

Policy Discourse Analysis–India

Supporting climate resilience
in policymaking

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Country Report

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Climate change

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Sushil Saigal, January 2014

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The work of the Climate Change Group focuses on achieving the following objectives:

- Supporting public planning processes in delivering climate resilient development outcomes for the poorest.
- Supporting climate change negotiators from poor and vulnerable countries for equitable, balanced and multilateral solutions to climate change.
- Building capacity to act on the implications of changing ecology and economics for equitable and climate resilient development in the drylands.

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Policy discourse analyses (PDAs) draw on existing evidence and engage key stakeholders in a dialogue to review different policy arenas. IIED is undertaking case studies of countries participating in the PDAs and this report focuses on India, where a PDA was carried out to assess the extent to which climate resilience is factored into current policies and programmes. The report reviews recent developments in key policy areas relating to climate resilience, as well as the main discourses, policy objectives and stakeholders in key thematic areas to establish how climate risk management is being addressed. The report also identifies alternative discourses and evidence gaps to present opportunities and entry points for climate resilient development.

Contents

Summary	4	7 Climate change concerns in the Indian Himalayan Region	46
1 Introduction	6	8 Sources of evidence	49
2 Approach, methods and scope	9	9 Conclusions	54
3 Agricultural innovation and food security	11	References	57
4 Poverty reduction and social protection	21		
5 Ecosystem and natural resources management	30		
6 Climate change risk management	40		

Summary

Discourses (or narratives) play an important role in policymaking. This report assesses how climate change is entering key discourses that are relevant to inclusive growth and poverty reduction (or relevant to climate change resilient landscapes and livelihoods) in India. By doing so it aims to provide a better understanding of how public policy responses for climate resilient development can be supported.

India presents an appropriate context for the study. A vast majority of India's rural population depends on climate-sensitive sectors, landscapes, and natural resources for their livelihoods. These people, many of whom are poor and have low adaptive capacity, are extremely vulnerable to adverse impacts of climate change. In a recent survey of 170 countries, India was ranked as the second-most vulnerable. In recent years, there has been increasing concern in India's policy circles over climate change. The Government of India has formulated the National Action Plan on Climate Change (NAPCC), which acknowledges the threat of climate change and the need for action on several fronts.

The themes

The study covers four themes that are of direct relevance to climate change resilient landscapes and livelihoods:

- Agricultural innovation and food security
- Poverty reduction and social protection
- Ecosystem and natural resources management
- Climate change risk management

In addition to these themes, discourses related to one critical landscape – the Himalayas – have also been explored. The study was carried out through the analysis of relevant documents and semi-structured interviews with 25 key informants. The study has yielded important insights regarding dominant and alternative policy discourses related to the themes and landscape concerned.

Agriculture plays a vital role in the life and economy of India. It is the dominant land use, covering around 42 per cent of the country's geographical area, and provides employment to over half of the country's workforce. In the case of agricultural innovation, dominant discourses that could be discerned relate to growth, intensification, diversification, institutional reforms, and convergence and flexibility. The dominant discourses related to food security focus on the right to food and distribution issues. There is also considerable focus on land acquisition and its impact on agriculture. Several alternative discourses on issues such as traditional/organic farming and genetically modified organisms could also be discerned. The climate change concerns are primarily being addressed through the National Mission for Sustainable Agriculture.

Poverty is a major concern in India. Official estimates indicate that as much as 29.8 per cent of the total population, and 33.8 per cent of the rural population, were living below the poverty line in 2010. For rural poverty reduction, dominant discourses pertain to economic growth, employment guarantee, promotion of institutions for poor entrepreneurs, and financial inclusion. For social protection, a number of welfare measures and schemes have been launched that focus on specific disadvantaged groups. There are number of alternative discourses, a key one of which concerns a radically different development model that does not emphasise economic growth. There are attempts to mainstream environment concerns, including climate change, through 'greening' of rural development.

India is endowed with diverse ecosystems ranging from snow-clad Himalayas to rainforests, making it one of the world's megadiverse countries. The country accounts

for 11 per cent of the world's floral and 7.4 per cent of the world's faunal species. It is also among the top ten forested countries in the world; total forest and tree cover in the country is estimated to be over 78 million hectares, or 23.8 per cent of the country's geographical area. In the case of ecosystem and natural resources management, dominant policy discourses focus on the link between environment and economic growth, a shift from 'quantity' to 'quality', and a rights-based approach. There are a number of alternative discourses related *inter alia* to market-based approaches, green accounting, and the commodification of natural resources. The dominant current thinking on ecosystem and NRM issues in the context of climate change is reflected in the draft action plan of the National Mission for a Green India.

A large proportion of India is considered vulnerable to natural disasters. Around three-quarters of the coastline is considered to be at risk from cyclones, over two-thirds of the country is considered susceptible to droughts, and over 8 per cent of the country is considered prone to floods. These and other natural disasters cause considerable human and economic loss; climate change is likely to exacerbate an already serious situation. Policy discourses related to climate change risk management fall into two main categories: disaster management and agricultural risk management. Under disaster management, the major policy emphasis is on establishing an institutional structure at different levels and on disaster risk reduction, especially community-based disaster risk reduction. In the case of agricultural risk management, again there is a focus on developing an appropriate institutional structure for reducing risk, especially through crop insurance.

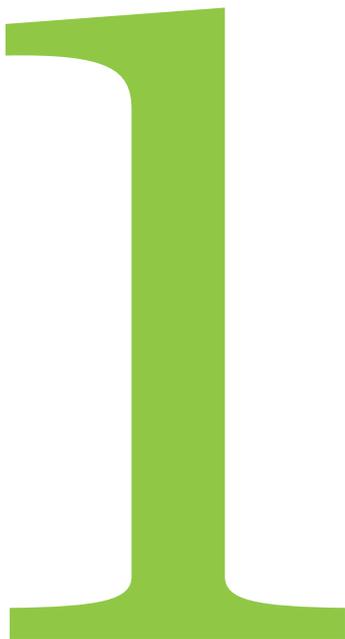
The Indian Himalayan Region, including the Himalayas proper and the north-eastern hill states, makes up around 16 per cent of India's geographical area. Although there is considerable emphasis on developing the hydropower potential of the region, there is also an increasing realisation in policy circles that this landscape is critical for India's ecological security. Accordingly, the focus is moving towards environmentally friendly niche products.

The study identified a number of policy arena gatekeepers (i.e. actors that shape policy formulation and implementation) for all selected themes. These gatekeepers use a range of evidence from different sources to inform their positions, policies and programmes. This includes *inter alia* the five-yearly national planning process, formal data collection mechanisms such as the census, committees and commissions, 'success stories', particular events, media reports, judicial interventions, and international processes.

In recent years, the policy focus on rural livelihoods and landscapes, combined with a rights-based framework, has led to the development of several initiatives that are significant for climate change resilient landscapes and livelihoods.

Introduction

The dependence of the livelihood of the majority of the population on climate-sensitive sectors, coupled with the prevalence of poverty, makes India extremely vulnerable to the adverse impacts of climate change. The increasing policy concern over climate change issues and the need for action to address them are reflected in the National Action Plan on Climate Change, which was issued in 2008.



Policy discourses (or narratives) are essentially stories (scenarios and arguments) that 'underwrite and stabilise the assumptions for policymaking' (Roe 1994, p. 34). These discourses play a dominant role in policymaking – by government and other relevant actors (Roe 1991) – and also provide convergence points for different actors (Swift 1996) (see Box 1).

This report presents the findings of a study carried out to understand current policy discourses in India around selected themes, especially in the context of climate change resilient landscapes and livelihoods.

India presents an appropriate context for the study. Vulnerability to climate change combines exposure to an event/change with sensitivity (Scott 2008), and India scores highly on both of these parameters.

India has many landscapes, such as arid areas, semi-arid areas, flood-prone areas, low-lying coastal areas and small islands that are considered particularly vulnerable to climate change (Olmos 2001). A vast majority of India's rural population depends on climate-sensitive sectors (e.g. agriculture, forests and fisheries), landscapes and natural resources for their livelihoods (Sathaye *et al.* 2006).

There is widespread chronic poverty in the country, which is seen as both a condition as well as a determinant of vulnerability (Chandurkar *et al.* n.d.). Everywhere, including in megacities (WWF 2009), it is the poor who are likely to bear the brunt of climate change-related adverse impacts.

Due to acute dependence on seasonal rains and the poverty of many farming households, agriculture is considered to be particularly vulnerable (Dev 2011, Chandurkar *et al.* n.d.). Between 40 and 70 per cent of forested grids in various states are considered vulnerable to climate change, which could lead to forest dieback and a loss of biodiversity (Planning Commission 2012a). In a recent survey of 170 countries, India was ranked second-most vulnerable to climate change.¹

In recent years, there has been increasing concern in India's policy circles over climate change. This is clearly discernible from the following extracts from the country's Twelfth Five Year Plan (2012-17) and the latest available Annual Report of the Ministry of Environment and Forests (MoEF):

India is highly vulnerable to climate change...It has been estimated that a 2.0 to 3.5 degree Centigrade increase in temperature, and the associated increase in precipitation, can lower agricultural GDP by 9 to 28 percent. Yields of most crops will fall in the long run (Planning Commission 2012a, p. 221).

