4.6	4.8 ↓	7.4	4.9 ↓	6.6	3.9 ↓

Source: World Bank Data and UNDP

Table 3: Comparative country level data: carbon dioxide emissions per capita

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Carbon dioxide emission per capita (tonnes)	0.29	0.37	0.66	1.67	3.3	0.14	0.93	0.62

Source: UNDP

¹⁷ Variety of sources: UNFPA, 2012, <http://goo.gl/JY6Yyd>; DGHS, 2012, <http://goo.gl/OJwnA9>; Bhutan Multiple Indicator Survey 2010; CMIE, 2011, <http://goo.gl/kAtIU0>; Faisal, M, 2006, <http://goo.gl/D72hkC>; UNFPA, 2013, <http://goo.gl/u8s7zi>; Ahmed T and Ali SM, 2007, <http://goo.gl/130eof>; DCS, 2013, <http://goo.gl/O8uPJL>

2.4 COMMUNITY RESILIENCE: KEY FINDINGS

Divergent approaches must be harmonised

Resilience is a multi-faceted concept, and despite a growing body of literature there is little consensus on how best to intervene to build resilience, particularly when resources are limited. DRR, climate change adaptation and poverty reduction are all elements of resilience, but programmes often have different durations, timelines and focus in terms of short or medium-term results. At an operational level, conceptual and institutional separation can lead to contradictory interventions.

In Afghanistan, stakeholders' opinions differ as to whether communities should be supported in waterway dredging. From the government's rural poverty reduction perspective, it should not be funded. The authorities want to encourage the revival of what is a traditional practice, and argue that funding dampens community volunteerism and can be detrimental to resilience in the long-term. Other agencies, however, continue to "pay" for communities to dredge through food-for-work and cash-for-work programmes as a part of their humanitarian response. Both approaches aim to strengthen resilience, but the development and humanitarian lenses used to determine them produce contradictory interventions.

The emerging issue of development-induced displacement and resettlement in some countries offers one cautionary tale. The development of hydropower capacity has led to the displacement of vulnerable local communities in Nepal and the oldest indigenous population in Bhutan, highlighting the need for a coherent and integrated approach across disaster management, climate change adaptation and poverty reduction.

Multidimensional risks must be considered

Previous literature has identified the focus on the poor, vulnerable and marginalised as good practice in climate change adaptation programming in South Asia.¹⁸ The EU, for example, has developed gender, age and resilience markers to ensure coverage of beneficiaries. Despite such efforts, however, disaster response and recovery can make existing vulnerabilities worse.

Disaster responses that require beneficiaries to hold certain assets may exclude the most vulnerable from assistance. In Afghanistan, landless people and displaced households that do not have alternative land may be ineligible for shelter assistance. The capacity of regional

and local governments also tends to reflect the vulnerabilities of larger communities. In Pakistan, the provincial authorities with the least resources are in Sindh, the poorest, and Balochistan, the most remote.

Risk must be considered holistically and go beyond exposure to natural hazards. Interventions must avoid replication and the reinforcement of vulnerabilities and inequalities.

Existing assets must be secured

The security of communities' asset bases has a direct impact on their ability to absorb the shocks and stresses of disasters. The two most pressing issues for South Asia are water resources and agricultural productivity. Even the landless are affected by their security or otherwise, because it affects the availability of work and food security.

Agriculture accounts for around 18 per cent of South Asia's GDP. More than 50 per cent of the region's population are employed in the sector and directly dependent on it.¹⁹ Sixty-seven per cent live in rural areas.²⁰ As such, agricultural productivity is an important driver of poverty reduction. The rural economy depends largely on the timely arrival of the monsoon, which provides water resources for most of the region's agricultural production.

The rice-wheat system on the Indo-Gangetic plain covers an area of around 13.5 million hectares in Pakistan, India, Bangladesh and Nepal, and meets the staple food needs of more than 400 million people. It is highly productive land and contributes to the region's food security. It is, however, also highly vulnerable. Declining soil quality, diminishing water supplies, increased salinity and pest infestations already threaten its sustainability.²¹

South Asia also has also suffered from rapid deforestation. Eighty-eight per cent of the region's forest cover has already been lost to logging and other human activities, and it continues to shrink by 1.1 per cent a year. The region accounts for only two per cent of world's forests, and at 18.7 per cent of its land mass, cover is well below the global average of 25 per cent. Forests increase resilience to hydro-meteorological hazards by providing a buffer against floods, landslides, and tsunamis. In rural areas, they also provide essential resources for local communities and indigenous people.²²

Water security is an emerging development issue in South Asia, with population growth, urbanisation and economic development putting pressure on supplies. Gross per capita water availability in India is projected to decline from around 1,820 cubic metres in 2001 to

¹⁸ Sterrett, C, 2011, *Review of Climate Change Adaptation Practices in South Asia*, Oxfam Research Reports, p.4, <http://goo.gl/uGUIAf>

¹⁹ World Bank, 2013, *Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience*, p.125, <http://goo.gl/1F00kl>

²⁰ World Bank, 2015, *Agriculture & Rural Development*, <http://goo.gl/4gxfc1>

²¹ World Bank, 2013, *Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience*, p.125, <http://goo.gl/1F00kl>

²² World Bank, 2012, *Disaster Risk Management in South Asia: A Regional Review*, p.19

1,140 cubic metres in 2050, mainly as a result of population growth. Satisfying future demand will be a major challenge, even before the effects of climate change are factored in. Dwindling supplies pose an additional risk to the agriculture sector.²³

The region's rapid economic growth has increased the exposure of physical assets to natural hazards. Between 1991 and 2009, the value of tangible physical assets increased by 320 per cent, but few risk management practices have been put in place. Without proper building regulations and land use planning in both urban and rural areas, ever more assets will be put at risk. In Nepal, poor construction standards in areas of seismic risk can dramatically increase vulnerability to earthquakes.

The region's vulnerabilities have the potential to undermine recent advances in economic development. A single high-impact disaster could erase them in an instant. In an effort to respond to disasters and fund recovery efforts, governments also often divert resources from other areas, including development programmes. Such reallocations can delay or halt important work that strengthens communities' resilience.

The 2004 Indian Ocean tsunami severely damaged 52 of the Maldives' inhabited islands and destroyed another 20. More than a third of the country's population were severely affected and the cost of the damage was put at more than \$4.8 billion. In the aftermath, government officials estimated that the country had been set back by at least two decades in terms of its socio-economic development.

Displacement as disaster response, migration as adaptive strategy

According to the Internal Displacement Monitoring Centre (IDMC), between 2008 and 2013, nearly 47 million people were displaced by rapid-onset disasters and natural hazards in South Asia. Displacement caused by slow-onset disasters such as drought is not included in the figure. These numbers do not capture the duration or location of displacement, or whether those affected manage to achieve durable solutions.²⁴ The movements of internally displaced people (IDPs) after their initial displacement are rarely tracked. Whether they eventually return to their homes, integrate locally in their place of displacement or resettle elsewhere depends on a

Figure 1: IDPs displaced by disasters as percentage of population (source: IDMC/NRC, 2013)

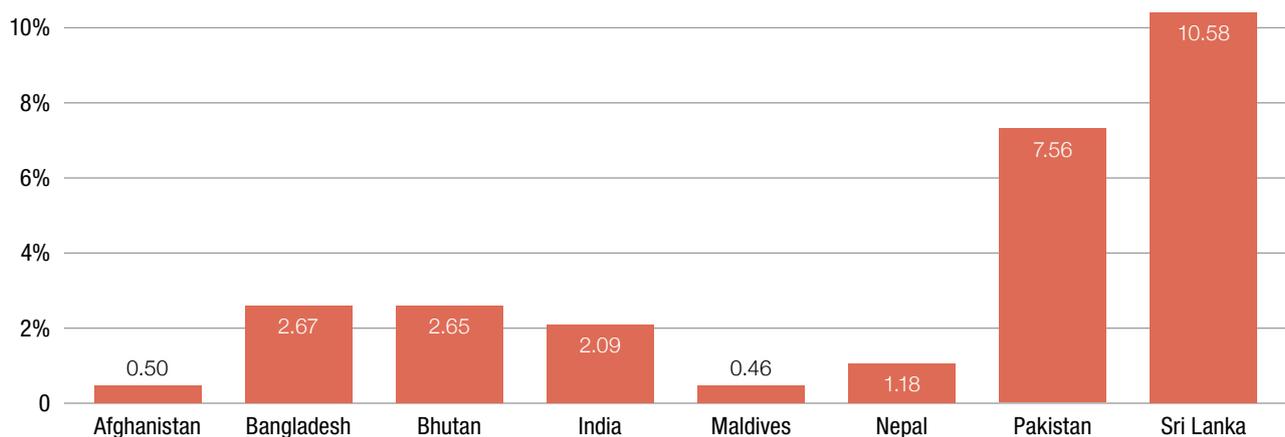


Table 4: IDMC Global Estimates 2013: number of people displaced by sudden-onset disasters

Country	2008	2009	2010	2011	2012	2013	Total 2008-2013
Afghanistan	3,430	28,435	71,000	3,000	29,519	15,890	151,274
Bangladesh	61,347	1,342,000	569,000	400,000	650,788	1,159,829	4,182,964
Bhutan				20,000			20,000
India	6,662,165	5,304,000	1,411,285	1,503,320	9,110,000	2,142,271	26,133,041
Nepal	250,000	18,300		46,476	600	12,474	327,850
Pakistan	89,200	84,290	11,060,000	300,000	1,856,570	371,535	13,761,595
Sri Lanka	525,408	362,885	141,414	684,884	129,092	324,236	2,167,919
Maldives*				1,600			1,600
Regional total	7,591,550	7,139,910	13,252,699	2,959,280	11,776,569	4,026,235	46,746,243

* Figures for the Maldives from UN source

²³ World Bank, 2013, *Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience*, p.119, <http://goo.gl/1FOOkI>

²⁴ IDMC, 2015, *Global figures*, <http://goo.gl/nbdYTw>

plethora of factors, including those that determine their community's resilience in the first place.

In Afghanistan, tenure security is an important factor in IDPs' decisions in terms of durable solutions. If their asset base lies in their land and tenure is secure, they are more likely to return, provided there are no other factors such as violence or conflict in their places of origin. One study found that IDPs generally preferred to return or integrate locally because they were unable to afford to move again.²⁵

People forced to flee their homes tend to become more vulnerable, but fieldwork conducted for this report found that for many families the voluntary migration of selected members is a common adaptive strategy. In India, almost all IDPs interviewed in the West Bengal Sundarbans said they had at least one family member working in urban centres such as Kolkata or nearby states such as Kerala.

Communities in the Kurram wa Sabagh district of Afghanistan's Samangan province said family members undertook circular migration to and from Kabul even before the 2014 floods, but the number of men doing so doubled in their aftermath. Members of smallholding families in Khulm district migrate temporarily to work in other provinces when floods reduce crop yields. By doing so, they diversify their asset base beyond that derived from their land. Seasonal migrants to Afghanistan's urban centres work primarily as day labourers, often in the construction industry. They appear, however, to prioritise the recovery of their family's assets in their places of origin. In one community, young men working in Kabul were asked to return to help their families rebuild shelters as winter approached.

Significant numbers of people migrate overseas to work as an adaptive strategy. Around 1.5 million people in the region did so in 2010, and the government of Bangladesh estimates that more than five million people, or nearly three per cent of the country's population, were migrant workers as of 2011. Between 2000 and 2010, 435,000 Bangladeshis migrated abroad for work each year. The figure for India averaged around 600,000. There are also around 1.5 million Nepalese migrants working in India.²⁶

The South Asian economy is highly dependent on remittances, which exceeded foreign exchange reserves in Pakistan, Bangladesh and Nepal in 2013.²⁷ India received \$71 billion in remittances the same year, making it the largest recipient of such income in the world. Pakistan

and Bangladesh were also in the top ten, with \$15 billion each. Nepal receives the largest inflows in region and the third largest in the world as a percentage of GDP.²⁸

Community perceptions of risk and trade-offs

Most communities in South Asia are aware of the impacts of climate change that affect them, but not necessarily the phenomenon itself. Communities have observed and experienced changes in weather patterns, dwindling water resources, flooding and changes in agricultural productivity, but they tend not to make the link with long-term climate change. Many communities that experience sudden-onset disasters consider them exceptional, and it is not clear to what extent, if any, they anticipate such events recurring, let alone becoming more frequent and more powerful.

Communities affected by slow-onset disasters seem less willing to take immediate adaptive measures and tend not to prioritise future risks that have yet to materially affect their lives. Communities also appear generally less prepared for slow-onset disasters. Those affected by drought in Afghanistan, for example, demonstrate a sense of fatalism and seem to have no proactive adaptive strategies.

Communities affected by multiple disasters often try to strike a balance between risks, or make trade-offs between the advantages in one area and assuming risks in another. Those that grow betel nut instead of saline resistant rice in the West Bengal Sundarbans increase their income in the short-term, but may also make themselves more vulnerable to increasing soil salinity and market price fluctuations. In Afghanistan, communities that build temporary shelters underground choose short-term convenience that increases their exposure to the risk of flash floods.

Any intervention to increase community resilience involves balancing competing interests and priorities in the areas of DRR, climate change adaptation and poverty reduction. As such, humanitarian and development organisations must understand communities' perceptions of risk and the trade-offs they are willing to make, and take them into account in their programming.

Build on traditional resources, knowledge and practice

South Asian communities are no stranger to natural hazards and disasters, and many have traditional practices and knowledge that help to mitigate the risks they face. Communities in Afghanistan said NGOs

²⁵ Samuel Hall Consulting, 2014. *Displacement Dynamics: IDP Movement Tracking, Needs and Vulnerability Analysis, Herat and Helmand*, commissioned by IOM, <http://goo.gl/YojCAf>

²⁶ Ozaki, M. 2012, *Worker Migration and Remittances in South Asia*, ADB South Asia Working Paper Series 12, pp.2-3, <http://goo.gl/cm3u4E>

²⁷ World Bank, 2013, *Migration and Remittance Flows: Recent Trends and Outlook, 2013-2016*. Migration and Development Brief 21. p.2, <http://goo.gl/RaepP0>

²⁸ Ozaki, M. 2012, *Worker Migration and Remittances in South Asia*, ADB South Asia Working Paper Series 12, p.9, <http://goo.gl/cm3u4E>

had trained them in the establishment of early warning systems for floods, despite the fact that some already had a traditional method of warning in place as a part of their broader water management system. The encouragement of traditional practices can be effective in terms of resources, because communities are already familiar with the techniques. Community-based solutions are also likely to have more local ownership.

Practical demonstrations and customised solutions

Communities are more likely to change their behaviour if they have confidence in the adaptation strategies on offer, and demonstration farms have been used in India and Nepal to excellent effect. Farmers learn from observation and share their experiences of using new techniques and crop varieties. Some beneficiaries may also become advocates for the innovations to which they are introduced.

As the Building Resilient Communities in Somalia (BRCiS) project found,²⁹ communities that take part in guided experimentation with adaptation strategies can adjust them to their own needs. Community participation in the conception and implementation of interventions can also generate a beneficial and sustainable “snowball” effect, in which communities help their neighbours to develop similar strategies. Each community faces different natural hazards, has different views on displacement and is at a different stage of development. Interventions need to be tailored accordingly.

The role of disaster management agencies

Disaster management agencies have been established across the region since 2004, but they tend to be administrative bodies with only limited political power. The mandates of most national and sub-national disaster agencies are to empower or persuade line ministries to incorporate DRR strategies into their broader remits, but they often lack the authority and status to influence planning and development agendas. Limited financial and human resources also hinder their work, and disaster management can effectively become a narrow form of disaster response.

Disaster management agencies rarely address displacement. There is little coordination between disaster response, preventing displacement and IDPs’ protection. Afghanistan has a specific ministry mandated with IDPs’ protection, but a lack of coordination and cooperation between it and national disaster management agencies impedes a comprehensive approach. Sri Lanka has a ministry mandated with the resettlement of people displaced by conflict, but without a national policy on displacement there is little integration with disaster management.

Ministries that have taken DRR more seriously have in some cases done so independently of the national disaster management agency. Afghanistan’s Ministry of Rural Rehabilitation and Development has adopted its own disaster mitigation strategy.

Disaster management agencies can be repositories of institutional knowledge, both on DRR, which looks back to the past to consider how not to repeat disasters; and on climate change adaptation, which looks forward to examine how to change behaviours to prevent or adapt to future disasters. A long-term view of disaster management can contribute to community resilience.

Risk and burden-sharing mechanisms

Risk and burden-sharing mechanisms need to be developed at the community level to distribute the costs associated with increasing resilience, particularly in terms of DRR and climate change adaptation where different groups may experience different impacts. Communities that are more cooperative tend to be more resilient, and those with more competitive dynamics less so. Burden-sharing mechanisms can help to foster more cooperative dynamics so that resources, as well as risks, are shared.

The state bears much of the cost of disasters in South Asia. Risk transfer mechanisms such as insurance only cover 30 per cent of economic losses. In low-income countries, the figure is only one per cent. As such, disasters constitute a significant and often unexpected burden on public finances, which further delays economic and social development. Such delays in turn reduce resilience in the long-term, creating a vicious cycle.

States should aim to develop risk financing strategies with the support of donors such as the World Bank. Just as community resilience is based on securing existing assets and diversifying them, a similar approach can be applied to risk financing. Risks should be distributed among a variety of capital bases, which can withstand the cost of disasters. Insurance schemes could also be developed through public-private partnerships.³⁰

Information sharing and knowledge needed

Nepal still has no national early warning system. Even in countries where they do exist, meteorological and disaster management institutions sometimes lack the technical skills and capacity to collect information and analyse risks. Information-sharing mechanisms need to be established, particularly between countries and communities that face similar risks and have geographical features. Lessons learnt and adaptive strategies can also be shared. Cross-border community resilience initiatives should be explored.

²⁹ The BRCiS project (2013-2017) aims to increase the resilience of households in South Central Somalia by supporting grassroots initiatives, using a community-drive approach. It is implemented by a consortium, including NRC

³⁰ World Bank, 2012. *Disaster Risk Management in South Asia: A Regional Review*, p. 26-27; 2008, *Building Resilient Communities - Risk Management and Response to Natural Disasters through Social Funds and Community-Driven Development Operations*, p.53, <http://goo.gl/FPClQa>



3. AFGHANISTAN

3.1 RISK LANDSCAPE

3.1.1 Climate change and disasters

Afghanistan is a landlocked country that shares borders to the north with Turkmenistan, Uzbekistan and Tajikistan; to the north-east with China; to the south-east with Pakistan; and to the west with Iran. Around three-quarters of the country is mountainous. The Hindu Kush and its subsidiary ranges divide Afghanistan into three distinct geographical areas: the central highlands, the northern plains and the south-west plateau. The north-west plain is part of the great central Asian plain, and stretches from Iran to the foothills of the Pamir mountains. Its fertile expanses slope towards the Amu Darya, or Oxus river. The south-west plateau lies at an average altitude of 1,000 metres, and is mostly sandy desert and semi-desert. The Registan desert makes up around a quarter of it. The Helmand river, which flows from the Hindu Kush to Lake Helmand, bisects the region.

The Hindu Kush is the source of 80 per cent of Afghanistan's water resources. It feeds four main rivers, which also supply the country with hydroelectricity. Ecosystems throughout the country are fragile, however, damaged by more than 30 years of conflict that also have brought widespread insecurity, displacement and poverty. Around 60 per cent of the country's infrastructure has been damaged or destroyed.³¹

Afghanistan has few reliable meteorological records, but data and trends from neighbouring countries indicate that the mean annual temperature has increased by 0.6C since 1960, with the frequency of unusually hot days

and nights increasing every season. Projections suggest that the most likely adverse impacts of climate change on the country will be drought-related. According to the UN Environment Programme (UNEP), 75 per cent of Afghanistan is vulnerable to desertification, and more than 2.5 million people are already affected by drought or water shortages.³² Drought is likely to be regarded as the norm rather than a temporary or cyclical event by 2030.³³ The cumulative effects on reservoirs and groundwater could threaten the water supply of entire communities in the most arid regions, leading to humanitarian crises. The impact of floods caused by unseasonal rainfall will be amplified by more rapid spring melts, land degradation downstream, loss of vegetative cover and land mismanagement.

Afghanistan's agricultural sector is vulnerable to the projected impacts of climatic change. Increased evaporation, dwindling river flows and less frequent rain during growing seasons are likely to reduce productivity and the choice of viable crops. Wheat is currently grown mainly on rain-fed land in the north of the country, but drought and changing rainfall patterns may have a significant impact on yield. Without significant investment in irrigation and water management, large parts of the agricultural economy are likely to have become marginal by 2060.³⁴ Given Afghanistan's reliance on agriculture, such impacts would constitute a serious threat to the economy as a whole.

Afghanistan is rated 170th of 178 on the Global Adaptation Index (ND-GAIN), which ranks countries according to their vulnerability and ability to cope with climate change. It is the ninth most vulnerable country and the 15th least prepared.

³¹ UNEP, 2009, *UNEP in Afghanistan, Laying the foundations for sustainable development*, p.4, <http://goo.gl/YkXNPW>

³² *Ibid*, p.5

³³ Stockholm Environment Institute, 2009, *Socio-Economic Impacts of Climate Change in Afghanistan*, p.4, 9, <http://goo.gl/BpRjpc>

³⁴ *Ibid*, p.vi, viii and 9

3.1.2 Economy and development

Afghanistan is a low income country. As of 2011, 35.8 per cent of the 31 million Afghans lived below the national poverty line.³⁵ National survey results show that inequality has grown over time, with consumption by the richest quintile growing much faster than that of the poorer quintiles.³⁶ Rural communities make up 76 per cent of the total population, and poverty is more severe in rural areas - 45 per cent compared with 27 per cent in urban areas. Small-scale cultivators, who make up most of the farming population, landless people and female-headed households are considered most vulnerable.³⁷

Around 7.6 million people experienced food insecurity in 2012, of whom 4.6 million were either severely or very severely food-insecure. Around 20 per cent of the population did not consume enough protein, a deficiency that particularly affects the nutrition of children under five.³⁸ The situation in 2012 was worse than that revealed in the previous assessment for 2007 to 2008.

As the government recognises, Afghanistan has a high-risk profile, the result of climatic and environmental circumstances, its history of conflict and consequent economic vulnerability. In 2011 and 2012, 84 per cent of households reported experiencing one or more shocks. Sixty-one per cent were related to food security and livelihoods, 47 per cent to drinking water supplies, 37 per cent to agricultural problems and 36 per cent to disasters.³⁹

3.1.3 Politics and governance

After three decades of conflict, Afghanistan held its first democratic elections in 2004. Its third presidential poll took place in 2014, and was deeply contested.⁴⁰ Ashraf Ghani was inaugurated as president after he and his rival, Abdullah Abdullah, agreed to form a unity government. Abdullah was appointed to the new position of chief executive officer. Delays in forming a new cabinet led Ghani to dismiss the caretaker government in

November 2014, and the situation remained unresolved as of January 2015, reflecting ongoing tensions between Ghani and Abdullah supporters.

The election was marred by deteriorating security as the NATO-led International Security Assistance Force (ISAF) gradually reduced its presence in the country. Civilian casualties hit a record high, making 2014 the deadliest year for non-combatants since 2009.⁴¹

3.2 DISPLACEMENT

3.2.1 Internal

The scale of displacement in Afghanistan is difficult to ascertain, but IDMC estimates that the country had 667,200 IDPs as a result of conflict as of April 2014.⁴² The UN Refugee Agency (UNHCR) put the figure at 701,900 as of September 2014.⁴³ Nearly 105,800 people were newly displaced by conflict during the year.⁴⁴

Disasters such as droughts and floods occur regularly and cause displacement, but poverty and conflict are considered the main drivers. According to a 2009 study by the International Committee of the Red Cross (ICRC), 60 per cent of Afghans had direct personal experience of conflict, three-quarters of whom had been displaced.⁴⁵ A significant percentage of displacement is driven by a mix of conflict and disasters. As the country's national policy on IDPs describes:

*The causes of displacement in Afghanistan are often multi-causal and multi-faceted ... If the irrigation system in a village is destroyed as a result of aerial bombing in an area experiencing drought, the families can no longer productively farm their land, it is a combination of conflict and disaster that forces them to leave their villages.*⁴⁶

A 2014 report commissioned by the International Organization for Migration (IOM) and based on surveys of 720 displaced households in Helmand and Herat

³⁵ World Bank, 2013, *Afghanistan*, <http://goo.gl/k6W88S>

³⁶ UNDP, 2013, *National Risk and Vulnerability Assessment 2011-2012*, p.52, <http://goo.gl/2ul5Ng>

³⁷ Rural Poverty Portal, *Rural poverty in the Islamic Republic of Afghanistan*, <http://goo.gl/3lkLHl>

³⁸ UNDP, 2013, *National Risk and Vulnerability Assessment 2011-2012*, p.xix and 57, <http://goo.gl/2ul5Ng>

³⁹ *Ibid*, p.xxi

⁴⁰ Crisis Group, 2014, *Afghanistan's Political Transition*, <http://goo.gl/Aiw76j>

⁴¹ Al Jazeera, 2014, *Afghan civilian casualties hit record high*, <http://goo.gl/8dmY2l>

⁴² IDMC/NRC, 2014, *Afghanistan*, <http://goo.gl/GQ1UeL>

⁴³ UNHCR, 2014, *Afghanistan Factsheet*, p.1, <http://goo.gl/VFp08p>

⁴⁴ Humanitarian Country Team, 2014, *2015 Humanitarian Needs Overview Afghanistan*, p.9, <http://goo.gl/Wskb4d>

⁴⁵ Ipsos/ICRC, 2009, *Afghanistan, Opinion survey and in-depth research*, p.22, <http://goo.gl/05tfUz>

⁴⁶ Government of Islamic Republic of Afghanistan, Ministry of Refugees and Repatriation, *National Policy on Internally Displaced Persons*, p.14-15, <http://goo.gl/vPi9p7>

provinces found that conflict was responsible for 55 per cent of displacement, the combination of conflict and disasters 32 per cent and disasters 12.5 per cent.⁴⁷

There is no reliable data on the cumulative number of people displaced by disasters. One NGO estimates that there were 89,000 as of the beginning of 2014,⁴⁸ but the figure cannot be verified. IDMC estimates that at least 15,896 people were newly displaced by disasters in 2013.⁴⁹ The figure includes 9,365 IDPs reported by IOM, but that does not take in people displaced within their villages, who are registered as “affected”.⁵⁰ A separate IOM report states that 242 disasters affected 90,505 people in 2013, of whom 8,356 were displaced, mainly by floods, heavy rainfall and harsh winter conditions.⁵¹

The Humanitarian Country Team (HCT) for Afghanistan anticipates that 250,000 people will be affected by disasters in 2015, and 140,000 will be displaced by conflict.⁵²

The discrepancies and general lack of accurate data reflect the challenges of tracking IDPs’ movements, particularly those displaced by disasters. There appears to be no reliable information on how long people remain displaced or what becomes of them in the long term.

3.2.2 Cross-border

More than 5.8 million Afghan refugees have returned home since 2002, of whom 4.7 million were assisted by UNHCR through its voluntary repatriation programme.⁵³ Returnee rates have slowed in the last five years as result of insecurity, difficult socio-economic conditions and uncertainty surrounding the 2014 elections and ISAF’s withdrawal.

There is no reliable data on how many returnees have been able to go back to their places of origin, but the

national policy on IDPs states that those who remain in secondary displacement are “substantial in number”. A 2008 UNHCR report endorsed by the government found that 52,422 returnees from Pakistan had become IDPs upon their return.⁵⁴

Returnees regularly find that their land and property has been destroyed, occupied or sold. Ownership disputes within families are also common, particularly between those who fled and those who stayed behind. Some families do not bother to reclaim their land when they return, particularly if it has been occupied by powerful warlords or elites.⁵⁵

Future return rates are difficult to predict. The proof of registration cards issued to Afghan refugees in Pakistan, which give them the de facto right to stay, expire at the end of 2015 and it is unclear whether their validity will be extended. The refugees’ position has become more uncertain still since an attack on an army school in Peshawar in December 2014, in which 143 children were killed. The provincial government in Khyber Pakhtunkhwa said it intended to deport all unregistered Afghan refugees in January 2015, citing security concerns.⁵⁶ Azad Jammu and Kashmir has also begun to evict Afghans, labelling them “illegal immigrants”.⁵⁷ More than 33,000 Afghans returned from Pakistan in the first six weeks of 2015, an average of 749 a day compared with 59 a day in 2014.⁵⁸ Around six per cent were deported.⁵⁹ Returnees will need of land, shelter and other assistance.

Following military operations in Pakistan’s North Waziristan agency, more than 13,000 families crossed into Afghanistan’s Khost and Paktika provinces in June 2014, where many have settled with host communities.⁶⁰ It was initially hoped that those affected would be able to return relatively quickly, but ongoing operations have continued to drive refugees across the border. As of 6 January 2015, there were 39,494 families in Khost and

⁴⁷ Samuel Hall Consulting, 2014, *Displacement Dynamics: IDP Movement Tracking, Needs and Vulnerability Analysis, Herat and Helmand*, commissioned by IOM, p.16, <http://goo.gl/YojCAf>

⁴⁸ Intersos, 2012, *Afghanistan*, <http://goo.gl/6hNcsz>

⁴⁹ IDMC/NRC, 2014, *Afghanistan*, <http://goo.gl/GQ1UeL>

⁵⁰ IOM, 2014, *Transition Crisis and Mobility in Afghanistan*, p.9, <http://goo.gl/eRYuw7>

⁵¹ IOM, 2013, *Afghanistan Humanitarian Assistance Programme Cumulative Report*, January - December 2013, p.1, <http://goo.gl/i6pQNi>

⁵² OCHA, 2015 *Humanitarian Needs Overview*, p.12, <http://www.humanitarianresponse.info/operations/afghanistan>

⁵³ UNHCR, 2015, *UNHCR country operations profile - Afghanistan*, <http://goo.gl/KHkWA3>

⁵⁴ UNHCR, 2008, *National Profile of Internal Displaced Persons (IDPs) in Afghanistan*, p.3, <http://goo.gl/TZ62PY>

⁵⁵ Macdonald, Ingrid, 2011, *Landlessness and Insecurity: Obstacles to Reintegration in Afghanistan*, p.3, Middle East Institute <http://goo.gl/eK3eh2>

⁵⁶ The Express Tribune, 2014, *UNHCR clears path for Pakistan to deport undocumented Afghan refugees*, <http://goo.gl/6T03tw>

⁵⁷ The Express Tribune, 2015, *Expelled: AJK expels scores of Afghan families*, <http://goo.gl/cWpSOV>

⁵⁸ New York Times, 2015, *Refugees are pushed to exist in Pakistan*, <http://goo.gl/t5Qab8>; HRW, 2015, *Pakistan: stop forced returns of Afghans*, <http://goo.gl/JEJVAY>

⁵⁹ IOM, 2015, *Sharp increase in Afghans returning from Pakistan raises concerns*, <http://goo.gl/R548hx>

⁶⁰ UNHCR, 2015, *UNHCR country operations profile - Afghanistan*, <http://goo.gl/KHkWA3>

Paktika.⁶¹ For many, it is their first experience of sub-zero temperatures. Afghanistan's Directorate of Refugees and Repatriation (DORR), UNHCR and other UN agencies and international NGOs have provided food, tents, non-food items and winter kits.⁶²

3.2.3 Protection

MORR and DORR

The Ministry of Refugees and Repatriation (MORR) provides protection and assistance to IDPs and returnees. Both MORR and DORR are responsible for their identification and verification. MORR is also mandated to act as the institutional focal point and provider of last resort for all matters related to internal displacement, and to coordinate implementation of the national policy on IDPs. Despite its central role, however, it is one of the worst resourced and most challenged government ministries.

At the provincial level, the relationship between DORR and the Afghanistan National Disaster Management Authority (ANDMA) appears to be unclear. DORR is the lead on all displacement issues, but ANDMA officially leads emergency responses.

National policy on IDPs

On 23 November 2013, the government approved a national policy on IDPs.⁶³ It aims to establish a comprehensive, effective and realistic framework for addressing internal displacement, and seeks to ensure the protection of IDPs' rights throughout the displacement process, including their pursuit of durable solutions. Importantly, it also covers DRR and emphasises the causal link between disasters and displacement. Contingency planning and early warning systems to mitigate the impact of disasters are identified as strategies to prevent and reduce displacement.

The policy adopts the definition of an IDP provided in the Guiding Principles on Internal Displacement, and refers to natural, human-made and slow-onset disasters.⁶⁴ Returnees who are unable to go back to their places of origin are covered, as are people displaced by the compulsory acquisition of land for public purposes.

The policy also recognises the importance of large-scale development interventions and DRR projects in reducing new displacement.

