Chapter 2
Disaster Risk Reduction: The Indian Landscape

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Abstract India has registered a remarkable progress in reducing disaster risk since the Hyogo Framework for Action (HFA) went into effect in 2005; still it remains as one of the most disaster-prone countries of the world. Even though the HFA Monitor shows that nations across the world are making good progress towards the goal of reduced disaster losses and impacts, national and global disaster loss databases and global risk models indicate rising economic and livelihood losses (FLACSO, UNISDR. The future of disaster risk reduction. A Scoping Meeting for GAR 2015. San Jose, Costa Rica. Available at: http://www.unisdr.org/files/35715_thefutureofdisasterriskmanagement.pdf, 2013). Also, there is a little evidence that current risk governance arrangements are fit or suitable to effectively reduce underlying risk factors (UNISDR. Chair's summary fourth session of the global platform for disaster risk reduction, Geneva, 21–23 May 2013. Available at: http://www.preventionweb.net/files/33306_chairssummarypostdraft1.4.pdf, 2013). The institutional and legislative arrangements have largely taken the form of disaster-focused organisations and systems, which had little real influence on development processes (UNISDR. Synthesis report: consultations on a post-2015 framework on disaster risk reduction (HFA2) Geneva: Switzerland. Available at: http://www.unisdr.org/files/32535_hfasynthesisreportfinal.pdf, 2013). Thus, the call for appropriate risk governance, defined as system of norms, institutions and interactions that determine how decisions are made and enforced, is clearly identified in the Sendai Framework. This paper discusses disaster risk, governance structures, stakeholders and opportunities for effectively managing disaster risk in the Indian disaster risk reduction policy landscape. This paper tries to trace the progress made in disaster risk reduction efforts from national to local levels from the perspectives of DRR.

Keywords Disaster risk reduction • Policy • Risk governance • Sendai Framework

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I. Pal, R. Shaw (eds.), *Disaster Risk Governance in India and Cross Cutting Issues*, Disaster Risk Reduction, DOI 10.1007/978-981-10-3310-0_2

2.1 Natural Disasters and Climate Extremes in India

2.1.1 Vulnerability

India is highly vulnerable to natural disasters and climate extremes, including conflict and displacement. These hazards pose significant risk to India's economy and to its citizens every year. According to the Ministry of Home Affairs, Government of India, India is one of the ten worst disaster-prone countries of the world. Out of 35 states and union territories in the country, 27 of them are disaster-prone. Almost 58.6% of the landmass is prone to earthquakes of moderate to very high intensity; over 40 million hectares (12% of land) are prone to floods and river erosion; of the 7516-km-long coastline, close to 5700 km is prone to cyclones and tsunamis; 68% of the cultivable area is vulnerable to drought and hilly areas are at risk from landslides and avalanches (Ministry of Home Affairs (MoHA) 2011). 'Disaster risks in India are further compounded by increasing vulnerabilities related to changing demographics and socio-economic conditions, unplanned urbanization, development within high-risk zones, environmental degradation, climate change, geological hazards, epidemics and pandemics' (NDMA, 2016).

2.1.2 Disaster Risks

In India, risk in terms of both human and economic exposure to disasters is extremely high. As per the recently released World Risk Report 2016, India *ranks 77 in disaster risk index of the world* (The Hindu 2016). And, with the impact of global warming, it is likely that both human and economic exposure to disasters risk will only increase. The SREX report has concluded that the economic losses from weather- and climate-related disasters have increased over time and that these losses as a proportion of GDP are higher in developed countries, whereas deaths from natural disasters occur at a much higher rates in developing countries (IPCC 2012). Even vulnerability to disasters or emergencies of Chemical, Biological, Radiological and Nuclear (CBRN) origin in India has increased on account of socio-economic development (Disaster Management in India 2011).

2.1.3 Impact

In the decade 1990–2000, an average of about 4344 people lost their lives and about 30 million people were affected by disasters every year (Ministry of Home Affairs, GoI 2005). According to UNICEF, every year, between 2000 and 2009, 65 million people on average in India were affected by disasters (UNICEF). Data from the

(EM-DAT) OFDA/CRED International Disaster Database for the period of 1990–2014 (PreventionWeb) (CRED EM-DAT: The OFDA/CRED – International Disaster Database) shows that while earthquakes, floods and storms are the biggest killers in India, droughts and floods affect most people in India. Further analysis of data from EM-DAT shows that both, in terms of frequency and economic damage, floods top the list with highest economic damages in India followed by storms and earthquakes (Table 2.1). As per the recent UN report, India's average annual economic loss due to disasters is estimated to be $9.8 billion; these includes more than $7 billion loss on account of floods (Thakur 2015).