BOX 1. POLICY DISCOURSES

A discourse may emerge from a particular event or study and, over a period of time, may become 'stabilised as a discursive formation' (Li 2005, p. 386; cf. Foucault 1972). It then allows certain kinds of problems and solutions to become thinkable while sidelining others (Li 2005). Some discourses become hegemonic (Watts 2001) and are actualised as projects and programmes (Hoben 1996). A number of 'corollary' discourses focusing on more specific aspects may also emerge (Hoben 1996). Once a discourse becomes dominant, it exhibits a degree of 'stickiness' (Swift 1996) and may continue for a long time. A few discourses may go on to become 'received wisdom' (Leach and Mearns 1996).

Most discourses, however, are hotly contested by counter-discourses, or 'counterstories' (Roe 1994). A good example is the challenge posed by Boserup (1965) to the Malthusian discourse on agriculture and population growth. Swift (1996) considers such contestation to be inevitable. Discourses evolve over time due to this contestation.

An important feature of discourses is that these 'lexicalise' the world (Fairclough 2003) through 'key words' (Apthorpe 1984) or 'labels' (Horesh 1985; Wood 1985). It has been argued that such labelling is far more than just a taxonomic exercise:

Labelling is in part a scientific (taxonomic) act, but it is also an act of valuation and judgement involving prejudices and stereotyping. Since these elements are difficult to disentangle, labelling is rarely just taxonomic or classificatory (Wood 1985, p. 6).

India is already vulnerable to a large degree of climate variability. Studies indicate that climate change may exacerbate the problem of existing climate variability in India. It is projected that, by the end of the 21st century, rainfall in India may increase by 15-40 per cent with high regional variability (MoEF 2012, p. 285).

The country's official stance is to emphasise the principle of 'common but differentiated responsibilities and respective capabilities' agreed under the United Nations Framework Convention on Climate Change (UNFCCC):

The foremost issue is that of equitable burden sharing with regard to mitigation actions between the developing and developed countries in the post-2020 arrangements. This is necessary to ensure that the

¹ Bangladesh was ranked as the most vulnerable country (www.indiawaterreview.in, accessed 18 October 2011).

goal of social and economic development and poverty eradication in developing countries is not compromised. Besides the issues of unilateral measures and technology related intellectual property rights (IPRs) continue to be the dominant concern... (MoEF 2012, pp. 286-287).

In spite of this official position, India has taken a number of steps towards climate change mitigation and adaptation. For example, despite not having binding mitigation commitments under the UNFCCC, India has communicated its voluntary mitigation goal of reducing the emission intensity of its gross domestic product (GDP) by 20-25 per cent (from 2005 levels) by 2020 (Planning Commission 2012a). The government of India has also formulated the National Action Plan on Climate Change (NAPCC), which was issued by the Prime Minister's Council on Climate Change in 2008. This document acknowledges the threat of climate change and the need for action on several fronts:

India needs a national strategy to firstly, adapt to climate change and secondly, to further enhance the ecological sustainability of India's development path (Gol 2008a, p. 3).

The NAPCC is primarily based on eight National Missions that aim to tackle climate change issues in different sectors/landscapes (see Box 2):²

There are eight National Missions which form the core of the National Action Plan, representing multi-pronged, long-term and integrated strategies for achieving key goals in the context of climate change. While several of these programmes are already part of our current actions, they may need a change in direction, enhancement of scope and effectiveness and accelerated implementation of time-bound plans (Gol 2008a, p. 3).

While all of the themes covered under the NAPCC Missions are important to address climate change, this study focuses on the themes that were identified as being most relevant to promoting climate change resilient landscapes and livelihoods (see Section 2).

Although the focus of this study is on India, its findings have wider relevance across the South Asia region, as South Asian countries share many common features, including similar landscapes and widespread poverty. Climate variability is not new to the communities of South Asia and the various communities have developed a range of adaptive strategies to deal with it. Due to the sheer magnitude of the problem, however, new and innovative measures are needed to supplement existing/traditional strategies. The scale of the problem

BOX 2. EIGHT MISSIONS UNDER THE NAPCC

1. National Solar Mission
2. National Mission for Enhanced Energy Efficiency
3. National Mission on Sustainable Habitat
4. National Water Mission
5. National Mission for Sustaining the Himalayan Ecosystem
6. National Mission for a Green India
7. National Mission for Sustainable Agriculture
8. National Mission on Strategic Knowledge for Climate Change

was demonstrated by the 2008 flooding of the Kosi river on the Indo-Nepal border. The experience of this event showed that while immediate relief is important, it is adaptive strategies that are more likely to secure lives and livelihoods in the long run (Somanathan and Somanathan 2009). Cross-learning of traditional as well as innovative adaptive measures across the region can make local livelihoods as well as landscapes more resilient to climate change.

² The Twelfth Five Year Plan has suggested a reorganised framework with the following seven Missions: 1. National Solar Mission; 2. National Wind Energy Mission; 3. The Energy Efficiency Mission; 4. Sustainable Habitat Mission; 5. Sustainable Agriculture Mission; 6. Mission on Sustainable Himalayan Eco-systems; 7. National Mission for a Green India (Planning Commission 2012a).

Approach, methods and scope

The study focuses on selected themes and landscapes that are considered important for climate change resilient landscapes and livelihoods. In order to develop a deeper understanding of various policy discourses, a historically sensitive analysis has been carried out. The study is primarily based on semi-structured interviews with 25 key informants and an analysis of relevant policy documents.



The study covers four themes that are of direct relevance to climate change resilient landscapes and livelihoods:

- Agricultural innovation and food security
- Poverty reduction and social protection
- Ecosystem and natural resources management
- Climate change risk management

Although the focus of the study is climate change, all major discourses under the selected themes have been examined. A broader understanding of discourses is important to discern the place of climate change in various themes, as climate change is only one of several policy drivers. An attempt has been made to carry out an historically sensitive analysis, as discourses continually evolve. While analysis at a particular time provides a snapshot, tracing their evolutionary path leads to a deeper understanding of current discourses.

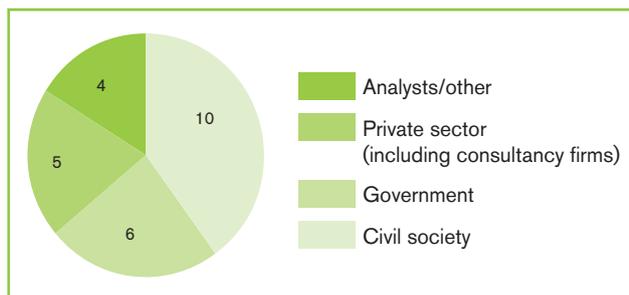
Apart from the selected themes, three key landscapes – agricultural landscapes, forests and mountain systems – were also identified for the study. As there is a strong overlap between agricultural and forest landscapes and two of the themes (first and third, respectively), discourses related to these landscapes and themes have been explored together. As the mountain landscape does not have a similar strong overlap with any particular theme, its policy discourses have been covered separately. Because the main policy focus from the climate change perspective is on the Himalayas,³ the study examined policy discourses related to this specific landscape.

Approach and methods

The approach followed to carry out this study could be termed 'iterative-inductive' (see O'Reilly 2005, p. 3). Based on the selected themes and landscapes, a set of questions was developed at the beginning of the study. This initial set was continuously refined, however, as the study progressed and more aspects of the themes and landscapes came to light.

A total of 25 semi-structured interviews were conducted for the study. Most of the interviewees were decided upon in consultation with other scoping team members using the combined domain knowledge of the scoping team. Some potential interviewees were also identified during interviews following the snowball technique. The interviewees were selected for their knowledge regarding current policy discourses surrounding the selected themes and landscapes. An attempt was made

Figure 1. Breakdown of interviewees by stakeholder group



to cover three major stakeholder groups: civil society, government and the private sector. Some additional persons (who did not fit in the above three categories) with in-depth knowledge of particular discourses were also interviewed. Figure 1 shows the breakdown of interviewees by stakeholder group. The interviews are not referred to individually within this report.

In addition to interviews, key policy and analytical documents were consulted for the study, including reports by the Planning Commission, relevant ministries and other relevant actors. The documents produced by relevant Missions under the NAPCC were also studied. The preliminary findings of the study were presented in a workshop to obtain feedback and validate the findings.

Scope

Although every attempt has been made to depict all policy discourses that could be discerned in sufficient detail along with key policy arena gatekeepers, their use of evidence, and the main programmes, the report should be read while keeping in mind that it is the product of a short study. Given the vastness and complexity of the country, it was not possible to capture all possible discourses, gatekeepers and programmes. Rather than attempting to present an exhaustive listing, the report therefore focuses on broad trends at the national level. While acknowledging the importance of urban issues, the focus of this report is on rural landscapes and livelihoods. Further, some important issues such as energy and water were not examined in detail as these were outside the scope of the present study.⁴

The data collection for this study was carried out between August and October 2011. It therefore depicts policy discourses that were discernible during this period. Relevant discourses were updated, however, while the document was being prepared for publication during mid-2013.

³ For example, there is a separate Mission on Sustaining the Himalayan Ecosystem under NAPCC, the only landscape to have a full-fledged Mission devoted to it.

⁴ These issues were covered, however, to the extent that they overlapped with the identified themes, for example biofuel plantations and groundwater depletion.