Land allocation scheme

IDPs and returnees who are unable to go back to their places or origin face many challenges in finding alternative land. To resolve the issue, MORR launched a land allocation scheme (LAS), which was endorsed by presidential decree 104 in December 2005 and legalised the distribution of uncultivated government land to landless IDPs and returnees.⁶⁵ The scheme is managed by MORR and administered by provincial DORR offices, but it has a number of shortfalls that affect the resilience of the communities concerned. They include:

- Isolated sites far from basic services, and with only limited livelihood opportunities and education facilities⁶⁶
- Confusion as to the nature of LAS grants, with potential beneficiaries unaware that five years of proven occupation is required before title deeds are issued
- Fees and documentation requirements may exclude the most vulnerable⁶⁷

Previous research suggests that MORR has until recently favoured returnees over IDPs for LAS plots. This was confirmed during a December 2014 interview with DORR in which the official stressed that the land was intended for returnees, an apparent misinterpretation of the presidential decree, which includes IDPs.⁶⁸

⁶¹ OCHA, 2015, *Afghanistan: Cross-Border Movement from Pakistan* (as of 6 Jan 2014), <http://goo.gl/7pNggk>

⁶² *Ibid.*

⁶³ MORR, *National Policy on Internally Displaced Persons*, <http://goo.gl/PJS9nR>

⁶⁴ Wiseberg, Laurie, 2014, *An IDP Policy for Afghanistan: from draft to reality*, *Forced Migration Review* 46, p.10-11, <http://goo.gl/LlvGEO>

⁶⁵ UNHCR, 2008, *Land Allocation Scheme*, p.1, <http://goo.gl/SocHZ4>

⁶⁶ For example, Aliceghan in Kabul province is a housing project funded by the Australian government that cost \$10 million. Launched in 2006, it was only 15 per cent occupied as of 2011. See <http://goo.gl/PtF6W7>

⁶⁷ Macdonald, Ingrid, 2011, *Landlessness and Insecurity: Obstacles to Reintegration in Afghanistan*, p.6, Middle East Institute <http://goo.gl/eK3eh2>

⁶⁸ MORR, *National Policy on Internally Displaced Persons*, <http://goo.gl/PJS9nR>

3.3 COMMUNITY RESILIENCE

3.3.1 Key assets

Agriculture and livestock

Afghanistan covers 652,860 square kilometres of which 58.1 per cent is farmed, but only 5.5 per cent of agricultural land is irrigated.⁶⁹ Around 60 per cent of the population rely on agriculture for their livelihoods, and up to 80 per cent depend directly on natural resources for their income and sustenance. The country's 2008 national development strategy identified agriculture as a target sector.

Wheat is the principal crop grown, but farmers vulnerable to natural hazards such as drought may choose to plant others that are more resistant, including opium poppy. The government and the international community have tried to deter farmers from doing so by providing fertilisers and cash advances, but the high yield and return on investment that opium poppy provides have led the area under cultivation to grow to around 224,000 hectares in 2014. The profits from opium production in the same year accounted for four per cent of Afghan GDP. Production is highest in the more insecure provinces, and the Taliban are thought to be involved in its cultivation and distribution. It is less common among subsistence farmers.⁷⁰

Livestock production in Afghanistan returned to pre-war levels by the late 1990s.⁷¹ Farmers own an average of one to two horses, mules or donkeys for transport purposes. Traditional livestock breeds may not yield as much in economic terms as introduced species, but they are more resistant to local diseases and climatic conditions.

The livestock sector provides livelihood opportunities for vulnerable communities. It is female-dominated sector and provides income for marginalised groups and household level nutrition in the form of milk and eggs. The Kuchi, a tribe of nomadic herders, traditionally depends on livestock and migration.⁷² Their lifestyle increases their resilience to climate shocks and disasters, because they can move according to the availability of water and food, but the conflict has deprived many of

their livestock and migration routes, forcing them to settle in one place.

Land

Land is a vital economic asset in Afghanistan and a means of survival, but decades of conflict have disrupted the country's tenure system, which is patchy and uncertain, and governed by a mix of formal and traditional institutions. The Afghanistan Research and Evaluation Unit estimates that at least 50 per cent of tenure is not formalised,⁷³ and disputes over land and property have increased both in their number and impact since 2001.⁷⁴ A 2008 survey showed that land disputes were the most common cause of violent conflict.

Afghanistan's population has nearly tripled since the 1970s, leading to the rapid growth of urban areas. Around 70 per cent of the urban population lives in unplanned areas and illegal settlements. Deforestation, poor land management and soil erosion have degraded large areas of land. Around 16 per cent of Afghanistan's land mass is affected by human activity, and around three-quarters of the country is vulnerable to desertification. Arable land per capita was 0.55 hectares in 1980, but had fallen to 0.25 hectares by 2007.⁷⁵ The end result is greater competition for the decreasing amount of productive land available, whether it be for agriculture in rural areas or construction in urban centres.

3.3.2 Legal and institutional frameworks

Disaster management

Afghanistan enacted a national disaster management law in 2012 to regulate response, preparedness and risk reduction. It established the National Disaster Management Commission (NDMC),⁷⁶ with the country's president as its head and ANDMA as its secretariat. Provincial commissions (PDMCs) and their district-level counterparts were established as implementing mechanisms.

NDMC is chaired by the vice-president and its membership includes the Ministry of Rural Rehabilitation and Development (MRRD), MORR and ANDMA. Its main duties include the declaration of emergencies related to

⁶⁹ World Bank, 2014, *Agricultural irrigated land (% of total agricultural land)*, <http://goo.gl/FIDoPY>

⁷⁰ UNODC, 2014, *Afghan Opium Survey 2014 Cultivation and Production*, p.6, <http://goo.gl/7qznl1>

⁷¹ Khan, Ulfat-un-Nabi and Iqbal, Muzaffar, 1999, *Role and the size of livestock sector in Afghanistan*, p.ii, <http://goo.gl/uuhusY>

⁷² ARTF, 2014, *Agriculture in Afghanistan, Growing the Economy, Jobs, and Food Security*, p.13, <http://goo.gl/tu70ef>

⁷³ Macdonald, Ingrid, 2011, *Landlessness and Insecurity: Obstacles to Reintegration in Afghanistan*, p.4, Middle East Institute, <http://goo.gl/eK3eh2>

⁷⁴ Dr Katawazi, Nezamuddin, 2013, *Land disputes and governance in Afghanistan*, *Transconflict*, <http://goo.gl/BZzaHe>

⁷⁵ UNEP, 2013, *Natural Resource Management and Peacebuilding in Afghanistan*, p.14, <http://goo.gl/l7g0tN>

⁷⁶ Note that the unofficial translation of the law appears to refer to ANDMA as the Office of Disaster Preparedness.

disasters, the definition of preparedness and management policy, and allocating funds for risk reduction and rehabilitation projects. It holds sessions during emergencies at the decision of the chairman or the request of ANDMA, and civil society organisations, NGOs and other ministries may also be invited to attend.

PDMCs are established under the supervision of the governor and their district-level counterparts under the district governor. Both consist of representatives from member ministries and agencies at the subnational level.

The national disaster management plan (NDMP) was developed in 2010 with two sub-plans that reflect its twin goals. The national disaster risk reduction plan aims to prevent disasters by identifying mitigation and prevention activities at the national level in line with the Hyogo Framework for Action (HFA). The national response and recovery plan aims to create an efficient response to emergencies arising from disasters, including search and rescue, evacuation and relief.

ANDMA

Under the disaster management law, ANDMA is mandated to “manage and coordinate all disaster related activities in Afghanistan”, and to implement NDMC’s decisions and recommendations. It is responsible for convening NDMC meetings, organising national and provincial meetings to address issues related to disasters, mobilising response systems, developing disaster management plans, monitoring their implementation and reporting to NDMC.⁷⁷

Despite ANDMA’s central role on paper, in practice it struggles to coordinate disaster management, while institutions involved in DRR compete rather than complement each other. One ANDMA official admitted there were coordination problems with the central government. The organisation does not have the status of a ministry, and the ministerial members of NDMC do not feel answerable to it, effectively excluding it from DRR activities at the national level.

It wields more influence at the provincial and district level, where it is engaged in DRR activities through awareness-raising and disaster management education in schools. It lacks the technical expertise, however, to guide communities at risk of earthquakes and landslides. It also retains its coordinating role for emergencies at the provincial level. According to ANDMA’s director in Balkh province, however, it has not been called upon to act in this capacity, given that slow-onset disasters such as drought are not considered emergencies.

ANDMA is also mandated to develop DRR infrastructure such as culverts and gabion walls, but it does not have the budget to do so. Instead, communities turn to MRRD’s national solidarity programme to fund such initiatives. In 2014, a regional disaster management coordinator was appointed as part of the Heart of Asia process, a regional cooperation initiative to secure a stable and prosperous Afghanistan. The coordinator is tasked with strengthening ANDMA’s role in disaster management and capacity building activities.

In 2011, ANDMA launched a national DRR action plan.⁷⁸ It aims to address the risk of future disasters and climate change in a comprehensive and cohesive way and adopted a “no-regrets” approach to mainstreaming DRR and climate change adaptations into Afghanistan’s development. Based on HFA principles, it outlined objectives for the short-term (2011), medium-term (2011 to 2013) and long-term (2011 to 2015). It was deliberately designed to outlive Afghanistan’s national development strategy for 2008 to 2013 in order to provide future direction in DRR areas. It is not clear whether the plan has been implemented.

Ministry of Rural Rehabilitation and Development

Under the disaster management law, MRRD is a member of NDMC. On paper, it is not the lead agency for DRR or response, but in practice it plays a major role and coordinates between the government and the UN. Its social protection department is mandated with disaster response, and to mobilise and facilitate resources for those affected, including the provision of food, drinking water, clothing and shelter. The department is also tasked with keeping rural roads open in winter, and facilitating resources for returnees’ and IDPs’ livelihoods.⁷⁹

MRRD is perceived as having the highest functional capacity of all ministries. Its national solidarity programme is seen as a flagship initiative and the development programme with the highest level of government ownership. MRRD’s ministerial status means that it effectively overshadows ANDMA’s efforts despite the latter’s mandate, and particularly outside emergency responses. The current minister, Wais Ahmad Barmak, served as executive director of the national solidarity programme before his current appointment. Before joining MRRD, he was a senior advisor to the Department of Disaster Management and Preparedness, and his professional background may strengthen MRRD’s engagement in DRR.⁸⁰

⁷⁷ IFRC, 2013, *International Disaster Response Law (IDRL) in Afghanistan*, p.27-28, <http://goo.gl/EmG7jU>

⁷⁸ ANDMA, 2011, *Afghanistan Strategic National Action Plan (SNAP) for disaster risk reduction: towards peace and stable development*, <http://goo.gl/1t454E>

⁷⁹ MRRD, *About SPD*, <http://goo.gl/Pa8k6U>

⁸⁰ MRRD, *Extended Biography for Mr Wais Ahmad Barmak Deputy Minister, Programmes*, <http://goo.gl/iuH5gF>

National solidarity programme

MRRD launched its national solidarity programme in 2003 in an effort to establish a sustainable form of local governance, rural reconstruction and poverty alleviation. It has two key objectives: to set up, maintain and strengthen community development councils (CDCs) as effective institutions for local governance and socio-economic development;⁸¹ and to disburse grants of \$200 per household up to a maximum of \$60,000 per community to fund village-level projects designed and managed in consultation with the beneficiaries. It has set up 32,000 CDCs in 361 districts across all of Afghanistan's 34 provinces and financed nearly 65,000 development projects.⁸²

CDCs themselves were originally established by a development project, but were granted legal status by the community development council bylaw and approved by presidential order 3138 in 2007.⁸³ They are mandated to work within communities to improve local governance, promote welfare and strengthen solidarity. They do not, however, have "village council" status, and as such are outside the local governance structure provided for by article 140 of the Afghan constitution. Debate on whether to convert CDCs into village councils is ongoing, but meantime they are the primary mechanisms for community-based DRR activities and appear to be the most effective grassroots structures in place. Government and non-government stakeholders all work through CDCs.

Disaster management strategy

In June 2014, MRRD adopted its disaster management strategy for 2014 to 2017 in an effort to address vulnerabilities caused by disasters. Its key components are emergency response and immediate relief, post-disaster rehabilitation and reconstruction, preparedness and mitigation. Its overall aim is develop resilience in rural areas by mainstreaming DRR activities through MRRD's existing programmes, including the national solidarity programme and CDCs.

If successfully implemented, MRRD's strategy will integrate DRR, climate change adaptation and poverty reduction to strengthen community resilience. It is unclear, however, how it, the national disaster management plan and ANDMA's national DRR action plan will work together, particularly given the coordination problems between MRRD, NDMC and ANDMA. There is a risk that parallel structures will replicate rather than cooperate with each other. Areas of competence must be agreed upon and coordination mechanisms established to ensure that all DRR activities dovetail with each other.

Climate change

The National Environmental Protection Agency (NEPA) is Afghanistan's leading policy-making and regulatory institution on the environment. It was established in 2004 and given formal legal recognition under the 2007 environment law. One of its main functions is to develop and implement plans for training, education and awareness-raising in coordination with other institutions.

There is currently no national climate change adaptation strategy.⁸⁴ UNEP, however, has provided technical assistance to NEPA and line ministries at the national and provincial level to draft one. It has also helped to develop financial systems and interventions at the local level. Projects include community-based natural resource management initiatives to improve climate change adaptation, the demonstration of small-scale measures and a national awareness-raising campaign.⁸⁵

3.3.3 Knowledge, resources and actions

Community perceptions of risk and adaptability

Despite experiencing repeated floods, communities stressed that those of 2014 were unprecedented. It is unclear, however, whether they have acknowledged that severe flooding is likely to occur again, and none of those featured in case studies one to three (pages 30-31) identified any changes they would make in preparation for future events.

The returnee community featured in the fourth case study (page 32) appears to accept a high level of risk. It continued to build temporary shelters underground, even after two people were killed in a flash flood. When asked about the decision, the village leader said that such shelters were only a temporary measure as they were cheap and fast to build. This risk calculation reflects the community's efforts to balance its short-term shelter needs and resource constraints with the risk of flooding. It has chosen higher ground at less risk for its permanent settlement.

Role of community organisations

Where CDCs are present, communities can apply for grants for village-level development projects. CDCs are made up of an equal number of male and female members, in some cases divided into separate subcommittees.

⁸¹ MRRD, *National Solidarity Programme*, <http://goo.gl/lv4kNT>

⁸² MRRD, 2013, *Randomized Impact Evaluation of Afghanistan's National Solidarity Programme*, p.viii, <http://goo.gl/9MFau6>

⁸³ Office of the Special Inspector General for Afghanistan Reconstruction, 2011, *Afghanistan's National Solidarity Program Has Reached Thousands of Afghan Communities, but Faces Challenges that Could Limit Outcomes*, p.18, <http://goo.gl/pQ3KSi>

⁸⁴ UNEP, *Climate Change Adaptation*, <http://goo.gl/al9cqW>

⁸⁵ *Ibid.*

Communities affected by flooding in Khawja du Koh, Kurram wa Sabagh and Khulm districts have successfully applied for grants to repair and maintain protection walls along waterways. This seems to be the primary funding stream for community-based resilience initiatives under the national solidarity programme, but funding is not available for activities such as dredging. MRRD's position is that given dredging forms part of Afghan communities' traditional practices, paying them to do so is seen as having a detrimental effect on their resilience.

This approach is at odds with other agencies, which include dredging as a part of their humanitarian food-for-work and cash-for-work programmes. Such divergence in terms of approaches reflects a lack of consensus on how best to build community resilience.

Land for resettlement

The challenges facing returnees in terms of land are well documented.⁸⁶ They are often unable to go back to their places of origin because of land grabs and disputes. As such, they need land not only for shelter, but also as the basis for viable and sustainable livelihoods. Land for relocation and settlement should be suitable for both cultivation and grazing, and should be near services such as water supplies, markets, mosques and health clinics.⁸⁷ It should also be free of any legal encumbrance, lien or dispute to avoid the risk of secondary displacement.⁸⁸ The shortage of such land is a challenge for the humanitarian community.

Land issues can sometimes prevent the most vulnerable families and communities from accessing shelter assistance, as shown in case study two (page 30), in which AfghanAid provided emergency shelter to 166 households in Kurram Wa Sabagh district whose homes had been destroyed. The selection of beneficiaries targeted families headed by women and people with disabilities, and those still living in tents. The selection criteria, however, also required beneficiaries to have land considered safe for the building of a new dwelling. Those whose homes were in areas prone to disasters or previously affected by flooding were ineligible. As one AfghanAid staff member put it, families "who did not learn the lesson" from previous flooding were unable to access shelter assistance. The condition, however, also excluded the landless and those families who did not own alternative plots of land away from disaster risks.

IDPs also have difficulties in accessing land under MORR's allocation scheme. One displaced community, featured in case study five, is in dispute with the

ministry, after its members were displaced twice from their place of origin in Faryab province. They paid for alternative land in Balkh district, believing they had acquired ownership, only to be told that the seller did not hold title deeds. They are now petitioning to be granted the land they are occupying under MORR's scheme. Ironically, as they do so, their original land in Faryab may revert to government ownership. Without formal deeds, they are likely to lose that as well. While the dispute is ongoing, they are unable to build permanent shelters and live in limbo. If their application is unsuccessful, they will be left landless.

Many Afghans who have lived as refugees in Pakistan and Iran for protracted periods have become urbanised. When they return, they often chose to settle in urban or peri-urban areas in the hope of encountering better livelihood opportunities and services. The community featured in case study four had intended to settle in the city of Mazar e Sharif, but in the end opted for the nearby village of Qalimbafan so as to be able to apply for land under MORR's allocation scheme.

Training and knowledge transfers

When the flood-affected communities featured in case studies one to three were asked about risk reduction measures, they tended to focus on the repair of infrastructure such as retaining walls. In one community with a long history of exposure to flooding, there was a higher level of discussion about the technical aspects of gabion walls and the use of different materials, but there was no mention of other measures to increase resilience, such as hazard mapping, the relocation of assets and waterway management.

When the discussion turned to drought, the same communities tended to demonstrate a sense of fatalism. They described simply waiting for rain, and "it's in God's hands" was a common response.

NGOs have run community-based training programmes, but they have tended to focus on emergency response. Beneficiaries said they had been trained in setting up warning systems, planning evacuation routes and systems and prioritising vulnerable people for rescue. Such training is important, but strategies vital to building resilience in the longer-term, such as water management, irrigation and the cultivation of crops resistant to drought and floods, have not been addressed.

The risks associated with lack of knowledge are highlighted by the plight of the returnees featured in case study four. They had no previous experience of floods,

⁸⁶ Macdonald, Ingrid, 2011, *Landlessness and Insecurity: Obstacles to Reintegration in Afghanistan*, p.6, Middle East Institute, <http://goo.gl/eK3eh2>

⁸⁷ Aliceghan in Kabul province is a housing project funded by the Australian government that cost \$10 million. Launched in 2006 at isolated site, it was only 15 per cent occupied as of 2011

⁸⁸ Housing, Land & Property Task Force, *Northern Regional Updates*, p.8, <http://goo.gl/xP997y>

and they were unaware that the area they had chosen to settle in temporarily was at risk. Nor was there a warning system in place. They were caught by surprise when flash floods killed two people and damaged stored food. Returnees should clearly be advised of potential hazards in their locations, and local residents could play a role in doing so.

Importantly and paradoxically, CDCs and the national solidarity programme accentuate such risks at the community level. CDC interventions are conceived and developed by communities, many of which have little or no expertise and limited knowledge of new technologies to bring to the process. More innovative and creative solutions are unlikely to come to light unless they are better prepared to take part.

The humanitarian community appears to agree on the importance of building community resilience and reducing future risks, but not on the means of doing so. There are often competing considerations and demands in the immediate aftermath of a disaster and the early recovery stage, particularly when a wide range of organisations and donors are involved.

As case study six (page 34) illustrates, different approaches reflect a real and substantive debate among the international humanitarian community about how best to prepare for and respond to disasters, and how to balance competing interests such as:

- Including disaster resilient features in the response
- The timeliness and efficiency of the response
- Reaching as many beneficiaries as possible
- Providing “value for money” from a donor’s perspective

Decisions in these areas are currently made on an ad hoc basis, often in response to immediate needs and constraints. The extent to which shelters incorporate DRR features, for example, is determined largely by humanitarian providers. Communities are offered assistance based on certain models and designs. Even when no design is stipulated, the type of shelters communities can build and the extent to which they include DRR features is limited by the size of the cash grant they receive.

It is crucial that a more systematic discussion takes place among humanitarians in consultation with affected communities. Guidelines and principles that take a variety of geographical and climatic characteristics into account need to be established. Challenging as it is, humanitarian responses need to find an optimal balance between integrating long-term disaster resilience measures, delivering short and medium-term results efficiently, and reaching the maximum number of beneficiaries. There is no “one-size-fits all” solution, but guidelines can be developed to ensure that decisions are taken thoughtfully and in a principled manner.

3.4 RECOMMENDATIONS

Humanitarian and development organisations

- Engage in multi-sectoral dialogue to develop guidelines and principles for comprehensive risk assessments, and to define strategies for humanitarian assistance that address displacement and risk of displacement both during the emergency response and in development programming
- Based on current climate change projections, prioritise drought adaptation strategies, including the development of water management and irrigation systems
- Upgrade traditional water sharing systems with new technologies
- Diversify crop varieties and introduce more effective cultivation methods, such as organic farming, to protect soil fertility and increase agricultural yield in the long term
- Increase the distribution of drought and flood-resistant species to communities
- Raise public awareness on the benefits of different crops in areas prone to drought and floods

Government

- Significantly strengthen ANDMA’s capacity and authority to enable it to fulfil its mandate
- Clarify ANDMA’s and MRRD’s spheres of competence, and establish institutional dynamics that are complementary rather than competitive
- Ensure that disaster response and assistance is provided to IDPs fairly and equitably
- Prioritise drought risk mitigation
- Broaden CDCs’ mandate to include community resilience

3.5 CASE STUDIES

Case study one: 2014 flooding

Khawja du Koh district, Jazwjjan province

Communities in Khawja du Koh district suffered severe flooding in April and May 2014. They had a similar experience 10 years ago, when homes and agricultural land were damaged or destroyed. The flooding in 2014 was much worse, however, and damaged 40,000 *jeribs* (8,000 hectares) of agricultural land and 1,334 homes. Between 4,000 and 5,000 head of livestock were lost, but many other animals had been moved to higher ground. The communities' main livelihood is agriculture, supplemented with a small amount of carpet weaving.

Those affected were displaced for around four months, during which time they lived in tents and received food assistance.⁸⁹

There is an early warning system in place in Khawja du Koh, and the communities affected had between six and seven hours' notice of the floods. Mosques communicated the warning via their loudspeaker systems normally used for calls to prayer. An informal warning also came from neighbouring Saripul province.

Community teams made up of ten women and ten men are responsible for warning, logistics, the preparation of emergency aid kits and rescuing children. Planned evacuation routes are also in place. When flooding is anticipated, communities prepare evacuation kits including identity and property documents, food for three days and valuables.

The system is based on tradition hazard warning systems, with input from NGOs which have conducted DRR training with the communities. The teams were first established by ActionAid, which also distributed lights, loudhailers, lifejackets and stretchers. Save the Children conducted DRR training after the 2014 floods. The traditional warning system long predates such interventions. Said to have been in place for a century, and based on traditional methods of water management, a *mirab* or water master based in Saripul, the source of Khawja du Koh's water, issues the warning.

The communities also undertake other DRR activities such as canal dredging. They maintain culverts and roads, and have tried to improve irrigation, but no longer-term measures have been taken.

Villagers say the main canal that flows nearby is in need of repair. Ten villages in the district are protected by the retaining wall, but they are not ready to pool their

resources to do the work. CDCs in the area have applied to the national solidarity programme for grants, but its budget tends to go on other infrastructure work such as road and culvert maintenance.

Despite the unprecedented nature and impact of the 2014 floods, communities have not identified any changes they will implement in the future to improve their resilience.

Khawja du Koh has also experienced drought for the last seven or eight years. Communities, however, do not appear to have any adaptive strategies in place. Instead, they say they are simply "waiting for rain", a matter that "depends on God".

Case study two: 2014 flash floods

Yotroq, Qaum Mahjer and Arbab Qarloq villages, Kurram wa Sabagh district, Samangan province

Kurram wa Sabagh was affected by severe flooding in April and May 2014. Each of three villages lost around 1,000 *jeribs* (200 hectares) of farmland, and between them around 500 head of livestock. The communities also lost 80 per cent of their food supplies and suffered fuel shortages.

The impact of the floods also meant families faced additional costs of between 3,000 and 5,000 Afghanis (\$50 and \$85) each. In order to make ends meet, 40 per cent of the communities' heads of household left to look for work in Kabul, often as day labourers. Some community members had already migrated to the capital in search of work before the floods, but the number of people doing so doubled in their aftermath.

Vulnerable families depended on charity and assistance from within their own communities. Around 50 families who lost their homes left the district for Samagan and Mazar e Sharif, leaving neighbours to tend their land.

Community members said floods were an annual occurrence, but that the damage caused in 2014 was unprecedented. It was the first time that homes as well as land were affected. Residents of villages closer to the river had been displaced twice before, but those living on higher land had not.

A neighbouring district first alerted the communities to the fact that flooding was imminent. CDC heads in other districts also called later. Those affected had

⁸⁹ Abdul Rashid Dostum, Afghanistan's vice-president



Canal and retaining walls in Sayyad village. Photo © Mi Zhou

between five and six hours to prepare, but they did not anticipate the extent or severity of the flooding. They were surprised that water levels reached the roofs of some houses, and warned other villages downstream.

Community members warn each other via mobile phones and by shouting. They do not have loudhailers and they were unable to use the mosques' loudspeakers, because the villages rely on hydroelectricity that is only generated at night. During the day, the water resources are used elsewhere.

The communities have undertaken a number of resilience measures. They have planted trees, built retaining walls and sandbagged the river. They have asked for help from NGOs, but the initiatives were their own. The retaining walls have been destroyed three times over the last decades, and each time the communities have rebuilt them in the same place. They build gabion walls of gravel cages reinforced with cement in areas that take the greatest strain. Tree planting is a traditional practice that they have maintained.

AfghanAid has provided some basic DRR training. Community members said they had learned that they should prepare a kit and tools for evacuation. In terms of future resilience strategies, they identified more tree planting, dredging and maintenance of retaining walls.

Kurram wa Sabagh also suffered drought four or five years ago, and a landslide around ten years ago killed 50 people and destroyed 20 homes. The families who lost their homes moved out of the area.

Case study three: 2014 floods

Sayaad, Khulm district, Balkh province

Sayaad is a village on the main road to Samangan, around 50km from the city of Mazar e Sharif, and has a canal flowing through it. It is home to around 500 families who have lived in the area for many generations. Between 100 and 120 households headed by women, people with disabilities and in one case a young boy are considered vulnerable. The village has not suffered displacement as a result of disasters, but a few families have left for Mazar e Sharif. It has a CDC with male and female subcommittees, but according to the organisation's male head, the female subcommittee is symbolic and does not take any substantive decisions.

Sayaad is an agricultural community. Each family has between one and three jeribs (0.2 and 0.6 hectares) of farmland on which they cultivate wheat and vegetables, and six or seven head of livestock. The community also has around 100 jeribs (20 hectares) of orchards. Irrigation is provided via a traditional water sharing system, and the village has a mirab who allocates resources in prior agreement with other villages. It is not connected to the electricity grid, and the nearest health clinic is 20km away. It has a well, but no supply of drinking water.

In 2014, the village was affected by floods that destroyed 12 homes and damaged 31 more. NRC gave the families affected cash for shelter, and the government and other NGOs provided non-food items. The harvest was also affected, and around 400 men left temporarily for Samangan province in search of agricultural labour. In most cases, at least one family member stayed behind to look after their land. Livestock was unaffected because, by chance, the animals were grazing on higher ground.

Sayaad had experienced frequent flooding in the past, but 2014 was the first time housing and infrastructure suffered serious damage. Villagers described the situation as unprecedented.

In 2011, the community applied for a national solidarity programme grant to build protection walls along the canal. It received \$53,000 to build 232 metres in order to protect the village's homes, but an additional 700 metres are needed. The community also built a small dam for irrigation, but no dykes or retaining walls to protect their agricultural land.

All discussions about the flood centred on building protection walls along the canal. No other DRR measures were mentioned. When the villagers were asked about dredging and maintaining the canal, the CDC head said they would need an excavator to do so.

Sayaad appears to have no official early warning system, but relies instead on informal contacts and government officials who may or may not issue an alert. In 2014, friends in Samangan warned the villagers, giving them between ten and 11 hours to prepare. They used the time to evacuate to higher ground with their valuables.

The village has experienced drought in the last four years and its agricultural productivity had been affected, but when asked whether any action had been taken to mitigate the impact of drought and increase the village's resilience, the CDC head said the matter was "in God's hands". The village elders said the risk appeared to have remained same during their lifetimes, with drought occurring every five or ten years.

Case study four: 2014 flash floods

Qalimbafan returnee village, Nahri Sahi Balkh district, Balkh province

Qalimbafan is built on land granted under MORR's allocation scheme around 25km from Mazar e Sharif. It sits on high ground on the side of the road between Mazar and Samangan. As of December 2014, it was still a work in progress. Eighty-one houses were under construction with NRC assistance, and were at various stages of completion. The village had no water supply, but Germany's *Gesellschaft für Internationale Zusammenarbeit* (GIZ) was drilling for water nearby. Around ten of Qalimbafan's 70 families had occupied their new homes, including the head of the village. The others were still living in temporary shelters on nearby lower ground, where they first settled when they returned from in Pakistan.

Around 30 families are female-headed households, and another 15 or so are identified as vulnerable because they are headed by elderly or disabled people. They rely on the rest of the community for food and other support.

The villagers are originally from the Kishendeh and Shoghara districts of Balkh province, but ongoing insecurity means they are unable to go back there. The fact that they do not have secure tenure over their original land appears to be a secondary factor discouraging their return. They left Afghanistan at different times, some before the Taliban came to power, and others under its regime. They met in the city of Quetta in Pakistan's Balochistan province, where they lived until 2012 when they repatriated voluntarily with UNHCR assistance. They decided to return to Afghanistan based on information provided by UNHCR in Pakistan. Two families had experience of secondary migration from Pakistan to Iran.

Before their flight, the villagers' livelihoods were based on agriculture and livestock. In Pakistan, many worked as day labourers, often on construction sites and in factories. A few kept cows for milk and yoghurt, but their agricultural lifestyle was all but curtailed. When they returned, some went back to rearing livestock. Around 20 families supplement their income by sending a member to work at a nearby brick factory for six months of the year. They are paid 400 Afghanis (\$7) for every 1,000 bricks made, which amounts to around two days' work. When there is no work at the brick factory, some families have a member who sells fruit and vegetables on the streets of Mazar. Public transport costs 40 Afghanis (\$0.70) one way, but earnings as a street vendor do not always cover the outlay.



New homes in Qalimbafan village. Photo © Mi Zhou

The villagers had originally intended to settle in Mazar when they returned to Afghanistan, but they travelled from Pakistan in a convoy of vehicles containing their belongings, and as they neared the city they stopped to pray at the roadside. Locals told them that they could stay in the area and that the land was available under MORR's allocation scheme. They were advised that if they stayed together as a community they would receive government help, but if they dispersed they would not. The community made a collective decision to settle in the area and received 7,000 Afghanis (\$120) from DORR to acquire land.

In 2014, flash floods struck. It was the villagers' first experience of any kind of flooding, and they were unaware that they were at risk. There was no warning, but most managed to escape to higher ground. Two people were killed, however, one of them an infant, because their temporary shelter had been built underground. The infant was tied to a cradle and could not be rescued in time. Stored food was also damaged, reducing the community's food security.

Following the experience, the community has now chosen higher ground on which to build permanent homes to reduce the risk of future flooding. All building will take place above ground to increase resilience. Save the Children has provided DRR training in how to identify evacuation routes and help children and elderly people.

Immediately after the floods, however, community members continued to build temporary shelters underground to house people whose tents had been washed away, because it the cheapest and easiest option. They understood that doing so entailed the risk of future flooding, but accepted the trade-off as a short-term solution.

Qalimbafan has no formal warning system in place.

IDPs from Faryab, now living in Balkh district, Balkh province

The community is made up of 47 families originally from Faryab province. They were first displaced by drought during the Taliban's reign and came to Balkh district in Balkh province, but they moved back to Faryab after Hamid Karzai's government came into power. In late 2013, however, they fled their homes again to escape armed conflict and came back to Balkh, where they currently live in temporary shelters.