Table 2.1 People affected, lives lost and economic damage due to disasters in India between 1990 and 2015

Disaster type	Disaster subtype	Events count	Total deaths	Total affected	Total damage ('000 US$)
Drought	Drought	5	20	351,175,000	2,041,122
Earthquake	Ground movement	12	32,911	7,832,486	4,122,000
	Tsunami	1	16,389	654,512	1,022,800
Epidemic	Bacterial disease	10	1155	55,032	0
	Parasitic disease	4	121	30,135	0
	Viral disease	19	1867	171,453	0
Extreme temperature	Cold wave	19	3186	25	0
	Heat wave	14	9522	25	400,000
	Severe winter conditions	2	320	0	0
Flood	Riverine flood	132	24,367	297,272,962	39,504,729
	Flash flood	21	2530	15,943,526	322,000
	Coastal flood	4	569	11,500,000	275,000
	–	35	8834	230,943,112	7,923,600
Landslide	Landslide	24	1542	1,332,748	4500
	Avalanche	6	532	10,256	50,000
Storm	Convective storm	30	1637	699,639	2,387,000
	Tropical cyclone	42	17,940	52,613,655	14,419,012
Wildfire	Forest fire	1	6	0	0

Source: EM-DAT: The OFDA/CRED International Disaster Database

2.2 Institutional Framework for Disaster Risk Reduction in India

2.2.1 Historical Perspective

According to the Ministry of Home Affairs, Government of India, a permanent and institutionalised setup for DRR began in the decade of 1990s with setup of a disaster management cell under the Ministry of Agriculture, following the declaration of the decade of 1990s as the 'International Decade for Natural Disaster Reduction' (IDNDR) by the UN General Assembly. Following a series of disasters such as Latur earthquake (1993), Malpa landslide (1994), Orissa super cyclone (1999) and Bhuj earthquake (2001), a high-powered committee under the Chairmanship of Mr. J.C. Pant, Secretary, Ministry of Agriculture, was constituted for drawing up a systematic, comprehensive and holistic approach towards disasters (Ministry of Home Affairs (MoHA) 2011). There was a shift in policy from an approach of relief through financial aid to a holistic one for addressing disaster management. Consequently, the disaster management division was shifted under the Ministry of Home Affairs in 2002, and a hierarchical structure for disaster management evolved in India.

2.2.2 The Foundation Stone

Recognising the critical need for having stronger legislation to promote and protect human rights during disasters, the government of India enacted the Disaster Management Act in 2005. The Act deals with the provisions regarding protection of human rights by virtue of providing specific guidelines with reference to minimum standards of relief and number of other administrative measures for reducing disaster risks in India. These legal provisions are considered to be the sacrosanct legislative measures as the intent of the legislature in enacting this Act is to provide for the effective management of disasters and to uphold the human rights of the disaster-affected people (Pratap 2012). The Act has allowed the country to evolve a more organised disaster risk governance system and shift its approach from relief and rehabilitation to preparedness and mitigation by formation of the national-, state- and district-level authorities with clear plans and guidelines.

In this structure, the National Disaster Management Authority is the authority for formulation of policy and guidelines for all disaster management work in the country. The state authorities further lay down the guidelines for departments of the state and the districts falling in their respective jurisdictions. Similarly, district authorities direct the civil administration, departments and local authorities such as the municipalities, police department and civil administration. The state executive committees are responsible for execution of the tasks envisaged by the authorities.

2.2.3 DRR Progress

Being a signatory to the Hyogo Framework of Action 2005–2015, the country incorporated global knowledge and know-how on DRR to implement international strategy for DRR at national, state and local levels in India. The HFA reporting has improved monitoring and reporting of DRR actions in India. India has registered a remarkable progress on several fronts in reducing disaster risks since the HFA went into effect in 2005. This included legislation on disaster management and setting up of national, state and district level authorities with clear plans and guidelines. The HFA has also helped India improve accountability and coordination with international and global disaster risk reduction sector, including regional cooperation, especially in the South Asian Association for Regional Cooperation (SAARC) region. Since the enforcement of the Disaster Management Act in 2005, DRR landscape in India has become much wider and more inclusive.