Agricultural innovation and food security

Agriculture is the dominant land use in India, covering around 42 per cent of the country's geographical area, and it provides employment to over half of the country's workforce. Due to concerns over inclusive growth and falling per person availability of major agricultural products, the policy focus is on achieving growth, particularly through intensification and diversification. In the area of food security, the main policy focus is on making food available to the needy, especially through a rights-based approach. Climate change concerns are entering the agriculture and food security discourses through the integration of mitigation and especially adaptation measures into several existing schemes and programmes. An ambitious set of initiatives has been proposed under the National Mission for Sustainable Agriculture.



Context

Agriculture and allied activities play a vital role in the life and economy of India.⁵ Agriculture is the dominant land use in the country and the net sown area is around 140 million hectares,⁶ which is over 42 per cent of the country's geographical area (DAC 2013). Although agriculture's share in the country's GDP has declined considerably over the years, it still contributed approximately 13.7 per cent of GDP in 2012-13 (at constant 2004-05 prices) (DAC 2013). More importantly, it has continued to provide employment to well over half of the country's workforce (DAC 2010a).⁷ The agriculture sector has a direct impact on food security and rural wages, and an indirect impact on the country's industrial sector due to its influence on both the supply of several raw materials and rural demand (Gol and UNDP 2012a). In spite of rapid advances made on several fronts in recent decades, Indian agriculture is still considered to be amongst the most vulnerable to climate change in the Asia-Pacific region (IFPRI 2009).

Dominant policy discourses

Considering the critical importance of agriculture to the country's economy as well as to the livelihoods of millions of people, agriculture has always received considerable policy attention in India. The evolution of policy discourses in independent India can be broadly divided into three phases: (1) the post-independence expansion and reforms phase (independence to mid-1960s); (2) the 'Green Revolution' phase (mid-1960s to 1991); and (3) the post-liberalisation phase (since 1991) (Papola 2010).

In order to understand current policy discourses, it is useful to briefly discuss key features of earlier discourses. At the time of independence in 1947, memories of the food crisis during the second world war and especially the famine in Bengal were fresh in the minds of the national planners. A number of steps had already been initiated by the colonial government, such as the creation of a separate Department of Food in 1942⁸ and the convening of a Food Production Conference in the same year. This led to a number of initiatives to increase food (and fodder) production and subsequently evolved into the 'Grow More Food' campaign. A 'Statement of Agriculture and Food Policy in India' was also issued in January 1946 (Gol 1976).

After independence, not only was food production made the top priority of the government, but there was also an additional concern regarding the loss of key cotton and jute production areas due to partition of the country. As a result, an 'Integrated Production Programme' was launched in June 1950 to 'win freedom from foreign bread and achieving progressive self-sufficiency' (Gol 1976, p. 143). The chapter on 'Land Policy' in the country's First Five Year Plan, issued in 1951, noted that the 'increase of agricultural production represents the highest priority in planning over the next few years' (Planning Commission 1951, Chapter 12, Paragraph 2).

The main thrust was on increasing the area under agriculture by extending cultivation in wastelands and forest lands. The figures compiled by the Ministry of Rural Development (MoRD) indicate that as much as 6.2 million hectares of government wastelands were distributed (MoRD 2008). In addition, around 2.6 million hectares of forest lands were also brought under agriculture⁹ (MoEF 1998), bringing the total area diverted to agriculture to 8.8 million hectares. Simultaneously, land reforms were initiated with a focus on (1) the abolition of intermediaries, (2) tenancy reforms, and (3) ceilings on landholdings (Papola 2010). Around 2.18 million hectares of ceiling surplus land and 0.88 million hectares of *Bhoodan* land¹⁰ were distributed amongst landless farmers (MoRD 2004).¹¹

The 'Green Revolution' phase started in the late 1960s with the introduction of high-yielding varieties, especially of wheat and rice, and a package of technological inputs. This led to a growth in agricultural output and India achieving self-sufficiency in food grains production (Papola 2010). However, Green Revolution technology had 'region specificity', 'crop specificity', and 'class specificity' (Venkateswarulu 2008, in Papola 2010) and thus did not have a uniform impact across the country.

The next phase started with the introduction of market reforms in 1991. The Indian agriculture market started to open up and its integration with the global commodity markets was initiated. Another key feature was a marked decline in public investment in agriculture. This was perhaps one of the contributing factors that led to a sharp decline in agriculture growth in the 1990s, especially from the mid-1990s onwards; the rate of growth dropped to just 2 per cent per year, compared with 3.6 per cent per year between 1980 and 1996 (Planning Commission 2007).

⁵ Agriculture is a complex sector. Although there is no universally accepted definition, usually crop production, horticulture and several allied activities such as livestock rearing and fisheries are included under agriculture (Datta and Sharma 2010).

⁶ 2009-10 figure. The net irrigated area is estimated to be 63.3 million hectares.

⁷ The contribution of agriculture to employment generation has also declined over time, however. The share of workforce engaged in agriculture decreased from almost 65 per cent in 1993-94 to 53 per cent in 2009 (Gulati *et al.* 2013).

⁸ This subject had been primarily dealt with by the provinces in the previous two decades.

⁹ Between 1951 and 1980.

¹⁰ *Bhoodan* literally means 'a gift of land'. It was a reform movement launched in the 1951 by Vinoba Bhave.

¹¹ Papola (2010) estimates that 5.39 million hectares of ceiling surplus land has been distributed so far.

Agricultural innovation

The following current dominant policy discourses on agricultural innovation could be discerned:

Growth: The current dominant policy discourse is on achieving a growth rate of at least 4 per cent in the agriculture sector. This target has been around for some time, was mentioned in the National Agriculture Policy announced in 2000 (MoA 2000) and is presently one of the monitorable targets of the Twelfth Five Year Plan (Planning Commission 2012a). There are two linked considerations: stability and yield. The dominant discourse is aimed more towards yield than stability and policymakers seem to be willing to accept greater vulnerability in exchange for achieving growth in yield. This emphasis on growth stems from two concerns. The first relates to macro food security. The per person output of cereals, pulses, oilseeds and also some major vegetables and fruits (e.g. potatoes and bananas) was lower in 2006-07 than in 1996-97, as growth in the agriculture sector fell below the population growth rate for the first time since the Green Revolution (Planning Commission 2007). The other concern is inclusive growth. The agriculture sector is considered important for inclusive growth as over 80 per cent of farmers fall into the small or marginal category (Planning Commission 2007). During the Tenth (2002-07) and Eleventh Five Year Plan (2007-12) periods, the stagnation in the agriculture sector was in contrast to the high growth rate of overall GDP,¹² leading to concerns over inclusive growth. The rationale for focusing on growth in agriculture becomes clear from the following extracts from the Mid-Term Appraisal of the Eleventh Five Year Plan and the Twelfth Five Year Plan document, respectively:

An important aspect of 'inclusive growth' in the Eleventh Five Year Plan (2007-12) is its target of 4 per cent per annum growth in GDP from agriculture and allied sectors. This target is not only necessary to achieve the overall GDP growth target of 9 per cent per annum without undue inflation, but it is an important element of 'inclusiveness' since the global experience of growth and poverty reduction shows that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture (Planning Commission 2010, Chapter 4, Paragraph 4.1).

Our focus should not be just on GDP growth itself, but on achieving a growth process that is as inclusive as possible. For example, rapid growth which involves faster growth in agriculture, and especially in rain-fed areas where most of the poor live, will be much more

inclusive than a GDP growth that is driven entirely by mining or extraction of minerals for exports (Planning Commission 2012a, p. 3).

Intensification: One of the main strategies for achieving growth in the agriculture sector is intensification. There is less focus on expansion as limited suitable areas for further expansion are available. One strand of the intensification effort is the development of irrigation, which is a policy discourse that has continued since independence. Over 80 per cent of public investment in agriculture is in irrigation (Planning Commission 2010). The continued emphasis on irrigation can be gauged from the fact that the target for creating irrigation potential in the country during the Eleventh Five Year Plan (under 'Bharat Nirman'¹³) was 16 million hectares over five years – over 11 per cent of the net sown area. Apart from attempts to complete various ongoing surface irrigation projects, another area of policy interest is promoting groundwater development in eastern India where, unlike in the rest of the country, this resource is felt to be under-utilised (Planning Commission 2012a). A key strategy is improving rural power supply to energise tubewells. The electrification of these areas is being attempted through the Rajiv Gandhi Grameen Vidyutikaran Yojana¹⁴ (Planning Commission 2007). As a result of various policy measures, the irrigated area increased to over 43 per cent of net cropped area in 2006-7 after stagnating at 40 per cent for several years (Planning Commission 2010).

Although the long-term trend of investing in irrigation is still continuing, the policy interest seems to be shifting to rainfed areas. As these areas usually produce only one crop per year, considerable potential for intensification is perceived. A senior official asked 'Green Revolution areas are already saturated, so where will the growth come from?' One observer called it an attempted 'Second Green Revolution'. A vision document prepared by the Central Research Institute for Dryland Agriculture estimated that there is scope for improving the productivity of rainfed agriculture by between 200 and 500 per cent (depending on the crop). It was also estimated that each marginal unit of food grains produced in rainfed areas requires around 23 times less investment compared with irrigated areas (Gol and UNDP 2012a).¹⁵

The National Rainfed Area Authority (NRAA) was established in 2006 to converge different programmes for achieving better water management in rainfed areas (Planning Commission 2007). The importance of rainfed areas in Indian agriculture can be seen from the

¹² The average GDP growth rate during 2001-10 was 7.2 per cent (MoEF 2011).