They would like to build more permanent structures, but are unable to do so without tenure security. In fact they are currently engaged in a land dispute. They bought land from someone whom they believed was within their rights to sell it, but in reality it was land granted under MORR's allocation scheme. As the seller had not occupied it for five years or built housing on it, he had not fulfilled the conditions required for a title deed to be issued, meaning that the land was in effect still government-owned.

The community now is trying to have the land, which is around 7km from the town of Balkh, formally allocated to it with support from one of NRC's information and legal assistance centres. As a first step, they are transferring their Faryab *tazkeras* or identity cards to Balkh province so as to be eligible for a grant under the allocation scheme.

Meantime community members work as day labourers in the agricultural sector, picking cotton and harvesting vegetables. They used to rear livestock in Faryab, but many sold their animals during the drought that first displaced them. They had only informal ownership of the land they occupied in Faryab, and they believe it is likely to be granted to another community under MORR's allocation scheme.

Shelter response

In April and May 2014, Afghanistan's northern and north-eastern provinces were hit by severe flooding caused by heavy rainfall and spring snowmelt. Fifteen districts of Baghlan, Balkh, Faryab, Jawzjan, Takhar, Samangan and Saripul provinces were worst affected. The rains also caused landslides in Rostaq in Takhar province, Pashtunkot in Faryab and Argo in Badakhshan. Damage was widespread across 132 districts in 27 provinces, and more than 140,000 people were affected.

In the 15 worst-hit districts, 12,366 families were affected and 10,194 houses were damaged or destroyed. An assessment of the 105 worst-affected villages in the 15 districts estimated the total cost to the agricultural sector in those areas to be nearly \$136 million.

After the immediate emergency effort, the focus of the humanitarian response switched to the reconstruction of homes, for which the Emergency Response Fund (ERF) allocated \$2.4 million in June.⁹⁰ The EU also allocated €3 million (\$3.4 million).⁹¹ ERF sought to prioritise the use of government and cluster-approved two-room shelter and latrine designs that include DRR features, while the EU focused more on the number of shelters built and less on "Rolls-Royce" disaster resilient designs. ERF also emphasised the importance of value for money, but the shelters it favoured purportedly cost more than double those of the EU.

In the north of the country, a consortium of NGOs including NRC was funded to build 2,459 shelters in some of the worst-affected areas in eight provinces. The projects began in the summer and construction was still ongoing as of December. Shelter designs and the extent to which they incorporate DRR features vary from one NGO to another. Those funded earlier tend to have more DRR features, while those funded later as winter approached tended to focus on coverage and quick completion. NRC Afghanistan has been a leading advocate for a "build back better" approach through a shelter design that incorporates both flood and earthquake resilient features.⁹²

⁹⁰ OCHA Common Humanitarian Fund (CHF), 2011, *Afghanistan - Emergency Response Fund Allocation Strategy Paper Shelter Response*, p.1, <http://goo.gl/Pu3ZKA>

⁹¹ European Commission, 2014, *EU steps up humanitarian aid to victims of displacement and floods in Afghanistan and Pakistan*, <http://goo.gl/N9oLyk>

⁹² NRC, 2014, *NRCs Country Programme in Afghanistan Fact Sheet*, <http://goo.gl/BS73q4>



4. BANGLADESH

4.1 RISK LANDSCAPE

4.1.1 Climate change and disasters

Bangladesh is a low-lying riverine country, made up largely of the world's largest delta at the confluence of the Ganges, Brahmaputra and Meghna rivers. Eighty per cent of the country is fertile alluvial lowland that forms part of the Lower Gangetic plain. The Chittagong Hill region, which borders Myanmar, accounts for ten per cent the country's landmass. Bangladesh's geography makes it extremely vulnerable to flooding, particularly during the monsoon rains and the summer season, when glacial melt from the Himalayas courses into the delta.

The country's many rivers cross administrative and national boundaries, making water management complicated. India controls the flow of the Ganges with a dam completed in 1974 at Farraka, 18 kilometres from the border. A treaty signed in December 1996 ensures Bangladesh a fair share of the flow that reaches the dam during the dry season.

Bangladesh is rated 139th of 178 on the ND-GAIN index, which ranks countries according to their vulnerability and ability to cope with climate change. It is the 38th most vulnerable country and the 43rd least prepared. Climate change will have serious impacts on both the environment and development.⁹³

IPCC predicts a 28cm rise in sea level, which would potentially flood up to 96 per cent of the country's Sundarbans mangrove swamp. Opinions differ, but in the worst-case scenario 18 per cent of the country would be flooded, and up to 28 per cent of the population could be displaced.⁹⁴ Increased soil salinity could cut rice production by 30 per cent, and infectious diseases would likely spread more easily and outbreaks last longer, given higher air and water temperatures and increased seawater flooding. The cholera bacteria, for example, survive longer in brackish water.⁹⁵

Rising temperatures and fluctuating rainfall during the monsoon season may also affect rice and wheat production, and climate change is likely to increase the occurrence and severity of drought. Around eight million people may be affected by 2050.⁹⁶ Cyclones are also likely to become more powerful.

It is estimated that the annual rate of erosion will increase by nine per cent over the next 50 years and 18 per cent over the next century, increasing the risk of floods and landslides on higher ground as well. According to the Ministry of Disaster Management and Relief (MDMR), between 20 and 25 per cent of the country is already inundated each year as a result of river spills and drainage congestion.⁹⁷

⁹³ CDKN, *Regions: Bangladesh*, <http://goo.gl/69NsTr>

⁹⁴ UNESCAP, *Country analysis Bangladesh*, <http://goo.gl/FKqhlm>

⁹⁵ IPCC, 2014, *Impacts, Adaptation and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, p.1347-1348, <http://goo.gl/zW8b1o>

⁹⁶ Khatun, Mahmuda, 2013, *Climate Change and Migration in Bangladesh: Golden Bengal to Land of Disasters*, Bangladesh e-Journal of Sociology 10 (2), p.1, <http://goo.gl/R0SqKP>

⁹⁷ MDMR, 2001, *Bangladesh: State of the Environment*, p.98, <http://goo.gl/Fo140R>

4.1.2 Economy and development

Bangladesh's GDP was \$150 billion in 2013. Since 1996, the economy has grown at an average of six per cent a year. Services account for 53.9 per cent of GDP, industry 28.9 per cent and agriculture 17.2 per cent. The mobilisation of public revenues is weak, and relies mainly on trade taxes. As of 2009, around 46 per cent of the workforce were active in the agriculture sector, of whom half were women.⁹⁸

Bangladesh is the most densely populated country in South Asia, which puts pressure on its agricultural land. The country has very little scope for increasing food production, particularly as a result of the changes caused by increased drought and flooding. As of 2011, 28.4 per cent of Bangladeshis lived in urban areas. The urban population is increasing by almost three per cent a year, with much of the growth taking place in slums. More than a third of the population of the capital, Dhaka, live in low-lying slums that are prone to flooding. Climate change impacts are predicted to cause an increase in poverty at the national level of up to 15 per cent by 2030, from the current figure of 31.5 per cent.⁹⁹

Malnutrition rates are among the highest in the world, with more than 56 per cent of pre-school children underweight and more than 50 per cent of women suffering from chronic energy deficiency.¹⁰⁰ Rates vary greatly across administrative divisions.

Poor households and women, particularly widows, are most at risk from climate change. Coping strategies include reduced consumption, borrowing, diversifying economic portfolios and taking children out of school. That said, cyclone Aila in May 2009 caused an influx of international aid agencies that actually improved living conditions and created temporary job opportunities. Migration among coastal communities is not common, for fear of increased poverty in a new location.¹⁰¹

4.1.3 Politics and governance

Formerly East Pakistan, Bangladesh became independent in 1971 following a war with what is today Pakistan. It is a parliamentary democracy, and has held ten general elections since 1973.¹⁰² In January 2014, Sheikh Hasina of the Awami League was re-elected as prime minister for a third term after a controversial walkover election that the main opposition party, the Bangladesh National Party (BNP), boycotted. Voter turnout was only 20 per cent. In January 2015, the opposition leader Khaleda Zia was confined to her office for 16 days in an effort to prevent her leading protests calling for fresh elections.¹⁰³ Supporters from the two parties clashed violently on the streets.¹⁰⁴

The country is divided into administrative regions called "divisions", with each one named after the city that serves as its headquarters. The divisions are split into *zila parishads* or district councils, and rural districts are further divided into *upazila parishads* or sub-district councils. The district and sub-district councils are responsible for the delivery of services such as education and health care. Almost 4,500 *union parishads* or union councils are further split into wards, usually made up of one village. Urban areas have *pourashavas* or municipalities, or city corporations, which are also divided into wards. Bangladesh is one of the most centralised countries in the world. According to the World Bank, only three to four per cent of government expenditure is decentralised, a disproportionate amount of it in urban areas.¹⁰⁵

⁹⁸ FAO, 2014, *Bangladesh*, <http://goo.gl/R8cBhV>

⁹⁹ IPCC, 2014, *Impacts, Adaptation and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, p.1347-1348, <http://goo.gl/zW8b1o>

¹⁰⁰ FAO, 2014, *Bangladesh Nutrition Country Profile*, <http://goo.gl/NbkiY6>

¹⁰¹ Islam, Mohammad Mahmudul and Chuenpagdee Ratana, 2013, *Negotiating risk and poverty in mangrove fishing communities of the Bangladesh Sundarbans*, *Maritime Studies* 12 (7), p.13, <http://goo.gl/W2C5H0>

¹⁰² Firoj, Jalal, 2013, *Forty years of Bangladesh Parliament: Trends, Achievements and Challenges*, *Journal of the Asiatic Society of Bangladesh* 58 (1), p.84, <http://goo.gl/M1mqaJ>

¹⁰³ Al Jazeera, 2015, *Bangladesh opposition leader Zia released*, <http://goo.gl/xjR4Rv>

¹⁰⁴ Guardian, 2015, *Bangladesh rocked by violence on election anniversary*, <http://goo.gl/8MtMqU>

¹⁰⁵ World Bank, 2003, *Bangladesh Public Expenditure Review*, p.113, <http://goo.gl/nxTa8U>

4.2 DISPLACEMENT

4.2.1 Internal

Following the civil war in 1971, almost a third of the population was displaced. Since then, disasters, environmental crises and ethnic conflict have continued to force people from their homes. As of May 2014, there were around 280,000 IDPs in Bangladesh as a result of conflict and violence.¹⁰⁶ Most are from religious and ethnic minorities, and violent incidents targeting Hindus have caused both internal and cross-border displacement. In 2001, when BNP came into power, 200,000 Hindus were displaced during post-election violence.

Riverbank erosion displaces as many as 200,000 people each year, and seasonal floods a similar number. Immediately after a disaster, IDPs tend to move to higher ground in the vicinity of their homes, usually along roads and embankments. During extended crises, people may leave in search of alternative livelihoods in urban areas. After cyclone Aila in 2009, tens of thousands of people did so.¹⁰⁷

Major disasters in recent years include the following:

- In August 2014, heavy rainfall in the north and north-east combined with increased upstream river flows to cause flash floods in densely populated areas. Of the 2.8 million people affected, more than 500,000 were displaced. Some IDPs were housed in flood shelters, while others took refuge on elevated roads and embankments.
- On 27 May 2009, cyclone Aila hit Bangladesh and India, causing a storm surge of three metres that breached embankments. As many as two million people lost their homes in the region.
- In November 2007, cyclone Sidr affected nine million people and displaced at least three million.
- In the summer of 2007, a series of floods affected a number of South Asian countries. Around 7.5 million Bangladeshis had to leave their homes.

There are no statistics on how many people move to urban centres each year as result of disasters and climate change, but people living in Dhaka's informal settlements say the environment has had a negative effect on their lives.¹⁰⁸ Many of the 500,000 people who used to live on Bhila island in the Meghna river, which lost half of its landmass as a result of coastal erosion, now live in the capital's Bholar Basti slum.

IDPs in the north of the country tend to show more resilience than those in the southern coastal areas. They are better able to adapt to disasters and displacement, because they are usually affected by slow-onset events such as drought. Those in coastal areas are more exposed to sudden-onset events such as flash floods and cyclones, which are more difficult to prepare for and adapt to.

4.2.2 Cross-border

Tens of thousands of indigenous Pahari from the Chittagong Hill Tracts (CHT) were displaced to India a decade ago, where many still live in refugee camps. The construction of dam in the region in 1961 also displaced 100,000 people, of whom 40,000 eventually moved to India. The lack of relocation and rehabilitation programmes after the dam's construction and limited financial compensation undermined Pahari livelihoods.¹⁰⁹

Around 29,000 stateless Rohingya from Myanmar live in official refugee camps in Bangladesh, where they are assisted by UNHCR and NGOs. There are also at least 200,000 unregistered Rohingya living in unofficial camps and villages who receive no humanitarian assistance. UNHCR has not been allowed to register Rohingya who arrived after mid-1992. Those left unregistered are not permitted to work and lack livelihood opportunities, access to education, healthcare and other services, decreasing their coping strategies. Between 1992 and 2005, around 230,000 Rohingya returned to Myanmar under a bilateral agreement, but the flow of returnees stopped when it was not extended.

In August 2014, Myanmar agreed to take back Rohingya refugees from Bangladesh, but human rights groups are worried about the implications.¹¹⁰ In January 2015, the Bangladeshi government signed a project agreement with IOM under which the organisation will provide health, water, sanitation and hygiene services and related information to any undocumented Myanmar nationals, including Rohingya, in two districts.¹¹¹

¹⁰⁶ IDMC/NRC, 2015, *Bangladesh IDP Figures Analysis*, <http://goo.gl/REIH43>

¹⁰⁷ Martin, Maxmillan, Kang, Yi Hyun, Billah, Motasim, Siddiqui, Tasneem, Black, Richard, Kniveton, Dominic, 2013, *Policy analysis: Climate change and migration Bangladesh*, p.11, <http://goo.gl/v6pFlg>

¹⁰⁸ UN Social Development in Asia and the Pacific (UNESCAP), *Country analysis Bangladesh*, <http://goo.gl/FKhlqm>

¹⁰⁹ IDMC/NRC, 2013, *Bangladesh: Internal displacement in brief*, <http://goo.gl/xJC4zR>

¹¹⁰ IRIN, 2014, *Concern over Bangladesh move to repatriate Rohingyas to Myanmar*, <http://goo.gl/aFLHQX>

¹¹¹ IOM, 2015, *IOM to Provide Humanitarian Assistance to Undocumented Myanmar Nationals in Bangladesh*, <http://goo.gl/iWMEH5>

4.2.3 Protection

The legal and institutional framework for addressing the needs of refugees and IDPs is weak. There is no policy instrument that covers people displaced by disasters, although the Ministry of Land has said that families affected by riverbank erosion will be prioritised in the distribution of government-owned land or *khas*. This could, however, affect and possibly displace indigenous minorities.¹¹²

Bangladesh is not a signatory to the 1951 Convention relating to the Status of Refugees and its 1967 protocol, but refugees are protected, in theory at least, by the fundamental rights enshrined in the country's constitution. These include article 31 on the protection law, article 32 on the protection of life and liberty, and article 33, which contains safeguards against arrest and detention. As a signatory to international human rights conventions and declarations, Bangladesh is obliged to protect refugees from persecution and guarantee their freedom of movement.¹¹³

The Ministry of Foreign Affairs developed a national strategy paper on Myanmar refugees and undocumented Myanmar nationals in 2014 with inputs from other ministries. The strategy aims to register all undocumented Myanmar nationals and meet their basic needs, and to improve border control and bilateral relations.¹¹⁴

4.3 COMMUNITY RESILIENCE

4.3.1 Key assets

Agriculture and livestock

Bangladesh covers 143,998 square kilometres, of which agricultural land accounts for 70.1 per cent. The sector provides livelihoods for almost half of the country's active labour force. Most rural households are subsistence farmers with an average plot size of 0.12 hectares, which in most cases is rented.¹¹⁵ Rice is the country's most

important crop.¹¹⁶ Overpopulation puts a significant strain on agricultural land, but innovative methods such as double and triple-cropping could potentially increase production by 150 per cent.¹¹⁷

Livestock farming increased between 1980 and 2000, particularly the rearing of poultry, sheep and goats. Most rural households rear livestock, which provides them with draught power, manure and nutrition in the form of eggs, milk and meat.

Bangladesh is one of the world's major fish producing countries. The sector accounts for slightly less than four per cent of GDP and is supported by both the public and private sector. It provides jobs for 1.5 million people, of whom 1.2 million fish inland waters. Fish makes up 55 per cent of the animal protein consumed in the country. Challenges for the sector include the quality of seed and feed for fish farming, poor conservation management and climate change.¹¹⁸

Textiles

Bangladesh's textile industry is second only to China's, and is responsible for most of the country's economic growth. From 2009 to 2010 the sector exported goods worth \$16 billion, contributing almost 12 per cent to the year's GDP. It employed four million people, most of whom were women.¹¹⁹ On the downside, the industry uses an immense amount of water, which puts extra pressure on resources in times of drought.¹²⁰

Remittances

Many households have a male family member who works in an urban centre and sends home remittances. Between 400,000 and 500,000 Bangladeshis also leave the country every year in search of work.¹²¹ This can be interpreted as an adaptive strategy, because families diversify their income and lessen their reliance on agriculture. In 2013 the country received \$13.9 billion in remittances, almost ten per cent of GDP.¹²²

¹¹² Rahman, Mohammad Sajjadur, 2010, *The Internally Displaced People of Bangladesh*, p.12, <http://goo.gl/efYKaP>

¹¹³ Mohammad, Nour, 2012, *Refugee Protection Under the Constitution of Bangladesh: A Brief Overview*, Refugee Watch 29 p.148, <http://goo.gl/CPxMZZ>

¹¹⁴ MFA, 2014, *Strategy Paper on Addressing the Issue of Myanmar Refugees and Undocumented Myanmar Nationals in Bangladesh: A Summary Presentation*, p.4, <http://goo.gl/QfPdrs>

¹¹⁵ FAO, 2005, *Bangladesh Livestock Sector Brief*, p.5, <http://goo.gl/qUznNy>

¹¹⁶ CDKN, *Regions: Bangladesh*, <http://goo.gl/69NsTr>

¹¹⁷ Streatfield, Peter Kim and Karar, Zunaid Ahsan, 2008, *Population Challenges for Bangladesh in the Coming Decades*, Journal of Health, Population and Nutrition 26 (3), <http://goo.gl/bhznFP>

¹¹⁸ FAO, *Fishery and Aquaculture Country Profiles Bangladesh*, <http://goo.gl/Jul66w>

¹¹⁹ Board of Investment Bangladesh, 2011, *Garments and Textiles*, <http://goo.gl/Ejrstv>

¹²⁰ Bangladesh Water PaCT: Partnership for Cleaner Textile, *What is the Bangladesh Water PaCT: Partnership for Cleaner Textile?*, <http://goo.gl/83j1Z>

¹²¹ Martin, Maxmillan, Kang, Yi Hyun, Billah, Motasim, Siddiqui, Tasneem, Black, Richard, Kniveton, Dominic, 2013, *Policy analysis: Climate change and migration Bangladesh*, p.16, <http://goo.gl/v6pFlg>

¹²² World Bank, 2014, *Personal remittances, received (current US\$)*, <http://goo.gl/EiX830>

4.3.2 Legal and institutional frameworks

Disaster management

The Ministry of Disaster Management and Relief (MDMR) is responsible for developing and implementing national DRR programmes and relief operations. After a powerful cyclone in 1991, the Disaster Management Bureau (DMB) was established within the ministry, and subsequent policies have empowered disaster management committees at all levels of government. In 2010, DMB published a revised standing order on disasters - the previous one was dated 1997 - with the aim of reducing disaster risk, and outlines the roles and responsibilities of ministries and other actors in the event of a disaster.

The draft national disaster management plan for 2010 to 2015 addresses key issues such as risk reduction, capacity building, climate change adaptation, community empowerment and response and recovery management. It also provides guidelines for agencies in improving cooperation. Local disaster action plans have been established to help vulnerable communities increase their own capacity to cope with and recover from disasters.

The 2012 Disaster Management Act established the Department of Disaster Management (DDM) under MDMR. It is mandated to implement the Act's objectives, among them reducing disaster vulnerability. This includes enhancing poor communities' capacity, and strengthening and coordinating DRR and emergency response programmes implemented by the government and NGOs.

The Directorate of Relief and Rehabilitation is a department within the Ministry of Food and Disaster Management (MoFDM). Its mission is to achieve a shift in national disaster management strategies from conventional response and recovery to a more comprehensive DRR approach. It also promotes food security as an important factor in ensuring communities' resilience to hazards.

The National Disaster Management Council (NDMC) engages line ministries under the leadership of the prime minister. It reviews national disaster management systems and policies, and provides strategic advice on DRR and emergency response management. It also promotes DRR awareness among policymakers, evaluates disaster preparedness and response measures, and coordinates multi-sectoral responses. A management coordination committee within the council implements directives and supervises the services of the armed forces and NGOs.

The Ministry of Water Resources (MoWR) chairs the Bangladesh Water Development Board (BWDB), which is responsible for flood control, drainage and irrigation projects to increase productivity in the agriculture and fisheries sectors. The Water Resources Planning Organisation (WARPO) deals with planning at the national level, and the Joint Rivers Commission (JRC) is responsible for issues relating to the sharing and management of water from transboundary rivers.

The Bangladesh Planning Commission's perspective plan for 2010 to 2021 articulates strategies to achieve the aims of the government's Vision 2021 manifesto, tied to the country's golden jubilee. It sets out broad approaches for the eradication of poverty and inequality, with specific strategies laid out in five-year plans. The Ministry of Planning's sixth five-year plan, for 2011 to 2015, was designed to accelerate growth and reduce poverty. Its ultimate aim is to move Bangladesh towards becoming a middle-income country by improving education and the socio-economic situation, and providing better protection from climate change and disasters to make development more sustainable.

Climate change

Bangladesh is considered to be one of the most active countries in the region in terms of planning and action on climate change.¹²³ Policies include the 2005 National Adaptation Programme of Action (NAPA) and the 2009 Climate Change Strategy and Action Plan.¹²⁴ Under the Ministry of Environment and Forests, the latter established the multi-donor climate change resilience fund, which covers six programme areas: food security, social protection and health, comprehensive disaster management, resilient infrastructure, awareness raising, mitigation, low-carbon development and capacity building.¹²⁵

¹²³ Sterrett, C., 2011, *Review of Climate Change Adaptation Practices in South Asia*, Oxfam Research Reports, p.4, <http://goo.gl/uGUIAf>

¹²⁴ Government of Bangladesh, 2009, *Bangladesh Climate Change Strategy and Action Plan*, <http://goo.gl/KihhzV>

¹²⁵ Global Climate Change Alliance, *The Bangladesh Climate Change Resilience Fund*, <http://goo.gl/iSj0or>

4.3.3 Knowledge, resources and actions

Community perceptions of risk and adaptability

The Climate Asia survey found that as a result of interventions by the government, NGOs and the media, awareness of the term “climate change” is high in Bangladesh. More than 80 per cent of respondents had heard of it, and around 60 per cent knew what it meant. More than three-quarters felt that climate change was taking place, and attributed it to population growth, deforestation, urbanisation and human activity that produce greenhouse gas emissions. Seventeen per cent of respondents – significantly more than in the other countries surveyed¹²⁶ – blamed the phenomenon for changes in the availability of food, water and energy. A third felt they had experienced significant impacts.¹²⁷

Thirty-six per cent of respondents said they had made changes to their livelihoods, the highest rate among the seven countries included in the survey. Of those who had not made any changes, 52 per cent felt they should. Out of all respondents, 45 per cent said that they were in the process of making changes to their lifestyles, including making water safe to drink, using electricity more efficiently, storing water and changing their diet.

Among the rural farming population, 35 per cent of respondents said they had taken measures to change their livelihoods and more than half were supplementing them with other forms of income. Various methods of increasing productivity have also been employed. Fifty-four per cent said they were growing different crops, 50 per cent were using technology to improve soil quality and 43 per cent were rotating crops.¹²⁸

Support for community organisations

Bangladesh established the NGO Foundation in 2004 to support and finance registered NGOs and other voluntary groups, including community-based organisations. The foundation also provides technical support and capacity building, and it carries out climate change activities with partner organisations.

Training and knowledge transfers

Local government and NGOs implement programmes funded by international donors. The World Food Programme (WFP) operates a cash-for-work programme

in southern Bangladesh, aligned with the country’s five-year plan for 2011 to 2015. It aims to improve the resilience of the most vulnerable communities to the effects of disasters and climate change. The programme is 50 per cent funded by the government, and through local partners it targets as many as 400,000 people in 12 of the country’s poorest districts. WFP distributes cash and food in exchange for work and participation in training. Local government workers, NGOs and communities build and repair embankments, roads, canals, ponds and protective dykes around homes. Training is provided in DRR, including preparedness, response, hygiene, sanitation and nutrition.¹²⁹

Islamic Relief has implemented a number of projects to increase communities’ resilience. Activities include the formation and support of community-based organisations, and helping with adaptive livelihood analysis and planning at the community and household level.

Between 2002 and 2005, CARE ran a project to reduce vulnerability to climate change in six south-western districts, in partnership with 16 NGOs, local authorities and educational and social organisations. Beneficiary communities were helped to identify and prioritise their own vulnerabilities and determine suitable adaptation measures. A number of traditional and new practices emerged as means of diversifying income and improving resilience, including mangrove nurseries, cage aquaculture, new crop varieties, adjusted irrigation practices, crop rotation, hanging vegetables and floating gardens. Training materials on climate change were also developed for secondary students and teachers, and to improve the capacity of local communities and institutions in terms of adaptation.

Practical Action implemented a programme in 2007 to increase poor communities’ resilience to climate change impacts in Gaibandha district, where they are vulnerable to floods and erosion. Participatory consultations were used to get a better picture of their knowledge and awareness and to provide an overview of local livelihoods and assets.¹³⁰ Two hundred local volunteers were recruited and trained on climate change issues, and two community-based organisations were set up to build networks and relationships outside the communities. The project also included awareness-raising initiatives and training in early warning systems, livestock rearing during disasters, alternative livelihoods and the development of community-based disaster plans and rescue services.¹³¹

¹²⁶ China, India, Nepal, Pakistan, Indonesia and Vietnam.

¹²⁷ Mamun, Md Arif Al; Stoll, Naomi and Whitehead, Sonia, 2013, *Bangladesh - How the people of Bangladesh live with climate change and what communication can do*, BBC Media Action Climate Asia report, p.22, <http://goo.gl/yDCqj9>

¹²⁸ *Ibid*, p.25 and 27

¹²⁹ WFP, 2013, *Japan And WFP Review Disaster Resilience Building In Southern Bangladesh*, <http://goo.gl/bwuZon>

¹³⁰ Sterrett, C., 2011, *Review of Climate Change Adaptation Practices in South Asia*, Oxfam Research Reports, p.4, <http://goo.gl/uGUIAf>

¹³¹ Rahman, Mizanur, *Increasing the resilience of poor communities to cope with the impact of climate change in Bangladesh*, <http://goo.gl/9HYpQS>

With funding from the World Bank, the Bangladesh Water Development Board is currently implementing the first phase of its 2013 to 2020 coastal embankment improvement project. It aims to increase the area protected from tidal floods and storm surges, improve agricultural production by reducing saline water intrusion and strengthen the government's capacity to respond promptly and effectively to crises and emergencies.¹³²

A number of UN organisations and affiliates are present in Bangladesh. Since the 1990s UNDP's disaster management programme has supported the development of early warning systems and the introduction of innovative technology, including the construction of 15,000 disaster-resilient homes and drought and saline-resistant crops. More than 60,000 government officials were trained in emergency response.

In cooperation with the Dutch government, authorities are currently developing the Bangladesh delta plan 2100, a long-term, holistic and adaptive strategy that is expected to be completed in 2016.¹³³ It focuses on cross-cutting multidimensional integration, and aims to incorporate all delta-related sector plans and policies; enable the government to integrate climate change adaptation in more strategic, knowledge-based and consistent way; enhance good governance; facilitate the conservation of natural resources; create opportunities to harmonise regional and local development plans; coordinate funding processes; and strengthen international cooperation on issues such as trans boundary rivers and water management.

The project is expected to build a common knowledge base by sharing background reports on delta issues. It will also contribute to the formulation of the Ministry of Planning's seventh five-year plan for 2016 to 2020 and the development of a delta framework for coordinated and transparent action. It is an ambitious initiative and unusual in its high-level and holistic approach. It explicitly attempts to integrate disparate spheres of action on DRR, climate change adaptation and poverty reduction in areas such as water management, drinking water supply and sanitation, agriculture and food security, disaster management, environmental conservation, socio-economic analysis, land planning, development and governance.

4.4 RECOMMENDATIONS

Humanitarian and development organisations

- Prepare communities for sudden-onset disasters and reduce risk of displacement through awareness raising and training programmes
- Assist urban slum communities in improving their resilience by diversifying their asset bases and seeking alternative livelihoods
- Advocate with authorities and communities to prevent displacement through DRR and climate adaptation measures, including long-term planning of relocations for communities faced with submergence. Facilitate community consultations about planned relocation as a DRR strategy, and ensure that any such move is implemented with the full participation of both relocating and host communities, and with full respect for human rights and the principles of non-discrimination

Government

- Transfer more responsibilities and resources from the national government to local authorities
- Develop and implement a legal and institutional framework for refugees' and IDPs' protection
- Develop a framework to facilitate and support sustainable development to prevent displacement
- Prepare communities faced with submergence by beginning long-term consultations over planned relocation as a DRR and climate change adaptation strategy, and provide support for both host and relocating communities

¹³² World Bank, 2013, *Coastal Embankment Improvement Project - Phase I (CEIP-I)*, <http://goo.gl/RykDFc>

¹³³ Bandudeltas, *Bangladesh Delta Plan 2100*, <http://goo.gl/rnN09n>



5. BHUTAN

5.1 RISK LANDSCAPE

5.1.1 Climate change and disasters

Bhutan is a small landlocked kingdom bordering China to its north and India to its south. It is one of the most mountainous countries in the world, with elevations varying from 100 metres above sea level in the south to more than 7,500 in the north. Forty-five per cent of its landmass is at an altitude of more than 3,000 metres. The country lies on the southern slopes of the eastern Himalayas, and includes fertile valleys and open grasslands. Its proximity to the Himalayan belt means its seismic risk is considerable.

Bhutan's climate varies from tropical on the southern plains, to cool winters and hot summers in the central valleys, and harsh winters and cool summers in the Himalayas. The country has four major rivers systems that originate in the Himalayas and which are fed by many tributaries as they flow south to the Brahmaputra in India. It also has 677 glaciers and 2,674 glacial lakes, which are the sources of some of the country's largest rivers.¹³⁴ The monsoon season accounts for as much as 90 per cent of annual rainfall.

IPCC's fifth assessment report projects that by the end of the 21st century, South Asia will experience significant average temperature rises, particularly at high altitudes. Bhutan is expected to be one of the countries hardest hit, with increases of as much as 7C.¹³⁵ Rising temperatures have already caused glacial retreat of two metres a year vertically and seven horizontally. Between 1963 and 1993, 66 glaciers lost 8.1 per cent of their volume. Snow

cover decreased by almost 25 per cent between 1970 and 2000 and glacial lakes have grown larger, increasing the risk of glacial lake outburst floods (GLOFs).

The country suffers from Himalayan storms, landslides, floods and soil erosion, and extreme weather events are expected to become more frequent.¹³⁶ Rainfall is predicted to rise by five per cent in the dry season and 11 per cent in the monsoon season, increasing the risk of floods and landslides. Paradoxically, annual mean soil moisture, which affects plant growth, is projected to decrease.¹³⁷

Bhutan is rated 120th of 178 on the ND-GAIN index, which ranks countries according to their vulnerability and ability to cope with climate change. It is the 44th most vulnerable country and the 80th least prepared.

5.1.2 Economy and development

Bhutan's GDP is \$1.781 billion, and its economy grew by 5.8 per cent in 2013. The World Bank estimated its population to be 766,000 in 2014, showing 1.6 per cent growth. Much of the population is settled densely in urban areas and along river valleys, but others live in mountainous areas that are difficult to access. Around 62 per cent live in rural areas.¹³⁸ Twelve per cent of the population live below the national poverty line.