In 2009, the government of India released India's first ever national policy on disaster management to guide DRR actors in the country. Similarly, a comprehensive report on 'disaster management in India' by the Ministry of Home Affairs, Government of India, was released in 2011 to capture India's initiatives on DRR and guide DRR stakeholders across India (Fig. 2.1). Established since 2005, the NDMA has produced numbers of guidelines to support and strengthen various aspects of disaster management in India and has produced a number of guidelines to facilitate

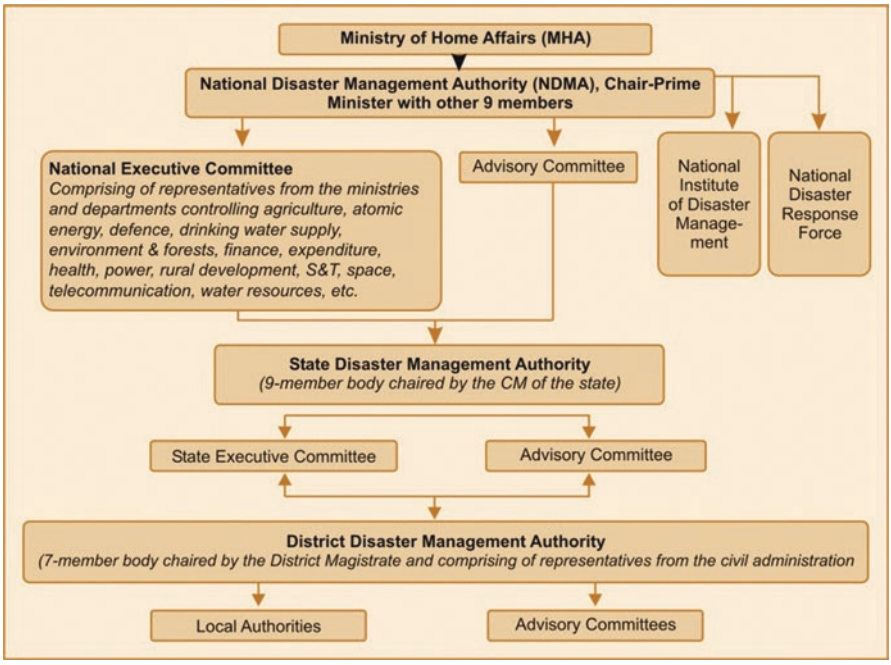

Fig. 2.1 Disaster management structure in India (Disaster Management in India 2011)

disaster recovery and preparedness planning. India has not only set up disaster relief funds at all levels but also launched the National Disaster Relief Fund, which is financed through the levy of a cess (The Ministry of Environment & Forests (MoEF) 2015). Likewise, State Disaster Management Authorities in India have developed their own plans and policies on DRR, including District Disaster Management Plan (DDMP) for each district (Table 2.2). But the National Disaster Management Authority has not reviewed DDMPs that are made by the districts with help from National Institute of Disaster Management guidelines and UNDP support (AIDMI) (2012). With an overarching goal of making local disaster management planning

Table 2.2 Laws, policies and plans to guide DRR actions of state and non-state actors at state levels