¹³ A national programme for building rural infrastructure (see www.bharatnirman.gov.in for details).

¹⁴ A national scheme for development of rural electricity infrastructure and for promoting rural household electrification.

¹⁵ 2.7 billion rupees (US\$58 million) in rainfed areas compared with 62.4 billion rupees (\$1.35 billion) in irrigated areas for each additional million tonnes of food grains (as per exchange rate of May 2013).

following extract from the latest Annual Report of the Department of Agriculture & Cooperation:

The rainfed agro-ecologies cover about 55 per cent of the net cultivated area of India and are widely distributed in the country. Of the total food production in the country, 44 per cent is from rainfed/ dryland farming which also supports about 40 per cent of the population. Approximately 85 per cent of the coarse cereals, 80 per cent pulses, 70 per cent oilseeds, 65 per cent cotton and 45 per cent rice are grown in the rainfed areas. Rainfed areas also support 78 per cent of cattle, 64 per cent of sheep and 75 per cent of goats. It remains a stark reality that even with the full development of irrigation, between 45 and 50 per cent of net sown area will continue to be rainfed (DAC 2013, p. 115)

Diversification: Another key strategy is diversification. It has been accepted in policy circles that cereal output can grow only at a modest rate and ‘the bulk of the acceleration in growth will come from diversification towards horticulture,¹⁶ animal husbandry and fisheries’ (Planning Commission 2012a, p. 31). There is therefore considerable emphasis on diversification of farming systems, such as livestock in dryland areas. The current thinking is that a ‘cluster approach’ is likely to be more effective to achieve economic levels of various farming system diversification activities in various agro-ecological zones. This is the central idea behind the Rainfed Area Development Programme (RADP) currently being piloted.

Farmer focus: The focus of current policy is on farmers (broadly defined) rather than commodities. The national agricultural policy document notes that ‘there is a need to focus more on the economic well-being of the farmers, rather than just on production’ (DAC 2007, Paragraph 1.5). This focus stemmed from the National Commission on Farmers, which submitted its report in 2006. It is interesting to note that the policy statement issued by the Ministry of Agriculture (MoA) in 2007 was called the ‘National Policy for Farmers’ rather than being referred to as an agriculture policy (as the policy issued in 2000 was). There is a particular focus on small and marginal farmers, which constitute around 82 per cent of holdings (DAC 2007).

Institutional reforms: There is a clear move away from subsidies towards institutional reforms, especially market reforms. Concern over deleterious impacts of subsidies is reflected in policy documents:

...excessive use of nitrogenous fertilizers and over-drawing of water, backed by subsidies at both Centre and State levels, is playing havoc with the sustainability

of soil and water ecosystem (Planning Commission 2012a, p. 114).

Pricing water and electricity appropriately will help recharge the depleting aquifers. Shifting urea to a nutrient based subsidy regime is also the need of the hour, which cannot be neglected any longer (Planning Commission 2012a, p. 116).

The preparation of a model Act by the central government to revamp the agricultural marketing set up and its adoption by various states reflects the policy emphasis on institutional reforms (see Planning Commission 2007). An issue that is receiving particular policy attention is groundwater depletion. Groundwater is critical for Indian agriculture; over 60 per cent of irrigated agriculture depends upon it. At 210 billion cubic metres, India’s annual extraction of groundwater is highest in the world. Moreover, as much as 85 per cent of the increase in irrigated area over the last three decades has come from groundwater exploitation. Considering this extreme dependence of Indian agriculture on groundwater, there is alarm in policy circles over groundwater depletion. Between 1995 and 2004, the proportion of ‘unsafe’ districts¹⁷ grew from 9 per cent to 31 per cent and the affected population from 7 per cent to 35 per cent (Planning Commission 2010). A study by the National Aeronautics and Space Administration (NASA) showed that between 2002 and 2008, India lost about 109 cubic kilometres of water, leading to a decline in the water table of 0.33 metres per year (GoI and UNDP 2012a). The current policy emphasis is therefore on institutional reforms to control over-exploitation in ‘unsafe’ districts and to promote further development in under-exploited areas.

The availability of quality seeds and the development of an appropriate regulatory regime for seeds and propagules (including related biotechnology issues) is another area of focus. This focus is reflected in the Draft Seeds Bill and the move to create the Biotechnology Regulatory Authority of India, both of which have generated heated debates in the country (Planning Commission 2010).

Convergence and flexibility: A key policy trend is convergence. Instead of launching a plethora of centrally sponsored schemes, the emphasis is on a few integrated programmes:

Government departments engaged in related areas tend to work in silos. We need much better mechanisms for converging the activity of these departments (Planning Commission 2011, p. 11).

At the policy level, a major effort in convergence was initiated in 2000–01 with the launch of the ‘Macro

¹⁶ In the Indian context, horticulture mainly refers to the cultivation of fruits and vegetables.

¹⁷ Semi-critical, critical and over-exploited.

Management of Agriculture' scheme following the merging of several different centrally sponsored schemes. At the field level, institutional structures, such as the Agriculture Technology Management Agencies (ATMAs), are being created that are expected to take the lead in convergence.

Another kind of convergence expected is between the agriculture sector and rural development schemes, especially through the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA):¹⁸

Some of the government's key inclusiveness-promoting programmes, such as MGNREGA, can make a major contribution to improving land productivity if the projects under it are structured to increase farm productivity. Properly designed and converged, MGNREGA can contribute to creating positive synergy with agricultural growth (Planning Commission 2012a, p. 31).

There is also an increasing emphasis on flexibility of planning at the local level, with districts in particular seen as the key level for programme implementation. The cluster approach being followed under the RADP and Comprehensive District Agriculture Plans being developed under the Rashtriya Krishi Vikas Yojana (RKVY) are illustrative of this trend.

Food security

The following current dominant policy discourses on food security could be discerned:

Distribution: At the macro level, the issue of food security is linked to agricultural production. As discussed above, there is concern over falling per person availability of foodgrains, pulses and oilseeds, as well as of major vegetables and fruits. The objective of the National Food Security Mission is to address this very problem. It aims to increase the production of rice, wheat and pulses (by 10, 8 and 2 million tonnes, respectively) in identified Indian districts.¹⁹ The dominant policy discourse on food security is not focused on production, however, but mainly on ensuring access for poor people to the food available – a distribution issue. The main programme for ensuring food security in both rural and urban areas is the Public Distribution System (PDS), under which the government procures and supplies foodgrains (and fuel) at subsidised rates through a country-wide network of 'fair price shops'. It is a massive scheme and the food outlay for 2009-10

was estimated to be 424.90 billion rupees (\$9.2 billion), substantially higher than the 301 billion rupees (\$6.5 billion) for MGNREGA. PDS consumes as much as 1 per cent of GDP but its impact on the poor has been limited (World Bank 2011). It is widely believed that PDS is full of leakages and inefficiencies, but a general political will to improve it is lacking.

Rights-based but targeted approach: The policy discourse on food security is moving towards a rights-based approach and has manifested itself in the form of the Draft Food Security Bill. Although a rights-based approach has been adopted, the dominant discourse is on targeting food subsidies to the neediest rather than accepting a universal right to food. There is also an attempt to plug leakages through Unique Identification (UID or Aadhaar²⁰) and cash transfers. There is, however, also a realisation that UID can only help to an extent. It can help in addressing problems of inclusion/exclusion, for example, but cannot be used to target the programme.

Land acquisition: There is also considerable policy attention on issues related to land acquisition and there is a move to make the process more transparent and fair for landowners. A draft National Land Acquisition and Rehabilitation & Resettlement Bill has been introduced that is widely seen as pro-farmer.²¹ The Bill also places restrictions on the diversion of multi-crop irrigated land away from agriculture to other land uses:²²

1. Multi-crop irrigated land will not be acquired except as a demonstrably last resort measure, which in no case should lead to the acquisition of more than 5 per cent of multi-crop irrigated area in a district.
2. Wherever multi crop irrigated land is acquired an equivalent area of culturable wasteland shall be developed for agricultural purposes.
3. In districts where the net sown area is less than 50 per cent of the total geographical area, no more than 10 per cent of the net sown area of the district may be cumulatively acquired under all land acquisition projects put together in that district.²³

Alternative discourses

The following alternative discourses on the subject of agricultural innovation and food security could be discerned:

¹⁸ The Act's implementation is sometimes referred to as the Mahatma Gandhi National Rural Employment Guarantee Scheme, or MGNREGS, but MGNREGA is used in this report to refer to both the Act and the scheme.

¹⁹ <http://agricoop.nic.in/Compedium7410.pdf> (accessed 05 August 2011).

²⁰ Aadhaar is a 12 digit individual identification number issued by the Unique Identification Authority of India on behalf of the Government of India. It serves as a proof of identity and address throughout the country.

²¹ Some stakeholders, however, want the Bill's social safeguards to be strengthened even further (see Oxfam India 2012). Many others, especially the corporate sector players, want some of the stringent provisions of the Bill to be relaxed.

²² <http://rural.nic.in/> (accessed 05 August 2011).

²³ Presentation on the Draft Land Acquisition and Rehabilitation and Resettlement Bill (LARR), 2011 (<http://rural.nic.in>, accessed 21 April 2013).