Almost two-thirds of the labour force works in agriculture, which accounted for 17 per cent of GDP in 2013. Industry employs fewer people, but accounted for 45 per cent of GDP. There is little gender disparity in terms of overall employment, with 72 per cent of men and 67 per

¹³⁴ RSPN, 2015, *About Bhutan - Biodiversity*, <http://goo.gl/IOq6ME>

¹³⁵ Gupta, Joydeep, 2014, *How climate change will impact South Asia – latest IPCC report*, <http://goo.gl/q5kYCz>

¹³⁶ SAARC, 2009, *Bhutan Disaster Knowledge Network*, <http://goo.gl/vz62CN>

¹³⁷ Gupta, Joydeep, 2014, *How climate change will impact South Asia – latest IPCC report*, <http://goo.gl/q5kYCz>

¹³⁸ UN Data, 2012, *Bhutan*, <http://goo.gl/ofmu9U>

cent of women in work, but women tend to be employed in low-paid agricultural jobs. Those working in other sectors earn 25 per cent less than men.¹³⁹

Many parts of Bhutan practice matrilineal inheritance. Around 60 per cent of rural women and 45 per cent of their urban counterparts have land and title deeds in their name. Their assets do not translate into economic advantage, however, as land is not used as collateral for loans. In fact land ownership can be an obstacle and limit women's mobility, preventing them from seeking better opportunities elsewhere. Men control all areas of decision making.¹⁴⁰

India is Bhutan's largest trading partner, accounting for 95 per cent of its exports and 74 per cent of its imports.¹⁴¹ The growth of hydropower generation, private construction, and other activities has also increased the flow of migrant workers from India. In 2012, the Ministry of Labour and Human Resources reported that the country had hired more than 55,000 Indian workers at a cost of \$40 million.¹⁴²

5.1.3 Politics and governance

Between 1907 and 2008, Bhutan was an absolute monarchy. The country's fourth king, Jigme Singye Wangchuck, began his reign in 1972 and introduced a process of devolution and democratisation that culminated in his abdication in 2006. He was succeeded by his eldest son, Jigme Khesar Namgyel Wangchuck, and the country made the transition to a constitutional monarchy in 2008. It is the world's youngest democracy.¹⁴³

Bhutan uses gross national happiness (GNH) as an official measure of quality of life and social progress. Its four pillars are good governance, sustainable socio-economic development, cultural preservation and environmental conservation.¹⁴⁴ The concept originates from the notion that sustainable development should be holistic

and "give equal importance to non-economic aspects of well-being".¹⁴⁵ Nine domains include more than 30 indicators are used to measure GNH, among them income distribution, pollution, noise and traffic, discrimination, safety, local democracy, individual freedom and foreign conflicts. The country's economic and development plans undergo GNH screening, and those that fail to pass – such as accession to the World Trade Organisation – are rejected.¹⁴⁶ GNH provides a unique platform for Bhutan to integrate climate change adaptation, DRR and poverty reduction into its efforts to build a resilient society.

Bhutan is divided into 20 administrative and judicial districts, or *dzongkhags*, which in turn are split into 205 blocks, or *gewogs*.¹⁴⁷ At the *dzongkhag* level, district councils or *tshogdus* and district development committees are responsible for socio-economic development and the coordination of government activities.

5.2 DISPLACEMENT

5.2.1 Internal

IDMC has no data on displacement caused by disasters in 2013, but a number of people were displaced by earthquakes in 2011 and 2009. Case studies suggest that those affected tended to rebuild their homes either on the same site or nearby.¹⁴⁸

Hydropower projects have also caused displacement. Construction of the Punatsangchhu dam in 2009 displaced 90 families, who chose to be compensated with new land rather than monetary payment. Most of the land provided, however, was on cliffs and ridges, away from roads and without services.¹⁴⁹ The Amochhu reservoir project displaced an unknown number of Lhops, Bhutan's oldest indigenous population, in 2012.¹⁵⁰

¹³⁹ World Bank, 2013, *Education and Economic Empowerment of Women in Bhutan Could Address the Gender Gap in Happiness*, <http://goo.gl/62wKt4>

¹⁴⁰ World Bank, 2013, *Education and Economic Empowerment of Women in Bhutan Could Address the Gender Gap in Happiness*, <http://goo.gl/62wKt4>

¹⁴¹ Lean, Hooi Hooi and Smith, Russell, 2014, *Electricity Consumption, Output and Trade in Bhutan*, ADB South Asia Working Paper Series 34, p.1, <http://goo.gl/xox2P6>

¹⁴² Chand, R, 2013, *Labour Migration as a Livelihood Strategy in Far East Bhutan: A Case Study of a Marginal Bhutanese Community*, in Hrvatski Geografski Glasnik (Croatian Geographical Bulletin), 2013, 75 (2), p43, <http://goo.gl/4Ld1Pg>

¹⁴³ Bisht, Mehda, 2013, *Bhutan: elections 2013*, <http://goo.gl/z9nB3J>

¹⁴⁴ Permanent Mission of the Kingdom of Bhutan to the United Nations in New York, *Pillars of GNH*, <http://goo.gl/T6XHQQ>

¹⁴⁵ Gross National Happiness, 2010, *Bhutan GNH Index*, <http://goo.gl/5rdsBG>

¹⁴⁶ Gross National Happiness, *GNH as a management tool - Bhutan's national surveys on GNH and GNH Index*, <http://goo.gl/hviWUI>

¹⁴⁷ National Portal of Bhutan, *Dzongkhags*, <http://goo.gl/0z40VI>

¹⁴⁸ Wangdi, Norbu and Kusters, Koen, 2012, *The costs of adaptation in Punakha, Bhutan: Loss and damage associated with changing monsoon patterns*, p.36, <http://goo.gl/pLhdmd>

¹⁴⁹ RAO online, 2009, *Displaced families disappointed*, Hydro Electric Projects - Punatsangchhu Reports, <http://goo.gl/EScF7b>

¹⁵⁰ BBS Radio, 2012, *Amochhu Reservoir to displace oldest indigenous community*, <http://goo.gl/LUpmH1>

5.2.2 Cross-border

The ethnic Nepalese Lhotshampa community received Bhutanese citizenship in 1958, but many were reclassified as illegal immigrants in the 1980s. In 1991 many Lhotshampa fled to India and onto Nepal, where tens of thousands remain.¹⁵¹

The country received around 18,000 foreign workers in 2007, and since then, the growth of hydropower generation, private construction and other activities has increased the flow of migrant workers coming from India. The Ministry of Labour and Human Resources reported that the country had 55,551 Indian workers on its books in 2012.¹⁵²

5.2.3 Protection

Bhutan is not a signatory to the 1951 Convention relating to the Status of Refugees and its 1967 Protocol. Nor does the country have any national legislation on IDPs or refugees.

5.3 COMMUNITY RESILIENCE

5.3.1 Key assets

Agriculture and livestock

Bhutan has a land area of 38,117 square kilometres, of which 51 per cent is under environmental protection.¹⁵³ According to the World Bank, only 2.6 per cent is arable land. More than 85 per cent of Bhutan is forested, and the country's constitution stipulates that the figure must stay above 60 per cent.¹⁵⁴

More than half the population depends on agriculture, forestry and livestock, usually a combination of the three. The average plot size is 1.5 hectares, and most farming is done on the subsistence level. There is some movement, however, towards commercial farming and cash crops. Methods to increase productivity include the double cropping of rice and the use of high-yield varieties. Only 10 per cent of households own more than five hectares of land.

Livestock forms an integral part of farming in Bhutan, and accounts for around 10 per cent of GDP. A broad range of animals are reared, but cattle make up almost 80 per cent of the ruminant population. Large ruminants are important for draught power, manure, meat and dairy products. Seventy-three per cent of cattle are native breeds, but the government is introducing imported breeds such as Jerseys and Brown Swiss, in part in an effort to discourage nomadic practices in the environmentally sensitive grasslands of the temperate alpine region. Nomadic herders inhabit the grasslands at altitudes of between 2,600 and 5,000 metres, where they rear yak and sheep as their sole source of livelihood.¹⁵⁵

Hydropower

The export of hydroelectricity has become an important source of income for Bhutan. Almost all of the country's electricity is supplied by hydropower, which accounts for 12 per cent of GDP. There are three plants in operation and a fourth under construction, financed largely by India. Around 75 per cent of the electricity generated is exported to India under a bilateral agreement. Around 95 per cent of Bhutan's hydropower potential is still unexploited.¹⁵⁶

5.3.2 Legal and institutional frameworks

Disaster management

Prior to the 2006 national disaster risk management framework, there were no policies or guidelines on the subject in Bhutan. The 2006 framework is based on HFA, and provides for the development of policies, risk assessments, early warning systems, disaster preparedness plans, public awareness and education, capacity development and transport.¹⁵⁷ It is currently being revised, however, to bring it into line with the 2013 National Disaster Management Act, which was passed after significant delays.

The Act provides for the development of comprehensive national, district and local disaster management structures, and establishes the National Disaster Management Authority (NDMA) as the highest decision-making body. NDMA is chaired by the prime minister and vice-chaired by the minister of home and cultural af-

¹⁵¹ IOM, 2014, *Bhutanese Refugee Number 90,000 Resettled from Nepal to Canada*, <http://goo.gl/D2XIkT>

¹⁵² Chand, R, 2013, *Labour Migration as a Livelihood Strategy in Far East Bhutan: A Case Study of a Marginal Bhutanese Community*, in *Hrvatski Geografski Glasnik* (Croatian Geographical Bulletin), 2013, 75 (2), p43, <http://goo.gl/4Ld1Pg>

¹⁵³ GNH Commission, 2013, *Eleventh Five Year Plan 2013-2018*, p.7, <http://goo.gl/zvaBLR>

¹⁵⁴ Global Platform for Disaster Risk Reduction, 2013, *Statement by Director General, Department of Disaster Management, Ministry of Home & Cultural Affairs, Royal Government of Bhutan at the Fourth Session of the Global Platform for Disaster Risk Reduction in Geneva, 19-23 May 2013*, p.3, <http://goo.gl/s6mQZZ>

¹⁵⁵ FAO, 2011, *Country Pasture/Forage Resource Profiles Bhutan*, <http://goo.gl/WlvCi7>

¹⁵⁶ Lean, Hooi Hooi and Smith, Russell, 2014, *Electricity Consumption, Output and Trade in Bhutan*, ADB South Asia Working Paper Series 34, p.1-2, <http://goo.gl/xox2P6>

¹⁵⁷ SAARC, 2009, *Bhutan Disaster Knowledge Network, Major Initiatives*, <http://goo.gl/hQ3LuM>

fairs. The Department of Disaster Management (DDM), established under the Ministry of Home and Cultural Affairs (MoHCA), serves as MDMA's secretariat and executive arm, and functions as a national coordinating agency. DDM has produced disaster management planning guidelines, both for district authorities and schools.

Each district or *dzongkhag* establishes its own disaster management committee (DMC) under NDMA. The committees develop a disaster management plan, implement DRR initiatives, improve response capacities and control a disaster management fund. Each district also has a *dzongkhag* emergency operations centre (EOC). Similar structures are envisaged at the local and village level.

Article 33 (2) of Bhutan's constitution authorises the king to declare emergencies. The national emergency operations centre undertakes disaster surveillance and issues early warnings to the district and local management committees. The Royal Bhutan Police Act has provisions for the force to help in the event of a disaster, and other branches of the armed forces are obliged to take part as and when they are called upon to do so. Authorities at the *dzongkhag* and *gewog* level are empowered to organise relief measures and mobilise volunteers during natural catastrophes and emergencies. Article 8(6) of the constitution makes every citizen responsible for helping victims of accidents and natural calamities.

Climate change

Bhutan's Gross National Happiness Commission published its 11th five-year plan in 2013, which runs until 2018. It provides a framework for the country's development agenda and efforts to be made towards GNH. It acknowledges that Bhutan is experiencing climate change and faces natural hazards that are likely to become more frequent and severe, and advocates for climate-resilient development and the mainstreaming of improved disaster resilience and management in all line ministries.¹⁵⁸

The National Environment Commission (NEC) is the main custodian of the Environment Assessment Act, and in 2006 it developed the national adaptation programme of action (NAPA) with UNDP support. The programme identifies hydropower development, industrial growth and the intensification of agriculture as the three major avenues for the country's sustainable

development, but also recognises that the sectors are climate-sensitive and vulnerable to climate change impacts.¹⁵⁹ It prioritises nine projects based on criteria that include cost; their impact on human lives and health, arable land and water supply; and their effects on essential infrastructure and monuments.¹⁶⁰

Other relevant legislation includes the National Environment Protection Act, the Mines and Minerals Management Act, the Water Act and policy, the Land Act, the Local Government Act and the country's building regulations.¹⁶¹

5.3.3 Knowledge, resources and actions

The role of community organisations

Of the 45 civil society organisations currently legally registered, only one describes its purpose as "to implement humanitarian aid to victims who are in need of support due to natural or man-made disasters in accordance with the laws". Four others include environmental conservation and education among their objectives, and two include poverty reduction.¹⁶²

Training and knowledge transfers

UNDP supported the *dzongkhag* DMCs in developing their plans, and DDM has trained *dzongkhag* focal points on the new disaster information and management system.¹⁶³

DDM has also run DRR training and awareness-raising sessions for teachers, designed to improve their preparedness for, and response to emergencies. Other workshops were designed to address broader aspects of preparedness planning. Evacuation drills were conducted in several *dzongkhags*.¹⁶⁴

The government has provided training on specific risks with targeted groups, including:

- Wangchuck Centennial Park, Bhutan's largest national park, trained nomads in the use of alternative fuels in 2014. Thirty-five nomads from Chhokhor *gewog* were shown how to produce biomass fuels and use biomass stoves to protect rhododendron and other shrubs.¹⁶⁵

¹⁵⁸ Gross National Happiness Commission, 2013, *Eleventh Five Year Plan 2013-2018*, p.7, <http://goo.gl/zvaBLR>

¹⁵⁹ NEC, *Bhutan National Adaptation Programme of Action*, p.2, <http://goo.gl/lqAVIQ>

¹⁶⁰ *Ibid*, p.11

¹⁶¹ DDM, 2014, *Country Report Disaster Management System*, p.8, <http://goo.gl/XP50oB>

¹⁶² Civil Society Organizations Authority, 2014, <http://goo.gl/IT0103>

¹⁶³ UNDP, 2012, *Reducing Climate Change-induced Risks from Glacial Lake Outburst Floods in Bhutan*, <http://goo.gl/6VMCIf>

¹⁶⁴ DDM, 2013, *National progress report on the implementation of the Hyogo Framework for Action (2011-2013)*, p.3, <http://goo.gl/Y90y28>

¹⁶⁵ MoAF, 2014, *WCP promotes alternative fuel for nomads*, <http://goo.gl/ob3g0R>

- The Forest Fire Management Association (FFMA) has run public education programmes, but despite its efforts wildfires are a significant problem. Thirty-six were recorded in 2010 alone, and more than 3,600 hectares of forest were burned.¹⁶⁶ Many fires are the result of human carelessness.
- DDM is leading a disaster preparedness and response programme implemented by UNDP and the UN Office for Outer Space Affairs (UNOOSA). The programme aims to improve community resilience by increasing local capacity. It focuses on preventing forest fires, applying safe building practices and land use planning.¹⁶⁷

To reduce the risk of outburst floods, one of NAPA's nine prioritised projects was to lower the level of the Thorthormi glacial lake by more than five metres by digging a channel to drain water each summer between 2008 and 2012.¹⁶⁸ The project was administered by the Global Environment Facility (GEF) and funded through the Least Developed Countries Fund (LDCF) with co-financing from Bhutan, Austria, UNDP and the World Wildlife Fund.¹⁶⁹ An early warning system has also been set up in Punakha and Wanduephodrag.

In June 2014 the government and UNDP launched what is said to be the largest climate change adaptation project in the world. Addressing the Risks of Climate-induced Disasters through Enhanced National and Local Capacity for Effective Actions is also one of NAPA's prioritised projects, and is designed to improve community resilience at all levels. It includes the development of water harvesting, storage and distribution systems, and improving the quality and dissemination of data on extreme weather events. The \$11.5 million initiative is funded through GEF-LDCF, coordinated by the National Environment Commission secretariat and implemented by eight government agencies and the Phuentsholing Thromde and Tarayana Foundation.

5.4 RECOMMENDATIONS

Humanitarian and development organisations

- Assess and improve the disaster management capacity of civil society organisations in building resilience to prevent future displacement
- Hold consultations with IDPs to identify measures to facilitate the achievement of durable solutions, including the development of sustainable livelihoods, the identification of potential relocation sites and the creation of conditions suitable for their return to their places of origin
- Support communities facing development-induced displacement and resettlement in their search for alternative sites and livelihoods, the negotiation of compensation packages with government and private stakeholders, and integration with host communities
- Support the Gross National Happiness Commission in its efforts to integrate resilience building measures into development plans

Government

- Engage communities in the development of relocation strategies and compensation schemes for displaced people
- Support the NDMA and other agencies to establish mechanisms for the collection of data on people displaced by disasters
- Develop national guidelines for IDPs' protection and their pursuit of durable solutions. Such guidelines must be consistent with international standards
- Include community resilience as one of the measures of gross national happiness

¹⁶⁶ Department of Forests and Park Services, 2010, Forest Fire, <http://goo.gl/udjDZv>

¹⁶⁷ UN Country Team, 2014, *New Joint Programme for Disaster Management in Bhutan*, <http://goo.gl/cdzvW8>

¹⁶⁸ UNDP 2011, *Reducing climate change-induced risks and vulnerabilities from glacial lake outburst floods in the Punkha-Wangdi and Chamkhar Valleys*, <http://goo.gl/XdSesi>

¹⁶⁹ UNDP, 2012, *Reducing Climate Change Risks and Vulnerabilities from Glacial Lake Outburst Floods in Bhutan*, <http://goo.gl/DqHuAd>



6. INDIA

6.1 RISK LANDSCAPE

6.1.1 Climate change and disasters

India is the seventh largest country in the world in terms of land area. It borders Pakistan to its west, China, Nepal and Bhutan to its north, and Myanmar to its east. It all but surrounds Bangladesh, with which it shares the Indo-Gangetic plain. Its coastline spans the Arabian Sea, Indian Ocean and Bay of Bengal. The Ganges–Brahmaputra river system runs through most of northern, central and eastern India. The Brahmaputra originates in Tibet, enters India in Arunachal Pradesh and passes through Assam before flowing into Bangladesh. The Ganges is the longest river in India, and its tributaries include the Yamuna and the Chambal. Other main rivers include the Narmada, Godavari, Krishna, Kaveri and Mahanadi.

India is rated 117th of 178 on the ND-GAIN index, which ranks countries according to their vulnerability and ability to cope with climate change. It is the 65th most vulnerable country and 67th least prepared. Its geographical diversity makes it particularly prone to the effects of climate change. Sixty-eight per cent of the country is vulnerable to drought, 57 per cent to earthquakes caused by tectonic activity in the Himalayas, 12 per cent to floods and eight per cent to cyclones.¹⁷⁰

In March 2014, IPCC predicted a rise in global temperatures of between 0.3 and 4.8C.¹⁷¹ A rise of 2C would result in unpredictable summer monsoons in India, and a 4C rise would increase the risk of extremely wet monsoons tenfold. Changes in the monsoon cycle could trigger more floods and drought, as dry years become drier and wet years wetter.¹⁷² Extreme summer monsoons in the north-west and fewer rainy days along the east coast have already been recorded.¹⁷³ As temperatures rise and glacial melt increases, so will the risk of glacier lake outbursts and other types of flooding. Such events would also affect the middle and lower reaches of rivers originating in the Himalayas.¹⁷⁴

IPCC also predicts sea level rises of up to 82 cm by the late 21st century, which would put large parts of India at risk of flooding, saline water intrusion, the degradation of groundwater and outbreaks of waterborne diseases. Some scientists predict that more than 17 million people could be displaced by 2050. In the Sundarbans delta in West Bengal, the coastline retreats at about 200 metres a year.¹⁷⁵

Crop yields are predicted to fall significantly by the 2040s as soil moisture, the ability of the ground to hold water, decreases as a result of extreme heat. The adverse impacts of climate change would be devastating for many households. Almost 50 per cent of India's labour force depends on agriculture, and reduced yields, increased soil salinity, flooding and loss of biodiversity could threaten food security.

¹⁷⁰ NDMA, 2013, *India Vulnerability Profile*, <http://goo.gl/6QpLij>

¹⁷¹ IPCC, 2014, *Climate Change 2014: Impacts, Adaptation and Vulnerability*, <http://goo.gl/qVAR3x>

¹⁷² World Bank, 2013, *India: Climate Change Impacts, Turn Down the Heat*, <http://goo.gl/sJH3Tk>

¹⁷³ SAARC, 2010, *Integration of Disaster Risk Reduction and Climate Change Adaptation*, p.28, <http://goo.gl/A5rQnX>

¹⁷⁴ SAARC, 2009, *India Disaster Knowledge Network*, <http://goo.gl/dgPOSM>

¹⁷⁵ Zoological Society of London, *Bengali forests are fading away*, <http://goo.gl/xXK022>

6.1.2 Economy and development

India is one of the world's largest economies. Its GDP was \$1.88 trillion in 2013, and annual growth is currently five per cent. Development indicators are improving. Life expectancy is up, literacy rates have increased dramatically over the past decade, health conditions have improved and the middle class is growing steadily.

That said, India is also the second most populous nation in the world, and one of the poorest middle-income countries. Inequity is high, as shown by the fact that it still ranks only 135th of 187 countries on UNDP's Human Development Index.¹⁷⁶ Nearly 22 per cent of the population live below the national poverty line and around 37 per cent survive on less than \$1.25 a day. The country's rating on the Global Hunger Index is improving slowly, but 17 per cent of the population is still undernourished.¹⁷⁷

Services accounted for 56.9 per cent of GDP in 2012, industry 25.8 per cent and agriculture 17.4 per cent. The latter, however, employs the most people, with 49 per cent of the work force.¹⁷⁸ Agricultural production has increased dramatically in the past decade, turning India from a net importer to a net exporter of food. Employment, however, is shifting towards the industrial sector. India has the fifth largest coal reserves in the world, and plans to double its consumption from 565 million tonnes in 2013 to more than a billion by 2019. The country's industry is a major threat to its environment and a contributor to global climate change.¹⁷⁹

India is home to 1.3 billion people, more than a sixth of the world's population, and its annual population growth rate has been 1.2 per cent over the past five years. Around 10 million people move to towns and cities in search of jobs each year.¹⁸⁰ India's urban population is projected to increase by 404 million between 2014 and 2050, making the country the largest contributor of urbanisation globally.¹⁸¹ The average household size is 4.8 people, and the average population density is 421 people per square kilometre. The figure is higher, however, in urban areas, the north of the country, and the Sundarbans delta.

6.1.3 Politics and governance

India is the world's largest democracy. It is a federal parliamentary republic made up of 29 states and seven union territories, with a multi-party system at the national, provincial and local level. The states have democratically elected governors as their executive heads, while the union territories are run by an administrator appointed by the president. The president is the constitutional head of the federal executive, but de facto power rests with the prime minister, who is also head of the Council of Ministers and leader of the executive branch. In May 2014, Narendra Modi was elected prime minister in a surprise landslide victory.

Each state is divided into districts, which are subdivided into smaller administrative units. Each rural district has a number of blocks or tehsils, and depending on their size, urban areas have either municipal corporations or *mahanagar-palikas*, municipalities or *nagar-palikas* and/or city councils or *nagar panchayats*. Rural *tehsils* are usually made up of several village councils or *gram panchayats*.

Under the constitution, minority groups are designated. Scheduled castes and scheduled tribes are the most disadvantaged socio-economic groups in India, and the government has enacted legislation, programmes and schemes for their development.¹⁸²

6.2 DISPLACEMENT

6.2.1 Internal

India's population size and its geographic and climatic vulnerabilities mean the scale of displacement caused by disasters is huge. Between 2008 and 2013, more than 26 million people were displaced by sudden-onset events, making it by far the worst-affected country in South Asia. In 2013 alone, more than 2.1 million people were newly displaced.¹⁸³

In July 2014 several rivers, including the Brahmaputra, flooded after heavy monsoon rains in the eastern state of Assam, affecting 3.6 million people and displacing 350,000.¹⁸⁴ A month later the Mahandi river burst its

¹⁷⁶ UNDP, 2014, *India, Human Development Reports*, <http://goo.gl/p9fFxl>

¹⁷⁷ IFPRI Food Security Portal, *India*, <http://goo.gl/iGzwd9>

¹⁷⁸ CIA, 2013, *The World Factbook India*, <http://goo.gl/W5u94n>

¹⁷⁹ Harris, Gardiner, 2013, Coal Rush in India Could Tip Balance on Climate Change, *New York Times*, <http://goo.gl/WhV5Br>

¹⁸⁰ World Bank, *India Overview*, <http://goo.gl/jhGUwf>

¹⁸¹ UNESA, 2014, *World Urbanization Prospects*, pp. 1 and 12, <http://goo.gl/L6k8Ev>

¹⁸² UN in India, *Scheduled Castes and Scheduled Tribes*, <http://goo.gl/C7Kl72>

¹⁸³ IDMC/NRC, 2014, *India*, <http://goo.gl/P1iwe8>

¹⁸⁴ Pandey, Avaneesh, 2014, Dozens Killed, 350,000 Displaced By Floods In Northeast India, *International Business Times*, <http://goo.gl/IBiKnt>

banks in Odisha state, affected a million people.¹⁸⁵ In September, heavy monsoon rains in Jammu and Kashmir displaced at least 15,000 people.¹⁸⁶

In June 2012, monsoon floods in Assam and Arunachal Pradesh displaced millions in the catchment areas of the Brahmaputra and Barak rivers. Six million people fled the rising waters in Assam, and almost two-thirds of Arunachal Pradesh's population, or more than 800,000 people, were evacuated. More flooding in August and September displaced two million people, of whom half were already living in relief camps. Conflict also forced 500,000 people to flee their homes in Assam during the year, and more than 36,000 were still living in camps by the end of it.¹⁸⁷

Cyclones occur each year in May to June and October to November, peaking towards the end of the season.¹⁸⁸ Cyclone Hudhud struck in October 2014, affecting around 400,000 people. Cyclone Phailin in October 2013 was the strongest to hit India in 14 years, and forced the evacuation of 500,000 people.¹⁸⁹ In May 2009, cyclone Aila hit the coast from the Bay of Bengal.¹⁹⁰ Around 500,000 people lost their homes, mostly in the Sundarbans delta. The strongest cyclone ever measured in India was Odisha in October 1999. The storm left 1.67 million people displaced and homeless.¹⁹¹

IDMC estimates that as of May 2014 there were 531,000 people displaced by armed conflict and communal violence in India. As a result of India's territorial dispute with Pakistan, around 250,000 IDPs from Jammu and Kashmir have been living in protracted displacement since 1990, both within the state and as far afield as Delhi. There were around 148,000 IDPs in central India, displaced by the ongoing Naxalite conflict in Chhattisgarh and Andhra Pradesh. Assam was hosting 77,000 IDPs, of whom 32,000 have been living in protracted displacement since 2008.¹⁹²

6.2.2 Cross-border

According to UNHCR, as of July 2014 there were 198,665 registered refugees and 4,718 asylum seekers in India.¹⁹³

Of the thousands of Afghan refugees who fled to India in the 1970s and early 1980s, around 90 per cent belonged to Afghanistan's Sikh and Hindu religious minorities. Many have been resettled to third countries.¹⁹⁴ Some become Indian citizens through a government naturalisation scheme.¹⁹⁵ As of 2011, however, UNHCR reported that there were still around 13,000 Afghan refugees and asylum seekers in the country.¹⁹⁶

Ethnic Tamils fled to India from Sri Lanka after war broke out in 1983 between the government and the separatist Tamil Tigers.¹⁹⁷ A 2009 peace accord paved the way for their repatriation, but many were reluctant to return given a lack of livelihood opportunities and ongoing violence. As of 2014, around 100,000 remained in India, living in 111 government-run camps across Tamil Nadu state.¹⁹⁸

The country also hosts an unspecified number of refugees from Myanmar, many of them from the Rohingya and Chin ethnic groups. Most live in Mizoram state, which borders Myanmar. UNHCR does not have access to the area, making it difficult to ascertain the number of people involved, but some estimates put the figure at 100,000. There are also around 8,500 registered refugees from Myanmar in Delhi.¹⁹⁹

There are more than 100,000 Tibetan refugees in India. The government gave residence permits and jobs on public works to those who arrived in the first and largest wave in the late 1950s and early 1960s, but many of the later arrivals have not received the same treatment.²⁰⁰

¹⁸⁵ Disaster Report, 2014, Odisha Flooding Kills 34 - Mahanadi River Affects 1M, *Recent Natural Disasters*, <http://goo.gl/T6W4sT>

¹⁸⁶ Reliefweb, 2014, *India: Floods and Landslides - Sep 2014*, <http://goo.gl/sGpJiv>

¹⁸⁷ IDMC/NRC, 2012, *People displaced by disasters, Global Estimates*, p.17, <http://goo.gl/UieXv4>

¹⁸⁸ BBC, 2014, Cyclone Hudhud: India ups aid effort as death toll rises, *BBC News India*, <http://goo.gl/aJ6Hxs>

¹⁸⁹ Sinha, Amitabh, 2014, Phailin, and now Hudhud, show how India has learnt to tackle cyclones, *Indian Express*, <http://goo.gl/2MEqJc>

¹⁹⁰ Regional Specialised Meteorological Centre, 2009, *Severe Cyclonic Storm, AILA: A Preliminary Report*, <http://goo.gl/INrMYL>

¹⁹¹ ICRC, 2002, *India: Orissa Cyclone Appeal No. 28/1999 Final Report*, <http://goo.gl/A8MXFm>

¹⁹² IDMC/NRC, 2014, *India IDP Figures Analysis*, <http://goo.gl/o3jdrh>

¹⁹³ UNHCR, 2015, *UNHCR subregional operations profile - South Asia*, <http://goo.gl/tQ4dHX>

¹⁹⁴ UNHCR, 2008, *Newsletter New Delhi*, p.1, <http://goo.gl/AcC8gm>

¹⁹⁵ Naujoks, Daniel, 2009, *Emigration, Immigration, and Diaspora Relations in India*, Migration Policy Institute, <http://goo.gl/FT9MKr>

¹⁹⁶ UNHCR, 2011, *India, Global Appeal*, p.1, <http://goo.gl/adhB8P>

¹⁹⁷ IRIN Asia, 2012, *Sri Lanka: Tamil refugees slowly return from India*, <http://goo.gl/s1ePkM>

¹⁹⁸ Bhalla, Nita, 2014, *Five years after war, Sri Lanka refugees reluctant to leave India-survey*, <http://goo.gl/V9mmfQ>

¹⁹⁹ Bhalla, Nita, 2014, Myanmar's Rohingya stuck in refugee limbo in India, Reuters, <http://goo.gl/OfHvxl>

²⁰⁰ Naujoks, Daniel, 2009, *Emigration, Immigration, and Diaspora Relations in India*, Migration Policy Institute, <http://goo.gl/FT9MKr>

6.2.3 Protection

India's 2007 national rehabilitation and resettlement policy aims to minimise large-scale displacement. When mass displacement takes place as defined by the policy, social impact assessments must be conducted and eligible families become entitled to rehabilitation and resettlement benefits. Those who have been displaced for more than three years are entitled to housing and other assistance.²⁰¹

The 2013 Right to Fair Compensation and Transparency in Land Acquisition Act aims to protect landowners in cases of displacement caused by development projects.²⁰² It sets out the government's responsibilities to them when acquiring land for strategic public interest purposes.

Although India hosts refugees from almost all of its neighbouring countries, it is not a party to the 1951 Convention relating to the Status of Refugees and its 1967 protocol. In the absence of other legal frameworks, UNHCR processes claims for refugee status in India.

6.3 COMMUNITY RESILIENCE

6.3.1 Key assets

Agriculture and livestock

India has a total land area of 2,973,190 square kilometres. More than 60 per cent is agricultural land, of which 35.2 per cent is irrigated. Just over 23 per cent of the country is forested. Agriculture accounts for 17.4 per cent of GDP and employs almost half of the workforce.²⁰³ India overtook Thailand as the world's leading rice exporter in 2012 after the government lifted a ban on the export of non-Basmati rice. Its rice exports in 2013 were worth \$7.1 billion.²⁰⁴ The total value of agricultural exports for the same year was \$39 billion, making India the world's seventh-largest exporter.²⁰⁵ Production rates differ greatly between states.

Agricultural production increased dramatically during the "green revolution", which started in the 1960s and saw the introduction of modern techniques such as high-yield crop varieties and improved methods of irrigation. The increase boosted farmers' livelihoods and lifted many people out of poverty. In areas prone to disasters, however, the introduced crop varieties have not been as resilient to extreme weather events and changes in soil salinity as traditional ones.²⁰⁶ This has prompted authorities and NGOs to reintroduce traditional varieties and to provide training in their cultivation.

The average plot size is 1.41 hectares, though it varies significantly between states.²⁰⁷ The large number of landless families in rural areas is matter for concern and an important indicator of poverty. Landless people tend to work as day labourers on other people's farms or live off remittances from family members who have migrated to urban areas.