No.	State/authority	Key initiatives/projects/interventions
1.	Assam: Assam State Disaster Management Authority (ASDMA)	Assam State Disaster Management: Rules and Policy, State Disaster Management Plan, 27 District Disaster Management Plans and three City Disaster Management Plans
2.	Andhra Pradesh: Andhra Pradesh Revenue Disaster Management Department/ SDMA	The Andhra Pradesh Disaster Management Rules 2007, Andhra Pradesh State Disaster Management Plan (APSDMP), Preparing City level DM plan for all four cities (i.e. Srikakulam, Vijayawada, Khammama and Kurnool)
3.	Jharkhand: Jharkhand State Disaster Management Authority	State Disaster Management Plan, Departmental Disaster Management Planning Guidelines and District Disaster Management Plans for Palamu and Ramgarh
4.	Kerala: Kerala State Disaster Management Authority	Kerala State Disaster Management Rules, 2007, State Disaster Management Policy, 2010, District Disaster Management Plans
5.	Tripura: Tripura State Disaster Management Authority	State Disaster Management Policy, State Disaster Management Rules, District Disaster Management Plans
6.	Uttarakhand: Uttarakhand State Disaster Management Authority	State Disaster Management Action Plan (SDMAP), Standard Operating Procedures for key departments, Village Disaster Management Plans
7.	Odisha: Odisha State Disaster Management Authority	State Disaster Management Plan, Departmental Disaster Management Plans, District, Block and Village Disaster Management Plans, State Disaster Management Policy, City Disaster Management Plans in six cities
8.	Himachal Pradesh: Himachal Pradesh State Disaster Management Authority	Himachal Pradesh State Policy on Disaster Management 2011, DM Rule 2011, Himachal Pradesh State Disaster Management Plan and District Disaster Management Plans
9.	Sikkim: Sikkim State Disaster Management Authority	DM rules, SM policies, Sikkim DM Plan
10.	Maharashtra: Maharashtra State Disaster Management Authority	State Disaster Management Plan, District Disaster Management Plans

inclusive, AIDMI has launched a national campaign on making DDMPs inclusive. The initiative has covered select districts from the states of Assam, Bihar, Jammu and Kashmir and Odisha.

With a new government coming to power in May 2014, one of the key pending requirements of the Disaster Management Act, National Disaster Management Plan (NDMP), is now fulfilled. The NDMP is an opportunity to integrate climate action and India's NDCs as it not only lays down guidelines for preparation of state-level disaster management plans and plans by each central ministry and department but also provides for horizontal and vertical integration of government agencies and departments at various levels (Prime Minister's Office 2016). However, 'the national plan needs to be supplemented by national roadmaps for disaster resilience with clear goals, targets, timeframe, and ideas about how resources shall be mobilised for its implementation' (Dhar Chakrabarti 2016).

India's contribution and commitment continued during the third UN World Conference for Disaster Risk Reduction (WCDRR) in March 2015 in Sendai, Japan, where the new international framework for disaster risk reduction – Sendai Framework for Disaster Risk Reduction 2015–2030 (SDFRR) – was adopted by 187 member states. At the third UN WCDRR, the government of India assumed responsibility of hosting the seventh AMCDRR in 2016. As a follow up from the sixth Asian Ministerial Conference outcome and as a requirement of the Sendai Framework implementation, the intended outcome of the first Ministerial Conference in India will be to develop a 'Regional Action plan for Implementation of the Sendai Framework'.

2.3 Key Stakeholder Mapping in the Country

2.3.1 Governance

Governance can be simply defined as 'the process of decision-making and the process by which decisions are implemented (or not implemented)' (UNESCAP 2009). Although the government is a major actor, issues of governance are not limited to government as government is not the sole actor influencing decisions and how they are implemented (IRP) (Guidance Note on Recovery: Governance 2010). Risk governance is far more complex and comprehensive for a single institution or ministry to fully comprehend or cover. In a broader context, risk governance refers to the way in which the authorities, public servants, media, private sector and civil society coordinate in communities and on regional and national levels in order to manage and reduce disaster and climate-related risks (UNDP 2012). Thus, apart from the government, DRR landscape includes many other players such as UN agencies, national and international civil society organisations, financial institutions, private sector entities and so on.

2.3.2 Stakeholders

The DRR landscape in India includes the central government, state governments, private sector and civil society actors, including local communities, all playing significant roles in DRR at various levels. Well-defined policies, establishment of new authorities and proper guidelines, triggered by the Disaster Management Act, 2005, have stimulated DRR-related finance from a variety of public-private and international sources in India at various levels. Because many natural disasters are linked to climate change, a significant overlap in approaches, policies and measures is seen. India's INDCs have recognised planning and implementation of actions to enhance climate resilience and reduce vulnerability to climate change as one of the key priorities for achieving its commitments (The Ministry of Environment & Forests (MoEF) 2015).