Traditional/organic/alternative farming: While the dominant discourse is focused on modern practices and technology, there is a contesting discourse that emphasises traditional practices and organic farming. One of the reasons for the declining food security in some regions is considered to be the shift from low-input/low-risk traditional food crops to high-input/high-risk (especially market risk) cash crops, such as the shift to cotton in the Vidharbha region of Maharashtra, where suicides of farmers have been reported. This discourse is mainly spearheaded by civil society activists and groups such as Navdanya and Beej Bachao Andolan:

Chemical agriculture and genetic engineering are threatening public health and leading to nutrition decline. Costs of production...are increasing with every season pushing farmers into the debt trap and also to suicides...Navdanya has...built a movement for the protection of small farmers through promotion of ecological farming and fair trade to ensure the healthy, diverse and safe food (<http://www.navdanya.org/organic-movement>, accessed 10 September 2011).

There is also a growing realisation of the ill-effects of excessive use of fertilisers and pesticides among some state governments (in Uttarakhand and Rajasthan, for example). However, action on the ground is limited due to the vested interests of the fertiliser/pesticide industry. There is also a discourse that suggests it is possible to intensify crop production by building on traditional practices and without resorting to excessive inputs of fertilisers or pesticides. Dr Biksham Gujja is its most famous proponent and SRI (the system of rice intensification) the most well-known method.²⁴ As these involve many counter-intuitive practices, however, SRI and other similar methods have not found favour with mainstream agricultural scientists.

Genetically modified crops: While the dominant discourse is in favour of introducing genetically modified crops (the most famous example being Bt cotton), a relatively more cautious approach is being followed for food crops (as seen in the case of Bt brinjal). There is a contesting discourse that focuses on the dangers of genetically modified crops and corporate control of seeds, though the debate is often crop-specific. This discourse is spearheaded by organisations such as Gene Campaign and Greenpeace:

Gene Campaign is concerned about the pervasiveness of the argument put forth by the Agbiotech sector that GE crops are the solution to hunger and poverty, although it is well recognised that people are hungry because they lack productive assets like land water [sic] to grow their food or incomes to buy it ('What We Stand For', <http://www.genecampaign.org>, accessed 10 September 2011).

A complete ban the [sic] release of any genetically modified organisms in the environment, either for commercial cultivation or for experiments (<http://www.greenpeace.org/india/en/What-We-Do/Sustainable-Agriculture/GE-campaign/>, accessed 10 September 2011).

The discourse has manifested itself in the form of opposition to the Draft Seeds and Biodiversity Regulatory Authority of India Bills that are currently being debated. These are considered anti-farmer and pro-biotech companies, and are also seen as a way of diluting the pro-farmer Protection of Plant Varieties and Farmers' Rights Act that was enacted in 2001.

Win-win and win-lose: There is considerable focus on finding 'win-win' solutions. For example, Development Alternatives (a leading national non-governmental organisation (NGO)) is working towards greater water efficiency so that an extra crop can be taken by farmers, which would improve water use as well as food security. In the words of one interviewee, 'what is good for the environment is good for the poor'. There is also a realisation, however, that such win-win solutions may not always be possible. One observer put it thus: 'We know one thing – as people go to better diet, it will lead to higher emissions'. A senior government functionary emphasised that emission intensity may go down (towards which efforts are being made), but not net emissions.

Business sustainability: The private sector (mainly large companies using agriculture produce as raw material) is interested in agriculture innovation, mainly to ensure sustainability of their businesses. For example, ITC is working on watershed management, Triveni is focusing on water management, and Pepsico is working with potato and tomato farmers. Tea and apple industries, which are extremely sensitive to climate change, are also examining climate change resilience issues. According to an industry observer, while some multinational corporations engage with these issues primarily for brand protection, domestic companies are mainly interested in raw material security.

Universal approach: The counter discourse on the issue of food security is for a universal right to food and for strengthening rather than doing away with PDS. The following extract from the petition prepared by the Right to Food Campaign against the Draft Food Bill illustrates the key elements of this discourse:

The single entitlement proposed by the EGoM²⁵ in the name of food security of the people by provisioning for only 25 kgs per household is in fact less than what is the current entitlement of 35 kgs which has been mandated by Supreme Court orders. A legislation that

²⁴ See www.sri-india.net for details.

²⁵ Empowered Group of Ministers.

promises a "right" but in reality reduces the existing entitlement is completely unacceptable to the people of India and an affront on their dignity...Nothing short of a universal entitlement for the Public Distribution System would suffice to change the existing situation...targeting minimum food entitlements is to create food insecurity... We also strongly feel that replacing food entitlements by cash will not bring about any food security to individuals instead the entire purpose of ensuring food and nutritional security will be defeated...Sir, we cannot accept any legislation that reduce the entitlements of the people. We need to ensure universal coverage of all basic needs, an imperative that cannot be ignored by the Indian State (Petition to the prime minister rejecting the draft of the National Food Security Act approved by the Empowered Group of Ministers, <http://www.petitiononline.com/right4/petition.html>, accessed 29 August 2011).

Reservations about the Draft Food Security Bill and alternative local action: There is apprehension in some quarters that the proposed Food Security Act will lead to more corruption and will further increase food price inflation. Another observer felt that the Food Security Bill has reduced food security to a delivery problem rather than focusing on farming systems. He felt that 'it will break the spine of Indian farmers by killing self-esteem and innovation'. Rather than depending on government, some civil society groups are promoting local action for food security, such as grain bank schemes implemented by NGOs that build on traditional thrift practices.

Climate change concerns

Climate change concerns in the agriculture sector stem from i) greenhouse gas (GHG) emissions, and ii) the need for adaptation. The GHG emissions from Indian agriculture are primarily methane from rice paddies and from enteric fermentation in ruminant animals, and Nitrous Oxides from the application of manures and fertilisers. The sector currently contributes 18 per cent of India's total GHG emissions, but the proportion of emissions from agriculture is expected to decrease in future due to larger emission growth in other sectors (Planning Commission 2012a).

There is an emphasis on adaptation in the agriculture sector as the sector provides a livelihood to around half the country's working population. An assessment of vulnerability (a vulnerability index) has been carried out across 572 districts in the country (DARE and ICAR 2013). Studies carried out by the Indian Agricultural Research Institute (IARI) indicate a possible loss of 4-5 million tonnes in wheat production for every 1°C rise in temperature in the growing season. Although such estimates are not available for all crops, the

impact of climate change is like to be adverse (Planning Commission 2012a).

Although climate change concerns have been mentioned in the National Policy for Farmers, the main vehicle for addressing these concerns will be the National Mission for Sustainable Agriculture under the NAPCC. According to the draft document prepared by the Mission, its objective is 'to transform Indian agriculture into a climate resilient production system through suitable adaptation and mitigation measures in the domain of crops and animal husbandry' (DAC 2010b).

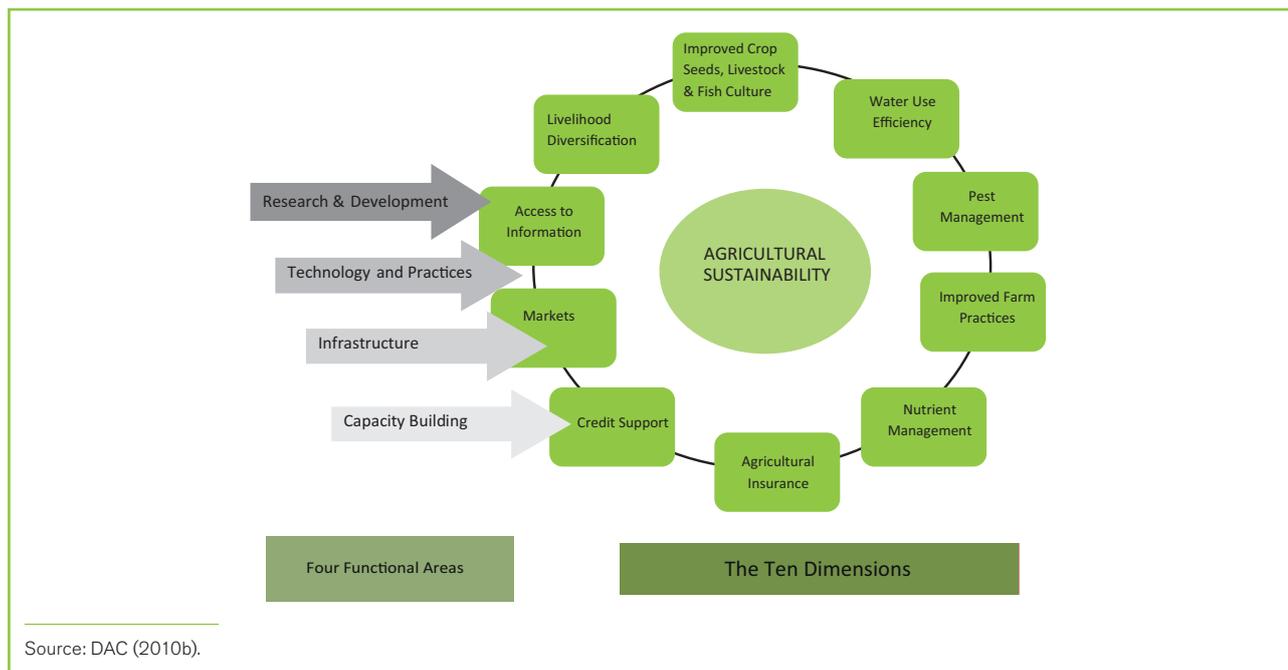
[The Mission] seeks to address issues regarding 'Sustainable Agriculture' in the context of risks associated with climate change by devising appropriate adaptation and mitigation strategies for ensuring food security, enhancing livelihood opportunities and contributing to economic stability at the national level. This mission acknowledges that the risks to Indian Agriculture sector due to climatic variabilities and extreme events would be felt at the levels of crop or livestock, farm or cropping system and the food system. Further, adverse impacts on agricultural production are likely to be severe in the absence of appropriate adaptation and mitigation measures with far reaching consequences in terms of shortages of food articles and rising prices thereby endangering the food and livelihood security across the country (DAC 2013, p. 112).