Households that raise livestock have small herds, with an average of one to two cattle, although shoat herds of 60 are common in the arid and semi-arid regions of the north. With more than 300 million head, India is one of the largest cattle producers in the world.²⁰⁸ Its milk production outstrips that of the EU. Most milk comes from buffaloes as they are more resilient to volatile rainfall and fresh water shortages and can survive on relatively saline water.²⁰⁹ Following disasters, during which many animals are lost, fodder is also scarce and livestock ownership drops in the affected villages.

Services

India has the second fastest growing services sector in the world. It has grown at a rate nine per cent higher than the country's overall GDP in recent decades.²¹⁰ It accounted for 60 per cent of GDP and employed 31 per cent of the workforce in 2012.²¹¹ Two of the largest subsectors are information technology and business outsourcing, which provide jobs for educated English-speakers and as such mainly benefit the middle class in larger urban areas.²¹²

²⁰¹ MoRD, 2007, *National Rehabilitation and Resettlement Policy*, <http://goo.gl/i09nyY>

²⁰² In 2007, a bill to establish a minimum-level compensation system for IDPs was introduced, but it was allowed to lapse.

²⁰³ CIA, 2013, *The World Factbook India*, <http://goo.gl/W5u94n>

²⁰⁴ USDA, Foreign Agricultural Service, 2014, *India's Agricultural Exports Climbing Record High*, <http://goo.gl/fLsH3E>

²⁰⁵ *Ibid.*

²⁰⁶ IFPRI, 2002, *Green Revolution Curse or Blessing?*, p.3, <http://goo.gl/i10a13>

²⁰⁷ FAO, 2005, *Livestock Sector Brief India*, p.5, <http://goo.gl/aBBN4s>

²⁰⁸ USDA, Foreign Agricultural Service, 2014, *Livestock and Poultry: World Markets and Trade*, p.28, <http://goo.gl/SeGNog>

²⁰⁹ Attanasio, Orazio, Augsburg, Britta, 2014, Holy cows or cash cows? *Institute for Fiscal Studies Working Paper*, p.7, <http://goo.gl/d8nDRW> and Narula, Svati Kirsten, 2014, India's 75 million dairy farms now produce more milk than all of the European Union, *Quartz*, <http://goo.gl/xVqaG0>

²¹⁰ Ministry of Finance, *Economic Survey 2013–2014*, <http://goo.gl/zgvrJ3>

²¹¹ CIA, 2013, *The World Factbook India*, <http://goo.gl/W5u94n>

²¹² Ministry of Finance, *Economic Survey 2013–2014*, <http://goo.gl/zgvrJ3>

Remittances

India is estimated to have the largest number of emigrants in the world, with more than 14 million citizens living abroad in 2013. It is also the largest recipient of officially recorded remittances.²¹³

Many families in rural areas, particularly the landless, have a member who works in an urban centre and contributes to the household income via remittances. They often work as day labourers in the construction sector. Most do not migrate outside their state, and those who do face a range of protection issues related to missing identity documents and different rules and regulations between states. Many internal migrants are from minorities and marginalised groups, which makes their situation more complicated still.²¹⁴

6.3.2 Legal and institutional frameworks

Disaster management

The Ministry of Home Affairs (MHA) is responsible for disaster management in India. The 2005 Disaster Management Act mandated the National Disaster Management Authority (NDMA) to plan, draft policies and guidelines and shift the focus of disaster management from relief response to prevention, mitigation and preparedness. NDMA developed the 2009 national policy on disaster management to fulfil the latter task through knowledge, innovation and education.

NDMA depends on forecasts and warnings from the India Meteorological Department under the Ministry of Earth Sciences, and the Central Water Commission under the Ministry of Water Resources. It is mandated to deal with natural and man-made disasters, but emergencies requiring the involvement of the security forces fall under the National Crisis Management Committee (NCMC).

The National Institute of Disaster Management (NIDM) provides training on the subject, and now has statutory status under the Disaster Management Act. It maintains the web-based India Disaster Resource Network (IDRN) to manage the availability of equipment, human resources and supplies for emergency responses. It is also part of the South Asian Disaster Knowledge Network (SADKN), sharing its expertise, maps and emergency contacts.²¹⁵

The National Disaster Response Force (NDRF) was established in 2006 to respond to natural and man-made disasters. It consists of ten battalions from the Border Security Force, the Central Reserve Police Force, the Central Industrial Security Force and the Indo-Tibetan Border Police. Each battalion has 18 specialist search and rescue teams of 45 staff.²¹⁶

Primary responsibility for disaster management, however, lies with the states, which are encouraged to develop their own disaster response forces. State Disaster Management Authorities (SDMAs) develop policies and plans according to NDMA guidelines, and review development proposals to ensure that disaster prevention, preparedness and mitigation are included. State Executive Committees assist SDMAs in carrying out their functions by coordinating and monitoring implementation. District Disaster Management Authorities (DDMAs) act as the planning, coordinating and implementing body at the district level. Local authorities are supposed to build the capacity of their own employees and officers in disaster management, relief, rehabilitation and reconstruction activities, and to develop plans according to NDMA, SDMA and DDMA guidelines.

Climate change

India's first national action plan on climate change (NAPCC) was published in June 2008. It established eight "national missions" to eliminate the causes and mitigate the effects of climate change, while maintaining high economic growth rates and lifting living standards. India's 12th national five-year plan for 2012 to 2017 recognises climate change as a threat to the country for the first time, and includes implementation of NAPCC.

6.3.3 Knowledge, resources and actions

Community perceptions of risk and adaptability

Research by Climate Asia in Gujarat, Madhya Pradesh, Odisha, Tamil Nadu, Uttarakhand and Mumbai found that knowledge about climate change and its effects is not widespread. Some communities felt the authorities did not communicate with them about climate change and disaster management.²¹⁷ Others learnt about the issue through radio programmes and public service announcements.

²¹³ World Bank, 2014. *Migration and Remittances: Recent Developments and Outlook, Special Topic: Forced Migration*. Migration and Development Brief 23. p.4, <http://goo.gl/hARAO7>

²¹⁴ Abbasm Rameez, Varma, Divya, 2014, *Internal Labor Migration in India Raises Integration Challenges for Migrants*, Migration Policy Institute, <http://goo.gl/E01iul>

²¹⁵ NIDM, 2014, *India Disaster Knowledge Network*, <http://goo.gl/vFyjkD>

²¹⁶ NDRF and Civil Defence, <http://goo.gl/F13AIY>

²¹⁷ Gambhir, Varinder and Kumar, Prerna, 2013, India, How the people of India live with climate change and what communication can do, *BBC Media Action Climate Asia report*, p.36, <http://goo.gl/WKEQy3>

People across India have, however, observed higher temperatures, less rainfall and more volatile weather patterns than a decade ago. Water shortages were among respondents' main concerns. In Uttarakhand and Madhya Pradesh, two states that face frequent drought, 46 per cent and 37 per cent respectively were worried about not having enough clean drinking water. Many others were concerned about the impact on agricultural yields.²¹⁸

Community responses to climate change differ from state to state, and are uncoordinated. At the individual level, 42 per cent of respondents said they had taken steps to supplement their income, 25 per cent had grown different crops, 20 per cent had become migrant workers or relocated and 10 per cent had changed jobs. Others have offset the fall in yields caused by water shortages by using more fertilisers, and sometimes by buying more livestock. Respondents generally felt that they did not have the knowledge or resources to take the most effective action. That said, in Odisha, where sudden-onset disasters such as cyclones and floods are relatively frequent, more individual resilience measures had been taken, even though it was the poorest state surveyed.

Despite their long experience of regular flooding, communities in the Sundarbans said recent weather events had been unprecedented. It is not clear, however, to what extent they are anticipating more saline intrusion and severe flooding. Local government and NGOs have tried to raise awareness on disaster resilience, but communities show only limited initiative and capacity to implement measures themselves. They appear to depend on the authorities to take action, though the more remote the community the more likely they are to undertake tasks such as building and repairing embankments and roads themselves.

That said, the construction of embankments in the Sundarbans is a complicated issue. It involves communities giving up land for the purpose, but as one expert remarked, to be without land is considered a "serious insecurity" in the Sundarbans and migration is seen as a "major misfortune". As such, communities' attachment to their land may outweigh their perception of disaster risk (see case studies section).

The role of community organisations and NGOs

People in India tend to be mistrustful of government authorities when it comes to the awarding of contracts and provision of funding, but at the same time they are less willing than their counterparts in neighbouring countries to take on tasks themselves.²¹⁹ Community-based organisations (CBOs), however, can serve as a forum for

interaction between government and communities and the transfer of responsibilities.

They provide communities with a structure in which to organise themselves in their efforts to become more resilient to disasters. Communities that have CBOs are more proactive in taking DRR measures. Those established in the Sundarbans with NGO support can be very elaborate, with separate disaster management committees; water, sanitation and hygiene (WASH) and health clusters; and early warning and self-help groups. In other communities CBOs' mandates are more limited, but all share the ultimate goal of preventing and minimising the loss of lives and land in future disasters.

CBOs, NGOs and other community organisations are eligible for membership of the Confederation of Community Based Organisations of India (CCBOS), which aims to improve policies and legislation on CBOs, and to share information about funding opportunities. It encompasses a series of "sub-communities", including the climate change community and the disaster management community.²²⁰

The number and effectiveness of disaster mitigation and community resilience measures seems to depend heavily on the presence of NGOs and the scale of their interventions. Some communities have set up disaster management committees, farmers groups and CBOs and developed extensive plans on the subject.

Rural labour employment guarantee

The 2005 National Rural Employment Guarantee Act (MGNREGA) aims to improve livelihood security in rural areas and prevent outmigration by providing at least 100 days' work a year to households whose adult members volunteer to do unskilled manual work within five kilometres of their home for the minimum wage. The work is meant to provide the participating communities with durable assets such as roads, canals, ponds and wells, which in turn improve their resilience to climate change and disasters. Several communities in the Sundarbans said their members had been paid to maintain their embankments via the scheme, which is implemented by *gram panchayats*.

Correcting mal-adaptations

Previous government policy to increase rice production promoted the use of non-indigenous high-yield varieties, but these proved to be less resistant to flooding and saline water than traditional varieties. In the meantime, however, the latter were phased out and local knowledge about their cultivation and production has been

²¹⁸ Gambhir, Varinder and Kumar, Prerna, 2013, India, How the people of India live with climate change and what communication can do, *BBC Media Action Climate Asia report*, p.14, <http://goo.gl/WKEQy3>

²¹⁹ *Ibid*, p.40

²²⁰ CCBOS website, <http://goo.gl/M5dygt>

lost. NGOs in the Sundarbans are currently trying to reintroduce traditional varieties, because the high-yield alternatives will no longer grow in the delta's increasingly saline soil.

Farmers say they are willing to go back to planting traditional varieties (see case study 1A on [page 56](#)). That said, seed is currently in short supply and at least one NGO on Sagar island is setting up its own seed bank, to which farmers subsequently contribute. It is also conducting research on the yields of traditional varieties.

The diversification of livelihoods into aquaculture has also been used as a form of climate change adaptation in the Sundarbans, which has led to mangrove swamps being converted into shrimp farms. Mangroves play a vital role in coastal ecosystems and food chains, but they are threatened by the expansion of shrimp farming and other factors (see case studies below).

Training and knowledge transfers

Government initiatives vary greatly between states and districts, but in places where it intervenes communities feel better equipped to respond. Communities in which members cooperate with each other are also more resilient to the effects of climate change.²²¹ With this in mind, between 2002 and 2007 UNDP supported the government in the development and implementation of the natural disaster risk management programme, which encouraged the participation of communities and local governments in putting community-based DRR and recovery measures in place.²²²

The national cyclone risk mitigation project (NCRMP), a joint initiative between the government and the World Bank, aims to reduce the vulnerability of coastal communities. NGOs have run wetland restoration projects, in which communities in the Sundarbans are helped to replant mangroves and protect riverbanks from erosion.

NGOs have also supported communities in the Sundarbans in their efforts to improve their resilience in the following ways:

- Training in climate change and disaster awareness
- Establishing early warning systems
- Training in traditional crop cultivation
- Creating seed banks for traditional crop varieties

6.4 RECOMMENDATIONS

Humanitarian and development organisations

- Identify and document best practices in community-based soft adaptation strategies
- Where appropriate, scale up and build on traditional knowledge and existing adaptation strategies to prevent and reduce the risk of displacement
- Support local NGOs and civil society organisations with capacity training and resources in programming DRR measures
- Help communities to conduct multi-hazard assessments and make appropriate decisions about DRR and climate change adaptation to prevent and reduce the risk of displacement. Communities that face multiple hazards and risks may have to make decisions about trade-offs
- Encourage coordination between CBOs, different levels of local government, and provincial and federal authorities in the implementation of DRR, climate change adaptation and displacement policies and programmes
- Facilitate community consultation among IDPs in identifying durable solutions, and support the creation of appropriate conditions, including the establishment of alternative livelihoods and the provision of compensation packages
- Develop community-based burden sharing mechanisms to cover the costs of DRR and climate change adaptation, and to foster cooperative rather than competitive community dynamics
- Support communities facing development-induced displacement and resettlement in their search for alternative sites and livelihoods, the negotiation of compensation packages with government and private stakeholders, and integration with host communities.

²²¹ Gambhir, Varinder and Kumar, Prerna, 2013, India, How the people of India live with climate change and what communication can do, BBC Media Action Climate Asia report, p.38, <http://goo.gl/WKEQy3>

²²² Government of India and UNDP, *Natural Disaster Risk Management Programme 2002-2007*, <http://goo.gl/BTRw4G>

- Undertake consultations about planned relocation as a DRR strategy with communities threatened or affected by slow-onset disasters, including those faced with submergence in the Sundarbans (see case study)
- Ensuring that relocation is implemented with the full participation of both relocating and host communities, and with full respect for human rights and the principles of non-discrimination
- In areas of the Sundarbans where relocation is necessary, planning must take the following into consideration:
 - Land availability and tenure for resettled populations
 - The development of alternative livelihoods away from land-based activities
 - The establishment of small-scale model towns to demonstrate the viability of relocation
 - Support for both host and relocating communities
- Fully implement the MGNREGA scheme for DRR and climate change adaptation measures
- Fully implement the 2007 national rehabilitation and resettlement policy, including the achievement of durable solutions for IDPs
- Consult communities in Sundarbans on the development of compensation packages to ensure that land is successfully acquired for the construction of embankments that encircle and protect islands

6.5 CASE STUDIES

Case study: The Sundarbans

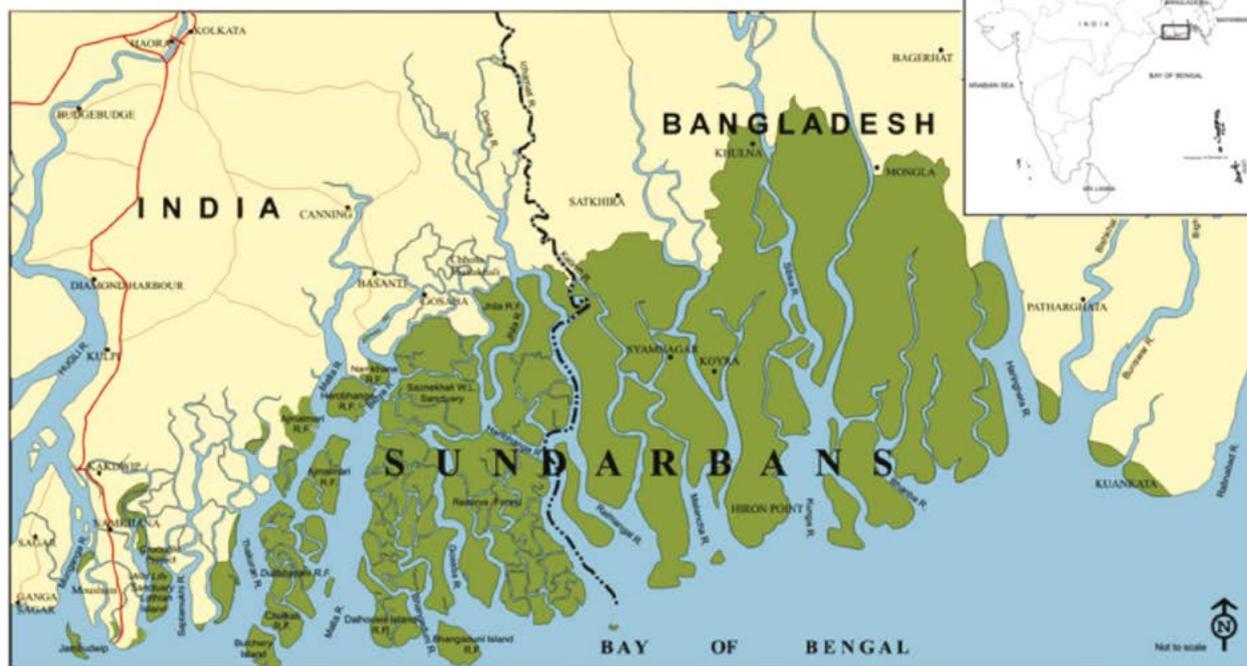
West Bengal is one of the most densely populated Indian states. The capital, Kolkata, has a population of almost 4.5 million people, and up to 14.5 million in its metropolitan area. As one of the ten cities in the world most at risk from disasters, it is protected from the full force of cyclones and tidal bores by the Sundarbans delta and its mangrove swamps.²²³

The Sundarbans, Bengali for “beautiful forest”, is an immense archipelago situated on the Indian Ocean coast to the south-east of Kolkata. To its north lie the plains of Bengal. It is the product of the confluence of the Ganges, Meghna and Brahmaputra rivers and their distributaries. The Ganges-Brahmaputra delta is the largest in the world and stretches for several hundred miles.

The West Bengal Sundarbans became a UNESCO world heritage site in 1987. It is home to more than 10 per cent of India’s mammal species, including the Bengal tiger, and 25 per cent of its bird species. Beyond the natural transformations of an active delta, the Sundarbans suffers the effects of climate change. Since 1980, its surface water temperature has risen by 0.5C a decade, along with salinity and pH levels. The sea level has also risen by average of 18 millimetres a year since 2000 and extreme weather events have become more common. All said, the Sundarbans and its flora and fauna are under significant threat.

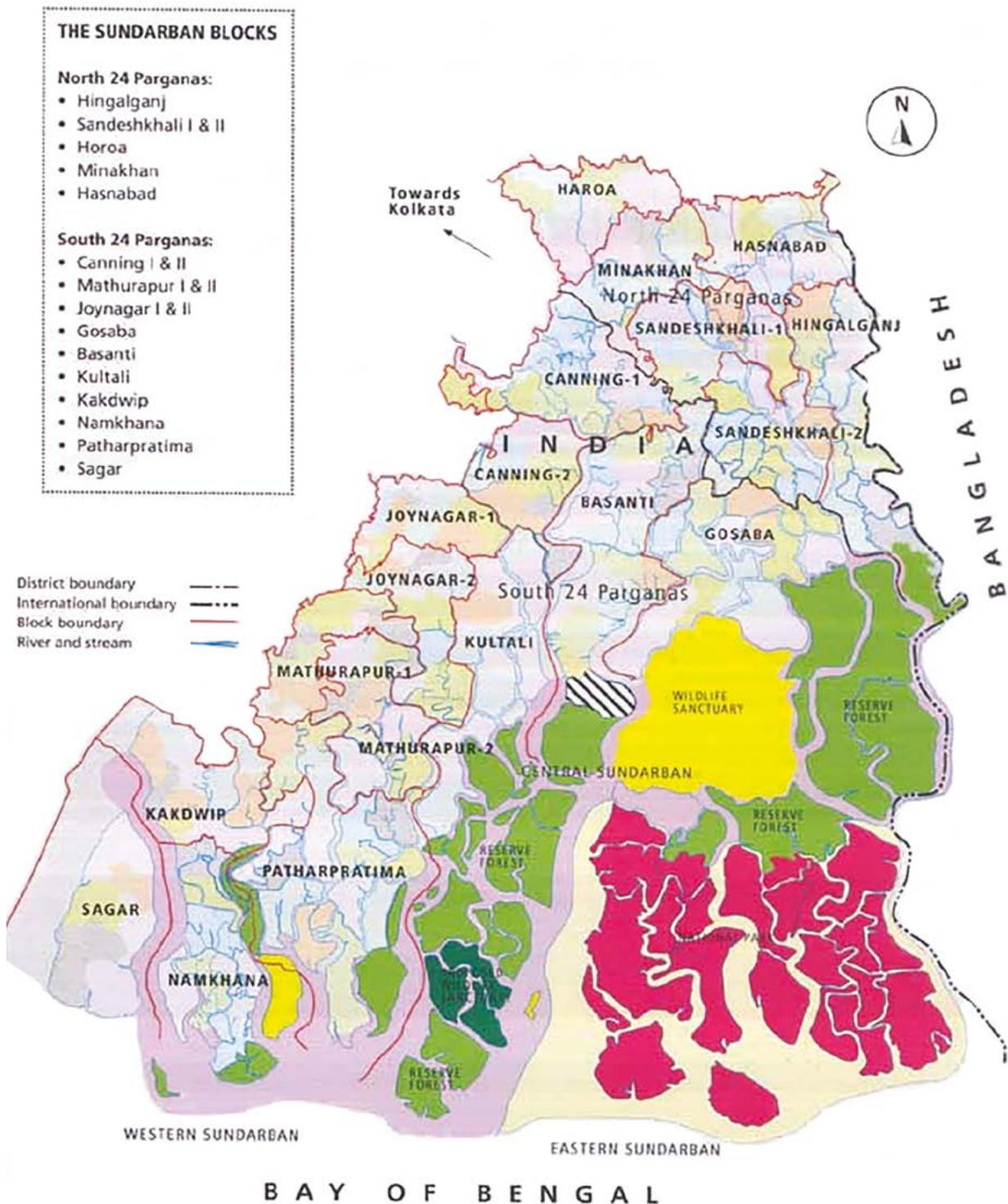
Figure 2: The Sundarbans (Source: www.academia.edu)

SUNDARBANS ECO-REGION



²²³ Nandy, Supriyo, 2010, *Climate Adaptation Strategies - Study of Great River Ganges in Sunderbans*, 13th International Riversymposium, p.15, <http://goo.gl/3XsA3s>

Figure 3: The West Bengal Sundarbans (Source: www.drcsc.org)



The total area of the Sundarbans across India and Bangladesh is around 40,000 square kilometres. The West Bengal Sundarbans cover 9,630 square kilometres, of which just over half is inhabited.²²⁴ It is home to 4.3 million people.²²⁵ One expert interviewed for this study said it was the most densely populated rural area in India,

with an average 900 people per square kilometre, compared with 329 in other coastal areas. Its demographic composition is a sensitive issue, and two experts alluded to the politicised and often undocumented migration of Bangladeshi nationals into the area.

²²⁴ Hazra, Sugata; Ghosh, Tuhin; DasGupta, Rajashree and Sen, Gautam, 2002, Sea level and associated changes in the Sundarbans, *Science and Culture* 68 (9-12) p.309-321, <http://goo.gl/fRpWID>

²²⁵ Bhaumik, Subir, 2003, Fears rise for sinking Sundarbans, *BBC News*, <http://goo.gl/i2k0Jt>

There are two kinds of inhabited islands. Those closer to the mainland in the north and west are deforested and have been cultivated since the 18th century. They are on relatively high ground, making them safer from storms and tidal bores. They also have less saline soil.

Those on the fringe of the mangrove swamp were reclaimed later, between 1900 and 1980, and are part of the active delta. They are much more vulnerable and are protected by mud embankments or bunds. Saltwater rivers threaten to engulf entire villages, and regular storms and cyclones are usually accompanied by tidal bores that cause loss of life and damage to property. Early inhabitants include East Bengali Hindu refugees who sought shelter on the Morichijhanpi islands in the late 1970s, but they were eventually forcibly evicted by the Indian authorities.

Rising seas submerged Lohachara island in 2006, the first disappearance of an inhabited island in the world. It had been home to 10,000 people, who have resettled on Sagar island. Sagar also hosts IDPs from the nearby Ghoramara island, whose landmass is more than half underwater (see case studies three and four on [pages 59-60](#)). The School of Oceanographic Studies at Jadavpur University estimates that there are a dozen vanishing islands in the West Bengal Sundarbans, with the potential to displace 70,000 people.²²⁶

Mangroves play a vital role in coastal ecosystems and food chains, supporting fish and shellfish species. They also serve as flood barriers and help to reduce the damage caused by storms and cyclones. A study on the 2004 India Ocean tsunami found that areas of south-east India protected by mangroves and other forests suffered significantly less damage.²²⁷ The relatively recent expansion of aquaculture, however, has led to mangrove swamps being converted into shrimp farms, causing environmental damage in the process. Shrimp farms also retain more saltwater after saline incursions, reducing the productivity of neighbouring land.²²⁸ The increasing salinity has affected the growth of mangroves as well, and they are also threatened by deforestation and the mushrooming of the brick kiln industry in some parts of the Sundarbans.²²⁹

The construction of embankments in the Sundarbans is a complicated issue. Many are lost to erosion and during disasters, meaning new ones need to be raised further inland. Communities understand their importance, but tend to be unwilling to hand over land for their construction without proper compensation. The sums the government offers are generally considered too small, and as a result whole stretches of embankment are missing, leaving communities at risk.

Case study one:

Cyclone Aila, 2009, Shandashkahli II, North 24 Parganas

A. The community

The villages on the relatively wealthy northern edges of the Sundarbans are generally ribbon developments along roads elevated above the surrounding land. The roads also have large fish ponds on either side, interspersed with smaller areas of agricultural activity, including rice fields.

The Shandashkahli II community, which has lived in the area for five generations, was affected by cyclone Aila in May 2009. It was the biggest disaster in their collective memory. Community members did not use the language of climate change as such in discussions, but they were very aware of shifting seasons, and said the monsoon did not always arrive when expected and that weather patterns generally felt more extreme.

Livelihoods include the cultivation of high-yield rather than traditional rice varieties, shrimp aquaculture and fishing. Landless people work in one of the many brick kilns in the area, or as day labourers in agriculture and aquaculture. Livestock is kept for domestic use, but it is not particularly resilient and losses during disasters are high. Many families destocked after Aila because of fodder shortages.

Many households receive remittances from family members in urban areas, either in West Bengal or states further afield. The migration of young people to work in the construction or garment industries tends to be seasonal, from April to October. Families come back together for harvest.

The community had no early warning system in place when Aila struck. The heavy rains and storm surge breached the embankment, flooding the fields with saltwater. Community members described their surprise, saying that they were unaware a flood was coming until they saw the breach. People whose homes were flooded moved to temporary shelters on higher ground, where they faced food and water shortages. Some who lost their homes were displaced and eventually moved away.

Five years after Aila, around 40 per cent of the embankment is still to be repaired. The community is aware that this increases the risk of flooding, but feels powerless

²²⁶ Independent, 2006, *Disappearing world: Global warming claims tropical island*, <http://goo.gl/jYBZVK>

²²⁷ Union of Concerned Scientists, 2011, *Kolkata, West Bengal, India*, <http://goo.gl/geCNOo>

²²⁸ Mamun, Md Arif Al; Stoll, Naomi and Whitehead, Sonia, 2013, *Bangladesh - How the people of Bangladesh live with climate change and what communication can do*, BBC Media Action Climate Asia report, p.25, <http://goo.gl/yDCgi9 22>

²²⁹ The Hindu, 2014, *Sunderbans mangrove trees losing capacity to absorb CO2: study*, <http://goo.gl/Rpu60y>



Betel nut plantations near Shilpara and Hendol Ketki villages. Photo © Mi Zhou

to do anything about it. Members said the government had announced its intention to do the repairs shortly after Aila, but has taken no action. They said they were willing to give up land for the work to be carried out, and appeared to trust that the government would pay compensation in lieu.

Rice production fell after Aila because of the increased salinity of the land. Some farmers have cultivated saline-resistant paddy rice varieties as a resilience measure. Others said they were willing to do so despite seed being more expensive and yield lower, but that seed was not available. Raised platforms have been built to house livestock during floods, and there is also space for animals in the cyclone shelters the government is constructing. After losing 80 per cent of their livestock during the cyclone, however, many community members have chosen not to restock to previous levels, if at all.

With Adventist Development and Relief Agency's (ADRA) support after Aila, the community has set up a disaster management committee, including WASH, search and rescue and early warning taskforces. An early warning system has also been established with government help. It includes megaphones, handheld radios and boys running to the next village to warn neighbours with colour-coded flags.

Most families rebuilt their homes without having to relocate. Those with better resources built on higher ground, using brick and concrete rather than wood and mud. With ADRA's training, some families used technology such as J-hooks to increase disaster resilience. Some community members have taken work under the MNREGA scheme, but said they were not employed for the guaranteed minimum number of days and that payment was delayed.

B. The women's self-help group

A neighbouring village has set up a women's self-help group. Its principal and remarkable achievement has been to set up a horticultural nursery that has become a small community enterprise. The women were trained by ADRA, conducted soil-testing and used a government grant to buy start-up seed. Their cultivation methods are organic. In two years, they have saved 200,000 Indian rupees (\$3,200) and run a small micro-finance operation on the proceeds. They offer low-interest loans to both members of the group and non-members, with members getting discounted interest. They proudly report that "women are better savers". They also note that the men in their families were not initially supportive, but now occasionally have to ask for loans.



IDPs and their shelters on the roadside in Silpur. Photo © Mi Zhou

Case study two:

Cyclone Aila, 2009, and tidal floods, July 2014

Sagar island

Sagar island lies in the south-west corner of the Sundarbans. It faces coastal erosion and the degradation of vegetation, and hosts a growing population including IDPs from neighbouring islands that have been lost to the sea. Cyclone Aila's wind and torrential rains destroyed crops and flooded homes. In July 2014, the Muriganga river unexpectedly broke its banks as a result of tidal flooding.

A. Shilpara and Hendol Ketki villages

Villagers' livelihoods consist of the cultivation of a combination of high-yield rice, semi-aquatic paddy rice and betel nut, and other subsistence farming. Betel cultivation provides a profitable, year-round yield, but the initial investment is high and betel plants are particularly vulnerable to wind and rain, so need to be protected from the elements.

The villages are several kilometres inland, but some community members go fishing at high tide, and most households have fish ponds, on which they also keep ducks.

After Aila, some villagers were displaced and others shared their land and homes with those whose were no longer inhabitable. One community member spent a personal fortune providing humanitarian assistance to

his fellow villagers in the absence of government help. More than 200 villagers left temporarily to seek work as day labourers.

With the arrival of NGOs, community-level disaster management systems were set up. Initiatives included the establishment or introduction of:

- a disaster management committee
- a WASH taskforce group
- an early warning mechanism
- saline-resistant rice varieties
- salinity shock-resistant fish species
- mangrove planting
- water harvesting
- combined aquaculture

The 2014 tidal floods increased the salinity of agricultural land. High-yield rice varieties can only be cultivated after the monsoon season, when the rains decrease salinity. One local NGO, Paribesh Unnayan Parishad, is currently developing a seed bank of indigenous and saline-resistant rice varieties, and training farmers in their cultivation. Demonstration plots are used to introduce new techniques by example.

The community has a sense of climate change and the increasing frequency of disasters, and members say that most of their knowledge comes via radio from the government, and from NGOs that are active in the community. Given the experience of IDPs from other islands in the delta, there are concerns that embankment breaches could also wipe out parts of Sagar, and community members hold the government responsible for keeping them safe.



An unfinished embankment in Silpur village, Sagar island. Photo © Dorien Braam

Community members say they are worried about new floods, because the existing embankments are or seem to be weak. To build better defences, however, the government would need to acquire land and the villagers are unwilling to give theirs up for the purpose. Some of those whose land is needed consider their potential loss to be unfair, because others will benefit at no cost. As hosts to IDPs from Ghoramara and Lohachara islands, they also feel increased competition for land.

B. Silpur village

The southern tip of Sagar island looks out over the Bay of Bengal. It is made up of low-lying agricultural land protected by mud embankments, which are subject to natural erosion and damage during disasters. Silpur was hit by Aila in 2009, and the tidal floods of July 2014 caused a breach in the embankment kilometres long, destroying homes and crops, including rice and betel, and displacing the entire community.

Almost all of the villagers remain displaced. Most have received compensation for their land, and the government has decided to build the new embankment 500 metres inland. Some have built new shelters on public land along roads (see photo on previous page). Others left the island altogether. A few families have gone back to their land where they continue to live, because they do not feel the compensation on offer is high enough, effectively preventing the completion of the embankment (see photo above). It is unclear what these families live on other than remittances, because the salinity of the soil is up to 30 per cent, which is far too high to grow any crops.