This overlap, in many ways, is useful and beneficial. Since SFDRR 2015–2030 specifically addresses climate change and climate action, providing measures, guiding principles and means of implementation (UNISDR 2015a), integration of SFDRR implementation strategies and plans with NDCs is needed. However, the DRR landscape mostly remains isolated from the climate change landscape and vice versa. Although importance of better integration between DRR and CCA is recognised in India, current capacities in the government setup are limited to organise and prioritise such integration systematically. AIDMI's Risk and Resilience Programme (March 2008 to July 2016) has made systematic efforts to integrate DRR and CCA efforts at various levels through trainings, research and policy advocacy (AIDMI 2016). AIDMI works on integrating climate change and disaster risk reduction plans in over 50 districts in India under the National Disaster Management Plan of Government of India.

The recently release NDMP of India states that 'from time to time, the central government notifies hazard-specific nodal ministries to function as the lead agency in managing particular types of disasters (Tables 2.3 and 2.4).

2.4 Key Issues, Challenges and Opportunities for Strengthening Disaster Risk Governance

The World Conference has adopted the Sendai Framework for Disaster Risk Reduction 2015–2030 in Sendai, Japan, on March 18, 2015. The four priorities for action agreed by the World Conference focuses on (a) a better understanding of risk, (b) strengthened disaster risk governance, (c) more investment and (d) more effective disaster preparedness and embedding the 'build back better' principle into recovery, rehabilitation and reconstruction. To support the assessment of global progress in achieving the outcome and goal of this framework, seven global targets have been agreed.

Table 2.3 Current list of disaster-specific nodal ministries notified by GoI (NDMA, Government of India 2016)

	Disaster	Nodal ministry/department
1	Biological	Min. of Health and Family Welfare (MoHFW)
2	Chemical and industrial	Min. of Environment, Forest and Climate Change (MoEFCC)
3	Civil aviation accidents	Min. of Civil Aviation (MoCA)
4	Cyclone/tornado	Min. of Earth Sciences (MoES)
5	Tsunami	Min. of Earth Sciences (MoES)
6	Drought/hailstorm/cold wave and frost/ pest attack	Min. of Agriculture and Farmers Welfare (MoAFW)
7	Earthquake	Min. of Earth Sciences (MoES)
8	Flood	Min. of Water Resources (MoWR)
9	Forest fire	Min. of Environment, Forests and Climate Change (MoEFCC)
10	Landslides	Min. of Mines (MoM)
11	Avalanche	Min. of Defence (MoD)
12	Nuclear and radiological emergencies	Dept. of Atomic Energy (DAE)
13	Rail accidents	Min. of Railways (MoR)
14	Road accidents	Min. of Road Transport and Highways (MoRTH)
15	Urban floods	Min. of Urban Development (MoUD)

In the federal structure of our country with multiple agencies and stakeholders working on similar issues, entry points for improving disaster risk reduction governance can be many. 'Strengthening disaster risk governance for prevention, mitigation, preparedness, response, recovery and rehabilitation is therefore necessary and fosters collaboration and partnership across mechanisms and institutions for the implementation of instruments relevant to disaster risk reduction and sustainable development' (UNISDR 2015b) (Table 2.5). Although issues of governance cut across all the priorities of the Sendai Framework, we focus specifically on the governance priority of the framework, i.e. SFDRR priority 2: Strengthen disaster risk governance to manage disaster risk in this paper.

2.4.1 Mainstreaming

Mainstreaming DRR approaches and measures into development plans and setting achievable targets to measure impact are key to improving disaster risk governance in India. The government has established a policy framework for disaster management with a focus on mainstreaming disaster risk reduction into development planning and programmes. This framework has been successful in strengthening and implementing various provisions of the Disaster Management Act 2005 but has

Table 2.4 The list of entities play an important role in Indian landscape of DRR. This list by no means is exhaustive

Government	Intergovernmental bodies	Donors	CSO: NGOs	CSO: community groups	Other stakeholders
Ministry of Home Affairs, National Disaster Management Authority	UN agencies	Office of Direct Assistance	NGO networks/coalition	CBOs	Academic and research think tanks
State Disaster Management Authorities	Asia Disaster Preparedness Center	Multilateral and bilateral donors/financing institutions	INGOs	Volunteer groups	Private businesses
District Disaster Management Authorities	SAARC Center for Disaster Management, ASEAN disaster management bodies		National NGOs	Philanthropic groups	Media
National Institute of Disaster Management Military	Foreign embassies		Local NGOs		