The Mission has identified ten key dimensions for promoting sustainable agriculture, and the strategy for each dimension will cover four functional areas: research and development; technologies, products and practices; infrastructure (broadly defined as including even insurance); and capacity-building (DAC 2010b) (Figure 2).

According to a senior official, the Mission will have two broad aspects: (i) the reorientation of existing activities to make them more sustainable, and (ii) the introduction of new activities where needed. The programmes implemented through the Mission will be 'interventions rather than schemes' and will continually evolve rather than being based on a 'formula'.

The Mission will mainstream adaptation and mitigation strategies in ongoing flagship schemes such as RKVY, the National Horticulture Mission (NHM), the National Mission on Micro Irrigation, and the National Food Security Mission. Wherever needed, new programmatic interventions will be introduced. These include *inter alia* web-based and mobile phone-based climate information and forecasting systems, the development of new varieties, the development of seed, grain and fodder banks, and the reuse/recycling of waste water.

Figure 2. Four functional areas and ten dimensions identified under the National Mission for Sustainable Agriculture



Source: DAC (2010b).

The Mission’s Programme of Action is likely to be implemented from the Twelfth Five Year Plan onwards (DAC 2010b; DAC 2013).

Policy arena gatekeepers

Table 1 shows the major policy arena gatekeepers that have been identified.

Main programmes

There is a plethora of government schemes in the agriculture and food security sectors, and numerous initiatives by civil society actors. In this section, only some of the major programmes of direct relevance to climate change resilient landscapes and livelihoods are briefly discussed.

RKVY: This is the flagship scheme (under Additional Central Assistance) designed to increase public investment in agriculture. The amount released for the scheme during the Eleventh Five Year Plan was 224.09 billion rupees (\$4.8 billion) and the estimated budget for 2012-13 was 92.17 billion rupees (\$1.99 billion). The key feature of the scheme is the flexibility offered to the states to implement it on the basis of State and District Agriculture Plans²⁶ (DAC 2013). A number of new sub-schemes have been launched under RKVY:

- Bringing Green Revolution to Eastern India
- Integrated development of 60,000 pulses villages in rainfed areas
- Promotion of oil palm

- Initiative on Vegetable Clusters
- Nutri-cereals
- National Mission for Protein Supplements
- Accelerated Fodder Development Programme
- RADP
- Saffron Mission
- Vidarbha Intensive Irrigation Development Programme (DAC 2013)

RADP: This central scheme, launched as a sub-scheme of RKVY, aims to enhance productivity of rainfed farming systems via diversification, such as the introduction of a livestock, horticulture or fisheries component into an existing cropping pattern. It builds on the ‘watershed plus’ approach introduced under the watershed development programmes and is being implemented on a cluster basis, with clusters having potential for different products being identified (DAC 2013).

NHM: This is a centrally sponsored scheme that was started in 2005-06. It aims to enhance horticulture production and provide nutritional security and income support to farmers. It had a budget of 11 billion rupees in 2009-10 (\$238 million).²⁷

US-India Knowledge Initiative on Agriculture: According to one observer, this is an important initiative being implemented by the ICAR that is influencing agricultural education and training, food processing, biotechnology and water management.²⁸

²⁶ <http://agricoop.nic.in/Compedium7410.pdf> (accessed 05 August 2011).

²⁷ See note 27.

²⁸ <http://dare.nic.in> (accessed 11 September 2011).

Table 1. Key policy arena gatekeepers in agriculture and food security sectors

GATEKEEPER ²⁹	ROLE
MoA	The MoA is the nodal ministry in charge of agricultural policy in the country. The National Mission for Sustainable Agriculture under the NAPCC is also housed in the MoA.
Indian Council of Agricultural Research (ICAR)	The ICAR plays a key role in determining the agricultural research agenda in the country. The network of 97 agricultural research institutes under the ICAR is one of the largest in the world. ³⁰
Planning Commission	The Planning Commission plays a key role in setting macroeconomic policies and deciding the level of public investment in the agriculture sector, which has a major impact on the sector.
NRAA	The NRAA has the mandate to evolve a common approach for rainfed/dryland farming systems. Although its present role is limited, it could potentially emerge as a significant player in the future given the policy focus on rainfed farming. ³¹
National Bank for Agriculture and Rural Development (NABARD)	NABARD is the apex organisation in the field of agriculture credit and also supports various rural development activities. It has played a key role in watershed development and is now moving into the field of climate change adaptation.
National Advisory Council (NAC)	The NAC has played a crucial role in the drafting of the Food Security Bill.
Right to Food Campaign	It is an informal network that is lobbying for a universal approach to food security.
Biotechnology industry	The biotechnology industry has emerged as an important player in the discourse around seeds and genetically modified crops.
Farmer/agro-industry/fertiliser industry lobbies	Various farmer and industry interest groups play an important role (directly or indirectly) in policy debates on agriculture issues.
The World Bank	The World Bank is a key player and has supported several major projects such as the Diversified Agricultural Support Project, the Agricultural Competitiveness Project, and the National Agricultural Innovation Project.
MS Swaminathan Research Foundation (MSSRF)	MSSRF is an important policy arena gatekeeper, especially due to policy influence of its chairperson.
Civil society groups	Various civil society groups are important policy arena gatekeepers for specific discourses. Examples include: Navdanya, Gene Campaign, the Revitalizing Rainfed Agriculture Network and Voluntary Action Network India, an apex body of voluntary organisations in India that plays an important role in policy advocacy. Several funding agencies such as the Ford Foundation, Hivos and the Swiss Agency for Development and Cooperation provide financial and programmatic support to civil society groups.

²⁹ This is not an exhaustive list.

³⁰ <http://www.icar.org.in/> (accessed 11 September 2011).

³¹ <http://nraa.gov.in/> (accessed 11 September 2011).

Action Plan to Address Agrarian Distress in India:

NABARD is working in agriculturally distressed districts to mitigate the problem through a mix of short-term and long-term measures.

Food and nutrition schemes: There are several schemes run by the Department of Food & Public Distribution that contribute to the food security of vulnerable sections of society. In addition to PDS, the most important schemes are the Mid Day Meal Scheme, which covers students from classes I to VIII in government-run/aided schools, and the Annapurna scheme for senior citizens.³² The Integrated Child Development Services scheme, run by the Ministry of Health & Family Welfare, aims to provide adequate nutrition to young children and mothers.³³ In the future, a revamped PDS or other institutional structures created to implement the Food Security Bill will be one of the most crucial elements of food security in the country.

National Mission for Sustainable Agriculture:

Once the National Mission for Sustainable Agriculture becomes operational, the programmes initiated under it are likely to become the most important initiatives in the agriculture sector from the perspective of climate change. The scale of these programmes is likely to be significant; the Mission has estimated additional funding requirements for implementing the proposed plan of 1,080 billion rupees (\$23.33 billion), which is more than the entire MoA allocation for the Eleventh Five Year Plan.

³² <http://fcamin.nic.in/dfpd/> (accessed 06 August 2011).

³³ <http://wcd.nic.in/icds.htm> (accessed 11 September 2011).

Poverty reduction and social protection

Despite remarkable progress in recent decades, poverty remains a major concern in India. Over a third of the rural population was living below the official poverty line in 2010. The dominant policy discourse concerns economic growth, which is seen as necessary to pull people out of poverty. The two major routes that have been explored for poverty reduction are wage employment and self-employment. In the case of wage employment, the discourse has moved from a welfare approach to a rights-based approach. In the case of self-employment, it has moved from a focus on individual beneficiaries to creating effective and efficient institutional platforms for the rural poor. The dominant policy objective in the area of social protection is to help destitute and vulnerable groups, especially through measures that ensure their food and social security. Climate change concerns are entering the poverty reduction and social protection discourses in the form of an emphasis on the 'greening' of interventions carried out under different schemes and programmes.



Context

Poverty is a major concern in India. The most recent available estimates indicate that as much as 29.8 per cent of the total population and 33.8 per cent of the rural population were living below the poverty line in 2010 (Planning Commission 2007; Planning Commission 2012b). Although the percentage of poor people in the total population has been falling (down from 55 per cent in 1973), the absolute number of poor people has not declined due to the overall population growth. It is worth mentioning that the official poverty line represents a very low level of consumption (3,900 rupees (\$84) per month in rural areas and 4,800 rupees (\$104) per month in urban areas, both for a family of five), and even by this conservative yardstick, around 350 million people were believed to be living in abject poverty in 2009-10 (Planning Commission 2012a).