Case study three:

IDPs from Lohachara and Ghoramara islands

The Sundarbans is an active delta, where islands constantly form and disappear. A combination of rising water levels, more frequent natural hazards and other climate change impacts, and the loss of mangrove forests that act as natural protection against floods and erosion, mean that they now disappear more often and more quickly than before.

Lohachara is one such island. It disappeared from the Hooghly river in the 1990s, causing mass displacement to the nearby Sagar island. Ghoramara island, also nearby, is partially submerged.

IDPs from the two islands have been resettled on state land on Sagar, including dry riverbeds and other relatively infertile areas. All families received small plots of land of ranging from 0.8 to 0.07 hectares in four “refugee colonies”. The plots do not, however, provide enough food to subsist, and some family members work as day labourers on other farms. Many families also have at least one male family member who works in an urban centre and sends home remittances.

The IDPs were fishermen before their displacement. The land they have been resettled on is too far away from the river and sea to fish on a daily basis, but fishing continues to be an important means of subsistence to them, and entire families relocate to the coast seasonally.



Old and new embankments encircling Ghoramara island. Photo © Mi Zhou

During a group discussion with members of the displaced community, the focus was on the land ownership issues. Some families lost as much as 30 times the land allocation they received in Sagar, and were not compensated for their loss of livelihood. Some pointed out that those who resettled earlier had slightly better allocations, while later arrivals were given smaller holdings or became landless. Inheritance also puts pressure on land, effectively reducing plot sizes because it is divided between sons after a father's death and leaves many unable to produce enough food even for one family.

Case study four:

Ghoramara island

Ghoramara occupies around 5.7 square kilometres, less than half its original size as a result of erosion and rising sea levels. One 62-year-old man recalled a time when it was possible to walk to Sagar island at low tide. The embankment that encircles the island has been repeatedly breached. The current one is the sixth built, and though incomplete has lasted five years so far. Around 5,000 people still live on the island (see photo above).

The community on Ghoramara depends on rice cultivation, both traditional saline-resistant and imported high-yield varieties, sea and river fishing and fish ponds both inside and outside the embankment.

Erosion, tidal waves and extreme weather events mean the embankment has to be constantly reinforced, for which the government provides resources. Many people allege corruption in the awarding of contracts for the work, and that contractors steal materials. NGO staff, however, said community members themselves sometimes take building materials for use on their own houses.

Many people have left, but those who remain have no choice but to stay put and cultivate their land until it is lost to the sea. As the island shrinks and more homes and land are flooded, families will have to find a patch of land along a road or embankment over which they have no tenure security. One woman said she had moved three times in 12 years because of the loss of her land.

The community appears determined to stay on Ghoramara for as long as possible, but once their situation becomes untenable, they will ask the government to be relocated to Sagar, where they will receive a small plot of state-owned land (see case study three on page 59). IDPs from Ghoramara who have already relocated to Sagar, meantime, consider those they left behind to be better off because they still have land.

Some community members talked about a decline in fish stocks, blaming it on an increase in the number of fishermen. Experts, however, say that onshore fishing practices kill many young fish and prawns before they are able to replenish adult stocks.



7. MALDIVES

7.1 RISK LANDSCAPE

7.1.1 Climate change and disasters

The geography of the Maldives shapes the country politically, socially and economically. It is an Indian Ocean archipelago of 26 coral atolls made up of 1,190 islands, of which 200 are inhabited and 105 developed as tourist resorts.²³⁰ A small number are used primarily for industry and agriculture. Most of the islands are smaller than one square kilometre. The country has a total land area of around 300 square kilometres spread over 90,000 square kilometres, 99 per cent of which is ocean. It is the smallest nation in South Asia both in terms of land area and population. Its average ground elevation is the lowest in the world. Eighty per cent of the land is less than 1.6 metres above sea level. The Maldives is known as a Small Island Developing State (SIDS) along with 38 others, all of which face a unique set of challenges because of their size, remote location, limited natural and human resources, and vulnerability to climate change and rising sea levels.

The Maldives is one of the most vulnerable. Over the next 65 years, it is highly likely to experience marked increases in temperature, rainfall and sea level. Both sudden and slow-onset natural hazards threaten the populations, infrastructure, biodiversity and environmental sustainability of many of its islands. Forty per cent of the population and housing are within 100 metres of the shoreline. Food and water security, livelihoods, health and basic services are at risk.

IPCC predicts that global warming will cause a sea level rise of between 26 and 82 centimetres by 2095.²³¹ The Maldives government estimates a rise of 1.7 millimetres a year.²³² A recent World Bank report paints a bleaker picture, projecting a rise of between 60 and 115 centimetres by 2100.²³³ The coral reefs surrounding the islands, which support the country's tourism and fishing industries, are at risk from the gradual warming of the ocean.

IPCC also predicts that by 2050, extreme daily rainfall of 180mm is likely to occur twice as often. The annual maximum daily temperature is projected to rise by 1.5C, accompanied by more frequent and more powerful cyclones and storms.

7.1.2 Economy and development

Forty year ago the Maldives had a subsistence economy, but the last four decades have seen rapid growth and transformation. Today the country's per capita income is \$6,666, the highest in South Asia,²³⁴ and poverty has been reduced significantly in recent years. Twenty-four per cent of the population was living under the international poverty line as of 2010, down from 31 per cent in 2003.²³⁵

In 2011, the Maldives was granted middle-income country status, which led to a loss of development finance. Despite no longer being considered one of the world's least developed countries, however, it remains economically vulnerable. Its entire population lives in low-lying coastal areas, and the country is reliant on exports. The

²³⁰ The Maldives, *Country at a Glance*, <http://goo.gl/511tMZ>

²³¹ IPCC, 2014, *Climate Change 2014: Impacts, Adaptation and Vulnerability, working group 1 contribution*, <http://goo.gl/gVAR3x>

²³² MoEEW, 2007, *National Adaptation Programme of Action (NAPA)*, p.27, <http://goo.gl/NUsSvJ>

²³³ World Bank, 2013, *Turn down the heat: climate extremes, regional impacts, and the case for resilience*, p.23, <http://goo.gl/vL00WM>

²³⁴ World Bank, 2014, *GDP per capita (current US\$)*, <http://goo.gl/Nm8rck>

²³⁵ Department of National Planning, *Household Income and Expenditure Survey (HIES) 2009-2010*, p.2, <http://goo.gl/87tVkl>

2004 Indian Ocean tsunami demonstrated the country's vulnerability to disasters caused by natural hazards and climate change, wiping out 62 per cent of its GDP.²³⁶

The Maldives has a population of 352,000, of whom nearly a third live in the capital, Male, an island of less than two square kilometres. The number of people living on other islands varies between 200 and 1,500. Along with the country's lack of physical space, the fact that the population outside Male is so sparse and dispersed limits the potential for economic activity and investment in sectors other than tourism. Limited connectivity, transport and infrastructure across outlying islands also hinder the development of commercial activities.

7.1.3 Politics and governance

President Maumoon Abdul Gayoom, who came to power in 1978, ruled the Maldives for 30 years and adopted a centralised approach to governance. In 2008, the first democratically elected president was sworn in after a multi-party election under the new constitution.

The first five years of transition brought challenges to the nascent democracy. The most significant came in February 2012 when President Mohamed Nasheed resigned following days of protests and tensions between the government, military and police. He was immediately succeeded by his former deputy and an interim unity government was swiftly established. The constitutionality of the transfer of power was questioned, however, and the country experienced months of civil unrest. A Commonwealth-backed investigation subsequently upheld the legality of the takeover. The shift brought about a number of changes in key policy areas and adjustments on issues such as decentralisation. The current president, Abdulla Yameen, took office in 2013.

7.2 DISPLACEMENT

7.2.1 Internal

The 2004 tsunami displaced around 12,000 people in the Maldives, or seven per cent of the population. Among the IDPs were 4,000 people evacuated from Kandholhudoo island to the unpopulated Dhuvaafaru island after the former became uninhabitable, partly the result of previous damage to its reef and mangroves as a result of human activity.²³⁷ As of 2011, 1,600 people displaced by the tsunami were still living in temporary shelters in conditions described by the UN as "very difficult".²³⁸ Three years on, new housing to accommodate them is still under construction, with 51 houses unfinished as of December 2014.²³⁹

The country's entire population faces an increasing risk of internal and external displacement as the sea level continues to rise. Only 20 per cent of the land on inhabited islands is more than 1.6m above sea level, meaning there is little or no space to establish safe zones in case of tidal surges and flooding. All settlements are at risk from natural hazards.

7.2.2 Cross-border

Climate change projections suggest that the Maldives is likely to face more frequent sudden-onset natural hazards, such as cyclone Nilam which displaced 600 people in 2012, and slow-onset submergence in the longer term. There is a growing awareness among the international community of the implications of an island state becoming completely submerged. The entire population and government would be externally displaced, and unless territory could be protected or created, or it were ceded by another state, their exile would become permanent. Maldivians would depend on a host state being prepared to grant them the right to integrate, including citizenship.²⁴⁰

7.2.3 Protection

The Maldives is neither a signatory to the 1951 Convention relating to the Status of Refugees, nor does it have a national policy on IDPs. The National Disaster Management Centre (NDMC) is, however, preparing a framework on displacement in cooperation with the Asian Disaster Reduction Centre (ADRC). It is based on international standards adopted in response to the displacement caused by the 2004 tsunami.

²³⁶ European Community, 2006, *The Maldives - European Community Country Strategy Paper 2007-2013*, p.4, <http://goo.gl/Dfs7wj>

²³⁷ Vince, Gaia, 2009, Paradise lost: Islanders prepare for the flood, *New Scientist*, p.3, <http://goo.gl/jnUHd9>

²³⁸ OHCHR, 2012, *Report of the Special Rapporteur on the human rights of internally displaced persons, Chaloka Beyani, Mission to Maldives*, p.7, <http://goo.gl/n9APir>

²³⁹ Rasheed, Zaheena, 2014, Foreign Minister calls for greater resilience to climate change impacts, *Minivan News*, <http://goo.gl/uLJ6R0>

²⁴⁰ UNHCR, 2009, *Climate change and statelessness*, p.1, <http://goo.gl/cJqtMW>



PLANNED RELOCATION

One adaptation strategy available to the Maldives to address the implications of submergence and prevent displacement is territorial expansion in the form of artificial islands within its boundaries.

The country's most significant artificial island, Hulhumale, was designed in the short-term to accommodate population overspill from nearby Male, and in the longer term to provide a resettlement area in the event other islands become submerged. The island can accommodate 60,000 people. In January 2015, President Yameen inaugurated the second phase of the Hulhumale land reclamation project. Once completed, the island will be able to accommodate around 200,000 people. The construction of a bridge between Male and Hulhumale is also due to begin in 2015. Such projects come with risks such as high costs, the loss of maritime zones and livelihoods, and displacement-driven conflict, but these may be mitigated by the long-term and carefully planned relocation of the affected populations.²⁴¹

7.3 COMMUNITY RESILIENCE

7.3.1 Key assets

As with other small island nations, the Maldives' economic development is constrained by the absence of land-based natural resources. Economic development and livelihoods are heavily reliant on tourism and fisheries, which together account for around 40 per cent of GDP. Indirectly the two sectors contribute a much larger proportion and provide around a third of the country's employment. They are also vulnerable to natural hazards, putting many communities' livelihoods at risk.

Tourism and its related service industries, such as transport, communication and construction, have been the primary drivers of economic transition. Previously the economy was dependent on fisheries and other marine-based activity. For the two-thirds of the population living outside the capital, fishing and subsistence agriculture are the main sources of food security and livelihoods. The fisheries sector continues to employ around 30 per cent of the country's workforce and accounts for around six per cent of GDP. When related service industries are included, the figure is more than 15 per cent.²⁴² Tuna is the most important catch both for export and as a local staple. It is the main, and in many cases the only, source of protein in the Maldivian diet.²⁴³

The sector, however, is in decline. Its contribution to the economy is falling and catches are decreasing as a result of environmental factors and higher fuel prices. Tuna is highly sensitive to the biophysical conditions of the marine environment such as fluctuations in sea surface temperatures, which can result from global warming.

The country's fish-processing infrastructure is also vulnerable to natural hazards, with 70 per cent of it situated within 100 metres of the shoreline.²⁴⁴

The Maldives is estimated to produce less than a tenth of its food requirements, not least because only 40 square kilometres of land are available for cultivation. Poor soil conditions and a shortage of fresh water for irrigation are further limitations.²⁴⁵ The country's food security risks are made worse by its limited storage facilities and the challenges associated with transport and distribution. In 2012, food accounted for 21 per cent of all imports, with a value \$318.9 million. Such heavy reliance on food imports has significant implications for economic inflation as well as food security.

The agricultural sector's contribution to GDP is low and declining, but it continues to play an important role in terms of local food security and livelihoods. Around 8,000 farmers were registered with the Ministry of Food and Agriculture in 2012. Better links with the tourism sector are needed for the marketing of agricultural produce in order to enhance farmers' livelihoods and ensure their food security. That said, the depletion of aquifers for irrigation and drinking water is a problem for arable farmers, and deeper-rooted trees with low salt tolerance such as mango and breadfruit were severely damaged by the 2004 tsunami.

²⁴¹ UNHCR, 2014, *Planned Relocations, Disasters, and Climate Change: Consolidating Good Practices and Preparing for the Future*, p.14, <http://goo.gl/GBwJTQ>

²⁴² FAO, 2015, *Fishery and Aquaculture Country Profile online*, <http://goo.gl/B0JW5h>

²⁴³ FAO, 2003, *Food Balance Sheets*, <http://goo.gl/RPac8C>

²⁴⁴ Government of Maldives, 2014, *Maldives climate change policy framework 2014-2024*, p.6, <http://goo.gl/NLKxUF>

²⁴⁵ FAO, 2012, *Maldives Country Programming Framework 2013-2017*, p.9, <http://goo.gl/aVYDgQ>

7.3.2 Legal and institutional frameworks

Disaster management

The Maldives has no legislative framework that defines disasters or the process of declaring them. The most recent version of a Disaster Management bill dates from 2009, and an updated draft is pending in parliament.²⁴⁶

NDMC, which was established shortly after the 2004 tsunami, is the leading agency for the monitoring and coordination of disaster management. It sits within the Ministry of Defence and National Security, and its mandate includes emergency rescue and response, and the coordination of rehabilitation and reconstruction efforts.

As of 2013, 1,843 civil society organisations (CSOs) were registered under the 2010 Decentralisation Act. They are legally recognised as NDMC's partners in service implementation and development planning. Only 2.7 per cent of them, however, identified disaster and emergency response as an area of work within their remit.²⁴⁷

The 2011 Strategic National Action Plan (SNAP) integrates DRR and climate change adaptation.²⁴⁸ It is guided by the 2005 HFA, and promotes good governance, empowers local communities, builds resilience and promotes risk-sensitive regional and local development. It also highlights the need for a community-based approach to addressing disaster risk management based on effective partnerships between the government and civil society. A 2013 government progress report on HFA, however, noted the lack of civil society representation in what should be a multi-sectoral approach to DRR.²⁴⁹

The Maldives Meteorological Service (MMS) is responsible for the collection, analysis and dissemination of meteorological and seismic information, and risk mapping. It is a key part of the country's early warning system and shares information with the Indian Ocean Tsunami Warning System. According to SNAP, however, MMS lacks competent meteorologists and essential hardware for climate database management.

Under an memorandum of understanding signed with NDMC in 2012, the Maldivian Red Crescent (MRC) is mandated as the first responder in the event of a disaster

or emergency. It supports NDMC in many of its disaster-related capacity-building programmes and is active in advocacy and promoting awareness at the island level. Community-based initiatives and advocacy are prioritised in its strategic plan for 2011 to 2015.²⁵⁰ MRC's capacity-building efforts have created many DRR volunteers and first aiders, and several regional disaster response team members, search and rescue trainers and community-based DRR trainers.

Climate change

The Environmental Protection Agency (EPA), which was formed in 2008, works under the Ministry of Environment and Energy. It is the regulator and enforcement authority for all environmental issues, including water and sewage facilities. It also oversees all environmental impact assessments. It operates, however, in the absence of a legal framework and faces significant challenges in exercising much of its authority.

7.3.3 Knowledge, resources and actions

The role of community organisations

Maldivian CSOs working in environmental protection emerged in the late 1980s and many are active in supporting the implementation of environmentally sensitive development plans. A 2011 study found that 19 per cent identified environmental protection as one of their objectives.²⁵¹ In 2013, the Ministry of Home Affairs announced that it was to dissolve 70 per cent of civil society organisations for allegedly failing to submit proper reports and budgets. Protests by local and international CSOs led the ministry to suspend its plans, but increased mistrust between civil society and the government has endured.²⁵²

Under the 2010 Decentralisation Act, 188 island councils and women's development committees, 19 atoll councils and two city councils were established. Island communities were empowered for the first time to make their own decisions about DRR and climate change adaptation in a democratic and accountable manner. For the majority of atoll-based islanders, the councils and committees are – on paper at least – their conduits, interlocutors and representatives in their dealings with central government institutions.

²⁴⁶ Proposed measures aim to appoint a National Disaster Management Council and National Disaster Management Authority with clear mandates in coordination, policy-making and planning

²⁴⁷ UNDP, 2011, *Comprehensive Study of the Maldivian Civil Society*, p.47, <http://goo.gl/a0ZXVm>

²⁴⁸ UNISDR, 2011, *Maldives Government Endorses World's First Strategic National Action Plan Integrating Disaster Risk Reduction, Climate Change Adaptation*, <http://goo.gl/t1Dtw6>

²⁴⁹ NDMC, 2013, *Maldives: National progress report on the implementation of the Hyogo Framework for Action (2011-2013)*, p.21, <http://goo.gl/ov320m>

²⁵⁰ Maldivian Red Crescent, 2011, *Strategic Plan 2011-2015*, p.4, 8-9, <http://goo.gl/A6Z5sx>

²⁵¹ UNDP, 2011, *Comprehensive Study of the Maldivian Civil Society*, p.47, <http://goo.gl/a0ZXVm>

²⁵² IFHR, 2013, *Press Release: MALDIVES: Move to dissolve about 70% of the NGOs would seriously impact human rights activities in the country*, <http://goo.gl/OgVFkJ>

In practice, however, the decentralised organisations' capacity is limited. The central government has appeared reluctant to give them authority over their resources and hand over decision-making responsibilities. Many decentralisation processes are also dependent on legal gaps and contradictions being addressed. The Decentralisation Act, for example, identifies land management as a core responsibility of the island councils, but the Land Act makes the Ministry of Housing and Infrastructure responsible. The Decentralisation Act and the constitution make provisions for budget and fiscal decentralisation, but the Finance Act determines that all government revenue must be deposited and held in the central public account. Legal challenges have put up barriers to island councils delivering services and making decisions for and with their communities, and prevented them from raising their own funds for local development.

NDMC says that local councils lack the required level of ownership to fulfil their awareness and advocacy responsibilities, and attributes the shortfall to ambiguities in the legal framework. As a result, DRR has not been adequately mainstreamed into local planning, programming and budgeting. NDMC reports that only 22 per cent of islands carry out DRR drills and only 20 per cent have integrated DRR into their development.

Training and knowledge transfers

Maldivian volunteers have become integral to community-based disaster risk management processes. MRC has established sub-offices across 12 atolls and islands outside Male, and its involvement with more remote island communities is increasing. More volunteers are being mobilised in the areas of emergency response, first aid and community health preparedness.²⁵³ A UNDP project to enhance national capacity for DRR and management, which began in 2013, has also made progress in building island-level capacity in community-based disaster risk management, training councillors on 35 islands.

The 2013 presidential elections appear to have disrupted some community-based projects. MRC reported low levels of community participation in meetings, consultations and DRR awareness-raising events, and UNPD raised concerns about the loss of DRR capacity as a result of the departure of certain councillors and the increasing politicisation of island council positions.

Regardless of recent political changes, NDMC remains committed to mainstreaming atoll and island-level DRR into local planning. It intends to identify individuals to act as DRR focal points and receive training in community-based disaster risk management.

Tourism industry and private sector partnerships

Resilience could be stronger across communities if they had closer affiliations and links with the private sector, particularly tourism and fisheries. One argument is that tourism and fisheries make a substantial contribution to the Maldives' economic development, leading to increased international funding and co-financing from the government. To facilitate direct economic benefits for local communities, closer links between resorts and local islands are required. Tourism adaptation projects could promote community-focused tourism, in which private operators work with communities on a single island, or collaborate on a project involving a number of islands. The "adopt an island" initiative set up after the 2004 tsunami is one example of private-public cooperation, in which businesses helped affected communities to rebuild their homes.

The Tourism Adaptation Project for 2011 to 2014 aimed to strengthen community resilience by partnering communities dependent on tourism with operators and the government to plan and implement joint activities that address shared vulnerabilities.²⁵⁴ A new community water management facility is under development on Baa Maalhos island, for which rainwater tanks and construction materials have been ordered. Activities to raise awareness about water security and sustainable water management have also been undertaken.

²⁵³ MRC, *Annual Reports 2011, 2012 and 2013*, <http://goo.gl/wTsH2C>

²⁵⁴ Government of Maldives, UNDP and GEF, 2012, *Project Inception Report: Increasing Climate Change Resilience of Maldives through Adaptation in the Tourism Sector*, p.40, <http://goo.gl/hEUagN>

7.4 RECOMMENDATIONS

Humanitarian and development organisations

- Document evidence of best practice in community-based soft adaptation measures
- Develop public-private partnerships to provide compensation packages for communities affected by development-induced displacement and resettlement. Any such packages should be agreed in consultation with the affected communities and ensure IDPs' sustainable livelihoods
- Advocate with authorities and communities for DRR and climate adaptation measures that help to prevent and mitigate displacement, including the long-term planning of relocations for communities faced with submergence. Facilitate community consultations about planned relocation as a DRR strategy, and ensure that any such move is implemented with the full participation of both relocating and host communities, and with full respect for human rights and the principles of non-discrimination.
- Provide alternative livelihoods training for IDPs and communities facing relocation
- Provide the Maldives Meteorological Service with technical expertise and data collection management resources

Government

- Enact legislation on disaster management
- Formalise and implement a national framework on displacement
- Harmonise DRR, climate change adaptation and displacement legislation and policies between local island councils and committees, and between local and central authorities
- Expedite the adoption of legal instruments, tools and frameworks for DRR, water security and displacement to clarify communities' responsibilities in fiscal planning
- Increase island councils' responsibilities and management capacity, and provide fiscal and other resources to allow decentralised authorities to implement DRR and climate change adaptation measures to prevent and mitigate displacement
- Prepare for submergence by beginning long-term community consultations over planned relocation as a DRR and climate change adaptation strategy, and provide support for both host and relocating communities
- Establish a data collection system for the Maldives Meteorological Service, and improve its climate database management



8. NEPAL

8.1 RISK LANDSCAPE

8.1.1 Climate change and disasters

Nepal is a landlocked country bordered on three sides by India and by China's autonomous Tibet region to the north. It has many geographic zones, from tropics in the south to 90 peaks above 7,000 metres in the north, including the world's highest, Mount Everest. It is situated in an active seismic zone, and divided into three very distinct regions: the Terai plains, the Hill region and the Mountain region. It is the world's second richest country in terms of inland water resources, with as many as 600 rivers, rivulets and tributaries. It also has a wide variety of climatic zones.

Given its diverse geography, topography and climate, Nepal is susceptible to recurring natural hazards. IPCC predicts that the country will experience climate change impacts including higher temperatures, more frequent heat waves and shorter frosts. Winters are expected to become drier and monsoon summers wetter, which could result in more frequent and severe floods and drought. The International Centre for Integrated Mountain Development (ICIMOD) has identified 22 glacial lakes at risk of outburst floods over the next five to ten years, posing a significant threat to downstream communities.²⁵⁵ The agriculture sector is particularly vulnerable, and falling crop and livestock production could lead to the loss of livelihoods.²⁵⁶

Nepal is rated 126th out of 178 on the ND-GAIN index, which ranks countries according to their vulnerability and ability to cope with climate change. It is the 50th most vulnerable country and the 58th least prepared. The

country is particularly at risk from seismic activity. It is ranked the 11th most vulnerable country in the world to earthquakes, with its capital, Kathmandu, the 21st most vulnerable city.²⁵⁷

8.1.2 Economy and development

Nepal is one of the least developed countries in the world, ranked 145th out of 187 on the Human Development Index.²⁵⁸ As a low income country, its GDP was \$19.3 billion in 2013, with an annual growth of 3.8 per cent. The country has made significant socio-economic progress, but it still faces challenges in reducing poverty and other disparities. Of its population of 28.12 million, 25.2 per cent live below the national poverty line.²⁵⁹

The lack of a reliable electricity supply is one of Nepal's most significant development challenges, and efforts to reduce the 16-hour load-shedding gap during the dry season have been unsuccessful. That said, the country has one of the largest untapped hydropower resources in the world, with more than 80,000 megawatts of potential. Its road density is one of the lowest in South Asia. More than a third of the population in the hills are more than four hours away from an all-weather road. Urbanisation and poor building practices have increased the country's seismic risk.

As a result of climate change and food and financial crises, much of the population is food insecure. Chronic malnutrition in children is estimated to be almost 50 per cent. In 2014, 184 villages - mainly in the west of country - were classified as moderately food insecure.²⁶⁰

²⁵⁵ ICIMOD, 2011, *Glacial Lakes and Glacial Lake Outburst Floods in Nepal*, p.41, <http://goo.gl/pyVI37>

²⁵⁶ FAO, 2014, *Managing climate risks and adapting to climate change in the agriculture sector in Nepal*, p.11, <http://goo.gl/j51Kyn>

²⁵⁷ Nepal Red Cross Society, *Earthquake Preparedness for Safer Communities*, <http://goo.gl/DicRXL>

²⁵⁸ UN Development Programme (UNDP), 2014, *Nepal, Human Development Reports*, <http://goo.gl/hsyHvv>

²⁵⁹ World Bank, 2014, *Poverty headcount ratio at national poverty lines (% of population)*, <http://goo.gl/9NnVGX>

²⁶⁰ WFP, 2014, *Nepal Food Security Bulletin*, p.1, <http://goo.gl/m5q1HM>

One government projection suggests that economic losses as a result of climate change will be between two and three per cent of GDP a year by the middle of the century. This will hamper its development objective of lifting the population out of poverty.²⁶¹

8.1.3 Politics and governance

Nepal has suffered from conflict and political instability, which has eroded the effectiveness of some state institutions. Since the introduction of democracy in 1990, the country has had 20 governments. A ten-year Maoist insurgency began in 1996, and the ensuing conflict displaced around 200,000 people, mainly to urban areas. It formally ended in 2006 with the signing of the Comprehensive Peace Accord (CPA). There have been many challenges during the transition to peace. The country has had six prime ministers since the end of the conflict, and in 2012 the Constituent Assembly was dissolved. After four years of efforts, it had failed to deliver a new constitution that was supposed to restructure Nepal as a federal state. A second assembly was elected in 2013 with the ruling coalition making up more than two-thirds of it, but the opposition has paralysed the process of passing the constitution.²⁶²

8.2 DISPLACEMENT

8.2.1 Internal

IDMC estimates that there were 12,474 people displaced by natural hazards in Nepal in 2013.²⁶³ In 2008, the Koshi river flood in the east of the country displaced 45,000 people (see case study three on [page 73](#)). In 2010, 38 families from a remote village in Upper Mustang district were displaced after a decade of water scarcity, and were labelled the country's first "climate refugees". Several Himalayan mountain communities are also undergoing planned permanent relocation as a result of slow-onset disasters such as drought, desertification and loss of water supply.

The government considers all IDPs displaced by conflict to have returned or resettled, but IDMC estimates that

as of December 2013, 50,000 were still living in displacement.²⁶⁴ Nepal adopted a national policy on IDPs in 2007, after which the government sought to register the displaced population and facilitate its return. The policy, however, has been criticised as politicised and not fully implemented. The main obstacles to return are thought to be unresolved land and property disputes, and security concerns. The Maoists expropriated land that was then sold or given to landless or tenant farmers, many of whom are still living as IDPs in urban areas, including in the Kathmandu valley. They would prefer to integrate locally or settle elsewhere in the country because of insecurity in their places of origin. The absence of public services and a lack of livelihood assistance have also undermined the sustainability of returns.²⁶⁵

Criminal and separatist violence has also caused displacement in Terai. Protests by Madhesi groups began in 2007 over perceived inequalities and failure to implement the CPA. In September 2007 violence broke out in Kapilvastu district between Madhesi residents and members of the Pahadis ethnic group. Around 8,000 people, mainly Pahadis, were displaced during the year. Most fled to cities, where some have integrated into urban communities.²⁶⁶

The construction of dams and other hydropower infrastructure has led to forced displacement, and the West Seti hydroelectric project is expected to displace 13,000 people (see case study two).²⁶⁷ Dam projects have also been associated with unanticipated changes to agricultural production systems, the sudden influx of people around major construction sites and the loss of cultural heritage assets, which in turn reduce the resilience of affected communities to other hazards.²⁶⁸

Cash has been the main form of compensation for those forced to relocate, but it has not adequately addressed their needs. Fishermen who lost their traditional livelihoods as a result of the Kali Gandaki hydroelectric project had difficulties claiming compensation because they were not landowners.²⁶⁹ The timing of cash payments also affected the ability of displaced families to establish new livelihoods. Inadequate compensation for land lost as result of displacement can lead to the splitting of households, hostile patrilineal relationships and a cycle of poverty.²⁷⁰

²⁶¹ CDKN, 2008, *The IPCC's Fifth Assessment Report, What's in it for South Asia?*, p.18, <http://goo.gl/fkfXP6>

²⁶² Al Jazeera, 2015, *Defiant Nepali opposition vows to block constitution*, <http://goo.gl/72ejEY>

²⁶³ IDMC/NRC, 2014, *Nepal*, <http://goo.gl/el4P87>

²⁶⁴ IDMC/NRC, 2013, *Nepal IDP Figures Analysis*, <http://goo.gl/LXrQaM>

²⁶⁵ IDMC/NRC, 2013, *Nepal: Internal displacement in brief*, <http://goo.gl/GH0rf0>

²⁶⁶ Ghimire, Anita, Poudel, Saman Babu 20 November 2010.

²⁶⁷ International Rivers, *West Seti Dam*, Nepal, <http://goo.gl/iwCOEC>

²⁶⁸ Cernea, Michael, 2004, *Social Impacts and Social Risks in Hydropower Programs: Preemptive Planning and Counter-risk Measures*, p.5, <http://goo.gl/zdi7ZZ>

²⁶⁹ Rai, Kavita (2007). "The Dynamics of Social Inequality in the Kali Gandaki 'A' Dam Project in Nepal: The Politics of Patronage". In: *Hydro Nepal*. 1:1. pp. 22-26.

²⁷⁰ Lam, Lai M. & Paul Saumik (2012). "Displacement and Erosion of Informal Risk-Sharing: Evidence from Nepal". In: *World Development*. Vol. 43, pp.42-55

8.2.2 Cross-border

According to UNHCR there were 40,213 refugees in Nepal as of September 2014, including 24,000 from Bhutan. After being reclassified as illegal immigrants in Bhutan in the 1980s, many members of the Lhotshampa community fled to India and onto Nepal. UNHCR began to resettle Bhutanese refugees to third countries in 2007, and by May 2014 90,000 had left Nepal.²⁷¹

8.2.3 Protection

The National Policy on Internal Displacement was adopted in 2007, which defines IDPs as people displaced by conflict and natural or man-made disasters. The original draft was limited to those displaced by conflict. It was used to implement elements of the CPA and to facilitate the return of those displaced during the conflict.²⁷² Both the policy and the registration process it established have been criticised. IDPs were required to return to their places of origin in order to register, and the documentation needed was difficult to obtain. It is estimated that 40 per cent did not register. Of 89,000 registered IDPs, only 25,000 received assistance.²⁷³

8.3 COMMUNITY RESILIENCE

8.3.1 Key assets

Agriculture and livestock

Nepal's economic development and its people's livelihoods are mainly dependent on agriculture. It has a land area of 143,350 square kilometres, of which almost 30 per cent is in agricultural use, mainly dependent on rainfall. The sector accounted for 35 per cent of GDP in 2013. More than 80 per cent of the population live in rural areas, and depend on subsistence farming.²⁷⁴

Rice is the most important crop. It accounts for nearly 20 per cent of agricultural GDP, and provides more than 50 per cent of Nepalese calorie requirements. A nine per cent fall in rice production in 2014 was attributed to late

and below-average monsoon rains and a decline in the area under cultivation. Crops in the west of the country were also damaged by floods and landslides, but maize and wheat harvests were broadly the same in 2014 as in previous years.