Table 2.5 Governance issues and advocacy

Key governance issues in India	Entry points for strengthening disaster risk governance	Advocacy vehicles
Mainstreaming disaster risk reduction	Disaster Management Act 2005	Networks, alliances and working groups
Financing disaster risk reduction	National Policy for Disaster Management 2009	Workshops, conferences and forums
Participation of non-state actors	National Disaster Management Plan 2016	Funding
Accountability and performance	State Disaster Management Policies	Lobbying
	State Disaster Management Plans	Research
	District Disaster Management Plans	Pilot/demonstration projects
	Smart Cities Mission and City Disaster Management Plans	Policy briefs and publications
	Five-year plans and annual budgets	Media tools
	National and State Action Plan on Climate Change	Web influence
	Nationally determined contributions (NDCs)	
	Sectoral polices (water, energy, tourism, transport, livelihoods, transport, etc.)	

achieved limited impact in terms of mainstreaming DRR into development planning across authorities, stakeholders and sectors. 'Most SDMPs contain a high degree of detail on sectoral and departmental responsibilities for disaster responses, but fall short of outlining pathways for mainstreaming risk reduction' (CDKN and ODI 2016). Not enough attention is given to strengthen lowest governing structures such as *panchayats* in villages and urban local bodies (ULBs) in towns and cities of India. Although these structure shares roles and responsibilities laid by the 2005 Disaster Management Act of India, they are often found ill-equipped to deal with disaster in India both in terms of power and resources at their disposal. Effective decentralisation of disaster management responsibilities and mainstreaming cannot be done without employing these most essential structures at the local levels. Overall, results of mainstreaming efforts of key stakeholders in the DRR landscape of India have been mixed. For example, AIDMI experience of working with UNICEF and Save the Children on child-centred disaster risk reduction in India shows that DRR mainstreaming goal in the education sector has been quite successful but similar efforts in promoting development of new financial tools such as risk insurance or risk transfer in the finance sector have tested limited success.

The role of the private sector, such as insurance companies for 'risk informed investments in recovery efforts', is highlighted in the NDMP. However, much needs to be done especially at the grassroots level to make micro-insurance products

available to the poor and vulnerable. AIDMI is currently piloting a disaster micro-insurance innovation supported by the Humanitarian Innovation Fund (HIF) in three cities of India (Puri, Cuddalore and Guwahati), which has a focus on small and microbusiness enterprises. The project is creating a platform to promote risk transfer as a tool for urban disaster risk reduction, showcasing risk transfer products and their impacts and importance of inclusion of women for a successful risk transfer model (HIF) (n.d.a).

Similarly, results of integrating DRR and CCA approaches in India have been encouraging but widespread coverage of such integration is lacking. National missions such as smart cities development and national scheme such as MGNREGS opportunities for DRR mainstreaming are plenty. However, limited capacities of authorities to explore such opportunities in planning are limiting India's efforts to reduce risk through DRR mainstreaming. A lot has been done to mainstream DRR through the Disaster Risk Management Project of UNDP India. But more efforts are required, especially at state and district levels. One such effort is recently initiated by the ADPC and Government of Bihar with support from Bill and Melinda Gates Foundation to provide technical support to the state government for the implementation of the Bihar Roadmap for Disaster Risk Reduction (2015–2030). Under this partnership, ADPC will build the capacity of Bihar's government officials on mainstreaming disaster risk reduction into development planning with a special focus on the agricultural and health sectors (ADPC 2016).

2.4.2 Financing DRR

An analysis of National Progress Reports on HFA by *Duryog Nivaran* (2014) shows that, except Bangladesh and Maldives, all other countries in the region, including India, have made available legislations that mandate local governments for DRR functions. However, when it comes to regular provision of financial resources to local governments for undertaking these functions, except Bangladesh, no country in the region provides the local governments the required financial resources for DRR. All the countries in the region (including India) have highlighted the limited capacity of the local government functionaries and elected representative on account of DRR as one of the key challenges they are facing. Both the SREX and AR5 reports indicate that the cost of both mitigation and adaptation is expected to rise substantially, and financing these two areas effectively would not only require more money but also changes in investment patterns and governance structure. However, opportunities to create synergies in international finance for disaster risk management and adaptation to climate change and its convergence with national climate finance resources are yet to be realised fully (IPCC 2012). Resource allocation beyond conventional DRR areas will be key to the successful implementation of Sendai Framework and India's nationally determined contribution. 'In the absence of reliable financing support, it would be unrealistic to expect many developing countries to take full advantage of the post-2015 DRR framework (Ministry of

External Affairs, Government of India 2014). Countries such as India will require to secure and sustain substantial amounts of financial resources to overcome the impacts of natural disasters and climate extremes in the coming years. This will require regular budgetary allocations, especially at state and district levels. The recently concluded review of state disaster management plans in India has revealed that although 'equal legal importance is given to financing for disaster response and risk reduction at the national level, but there are limited funds for risk reduction across states, despite legal and legislative mandates for this' (CDKN and ODI 2016).