Dominant policy discourses

The following current dominant policy discourses on poverty reduction and social protection could be discerned:

Poverty reduction

Economic growth: The currently dominant policy discourse is about economic growth, which is seen as necessary to pull people out of poverty. The growth agenda is considered to be 'unquestionably good'. The Approach Paper to the Twelfth Five Year Plan (2012-17) suggested that the basic objective of the Plan should be 'faster, more inclusive and sustainable growth' (Planning Commission 2011, p. 2, emphasis added). It is use of the modifier 'inclusive' that indicates that this growth is expected to *inter alia* address poverty. The Twelfth Five Year Plan document provides the thinking behind this emphasis on economic growth to address poverty and social protection issues:

There are two reasons why GDP growth is important for the inclusiveness objective. First, rapid growth of GDP produces a larger expansion in total income and production which, if the growth process is sufficiently inclusive, will directly raise living standards of a large section of our people by providing them with employment and other income enhancing activities... second...it generates higher revenues, which help to finance critical programmes of inclusiveness (Planning Commission 2012a, p. 3).

According to one observer, what is not clear is whether this focus on inclusiveness stems from a genuine concern for the poor or out of fear that persisting poverty may undermine growth.

Two routes to poverty reduction: Irrespective of the underlying motivation, poverty alleviation has been a major focus of successive governments, particularly from the 1970s onwards. Two major routes have been tried to address rural poverty: wage employment and self-employment. These continue to be the major strategies for reducing rural poverty in the country, and the emphasis placed on them can be gauged from the fact that as much as 31 per cent of the total Central Budget Plan provision in 2009-10 was for poverty alleviation and rural development alone (Planning Commission 2010).

Targeted approach: The approach followed for poverty alleviation over the years could be described as a 'targeted approach'. While the Planning Commission estimates the extent of poverty through a sample survey, the poor households are identified through a census conducted by the MoRD, commonly referred to as the 'Below the Poverty Line' or 'BPL' Census (MoRD 2009a). The methodology followed for this census has been the subject of vigorous debate and it is widely believed that there are huge problems of inclusion and exclusion in the BPL list. Nevertheless, the BPL list remains the main mechanism to target various government schemes for poverty alleviation. Although the targeted approach continues to be important, alternative discourses are emerging for both wage and self-employment.

Rights-based approach and convergence: The most dramatic shift in policy discourse has been seen in the area of wage employment during the past five years. The discourse has moved from a welfare approach to a rights-based approach under which wage employment (unskilled manual labour) for a minimum number of days is guaranteed by the government to *all* rural households. The targeted approach has been replaced with a self-selection process under which anyone needing work can approach an appropriate authority. The legal framework for guaranteed wage employment also provides for an unemployment allowance to the employment-seeker as well as penalties for not complying with the provisions of the law. The introduction of wage employment guarantee is the culmination of an evolutionary process that started with the introduction of employment schemes such as the Employment Assurance Scheme, the National Food for Work Programme and the Maharashtra Employment Guarantee Scheme (Sharma 2010).³⁴

In spite of some problems, the rights-based approach is considered a vast improvement over the earlier welfare approach. One observer noted: 'There may be some corruption in MGNREGA, but where is it

³⁴ It is worth noting that the Directive Principles of State Policy given in the Constitution of India (Article 41) already provided for the non-justiciable right to work (Development Alternatives 2010).

totally absent?'. Another observer said that although the experience with MGNREGA has been mixed, he is inclined to see 'the glass as half-full rather than half-empty'. It is generally believed that this approach has improved bargaining power as well as wage rates of poor wage earners. This is also borne out by the available data: compared with 2006-07, there was an estimated three-fold increase in wage employment generated through rural employment programmes in 2009-10. In the same period, the average wage rate went up from 65 rupees (\$1.40) to 88 rupees (\$1.90) (Planning Commission 2010).

The dominant discourse is to continue with the rights-based approach and to build further on gains already achieved. One observer termed this the 'second generation' of MGNREGA. While a part of the effort is going into plugging leakages (through better management information systems and 'social audit', for example), the main emphasis is on addressing a more fundamental issue related to relevance and quality/durability of assets created through wage employment efforts. The following extracts from the Twelfth Five Year Plan document highlight policymakers' concerns over this issue:

...there are also some complaints against MGNREGA, primarily on the grounds that it is a dole, involving huge expenditures that could have been spent more productively (Planning Commission 2012, p. 7).

An important lesson from this experience is that it is the quality of assets created, which will determine whether MGNREGA can go beyond the safety net to become a springboard for entrepreneurship, even at the lowest income levels (Planning Commission 2012, p. 8).

A fundamental flaw is that only wage employment is being monitored and there is no proper record of the assets being created. The decision about the nature of the work to be undertaken is supposed to be made by local people (which should address the relevance problem), but planning does not seem to occur in a bottom-up manner. According to one observer, most soil work and earthen structures get washed away during the rainy season. Had planning really been bottom-up, it could also have been hugely empowering for the local people.

It is also being debated whether it was a good move to universalise MGNREGA and if a targeted approach would have been better. According to the Mid-Term Appraisal of the Eleventh Five Year Plan, in spite of the guarantee provided by law, only 14 per cent of worker households completed 100 days of work; the average in 2008-09 was just 48. More disturbingly, no record was kept of those who asked for work but were not

provided with it. This dilutes the 'guarantee' aspect of MGNREGA (Planning Commission 2010). The Mid-Term Appraisal noted:³⁵

It is relevant to ask whether a relatively low provision of work reflects lack of demand or is it ineffectiveness in being able to meet the demand. In certain states, the low number of days of work is almost certainly a reflection of the universalization of the programme to the whole country which led to the inclusion of districts where the need and demand for MGNREGA work is low (Kerala and Punjab are examples of this). But there are many states where demand was expected to be high but which have not performed well, such as the high out-migration states of Orissa and Bihar, as also states, such as Uttarakhand and Karnataka, which appear to have not given the due attention to energizing MGNREGA (Planning Commission 2010, para. 12.8).

Institutional focus: Like wage employment, the self-employment discourse has also evolved over the years. The initial focus was on helping the *individual beneficiaries* as reflected in the erstwhile Integrated Rural Development Programme. In April 1999, Swarnjayanti Gram Swarozgar Yojana (SGSY) was launched and the focus moved to *self-help groups* (SHGs), especially of women, who were supported to set up micro-enterprises.³⁶ The assistance was provided in the form of credit by banks with a back-ended subsidy by the government. Between 1999 and 2009, as many as 3.5 million SHGs were established. The total credit mobilised was 196 billion rupees (\$4.23 billion) and the total subsidy disbursed was 95 billion rupees (\$2.05 billion), bringing the total investment to around 291 billion rupees (\$6.29 billion) (Planning Commission 2010).

The discourse started changing, however, after 2009. A key event was the submission of the report by the Radhakrishna Committee on Credit Related Issues under SGSY (see MoRD 2009b). The committee noted that of around 3.1 million SHGs formed in the first ten years of SGSY, only about 0.7 million (around 22 per cent) could obtain bank credit for taking up economic activities. Further, even in a better-performing state like Andhra Pradesh, the income gain for a *swarozgari* (self-employed person) from enterprise activities under SGSY was a mere 1,228 rupees per month (\$26). The committee attributed this poor performance to SHGs' focus on low-productivity primary sector activities and low absorption of technology. The Committee also pointed out a high dependence on subsidies and low investment in capacity-building and training that may undermine the long-term success of such enterprises (MoRD 2009b; Planning Commission 2010).

³⁵ The new operational guidelines issued in 2013 (4th Edition) have addressed this issue to a certain extent.

³⁶ It was launched by merging and restructuring six existing schemes (MoRD 2009b).

Based on lessons learnt in the first decade of implementation of SGSY and recommendations of the Radhakrishna Committee, the MoRD decided to restructure SGSY into the National Rural Livelihoods Mission (NRLM), which was launched in June 2011 with the following mandate:³⁷

To reduce poverty by enabling the poor households to access gainful self-employment and skilled wage employment opportunities resulting in appreciable improvement in their livelihoods on a sustainable basis, through building strong and sustainable grassroots institutions of the poor (MoRD n.d.a).

NRLM aims at creating efficient and effective institutional platforms for the rural poor, enabling them to increase household income through sustainable livelihood enhancements and improved access to financial services. The plan is to cover 70 million BPL households across rural India within 8-10 years, through self-managed SHGs and federated institutions, and to support them for livelihood collectives.³⁸

Apart from its implementation in the mission mode, another key aspect of this programme is that it has adopted a demand-driven strategy rather than an allocation-based strategy.³⁹ As in several other government programmes, the current thinking is that it is best to allow flexibility at the state level so that they can formulate their own livelihoods-based poverty reduction action plans. Similarly, as in the case of other programmes there is an emphasis on convergence and partnerships.