Livestock is an important source of income, employment and protein in Nepal. Outside urban centres, it makes up an average of 10.6 per cent of household income. Families use livestock mainly for subsistence, but the sale of animals and products is also an important source of cash income, up to 47.6 per cent in rural hill areas. Research has found poverty to be less extreme among households that own livestock.²⁷⁵

Migration and remittances

Around 1.5 million Nepalese nationals work in India. Estimates differ, as there is a no-visa policy in place since the 1950 Treaties of Friendship and Peace between India and Nepal, and the Indian government do not count them among migrant workers.²⁷⁶ Between 1999 and 2009, labour migration from Nepal increased at an average annual rate of 47 per cent.²⁷⁷ Other than India, most of workers travel to Malaysia, Saudi Arabia, Qatar and the United Arab Emirates. Since 2011, South Korea has emerged as a new destination under its employment permit scheme. In 2012, the government estimated that 1,700 migrant workers left the country each day.

Nepal is heavily dependent on remittances. According to the World Bank, remittances accounted for 29 per cent of GDP and were worth \$5.6 billion in 2013. The country is one of the highest recipients of remittances as share of GDP in the world, and the government recognises them as a way of alleviating poverty and unemployment.²⁷⁸

Labour migration can be seasonal and temporary, or a long-term livelihood strategy. Over the last six years, 95.1 per cent of migrants with labour permits have been men. That said, the number of women with permits increased much faster over the same period at 239 per cent, compared with 133 per cent for men. Male migration has imposed heavy additional workloads on the women left behind. The first national report on labour

²⁷¹ IOM, 2014, *Bhutanese Refugee Number 90,000 Resettled from Nepal to Canada*, <http://goo.gl/sEmnWF>

²⁷² See reports of the Informal Sector Service Centre, INSEC, available at <http://goo.gl/kq3bj4>

²⁷³ IDMC/NRC, 2012, *Nepal Unresolved property issues and IDP policy hiatus undermine search for durable solutions*, p.6, <http://goo.gl/hZTxlw>

²⁷⁴ Rural Poverty Portal, *Rural poverty in Nepal*, <http://goo.gl/pgwGzU>

²⁷⁵ Maltsoğlu, Irini and Taniguchi, Kiyoshi, 2004, *Poverty, Livestock and Household Typologies in Nepal*, *Pro-Poor Livestock Policy Initiative Working Paper 13*, p.33, <http://goo.gl/Ch03iH>

²⁷⁶ Ozaki, Mayumi, 2012, *Worker Migration and Remittances in South Asia*, Asian Development Bank (ADB), *South Asia Working Paper Series 12*, p.9, <http://goo.gl/r00AE7>

²⁷⁷ Jones, Harry and Basnett, Yurendra, 2013, *Foreign employment and inclusive growth in Nepal*, *Research & Policy in Development - Centre for Inclusive Growth*, p.30, <http://goo.gl/hRYXg5>

²⁷⁸ ILO, 2004, *An Overview Paper on Overseas Employment in Nepal*, p.7, <http://goo.gl/falYmN>

migration from Nepal to other countries noted that although there is a lack of empirical evidence on the role of environmental drivers, the National Adaptation Plan for Action (NAPA) focuses on in-situ adaptation options and recognises the influence of climate change on mobility.²⁷⁹

Tourism

According to the World Travel & Tourism Council, tourism accounted directly for 3.9 per cent of GDP in 2013, a figure forecast to rise to 9.8 per cent in 2014. The sector also directly supported 504,000 jobs, around 3.2 per cent of all employment.²⁸⁰

Hydropower

In September 2014, the Investment Board Nepal signed the biggest foreign investment deal in the country's history with an Indian infrastructure group. The contract is to build a \$1.4 billion 900-megawatt dam and tunnel system on the Karnali river to exploit some of Nepal's untapped hydropower resources.²⁸¹ The Karnali facility is expected to be the first of at least four such projects that will export electricity to India as well as helping to end domestic power shortages.

8.3.2 Legal and institutional frameworks

Disaster management

Nepal's legal framework for disaster preparedness and response is contained primarily in the 1982 Natural Calamities (Relief) Act, which focuses on disaster response and does not cover mitigation and risk reduction. The 1999 Local Self Governance Act tried to remedy this by promoting decentralised disaster risk management, and encouraging district authorities to address DRR at the Village Development Committee (VDC) and municipal level. It also established Disaster Relief Committees at the central, regional and district level.

The 2008 National Strategy for Disaster Risk Management (NSDRM) was endorsed in 2010, and sets out a proposed structure and framework for disaster response and preparedness to be formalised through the Disaster Management Bill. According to Nepal's recent HFA progress report submitted in January 2015, the draft bill was still to be enacted.²⁸² Until that happens, the

Ministry of Home Affairs has a division that acts as the focal point for issues relating to natural hazards and displacement.

NSDRM and the Disaster Management bill set out a far more coherent and wide-ranging method of addressing the subject, including the creation of a national commission for disaster risk management to endorse national policies, guide and oversee the management of funds and mobilisation, and provide policy guidance at the bilateral, sub-regional, regional and international level. The National Authority for Disaster Risk Management (NADRM) would oversee the implementation of policies and coordinate responses as the highest executive agency.

The framework also envisages the establishment of district and municipal authorities, which will have responsibilities limited to their jurisdictions. Responsibility for local level DRR and emergency responses would rest with VDCs, which would also have primary responsibility for local hazard and risk assessments, disaster awareness, community-based disaster risk management, planning and preparedness strategies, light search and rescue and advocacy.

The government did not have any flood early warning flood systems in place when the Koshi river breached its embankment and displaced 45,000 people in 2008 (see case study three on [page 73](#)).²⁸³ NSDRM identifies the need for a national risk monitoring and early warning system, but none has been put in place to date.

Nepal has two formal mechanisms to share government, NGO and international expertise, the Inter-agency Standing Committee (IASC) and the Nepal Risk Reduction Consortium (NRRC). IASC includes key UN agencies, IFRC, ICRC and other international NGOs. It has established a cluster system covering 11 areas of activity, and produces contingency and cluster plans.

NRRC was launched in 2009 with the aim of mitigating the effects of known risks and preventing new ones. It is led by the government and has a steering committee of representatives from UN bodies, the Asian Development Bank (ADB), the World Bank, IFRC, the Australian, British and US governments and the EU. The consortium has an ambitious work plan but has said it is cautious about the challenges it faces.²⁸⁴

²⁷⁹ MoLE, 2014, *Labour Migration for Employment A Status Report for Nepal: 2013/2014*, p.9 and 20, <http://goo.gl/6zcFFM>

²⁸⁰ WTTC, *Travel and Tourism Economic Impact 2014*, Nepal p.1

²⁸¹ Mallet, Victor, 2014, Nepal launches hydropower growth plan with \$1.4bn deal, *Financial Times*, <http://goo.gl/mCaaap>

²⁸² Prevention Web, 2015, *Nepal National progress report on the implementation of the Hyogo Framework for Action (2013-2015)*, p.2, <http://goo.gl/mNfXig>

²⁸³ Shrestha, Rashmi Kiran; Ahlers, Rhodante; Bakker, Marloes and Gupta, Joyeeta, 2008, *Institutional dysfunction and challenges in flood control along the transboundary Kosi River: A Case study of the Kosi Flood 2008*, <http://goo.gl/f1HMeI>

²⁸⁴ Nepal Risk Reduction Consortium, 2012, *Humanitarian Exchange Magazine* 53, <http://goo.gl/E4eNG2>

Climate change

Nepal's response to the impacts of climate change began with a three-year plan approach paper in 2010, which incorporated environment and climate change issues into the country's infrastructure development policy. NAPA was developed with support from UNDP and approved in January 2011. It includes policies on climate adaptation, DRR, resilience and community participation, and has led to the development of the Nepal climate change and development portal under the Ministry of Science, an initiative supported by international donors.

8.3.3 Knowledge, resources and actions

Community perceptions of risk and adaptability

According to the Climate Asia survey, 40 per cent of people in Nepal were not aware of the term "climate change". Fifteen per cent had heard of it, but did not know what it meant and 42 per cent was aware of it. The impacts of climate change, however, were widely observed. Two-thirds of people in rural areas complained about declining agricultural productivity, with poor irrigation, erratic rainfall, seasonal changes and extreme weather events lowering yields. Many also noted that although chemical fertilisers increased productivity in the short term, they lowered soil fertility and did not work in the long term. Some farmers have gone back to organic cultivation.²⁸⁵

People reported taking adaptive action that helped them earn money, with 19 per cent making changes to their livelihoods. NGOs and civil society organisations have supported people in seeking alternatives. In Bardiya district, they have provided livestock and training to support people's livelihoods.²⁸⁶ Around two-thirds of farmers said they had tried growing different types of crop, and more than 57 per cent said they used crop rotation.²⁸⁷

Despite Nepal's high seismic risk, more than 50 per cent of the households surveyed in Kathmandu and Jhapa demonstrated a lack of awareness of building regulations, and were unlikely to have prioritised seismic-resilient features in construction. Sixty-three per cent expressed confidence that their homes were safe from earthquakes.

According to another study, households that received remittances were less likely to use an engineer in the design and construction of their homes.²⁸⁸ The fact that

such households are more likely to be building houses increases Nepal's seismic risk despite remittances contributing significantly to the economy. The study points to an urgent need to promote the implementation of building regulations and seismic risk mitigation practices with migrant workers and households that receive remittances.

The role of community organisations

The 1999 Local Self-Governance Act provided for the devolution of responsibility and power to village, municipal and district councils to enhance the participation of all communities. The local governance system consists of village development committees in rural areas and municipal development committees in towns, each divided into wards.

With the onset of climate change, which is mainly noticeable in shifting planting seasons, community groups are working together with the various development committees on mitigation and adaptation projects. Community-based organisations are generally considered to be important mechanisms for social inclusion, but research suggests that they may exclude women and low-caste representatives.²⁸⁹

Attempts to improve community resilience in Nepal are nascent, given the legal and policy framework's focus on relief, and the fact that climate change has only recently been incorporated into development policies. Until the disaster management bill is adopted and its large-scale programmes supported by the international community are given time to mature, communities are likely to remain highly vulnerable to natural hazards and the effects of climate change.

Training and knowledge transfers

A number of programmes have been implemented to train local communities. They include:

- The Nepal Climate Change Support Programme (NCCSP) focuses on the promotion of "community-based adaptation through integrated management of the agriculture, water, forest and biodiversity sectors". It supports the development committees by establishing environment, energy and climate change coordination committees at every local level. Results so far include better access to clean energy and climate resilience adaptation technology.²⁹⁰

²⁸⁵ Colom, Anna and Pradhan, Sabina, How the people of Nepal live with climate change and what communication can do, *BBC Media Action*, Climate Asia, p.15, <http://goo.gl/49VnAW>

²⁸⁶ *Ibid*, p.21

²⁸⁷ *Ibid*, p.23

²⁸⁸ Practical Action, Nepal Risk Reduction Consortium, 2014, *Understanding the Role of Remittances in Reducing Earthquake Risk*, p.20, <http://goo.gl/pACiIU>

²⁸⁹ Dhakal, Suresh Kumar, *Participation and Representation in Community Based Organizations of the Villages of Morang District of Eastern Nepal*, p.9, <http://goo.gl/JLzja>

²⁹⁰ UNDP, 2014, *Nepal Climate Change Support Programme (NCCSP)*, p.2, <http://goo.gl/bfyhTX>

- Oxfam facilitated the formation of community disaster management committees and the drafting of community disaster risk management plans in Dadheldhura district, which is subject to flash flooding. According to a review, resilience increased by almost 100 per cent. The programme supported small-scale mitigation measures such as low-cost flood barriers, embankment construction and the planting of shrubs and trees. A flood early warning system was put in place, involving gauges at various points, mobile phone arrangements to report flood activity and systems of flags, hand-held sirens and community drills. Links were also established with local authorities and the security forces, and disaster preparedness training was undertaken. Results were generally described as positive.
- An Oxfam project in Chitwan used an ad hoc community committee that eventually registered as a CSO to identify hazards and raise awareness. The initiative led to better agricultural practices, improved irrigation, and the construction of check dams and flood barriers. These adaptations in turn led to changes in livelihoods that improved food security and conservation measures.
- Traditional community-based adaptation methods to increase resilience were examined in 2009.²⁹¹ Successful agricultural practices included water storage, drip irrigation, hanging nurseries and crop adaptation. There are numerous examples of community-based resilience projects in Nepal. Strategies adopted include reforestation to reduce soil erosion, the construction of check dams to prevent the build-up of sediment, minimum tillage to preserve soil moisture and nutrients, and the protection of water sources from pollution.
- CARE implemented similar initiatives in 30 communities in Kailali and Dadheldhura in western Nepal. Thirty-two DRR committees were established, and its members were trained in community-based resilience, including early warning systems, first aid and light search and rescue. Contingency plans were devised for schools, which were also actively engaged in evacuation planning, education and first aid training. Such preparation is particularly important given that Nepal has no national early warning system.

8.4 RECOMMENDATIONS

Humanitarian and development organisations

- Given Nepal's political uncertainties, prioritise programmes that directly support communities and civil society organisations in building resilience to prevent and reduce the risk of future displacement
- Support and facilitate consultations with displaced people to identify durable solutions, develop sustainable livelihoods, determine potential relocation sites and create conditions suitable for return to their places of origin
- Support communities facing development-induced displacement and resettlement in their search for alternative sites and livelihoods, the negotiation of compensation packages with government and private stakeholders, and integration with host communities.
- Urgently raise awareness and provide training to communities on the construction of earthquake-resistant houses, particularly in the Kathmandu valley where a seismic event is expected and among families receiving remittances, given that they are more likely to carry out building work.

Government

- Incorporate mitigation and risk reduction into the disaster management legal framework, including the prevention of displacement
- Improve energy supplies by increasing the use of hydropower, while ensuring that adequate compensation for forced displacement is available to all groups, including the landless
- Develop public-private partnerships to provide compensation packages to communities affected by development-induced displacement and resettlement. Any such packages must be developed in consultation with the affected communities and ensure IDPs have sustainable livelihoods
- Any relocation of communities must be planned with their full participation and implemented without violating human rights and without discrimination
- Allocate more resources to improve infrastructure for both long-term development and disaster relief. Given its population density and strategic economic importance, disaster preparedness in the Kathmandu valley needs to be prioritised
- Provide support to citizens working overseas, by registering workers and facilitating remittances
- Promote sustainable tourism to ensure the sector remains viable in the future
- Develop public-private partnerships in tourism to share the costs of DRR measures and climate change adaptations
- Establish and operate a national early warning system
- Enforce building regulations to ensure that construction incorporates seismic resilience features, particularly in areas such as Kathmandu valley

²⁹¹ Regmi, Bimal, 2009, Community resilience in Nepal, *Tiempo* 73, <http://goo.gl/SBC4XQ>

8.5 CASE STUDIES

Case study one:

Preparedness in Kathmandu

In 1934, an 8.4 magnitude earthquake struck Kathmandu, killing around 9,000 people and damaging 80,000 buildings. A large-scale seismic event is expected around every 60 years in the Kathmandu valley, meaning that the next one is already overdue. Kathmandu's population is now estimated to exceed 2.5 million as a result of urbanisation and migration. The city is built on an area of liquefaction and construction techniques do not take its seismic vulnerability into account. It is home to Nepal's only international airport and lies at the junction of three of the country's major roads.

If a major event were to occur and roads were damaged, there are concerns it could take several weeks for outside assistance to reach survivors. Essential services are also lacking. In 2012, NRRC noted that the city had only four fire engines and no medium or heavy urban search and rescue facilities. Most drinking water is tankered in, and there are regular winter power cuts for up to 18 hours a day.

Case study two:

The West Seti dam

The West Seti river flows through north-western Nepal, a region that is rich in biodiversity. The West Seti hydroelectric project was first proposed in 1981, and the first licence was awarded in 1994. The start of construction, however, was delayed by civil society opposition. ADB withdrew its funding, because the project failed to comply with the bank's environmental, involuntary resettlement and public communication policies.

The project is estimated to require 2,322 hectares of land, plus 678 hectares for the transmission line. If it goes ahead, it is expected to displace 1,575 households, or around 13,000 people. Most of those at risk are from lower Hindu castes and depend on the region's natural resources for their livelihoods.

Two resettlement sites have been proposed. Most locals felt that the first, a satellite city upstream in the mountains, would not be viable because farmland is scarce and not particularly fertile. They considered the second option, relocation to the Terai flatlands in southern Nepal a better option, but raised fears about losing their livelihoods, the availability of land and whether Terai locals would be willing to host such a large influx of IDPs.²⁹²

The project was resurrected in 2012 by a memorandum of minutes between the Investment Board Nepal and China International Water and Electric Corporation. According to Chinese media, local communities will get 10 per cent of the equity in the project and the region will receive 150 MW of electricity.²⁹³ It is unclear what, if any, resettlement and relocation policies the new agreement includes.

Case study three:

The 2008 Koshi floods

On 18 August 2008, Nepal's largest river, the Koshi, breached its banks at Paschim Kushaha in Sunsari district, effectively changing its course. Severe flooding killed 270 people and affected more than 42,700 across Shreepur, Haripur and Paschim Kushaha VDCs. Around 8,200 *bighas* or 1,300 hectares of largely agricultural land were damaged, and 7,000 head of livestock were killed.²⁹⁴

Two VDCs were completely inundated while others suffered more limited flooding. The neighbouring district of Saptari took in a large influx of IDPs. The main east-west highway serving the commercial city of Biratnagar was severely damaged. OCHA estimated that 45,000 people were displaced. The government established 28 camps, which were still sheltering 21,300 people at the end of the month.²⁹⁵

An IASC assessment indicated:

- The floods displaced around 66,500 people in Sunsari and Saptari, of whom around 42 per cent were originally from India.
- Around a third of the affected population were Muslim, and 18 per cent Dalit. Only 35 per cent held a government identity card.

²⁹² Fast, Tobias, 2013, *Another Dam Development Project? Development-forced Displacement and Resettlement in Nepal*, Lund University, <http://goo.gl/vSMvLg>

²⁹³ China Daily, 2014, *Chinese developer to visit Nepal for West Seti Project*, <http://goo.gl/8uvSMb>

²⁹⁴ Refugee Watch, 2010, *Natural Disasters and Displacement: Koshi River Flood in Eastern Nepal*, p.2, <http://goo.gl/5lwGGP>

²⁹⁵ WFP, 2008, *Multi-Agency Flood Impact Assessment Koshi River Flood – Nepal*, p.2, <http://goo.gl/sPuXrh>

- Camps were overcrowded and poorly maintained, and more than half of the IDPs said their shelters provided insufficient protection from the elements.
- There was an urgent need for firewood and cooking fuel.
- The IDPs placed a heavy burden on host families and communities.
- Humanitarian aid focussed mainly on the official camps, leaving IDPs in spontaneous camps and with host families to adopt relatively severe coping strategies.
- The acute malnutrition rate among displaced children under the age of five was 13 per cent. A third of displaced children were at risk of becoming malnourished.
- • The flood caused a significant increase in commodity prices, which were already very high, further compromising people's access to food.

The government distributed 300 million Nepalese rupees (\$3 million) in compensation, plus cash-for-food payments of 1,000 rupees (\$10) per person and a return package of 50,000 rupees (\$500). There were complaints that the compensation was inadequate and that it excluded landless people and the most vulnerable. Disputes over the distribution of aid led to protests and strikes several months later.²⁹⁶

²⁹⁶ India Environment Portal, 2008, *Koshi flood victims announce phase-wise protests starting next week*, <http://goo.gl/CwcW5P>



9. PAKISTAN

9.1 RISK LANDSCAPE

9.1.1 Climate change and disasters

Pakistan is the second largest country in South Asia, both in term of land area and population. It borders Afghanistan, Iran, India and China, and opens out onto the Arabian Sea to the south. The country is home to K2, the world's second highest peak, and the Himalaya, Hindu Kush, Karakorum, Pamir and other minor ranges make up its northern and north-western highlands. It lies at the junction of the Indian, Eurasian and Arabian tectonic plates, and has four major and three moderate seismic danger zones.

In the south-west, the Balochistan plateau borders the Iranian plateau, with dry hills running north-east to south-east. A large part of the area is desert. Balochistan is the country's largest province, accounting for 48 per cent of its land area. The transboundary Indus river is Pakistan's longest, and flows north to south from Kashmir to the Arabian Sea. It has two main tributaries, the Kabul and the Panjnad.

Pakistan lies in a subtropical arid zone. Around 60 per cent of its rainfall comes during the July to September monsoon season. Fluctuations in seasonal rainfall directly affect river flows, which can vary dramatically. In the north of the country, snowfall provides the largest water resource at altitudes of more than 5,000 metres. Around 92 per cent of the Pakistan's land mass, however, is classified as semi-arid to arid.

The country's diverse geology and climate mean it faces a wide array of potential hazards, including floods, drought, earthquakes and cyclones. An increase of 0.24C per decade in mean annual temperature was recorded between 1960 and 2007, causing glaciers to melt faster and increasing the risk of glacier lake outbursts and other types of floods. The country has more than 5,000 glaciers and almost 2,500 lakes, 50 of which are considered highly unstable and could cause flooding in the Punjab and Sindh basins.²⁹⁷

Rainfall has increased by 25 per cent over the last century, as have the number of extreme weather events. The number of rainy days, however, has fallen.²⁹⁸ Reduced but more intense monsoon rains could cause more drought and floods. Such changes will affect crop rotation and cropping patterns, in turn reducing agricultural and livestock production. Global warming is already causing desertification across large swaths of Punjab, Sindh and Balochistan. The Indus delta is vulnerable to marine intrusion and sea level rises.

Pakistan is rated 122nd out of 178 on the ND-GAIN index, which ranks countries according to their vulnerability and ability to cope with climate change. It is the 67th most vulnerable country and the 45th least prepared.

²⁹⁷ Government of Pakistan, Ministry of Environment and IUCN, *Climate Change Disaster Management in Pakistan*, p.2, <http://goo.gl/Osuamj>

²⁹⁸ SAARC Disaster Management Centre, New Delhi, India, 2010, *Integration of Disaster Risk Reduction and Climate Change Adaptation in SAARC Region*, p.28, <http://goo.gl/A5rQnX>

9.1.2 Economy and development

Pakistan's GDP was \$232.3 million in 2013, with an annual growth of 4.4 per cent. It ranks 146th out of 187 on UNDP's Human Development Index, the second lowest position for a South Asian country.²⁹⁹ Development indicators have slowly improved over the past ten years, but the mortality rate for children under five remains high at 86 per 1,000. Almost 40 per cent of children of the same age are underweight. The adult literacy rate is still only 55 per cent, and 12.4 per cent of the population lives below the national poverty line. Balochistan is the least developed province.³⁰⁰

The country has a population of 185 million, of whom 62 per cent live in rural areas.³⁰¹ Forecasts suggest the figure will rise to around 270 million by 2050, of whom 56 per cent will live in urban areas. The population is spread unevenly across the provinces, with more than 50 per cent in Punjab and only 5 per cent in Balochistan, which correlates with their contribution to GDP.

The country has natural gas, coal and oil reserves that are rapidly being depleted. Inefficient distribution over long distances and theft mean that 30 per cent of electricity supplies are lost. As of June 2012, supply only covered 60 per cent of national demand. Hydropower is a potential source of energy, and the first dams were built in the 1970s, but generation is highly vulnerable to changes in rainfall patterns. Energy shortages cost the country up to four per cent of GDP. They are also considered a security issue in areas where insurgents attack government installations.

9.1.3 Politics and governance

Pakistan is a democratic federal republic. Its recent political history has been marked by alternating periods of civilian and military rule. Civilian politics has been tarnished by corruption, inefficiency and competition between institutions. In 2010, the 18th Constitutional Amendment was adopted, increasing provincial authority by transferring more resources and responsibilities from central government.³⁰²

Each of Pakistan's four provinces has a directly elected assembly, and a chief minister who appoints a cabinet. The autonomous territory of Gilgit Baltistan has a similar structure, but with a federally appointed governor.

The provinces are divided into districts or *zillas*, and these are subdivided into *tehsils*, which contain towns or municipalities. Within *tehsils*, local government is via elected village bodies called union councils or *sherwan*.

A recent survey found that Pakistanis have little confidence in their government institutions. Seventy-four per cent of respondents felt that the government did not listen to them. More than 70 per cent said it failed to take the necessary action to help people to respond to changes in climate, the environment and resources. More than half said they had no confidence in the government at all.³⁰³

9.2 DISPLACEMENT

9.2.1 Internal

Natural hazards have caused displacement on a vast scale in Pakistan. Monsoon floods in July 2010 caused widespread damage to homes, infrastructure and livelihoods across the country. One estimate put the peak number of people displaced at seven million. Sindh province was the worst affected, with 1.5 million people displaced, many of them taking shelter in relief camps or along roadsides. There were still 38,000 people living in 30 camps in Sindh almost a year later, exposing them to the 2011 monsoon rains while still living in displacement.³⁰⁴

Around five million people have been displaced by conflict, sectarian violence and human rights abuses in the north-west of the country since 2004. Displacement peaked in 2009, when around three million people were forced to flee their homes, but by the end of 2010 the number of IDPs had fallen to around a million. According to the UN Office for the Coordination of Humanitarian Affairs (OCHA), more than 1.4 million IDPs have returned to the Federally Administered Tribal Areas (FATA) since 2009, and more than 108,000 deregistered in 2013.

IDMC estimates that as of June 2014 there are at least 1.15 million people displaced by conflict and violence in Pakistan. The figure covers both protracted and recent displacement, and includes an estimated 23,000 unregistered IDPs from North Waziristan in FATA and around 175,000 thought to be living in protracted displacement in other parts of the country.³⁰⁵ According to UNHCR, which registers IDPs on behalf of disaster management

²⁹⁹ UN Development Programme (UNDP), 2014, *Pakistan, Human Development Reports*, <http://goo.gl/t2qTEo>

³⁰⁰ FAO, *Nutrition country profiles Pakistan*, <http://goo.gl/Y4wrDK>

³⁰¹ World Bank, 2014, *Rural population (% of total population)*, <http://goo.gl/SaVXOi>

³⁰² Kugelman, Michael, 2012, *Decentralisation in Pakistan: the lost opportunity of the 18th amendment*, *NOREF Norwegian Peacebuilding Resource Centre*, p.1, <http://goo.gl/aEhAIW>

³⁰³ Zaheer, Khadija and Colom, Anna, *How the people of Pakistan live with climate change and what communication can do*, *BBC Media Action, Climate Asia*, p.4, <http://goo.gl/n32qzw>

³⁰⁴ IDMC/NRC, 2011, *Briefing paper on flood-displaced women in Sindh Province, Pakistan*, p.6, <http://goo.gl/Uj1A18>

³⁰⁵ IDMC/NRC, 2014, *Pakistan IDP Figures Analysis*, <http://goo.gl/1JV9Q4> and IDMC/NRC, 2013, *Pakistan: Internal displacement in brief*, <http://goo.gl/wDIBRC>

authorities in Khyber Pakhtunkhwa (KP) and FATA, there were 714,548 IDPs in need of humanitarian assistance in the two areas as of August 2014. Military action in North Waziristan had also displaced around 500,000 people.³⁰⁶

9.2.2 Cross-border

Pakistan hosts a large number of Afghan refugees. Estimates vary, but the UN put the figure at around 2.7 million in 2014, of whom 1.6 million hold proof of registration cards issued by the Pakistani government. The remainder are thought to be undocumented. According to UNHCR, the Afghan refugees in Pakistan constitute the largest protracted refugee population in the world.³⁰⁷

9.2.3 Protection

Pakistan's legal and institutional framework for addressing the needs of refugees and IDPs is weak. The country does not have a policy on IDPs, despite the large displacements that take place with some regularity within its borders. Displacement from FATA is covered by a returns policy framework, the most recent signed in 2010.

Pakistan is not a signatory to the 1951 Convention Relating to the Status of Refugees. The Afghan refugee population is dealt with in accordance with a tripartite Solutions strategy agreed between Afghanistan, Pakistan and Iran. National instruments reflect this agreement, outlining a primary policy of voluntary return, supported by third country resettlements and interim alternative stay arrangements. Afghan refugees who hold a proof of registration card are exempt from deportation under the 1946 Foreigners Act, but the current arrangements are due to expire in 2015.

Security issues prompted KP's provincial government to announce its intention to deport all unregistered Afghan refugees in January 2015.³⁰⁸ Such a move, however, would come under the mandate of the federal government, and it is unclear as to what action will be taken. Azad Jammu Kashmir has begun to evict Afghans, labelling them illegal immigrants.³⁰⁹ In February 2015, IOM reported that more than 35,000 undocumented refugees had returned to Afghanistan, including more

than 2,000 deportees. The number of spontaneous returns of Afghans from Pakistan in the first six weeks of 2015 has already exceeded the total for 2014.³¹⁰

9.3 COMMUNITY RESILIENCE

9.3.1 Key assets

Agriculture and livestock

Pakistan's economy depends heavily on agriculture, which provides livelihoods for more than 47 per cent of the population and 70 per cent of foreign exchange earnings.³¹¹ It accounted for 25 per cent of GDP in 2013. The main food crops as of 2011 were wheat, sugar cane and rice. The government considers the Indus valley the cradle of the agriculture sector, and has raised concerns about the effects of climate change in the area.

Agriculture is practiced on 35.1 per cent of the country's surface area, and 70.2 per cent of agricultural land is irrigated. Only 0.05 per cent of households have holdings of more than two hectares. In Sindh, 26 per cent of the population are landless and 50 per cent of farmers are tenanted sharecroppers, among whom poverty is particularly high.³¹²

Livestock plays a significant role in poverty alleviation, providing income and wealth for rural households, and production is increasing annually. An estimated 30 to 35 million people rear livestock, with a household's average herd size being two to three cattle or buffalo, and five to six sheep or goats. Livestock makes up as much as 40 per cent of household income and provides employment for landless labourers, small and marginal farmers and women. It accounted for 11.9 per cent of GDP and 55.4 per cent of the agriculture sector's value in 2013.³¹³

Migration and remittances

Among South Asian countries, Pakistan has the second highest number of migrants working abroad. More than seven million Pakistanis left in search of overseas employment between 1971 and 2013. Such migration peaked in 2012, when more than 600,000 people left the country. Between 2008 and 2013, the main destinations were Saudi Arabia, the UAE, Oman, Bahrain Qatar and Kuwait.³¹⁴

³⁰⁶ UNHCR, 2015, UNHCR country operations profile - Pakistan, <http://goo.gl/g200sG>

³⁰⁷ *Ibid.*

³⁰⁸ The Express Tribune, 2014, *UNHCR clears path for Pakistan to deport undocumented Afghan refugees*, <http://goo.gl/6T03tw>

³⁰⁹ The Express Tribune, 2015, *Expelled: AJK expels scores of Afghan families*, <http://goo.gl/cWpSOV>

³¹⁰ IOM, 2015, *Return of undocumented Afghans from Pakistan*, <http://goo.gl/jLhUAv>

³¹¹ Pakistan Bureau of Statistics, *Agriculture Statistics*, <http://goo.gl/U8JoH0>

³¹² Social Policy and Development Centre, 2004, *Social Development in Pakistan: Annual Review*, p.75, <http://goo.gl/H4pHL7>

³¹³ Ahmad, Jawad, 2013, *Economic Survey of Pakistan & Livestock Sector*, <http://goo.gl/AU7GHE>

³¹⁴ ILO, *Strengthening Labour Migration Governance in Pakistan*, <http://goo.gl/yn8cY5>

In 2013, overseas workers sent home \$14.9 million in remittances, accounting for 6.2 per cent of GDP and making Pakistan the 9th largest recipient of such income.³¹⁵ Most remittances are sent from Saudi Arabia, the UAE, the US and the UK.

9.3.2 Legal and institutional frameworks

Disaster management

Much of Pakistan's disaster management structure was established after the 2005 Kashmir earthquake (see case study one on [page 80](#)). At the federal level, the National Disaster Management Commission (NDMC) was established in 2006 and is headed by the prime minister. The National Disaster Management Authority (NDMA) was created in August 2007 and formalised by the 2010 National Disaster Management Act. NDMA published its National Disaster Risk Management Framework (NDRMF) in 2007.

More recently it has issued an updated 2013 national DRR policy, outlining broad objectives and approaches to prevention, mitigation and preparedness, and a framework for implementation. The policy sets out the need for clear roles, responsibilities and mandates and for local and district level risk assessments. NDMA's role was significantly reduced in 2010 by the 18th Constitutional amendment, which devolved many of its responsibilities to Provincial Disaster Management Authorities (PDMAs) and District Disaster Management Authorities (DDMAs).

The PDMAs are well established, but their capacity levels vary. The PDMA of KP, the province most affected by displacement, and Punjab, the most populous, are regarded as having good capacity. Those in Sindh and in Balochistan - the poorest and most remote province - lack capacity. That said, all PDMAs have been assessed as being in need of better funding and more specialist human resources. DDMAs are in theory the main implementation mechanisms in case of disasters, but the absence of elected local officials following the dissolution of Pakistan's local government system has reduced their capacities as they rely on provincial capitals for their budgets and approvals.