2.4.3 Private Sector Engagement

The private sector's engagement in DRR landscape of India so far has been limited. The private sector is key to filling the financing gap in DRR and climate change adaptation, including meeting emission targets. But private sector bodies are hardly represented in ongoing DRR activities. The country needs to find ways to engage the private sector more to share the burden of reducing disaster risk. Public policy needs to create an enabling environment that supports and encourages micro-, small and medium enterprises (MSMEs) to integrate disaster resilience into their business through processes such as business continuity planning (6th AMCDRR 2014). The role of private sector in risk-proofing business investments is well understood, but most governments have not been able to capitalise on this experience. Many SDMPs in India encourage risk transfer mechanisms such as insurance, where the private sector has a significant role to play, but the uptake of insurance has not been widespread (CDKN and ODI 2016). AIDMI project supported by the Humanitarian Innovation Fund (HIF) is demonstrating how this could be achieved (n.d.b). Governments need to maximise the potential for private investment as fully as possible through enabling policy measures, regulations, taxations and other incentives. 'Improve existing governance systems, techno-legal regimes and policy frameworks to motivate and facilitate the Industry towards a viable and comprehensive Business Continuity Planning structure which incorporates DRR in their policies, plans and investment decisions' (SAARC 2014). India has become 'the first country to mandate a minimum spending on corporate social responsibility (CSR), Indian and foreign companies based in India that meet a certain turnover threshold are obliged to contribute two percent of their average net profits towards social development measures' (Chandrasekhar 2014). This additional resource has a lot of potential but has to be invested strategically in areas such as creating access to renewable energy, resilient crops, risk transfer and smart cities development.

2.4.4 Accountability and Performance

Issues of participation, decentralisation, accountability and transparency, including awareness of citizens on the rights of risk information, are critical to effective risk governance (UNISDR 2014). Having policies and legal framework in place will not be enough; policies and law supporting DRR must be supported with indicators in planning and actions against non-compliance, including incentives for responsible actions. Accountability and performance are often related to what is reported and to whom. The HFA Monitor has been used as an important tool for collecting information to self-assess and to provide means of verification to capture the progress and challenges of HFA implementation by nations. India has been most consistent in submitting these reports. But mere reporting is not enough. Accountability cannot exist without clearly defined monitoring, reporting and review systems, which underscore performance; clear targets and indicators in the Sendai Framework which drive and hold actors accountable for disaster and climate risk management actions. To this end, coherence of the targets and indicators with the Sustainable Development Goals and harmonisation of monitoring and review mechanisms, especially at the national level, are of significance (6th AMCDRR 2014). The 2005 Disaster Management Act of India has made pioneering steps in this direction; Chapter X on offences and penalties (The Disaster Management Act 2005; Ministry of Law and Justice, Government of India 2005) of the Act are specific and relevant for effective implementation of various provisions of the Act. Evidence shows that the use of empowering provisions of the Act such as peaceful but forced evacuations has saved many lives during the Cyclone *Phailin* in Odisha. How to avoid misuse of such provisions is also an area of debate and discussion as most states in India have reported significant progress on strengthening their laws, policies and regulation in the last decade or so.

2.5 Conclusion

The disaster risk reduction landscape in India is rapidly changing and like any other landscape is influenced by national and international policy changes. Although a lot of progress has been made in advancing DRR policies and practices, India faces several challenges posed by rising risks and economic losses from natural hazards and extreme events. Overcoming these challenges and turning them into opportunity not only require strengthening government systems and processes but also how non-state actors are governed and act. Achieving a more effective DRR governance system in India requires better integration of DRR and CCA approaches, improved representation of private sector players, clear and well-defined flow of finance for DRR, robust monitoring and accountability mechanics and participation of the poor and at-risk communities in decisions that impact them.

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