Community-based organisations (CBOs) are meant to play a significant role in rural development and disaster

management. NDRMF envisages improving their capacity via district and tehsil authorities, including training in early warning systems, evacuation and search and rescue. By developing links between CBOs and local entities such as banks, health and veterinary services, disaster preparedness across sectors is promoted.³¹⁶

Pakistan's army continues to play a central role in disaster management decision-making and strategy. After the Kashmir earthquake in 2005, the military led the organisation of emergency relief and rescue efforts, and the operation was considered a model of civil-military cooperation in response to a disaster. The military remains the most capable institution in terms of responding to emergency situations and large-scale disasters, and has a peacetime disaster management system that covers first-hand damage assessments, search and rescue, relief, medical assistance, communications and transport.³¹⁷

The National Crisis Management Cell under the Ministry of Interior is responsible for monitoring emergencies. The Pakistan Meteorological Department (PMD) within the Ministry of Defence provides forecasts for agricultural development and disaster management. Its flood forecasting division plays a central role in issuing warnings to disaster management authorities at all levels. The country has also had an Indus flood forecasting system in place since 1992.

Climate change

A Climate Change Policy adopted in 2012 aims to "mainstream climate change into economically and socially vulnerable sectors and steer Pakistan towards climate resilient development".³¹⁸ It recognises the country's growing vulnerability to climate-related hazards, increased health risks and migration. A framework for the implementation of the policy for 2014 to 2030 was adopted in November 2014, and sets out schedules for adaptation and mitigation initiatives across various sectors.

There are, however, no institutional mechanisms to implement such policies.³¹⁹ Committees were established at both the federal and provincial level, but they lack both the capacity and knowledge to fulfil their roles.³²⁰ Finance is also an issue. Climate change adaptations are predicted to cost between \$6 billion and \$14 billion between now and 2050, and mitigation between \$7 billion and \$18 billion.³²¹

³¹⁵ World Bank, *Migration and Remittances Data*, <http://goo.gl/JS1qgA>

³¹⁶ NDMA, 2007, *National Disaster Risk Management Framework Pakistan*, p.39, <http://goo.gl/46crr0>

³¹⁷ Dr. Murtaza, Niaz; Alam, Khurshid and Bhatti, Sahar, 2012, *Disaster Risk Reduction in Pakistan: The Contribution of DEC Member Agencies, 2010 - 2012*, *Disasters Emergency Committee*, p.14-15, <http://goo.gl/0DJshF>

³¹⁸ Government of Pakistan, 2011, *National Climate Change Policy*, p.3, <http://goo.gl/j3HfnQ>

³¹⁹ Zaheer, Khadija and Colom, Anna, How the people of Pakistan live with climate change and what communication can do, *BBC Media Action, Climate Asia*, p.20, <http://goo.gl/n32gzW>

³²⁰ Naeem Waqas, 2013, *Paradigm shift?: Pakistan launches first National Climate Change Policy*, *The Express Tribune*, <http://goo.gl/Enoygc>

³²¹ Government of Pakistan and UNFCCC, 2011, *National Economic & Environmental Development Study (NEEDS) Pakistan*, <http://goo.gl/4KhQ96>

The Ministry for Climate Change was established in 2012, but the government downgraded its status to a division in 2013, drastically reducing its budget and limiting its ability to make high-level decisions. Its status as a ministry was restored in January 2015 and a federal minister was appointed ahead of the 21st session of the Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC). Concerns about institutional memory have been expressed given these various changes.³²²

9.3.3 Knowledge, resources and actions

Community perceptions of risk and adaptability

Awareness of the term “climate change” among Pakistanis is low. More than half the respondents in a recent survey had not heard of it, and 15 per cent of those who had did not know what it meant. A third of respondents from big cities understood the term, compared with 22 per cent in rural areas.

Among those who understood it, 64 per cent attributed the changes to God. Forty per cent identified population growth as a cause, 33 per cent loss of trees and 31 per cent human activity that leads to the production of greenhouse gas emissions. There was an overall sense that people were fatalistic about disasters. Some communities identified floods as the greatest threat they faced, but the awareness did not necessarily result in action being taken to increase their resilience.³²³

Even if the causes of climate change are not understood, its effects are clearly felt, and some communities have developed strategies to adapt. Forty-three per cent of those who took part in the survey believed there had been an increase in extreme weather events, the figure rising to 58 per cent in Sindh. Forty-seven per cent thought that water was less available across the country, and those in rural areas made the link with crop yields, livelihoods and food security. In terms of adaptation strategies, 77 per cent of respondents said they recycled water, 48 per cent that they stored or saved it and 42 per cent that they had found new sources. Women tended to respond more to shortages, particularly in Sindh and KP, because it is generally women’s responsibility to collect and store water.³²⁴

Food security worried 27 per cent of respondents, particularly women. In Balochistan, 59 per cent of those surveyed said agricultural productivity had declined. General mitigation measures include rotating crops, changing diet, reducing waste and storing food. More than half of those surveyed took action to improve soil fertility, including changing seed varieties and cultivation methods. The high cost of seeds, fertilisers and equipment was seen as a barrier to change, particularly when coupled with a lack of information and unwillingness to take the risk in terms of current resources for future yield.

A third of women surveyed said they had changed their livelihoods to cope. Men were more likely to think that changes were unnecessary. That said, if livelihood changes are made, then men are more likely to migrate permanently or for long periods of time in search of work.³²⁵

Role of community organisations

The 2001 Local Government Ordinance established Citizen Community Boards (CCBs) as a mechanism to organise communities and mobilise resources for disaster management at the local level. As many as 40,000 had been set up by 2010, half of them in Punjab. Many, however, lack capacity and knowledge. In theory they identify projects and raise 20 per cent of the funds, with local government providing the remaining 80 per cent. Twenty-five per cent of local government resources are reserved for CCB projects. In practice, however, procedural complications make the boards’ work difficult and citizens’ satisfaction with them is low.³²⁶

One positive example comes from Badin where, after experiencing repeated floods, the CCB of Goth Muhammad Ali Chandio worked with Oxfam to design a DRR plan, set up an emergency committee and built a new elevated shelter equipped with bathrooms, a storeroom and a water tank. During the 2010 floods, the new committee successfully evacuated young children and the elderly to the shelter. Trained swimmers used inner tubes, cooking cauldrons and earthenware pots or *matkas* to help people cross the canal to safety.³²⁷

³²² Dr. Murtaza, Niaz; Alam, Khurshid and Bhatti, Sahar, 2012, Disaster Risk Reduction in Pakistan: The Contribution of DEC Member Agencies, 2010 - 2012, *Disasters Emergency Committee*, p.13, <http://goo.gl/ODJshF>

³²³ Zaheer, Khadija and Colom, Anna, How the people of Pakistan live with climate change and what communication can do, *BBC Media Action, Climate Asia*, p.22-23, 36, <http://goo.gl/n32gzW>

³²⁴ *Ibid*, p.17 and 34

³²⁵ *Ibid*, p.33 and 40

³²⁶ Shah, Mukhtar Paras, 2011, *Citizen Community Boards in Pakistan*, p.8, <http://goo.gl/6qzAaS>

³²⁷ Zaheer, Khadija and Colom, Anna, How the people of Pakistan live with climate change and what communication can do, *BBC Media Action, Climate Asia*, p.38-39, <http://goo.gl/n32gzW>

Training and knowledge transfers

Community-based organisations receive capacity training from government, local NGOs, civil society organisations and the UN. After the 2010 floods, the government and UNDP implemented an early recovery programme in 4,000 villages to repair community infrastructure and restore livelihoods. More than 2,300 CBOs were set up and more 58,000 members trained in their management to improve coordination and cooperation between communities, NGOs and government.³²⁸

Christian Aid used a truck carrying educational materials and training tools as a mobile knowledge resource. The truck visited villages and schools to give training in DRR and develop contingency plans. In January and February 2012, it travelled to remote areas of Thatta district in Sindh and trained more than 100 people.³²⁹

A range of international NGOs, including those organised under the umbrella of the Disasters Emergency Committee (DEC), support community-based resilience projects. Initiatives have included the introduction of more resilient housing models, early warning systems, elevated hand pumps to decrease the risk of contamination, organic farming techniques and more resilient irrigation systems. Education and training activities have also been undertaken.³³⁰

9.4 RECOMMENDATIONS

Humanitarian and development organisations

- Given the devolution of responsibility for disaster management to sub-national government, increase engagement with provincial and local authorities to advocate for interventions that address IDPs' specific needs and prevent and reduce the risk of displacement
- Support the coordination and harmonisation of policies between federal, provincial and local government on disaster management, climate change adaptation and displacement
- Encourage the new Ministry of Climate Change to engage with disaster management stakeholders to integrate disaster response and climate change adaptation to prevent and reduce the risk of displacement
- Support innovative agricultural practices such as intensive cropping and mixed farming to increase community resilience and reduce the risk of displacement

- Provide training and raise awareness with communities affected by climate change to shift perceptions, particularly among men who appear to be more reluctant to change their livelihoods
- Support and provide alternative livelihoods to women who are willing to engage in adaptive behaviour

Government

- Adopt legal and policy frameworks for the protection of IDPs and refugees
- Encourage provincial authorities to provide funding to local stakeholders for interventions to increase resilience and prevent and mitigate displacement
- resilience, stability and safety by providing uninterrupted energy supplies

9.5 CASE STUDIES

Case study one:

2005 Kashmir earthquake

In October 2005, a 7.6 magnitude earthquake devastated Kashmir. It killed around 74,000 people, destroyed around 600,000 homes and displaced 3.5 million people as winter approached. Many education and health facilities were destroyed and telecommunications networks brought down. Women and children were particularly affected, because the earthquake struck in the morning, as school classes began and women were working in their homes. It left 42,000 children orphaned and 17,300 women widowed. More than 30,000 square kilometres of Himalayan territory were affected.

No disaster management organisation in Pakistan was capable of responding to such a large disaster and handling relief on such a scale. As a result, the government established a Federal Relief Commission (FRC), reporting directly to the prime minister and through which all agencies worked. The government adopted a four-phase strategy covering search, rescue and relief; consequence management; recovery and rehabilitation; and reconstruction. The first two phases were led by FRC. The commission established a civilian and a military wing, and the army took responsibility for rescue and relief. An Earthquake Rehabilitation and Reconstruction Authority (ERRA) was also established.

³²⁸ UNDP, 2013, *Community based organizations boost economic growth*, <http://goo.gl/D164FY>

³²⁹ Christian Aid, 2012, *Reaching the unreachable*, <http://goo.gl/Z43FMu>

³³⁰ Dr. Murtaza, Niaz; Alam, Khurshid and Bhatti, Sahar, 2012, *Disaster Risk Reduction in Pakistan: The Contribution of DEC Member Agencies, 2010 - 2012*, *Disasters Emergency Committee*, p.25-27, <http://goo.gl/0DJshF>

FRC and ERRA adopted the UN cluster approach and formed 12 sector clusters. The resulting humanitarian response combined the efforts of a wide range of government and military resources, donors, international and national NGOs, communities and individuals. The UN response involved a range of agencies, including UNICEF, UNDP, UNHCR, WFP, UNESCO, the UN Population Fund (UNFPA), the WHO and the UN Human Settlements Programme (UN-Habitat). The relief phase of the response came to an end in April 2006 and was followed by an early recovery plan that ran from May 2006 to April 2007.³³¹

The outcome was regarded as one of the best examples of a civil-military response to a disaster worldwide. IASC described it as having “successfully provided a single and recognisable framework for coordination, collaboration, decision making and practical solutions in a chaotic operational environment”.³³² The response involved not only the Pakistani military, but also assistance from the international forces.³³³

Case study two:

2010 floods

The 2010 floods, which began in late July, were the worst in Pakistan’s history. At their height, a fifth of the country was flooded across all provinces. NDMA estimated that more than 20 million people in 78 districts were affected. Nearly 2,000 people were killed, 3,000 injured and around 1.6 million homes destroyed. Sindh was the province worst hit, with 7.2 million people affected, Punjab six million and KP 3.8 million. Around seven million people were displaced.³³⁴

Infrastructure recovery and reconstruction costs were put at between \$8.7 and \$10.9 billion, according to a preliminary needs and damage assessment.³³⁵ The assessment also outlined the government response, which was implemented by NDMA and the PDMAs, with support from the military and UN agencies. By 26 October, 20,000 troops had been mobilised, 1.4 million people rescued and 1.1 million blankets and 184,035 tonnes of food distributed. Nearly a million watan cards worth \$200 a family had also been given out.³³⁶ The contribu-

tion of international donors was assessed, with \$1.87 billion pledged and \$489.5 million received, of which \$202 million was in kind. The assessment described the contribution of international and national NGOs as immediate, rapid and extensive, particularly in the areas of shelter, sanitation, hygiene and medical supplies. The creation of child and women-friendly spaces was also noted.

More than half of Sindh’s rural population was affected, and around a million hectares of land were flooded. Around 1.5 million people sheltered in 3,500 relief camps, with many thousands of others camping by roadsides or taking refuge with host communities. Many attempted to return to their homes in late 2010, but were forced into secondary displacement in areas nearby by the extent of the destruction.³³⁷

Poorer communities living in mud and timber housing known *katchi abadi* were particularly hard-hit. Nineteen per cent of *katchi abadi* was damaged or destroyed across the country, compared with only three per cent of better constructed or *pukka* stock. In Sindh, 880,000 homes were damaged or destroyed, and the province lost 11 per cent of its healthcare facilities, as did Punjab. Nationwide, 515 health facilities were damaged or destroyed. Sindh also lost 18.5 per cent of its educational facilities, KP 12.9 per cent, Punjab 8.8 per cent and Balochistan 5.6 per cent. Nationwide, 10,407 educational facilities were damaged or destroyed. Agricultural losses were huge, with 89 per cent of crops in the affected areas lost. Sindh sustained 46 per cent of the agricultural losses, Punjab 36 per cent and KP and Balochistan both eight per cent.

³³¹ UNICEF, 2007, *Pakistan Earthquake Response Overview Information Sheet*, <http://goo.gl/Ut1tKF>

³³² IASC, 2006, *Real-time evaluation of the Cluster Approach - Pakistan Earthquake*, p.2, <http://goo.gl/paZ3p1>

³³³ Centre of Excellence in Disaster Management and Humanitarian Assistance, 2006, *Pakistan Earthquake: A Review of the Civil-Military Dimensions of the International Response*, p.1-2, <http://goo.gl/D9c8Br>

³³⁴ IDMC/NRC, 2011, *Briefing paper on flood-displaced women in Sindh Province, Pakistan*, p.3, <http://goo.gl/Uj1A18>

³³⁵ Government of Pakistan, Asian Development Bank, World Bank, 2010, *Pakistan Floods 2010, Preliminary Damage and Needs Assessment*, p.15, <http://goo.gl/JHxbbr>

³³⁶ Watan cards are a form cash grant to compensate disaster survivors, initiated in 2010.

³³⁷ IDMC/NRC, 2011, *Briefing paper on flood-displaced women in Sindh Province, Pakistan*, p.7 and 10, <http://goo.gl/Uj1A18>



10. SRI LANKA

10.1 RISK LANDSCAPE

10.1.1 Climate change and disasters

Sri Lanka is an Indian Ocean island off the southern tip of India, made up of coastal plains and a mountainous area in its south-central region. It has a tropical climate and two monsoon seasons, *maha* from December to March and *yala* from June to October. It was once almost entirely forested, but today less than a third has tree cover.

The country has three distinct geographical areas: the plains, coastal belt and central highlands. It has 103 river basins covering 90 per cent of the island, and ten major rivers. More intense monsoon rains associated with climate change mean that floods are now a regular occurrence, made worse in some cases by deforestation and erosion, which also contribute to landslides. At the same time, Sri Lanka's population has grown and more people have set up home in vulnerable areas close to rivers.³³⁸ The main natural hazards are cyclones and tornadoes, and the risks associated with them are increased by factors including deforestation, soil erosion, coastal degradation and increased pollution.³³⁹ Storms and floods cause most damage and loss of life, but drought causes most agricultural losses.

Sri Lanka is rated 91st out of 178 on the ND-GAIN index, which ranks countries according to their vulnerability and ability to cope with climate change. It is the 87th most vulnerable country and the 86th least prepared. According to the World Bank, changes in the frequency and intensity of extreme climatic events, sea

level rise and storm surges related to climate change are the major concern. Together with riverbed and coastal erosion, disappearing forests and changes in land use, they are likely to increase the threats to communities and their livelihoods.³⁴⁰

10.1.2 Economy and development

Sri Lanka has experienced strong economic growth since the end of its civil war in 2009, and is ranked 73rd out of 187 on the Human Development Index.³⁴¹ Its GDP was \$67.2 billion in 2010, with an annual growth rate of 7.3 per cent. Services account for 57 per cent of GDP, industry 32.4 per cent and agriculture 10.6 per cent. As of 2009, around four million people were active in the agriculture sector, amounting to 43 per cent of the workforce. Around 37 per cent of those active in agriculture were women.³⁴²

The country has a population of just over 21 million, and its urban population growth rate of 1.4 per cent is double that of rural areas. That said, around 80 per cent of the population is rural. The number of people living below the national poverty has fallen rapidly from 28.8 per cent in 1996 to 6.7 per cent in 2013.

10.1.3 Politics and Governance

Sri Lanka made the transition from dominion status within the British Commonwealth to a independent republic in 1972. Ethnic Tamils, who make up 10 per cent of the population, were excluded from the majority Sinhalese government. The separatist Liberation

³³⁸ SAARC, 2009, *Sri Lanka Disaster Knowledge Network*, <http://goo.gl/DvwYBy>

³³⁹ The Encyclopedia of Earth, 2014, *Sri Lanka*, <http://goo.gl/mMW4r2>

³⁴⁰ World Bank, 2015, *Sri Lanka Dashboard Overview*, <http://goo.gl/cRMbgy>

³⁴¹ UN Development Programme (UNDP), 2014, *Sri Lanka Human Development Indicators*, <http://goo.gl/GgssY2>

³⁴² Food and Agriculture Organization (FAO), 2012, *Sri Lanka Geography, climate and population*, <http://goo.gl/egvEVw>

Tigers of Tamil Eelam (LTTE) was formed in 1976 and launched its insurgency in 1983.³⁴³ The military eventually defeated LTTE after a 26-year campaign, and the civil war ended in May 2009. Maithripala Sirisena was the surprise winner of presidential elections held in January 2015, his campaign having focused on countering inflation and corruption and improving rule of law. Parliamentary elections are scheduled for later in the year, during which the return of Tamils to their land will be an important issue.³⁴⁴

Sri Lanka is made up of 25 districts, organised into nine provinces. Each district has a number of divisional secretary's (DS) divisions, which are subdivided into *grama niladhari* (GN) divisions. Colombo is the country's commercial centre, and Sri Jayawardenepura Kotte is the administrative and legislative capital.

10.2 DISPLACEMENT

10.2.1 Internal

IDMC estimates that disasters displaced 2.17 million people in Sri Lanka between 2008 and 2013, and that sudden-onset events forced 324,236 people to leave their homes in 2013 alone.

As of February 2015, there were around 90,000 IDPs in Sri Lanka, mainly from Northern and Eastern Provinces. Most have been living in protracted displacement since as early as the 1980s as a result of the civil war. In the final stages of the conflict in late 2008 and early 2009, more than 300,000 people in the Northern Province were forced to take refuge in displacement camps. IDPs' resettlement began in 2009 and was declared complete by the government in September 2012,³⁴⁵ but not all families have returned to their places of origin.

10.2.2 Cross-border

Since the end of the civil war, an increasing number of people who sought asylum abroad have gone back to Sri Lanka. More than 500 refugee families returned in 2013, the majority assisted by UNHCR.³⁴⁶ The organisation's monitoring of a small number of returnees suggests that indicate that the majority had land that they were able to access.³⁴⁷

There are also 308 refugees and 1,562 asylum-seekers in Sri Lanka, according to UNHCR.³⁴⁸ The number of asylum seekers increased by 700 per cent in 2014, mainly because of ongoing conflict in the Middle East, including Syria.

10.2.3 Protection

The Ministry of Resettlement is officially responsible for resettlement of IDPs. The Resettlement Authority was established in 2009 to formulate a national policy on the issue, and to plan and coordinate its implementation. Despite these initiatives, a comprehensive national policy has yet not come to fruition, and a draft bill on IDPs developed by the Human Rights Commission of Sri Lanka has been abandoned.

In 2010, Sri Lanka established the Lessons Learnt and Reconciliation Commission (LLRC), which was tasked to investigate the events that led to the breakdown of the 2002 ceasefire. The report of the LLRC, published in 2011, recognised the importance of finding durable solutions for IDPs without which a sustainable and inclusive reconciliation process could not be achieved. In 2011, the government adopted a national action plan (NAP) for the protection and promotion of human rights, which included a section on IDPs. The NAP anticipated a broad national policy on displacement. In 2013, the government developed a draft Framework for Resettlement Policy addressing conflict-induced displacement. However, the proposed policy fell significantly short of the goals of the NAP and the now-abandoned 2008 draft IDP bill. It is not clear whether the draft framework policy has been revised or formally adopted.

In June 2014, UN's Special Rapporteur on the human rights of IDPs reported that despite impressive advances in rebuilding infrastructure destroyed during the civil war, there needs to be a linkage between infrastructure rebuilding and the livelihoods of IDPs. Many still lived in protracted displacement, and those who have returned to – or relocated within – the Northern and Eastern provinces faced precarious conditions.³⁴⁹

Sri Lanka is not a party to the 1951 Convention relating to the Status of Refugees. As the country has no legal framework for refugees, the government returns asylum seekers to their country of origin, which has raised concerns about *refoulement*.³⁵⁰

³⁴³ Bhattacharji, Preeti, 2009, *Liberation Tigers of Tamil Eelam*, Council on Foreign Relations (CFR), <http://goo.gl/G9A4t3>

³⁴⁴ Economist, 2015, *The new president promises a new leaf for politics*, <http://goo.gl/v0gvvf>

³⁴⁵ IDMC, 2015, *Sri Lanka IDP Figures Analysis*, <http://goo.gl/QfgfuS>

³⁴⁶ UNHCR, 2014, *Sri Lankan Refugee Returnees in 2013*, <http://goo.gl/LByz20>

³⁴⁷ *Ibid.*

³⁴⁸ UNHCR, 2015, *UNHCR sub-regional operations profile - South Asia*, <http://goo.gl/C391ob>

³⁴⁹ UN Human Rights Council, 2014, *Report of the Special Rapporteur on the human rights of internally displaced persons, mission to Sri Lanka*, <http://goo.gl/oHqBCW>

³⁵⁰ UNHCR, 2014, *UNHCR alarmed as Sri Lanka extends deportation to families outside detention*, <http://goo.gl/6wQm4C>

10.3 COMMUNITY RESILIENCE

10.3.1 Key assets

Agriculture and livestock

Sri Lanka's land mass covers 62,710 square kilometres, of which 42.9 per cent is used for agriculture and 29.2 per cent is forested. Over 40 per cent of the workforce is engaged in agriculture.

The main crop is rice, which takes up 34 per cent of cultivated land, and most of it is grown during the *maha* season. Production satisfies 95 per cent of domestic demand.³⁵¹ Farmers in the central highlands grow tea, which accounts for two per cent of GDP and is an important source of foreign exchange earnings. Coastal communities are generally wealthier and benefit from better infrastructure. They meet their livelihood needs through fishing, agriculture or a combination of the two.³⁵²

The livestock sector accounts for only 1.2 per cent of GDP, but provides draught power for ploughing, fertilising and transport, and as such is an integral part of agricultural activity.³⁵³ It is also important to smallholders' livelihoods and supplements their income and diet. The National Livestock Development Board promotes milk production and consumption, and implements projects to encourage poultry farming.

Migration and remittances

Sri Lanka received \$6.8 billion in remittances in 2013, accounting for ten per cent of GDP and an increase from \$6.1 billion in 2012. The figure is expected to continue rising in the coming years. The country's 1.7 million migrant workers abroad constitute 17 per cent of the workforce.³⁵⁴ Their main destinations are Saudi Arabia, Qatar, Kuwait and the UAE.³⁵⁵

10.3.2 Legal and institutional frameworks

Disaster management

After the 2004 Indian Ocean tsunami, which killed around 40,000 people and displaced more than 500,000 in Sri Lanka,³⁵⁶ the government passed the Disaster Management Act in May 2005 and established the National Council for Disaster Management (NCDM) as the country's highest policy-making body on DRR.³⁵⁷ NCDM and the Ministry of Disaster Management are supported by a steering committee and a number of technical advisory committees. The ministry established the National Disaster Management Coordination Committee (NDMCC) in 2007 to implement HFA. Chaired by the ministry secretary, the committee meets twice a year and includes three core groups on preparedness, relief and rehabilitation. Under the Disaster Management Act, a national policy lays out the institutional framework for disaster management, including DRR, preparedness, mitigation, emergency response, recovery and rehabilitation.

The Disaster Management Centre (DMC) was established in 2005, and has offices in all districts. Through its disaster risk management programme, UNDP supported the centre with financial and technical assistance to develop a disaster information management system. The system aims to collate all data on disasters from 1974 onwards, and use it to provide information on climate change patterns and main hazards. A road map for disaster risk management is also in place. In April 2012, DMC evacuated more than a million people along the coast after a tsunami warning, the largest such exercise in Sri Lanka's history.³⁵⁸

The National Building Research Organisation has a simple and effective early warning system, which provides information to communities in areas prone to landslides. Water gauges help villagers to assess the threat level.³⁵⁹ In other areas, people receive warnings of an approaching or potential hazard by text message.³⁶⁰ There are lapses, however, when information does not reach those at risk or when communities do not heed warnings.³⁶¹

³⁵¹ Department of Agriculture Government of Sri Lanka, 2006, *Crop recommendations - Rice*, <http://goo.gl/EyBbU9>

³⁵² World Bank, 2011, *Vulnerability, Risk Reduction and Adaptation to Climate Change Sri Lanka*, Climate Risk and Adaptation Country Profile, <http://goo.gl/c5SBvm>

³⁵³ Ranaweera, NFC, 2007, *Sri Lanka: Opportunities for dairy sector growth*, FAO Corporate Document Repository, <http://goo.gl/7T3QLM>

³⁵⁴ Somarathna, Rasika, 2013, Migrant worker remittances to top US\$ 7 billion, *Daily News*, <http://goo.gl/a4TKwd>

³⁵⁵ Ozaki, Mayumi, 2012, Worker Migration and Remittances in South Asia, Asian Development Bank (ADB), *South Asia Working Paper Series* 12, p.9, <http://goo.gl/r0OAE7>

³⁵⁶ IRIN, 2014, *Sri Lanka, the tsunami and the evolution of disaster response*, <http://goo.gl/Y4eNv1>

³⁵⁷ Weeresinghe, Shayani, *Achieving Disaster Resilience through the Sri Lankan Early Warning System: Good Practices of Disaster Risk Reduction and Management*, p.2, <http://goo.gl/nCxlfA>

³⁵⁸ Perera, Amanthan, 'Sri Lanka Still in Search of a Comprehensive Disaster Management Plan' 31 December 2014, <http://goo.gl/wvU7qd>

³⁵⁹ UNDAC, 2011, *Disaster Response Preparedness Assessment Mission to Sri Lanka*, p.27, <http://goo.gl/5v57GQ>

³⁶⁰ IRIN, 2014, *Sri Lanka, the tsunami and the evolution of disaster response*, <http://goo.gl/Y4eNv1>

³⁶¹ IRIN, 2015, *Disaster warnings ignored in Sri Lanka*, <http://goo.gl/BkICQq>

The Ministry of Environment and Renewable Energy created the climate change secretariat as a national platform for coordinating climate change measures and a monitoring mechanism. It also facilitates research and develops policies and programmes. In 2008, the ministry established a national advisory committee on climate change (NACCC), which it restructured in 2012 into two national expert committees, one on climate change generally and the other on adaptation.

In 2010, it developed a national climate change adaptation strategy for 2011 to 2016, which aims to mitigate climate change impacts through sustainable development. It provides guidance and direction for all stakeholders.

10.3.3 Knowledge, resources and actions

Community perceptions of risk and adaptability

Research into communities' participation in community-based adaptation systems shows that their willingness to do so depends on their previous experiences of disasters; socio-economic factors such as education; income; and psychological factors including personal risk evaluations, coping strategies and awareness raising.³⁶² Interventions usually take place in more vulnerable communities, which are likely to be more receptive to assistance and open to change.

Role of community organisations

DMC is the lead agency for disaster management, and is responsible for collaboration with civil society, NGOs and community-based organisations. It also promotes community-based disaster management programmes.³⁶³

Sri Lanka's national secretariat for NGOs has registered 1,436 national and international organisations, of which six have a mandate exclusively dedicated to disaster management.³⁶⁴ UNDP has trained community-based organisations to increase their capacity and better prepare them to represent their communities and become effective development partners with the government.³⁶⁵

A number of projects have been implemented in Sri Lanka to provide communities with knowledge and training and to increase their resilience. They include:

- With support from Canada's former international development agency and its International Development Research Centre (IDRC), the Sarvodaya Shramadana Movement, a local NGO, implemented a project to establish coastal green belts to protect villages from events such as cyclones. Sustainable agriculture and aquaculture were also introduced.³⁶⁶
- Practical Action, which works across South Asia, implemented a climate change adaptation programme in Sri Lanka. Its activities focused on Southern province, in areas worst hit by the 2004 tsunami and where communities are at risk of losing 40 per cent of their agricultural yield as a result of coastal erosion and increasing soil salinity. The communities are aware of changing weather patterns, and resilience measures implemented from 2005 to 2007 include planting traditional instead of introduced high-yield crop varieties and using organic pesticides against increasing infestations.³⁶⁷
- The Sri Lanka Red Cross Society (SLRCS) runs community training programmes on issues including early warning, disaster preparedness and other DRR strategies.
- The national disaster relief services centre (NDRSC) under the Ministry of Disaster Management has implemented programmes to build rainwater harvesting tanks and distribute sprinkler and drip irrigation systems in areas prone to drought.³⁶⁸

³⁶² Rodrigo, Chatura, 2013, *Fighting Climate Change Through Community Based Adaptation (CBA): Assessment of the factors that determine the people's willingness to take part in CBA in agriculture sector*, p.2, <http://goo.gl/fclU78>

³⁶³ Disaster Management Centre, 2005, *Towards a Safer Sri Lanka, A Roadmap for Disaster Risk Management*, p.14, <http://goo.gl/19dj8l>

³⁶⁴ National Secretariat For Non Governmental Organizations, *Directory of registered NGO's Sri Lanka*, <http://goo.gl/weqU39>

³⁶⁵ UNDP, 2012, *Local Governance Programme*, <http://goo.gl/h7v8eY>

³⁶⁶ IDRC, *Better resilience to disasters and improved livelihoods on South Asian coasts*, <http://goo.gl/TUlcKM>

³⁶⁷ Practical Action, 2007, *Promoting adaptation to climate change in Sri Lanka*, Policy Briefing, <http://goo.gl/v86TcO>

³⁶⁸ Ministry of Disaster Management, 2012, *District Relief Progress, National Disaster Relief Services Centre*, <http://goo.gl/nfzqgc>

10.4 RECOMMENDATIONS

Humanitarian and development organisations

- Focus development projects on marginalised regions and population groups to prevent and reduce the risk of displacement
- Provide sustainable livelihood opportunities for IDPs and refugees
- Raise awareness to prevent further deforestation and introduce replanting programmes
- Support the government in drafting and enacting national legislation on IDPs
- Support the Ministry of Resettlement in revising the Framework for Resettlement Policy in line with the goals of the National Action Plan and the draft bill on displacement

Government

- Revive and enact national legislation on IDPs
- Bring the Framework for Resettlement Policy into line with the goals of NAP and the draft bill on displacement, and implement it
- Improve communities' awareness of climate change adaptation and encourage their participation in community-based initiatives to prevent future displacement

DISASTERS
CLIMATE CHANGE AND
DISPLACEMENT



EVIDENCE FOR ACTION

This is a multi-partner project funded by the European Commission (EC) whose overall aim is to address a legal gap regarding cross-border displacement in the context of disasters. The project brings together the expertise of three distinct partners (UNHCR, NRC/IDMC and the Nansen Initiative) seeking to:

- 1 › **increase the understanding** of States and relevant actors in the international community about displacement related to disasters and climate change;
- 2 › **equip them to plan for and manage** internal relocations of populations in a protection sensitive manner; and
- 3 › **provide States and other relevant actors tools and guidance** to protect persons who cross international borders owing to disasters, including those linked to climate change.

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