The key conceptual shift in NRLM is the realisation that poverty is *multi-dimensional* and that a range of interventions over the *long term* will be needed to lift poor people out of poverty and to keep them from slipping back into it. Rather than providing employment, the focus has shifted to imparting skills with which the poor will be able to find gainful employment. There is also a particular focus on building up the institutions of the poor at different levels (SHGs, their federations and livelihood collectives). NRLM has an ambitious mandate of reaching out to all rural poor families in the country (MoRD n.d.a), which has been termed a 'saturation approach'.⁴⁰

'Greening' rural development: A discourse on the need for 'greening' rural development has emerged in recent years. It is believed that this 'greening' would contribute to inclusive growth, promote environmental sustainability of economic growth, increase climate resilience of production systems, and make public expenditure more effective. There are suggestions

for the 'greening' of all rural development schemes. For example, *panchayat*-level perspective plans on a landscape, watershed or aquifer basis for MGNREGA works have been suggested, as well as a green index to track impacts at the *panchayat* level.⁴¹ Similarly, there have been suggestions for the development of protocols for sustainable agriculture, livestock and forest produce management under NRLM and support for the development of niche markets for sustainably harvested products (Gol and UNDP 2012a). The core philosophy underlying this discourse is reflected in the following extract from a key document on the subject:

'Greening RD' refers to conservation and regeneration of ecosystems and the natural resource base. 'Greening' can stimulate rural economies, create jobs and help maintain critical ecosystem services and strengthen climate resilience of the rural poor who are amongst the most vulnerable to the impacts of climate change and natural resources degradation (Gol and UNDP 2012a, p. 1).

Financial inclusion: There is an emerging discourse on financial inclusion, which is seen as critical for inclusive development (MoEF 2011). This discourse is rapidly gaining strength in the national policy circles as information and communication technology (ICT) improves and becomes more cost-effective. One of the reasons for the push for financial inclusion is the perceived need to plug leakages in government subsidies and welfare schemes.

The following two monitorable targets of the Twelfth Five Year Plan make the policy emphasis on financial inclusion, as well as its reason, clear:

Provide access to banking services to 90 per cent of Indian households by the end of Twelfth Five Year Plan.

Major subsidies and welfare related beneficiary payments to be shifted to a direct cash transfer by the end of the Twelfth Plan, using the Aadhar platform with linked bank accounts (Planning Commission 2012a, p. 36).

Social protection

Although wage employment and self-employment have traditionally been viewed as the main strategies for addressing rural poverty and for ensuring social protection, other direct measures have also gained prominence in recent years. The two main elements of social protection are food security and social security, and the dominant policy objective is to provide social protection to destitute and vulnerable groups. The basis

³⁷ Aided in part through investment support by the World Bank.

³⁸ <http://rural.nic.in> (accessed 20 April 2013).

³⁹ <http://rural.nic.in> (accessed 20 April 2013).

⁴⁰ <http://rural.nic.in> (accessed 20 April 2013).

⁴¹ Panchayats are democratically elected bodies that constitute the local self-governance structure in rural areas.

of such interventions is Article 41 of the Constitution of India, which provides guidance about the state's role in addressing 'undeserved want'.

PDS remains the largest food security programme in the country. It was originally a universal scheme designed to incentivise the production of food grains and to stabilise food prices, and was made a targeted programme in 1997 with a focus on the vulnerable sections of society (MoEF 2011). The National Social Assistance Programme (NSAP) was launched in 1995 and there are several schemes related to old-age pensions, widows' pensions, disability pensions, family assistance, maternity benefit, and so on (Planning Commission 2007; MoEF 2011). There is also an emphasis on food security and nutrition, especially in schemes administered through the Ministry of Consumer Affairs, Food & Public Distribution. More recently, insurance schemes for the general public have also been launched with support from the government. Although there are a number of initiatives, social protection remains at a nascent stage in India. The delivery system is also plagued with inefficiencies and rent-seeking (World Bank 2011). As with wage and self-employment, there is a focus on partnerships for social protection, especially public-private partnerships (PPP) (Planning Commission 2011).

Alternative discourses

Poverty and social protection are emotive and hotly debated issues and as a result, there are a number of alternative discourses on this theme. Some of the major alternative discourses are discussed in this section.

'Safety net' but not a 'ladder': Although the dominant discourse is in favour of continuing MGNREGA with some modifications, there is also some questioning of its long-term utility. Some observers felt that while it is certainly a 'safety net', it may not work as a 'ladder' out of poverty due to its exclusive focus on unskilled manual labour (World Bank 2011). 'What about those who want employment but don't want to do manual labour?', asked an observer, adding that the potential of MGNREGA in its present form was limited and will reach a saturation point in a few years. There is also a more pessimistic view that in spite of its promise, MGNREGA has failed to make much impact. According to one observer, 'MGNREGA has had some positive impacts but it has been hijacked. Poverty and exclusion we observe today, we never had it in 5,000 years'. He added that he is 'not a cynical person but it is the same bunch of people running the show'. Even the government has acknowledged that MGNREGA is not free from corruption. The Mid-Term Appraisal of the Eleventh Five Year Plan noted:

Initially, it appeared that instances of corruption under MGNREGA were less frequent than in similar programmes in the past. But it appears that the

'system' has fairly quickly devised creative ways around MGNREGA safeguards (Planning Commission 2010, para. 12.23).

Thanks to this line of thinking a sub-discourse is emerging on increasing the level of interventions on private lands, as investment in agricultural land is seen as a pathway out of poverty. Another sub-discourse is on developing/supporting common institutions to sustain MGNREGA interventions on public lands, which are *de facto* commonlands.

Impact on agriculture: One of the aspects of MGNREGA being debated is its impact on agriculture in the country. According to one observer, there is a big farmers' lobby that wants restrictions on the availability of wage employment under MGNREGA during the agricultural season; the MoA even wrote a letter to the MoRD on this issue. The main argument is that MGNREGA is adversely affecting agriculture as agricultural labourers are not available (or are available at much higher rates) during the agricultural season. There is, however, a counter argument that various soil and water conservation measures taken through MGNREGA actually enhance agricultural productivity.

A study was carried out by the Commission for Agricultural Costs and Prices under the MoA to understand the impact of various factors (including MGNREGA) on farm wages in India. It concluded that growth in the construction sector's GDP and overall GDP had a stronger influence on farm wages than MGNREGA (Gulati *et al.* 2013). The authors of the study also recommended that MGNREGA funds should be used to subsidise labour input required for agricultural operations on private farms:

*Now that the scheme has been in operation for 7 years, is there a way to make it more productive and less dole oriented? One of the ways to do this could be that MGNREGA operations are dovetailed with agricultural operations, wherein say half of the current market wage rate is paid by the farmer and the other half by the Scheme. This would help agriculture labour to earn more than what MGNREGA offers, and also help the farmer save on labour costs, while simultaneously ensuring that the labor remains productive. Higher labour productivity, with contained labour costs for the farmer, will help moderate the 'cost push' factor in food inflation. So it can be a win-win situation, and can be coordinated through panchayats (Gulati *et al.* 2013, p. 8).*

Area-based targeting and other rights-based approaches: Many civil society organisations target their resources at specific areas, which they choose based on indicators such as incidence of poverty and proportion of disadvantaged groups, such as Scheduled Castes and Scheduled Tribes. Many also attempt to address poverty and social security issues

by focusing on local people's individual or collective rights. Many organisations work on issues related to *jal, jangal* and *jameen* (water, forests, and land) and some organisations (for example, Oxfam India and Ekta Parishad) are focusing on getting land titles under women's names following an amendment to the Hindu Succession Act, as they believe that land tenure is the key to empowerment.

The government has also adopted the area-based targeting approach and one of its most ambitious initiatives is the Backward Regions Grant Fund (BRGF). This fund provides financial resources to supplement and converge existing developmental inflows into 250 identified districts.⁴²

Devolution: The devolution of powers to Panchayati Raj institutions has been an important policy discourse since the 73rd Constitutional Amendment Act in 1993. While *panchayats* continue to play an important role in the implementation of most government programmes, the emphasis on 'real devolution' of powers has weakened somewhat. There is an attempt, however, to revive the Panchayats (Extension to Scheduled Areas) Act 2006 that gives extensive powers to *gram sabhas* (village assemblies) in Schedule V (tribal) areas. One observer linked it to left-wing extremism but added that conformity of state Acts to the central Act is an issue.⁴³

Microfinance: A key change in recent years is a tempering of enthusiasm regarding microfinance. According to one observer, the presence of too many players, pressure to lend (targets) and coercion for recovery has given microfinance a bad name. One of the biggest players in the microfinance field is also facing financial difficulties. There is a move towards greater regulation of the microfinance sector: Andhra Pradesh has already introduced legislation and the Reserve Bank of India has also come up with a draft bill. Another observer not only felt that enthusiasm for microfinance has dissipated but that there is actually a backlash against it. A key issue is what people do with microfinance. There is lot of data on loans and recovery but surprisingly little on what happens in between, even though this is the most critical question.

Win-lose: Many persons focus on 'win-win' possibilities of poverty alleviation and climate change mitigation/adaptation, for example through investment in measures such as afforestation and drought-proofing. There is an alternative discourse, however, that poverty reduction will lead to greater emissions. One observer asked: 'Poverty reduction will require more food and energy

– so how will emissions go down?' He added that intensity of emissions may go down (due to improved efficiency), but not net emissions.

Corporate social responsibility: In the private sector, the discourse on poverty reduction and social protection is usually couched in terms of corporate social responsibility (CSR). There is an ongoing debate over whether making CSR mandatory will help in social causes. The Companies Bill was passed in 2012 by the Lok Sabha (lower house of the Parliament), which made it mandatory for certain companies⁴⁴ to spend at least 2 per cent of their average net profits in the preceding three years on CSR.⁴⁵ The thinking within the corporate sector is that such a provision is not going to help as it will degenerate into a 'tick box' exercise.⁴⁶ Instead an alternative business model is needed based on social entrepreneurship (e.g. Selco).⁴⁷

Alternative development: There is also a counter discourse to the dominant 'faster growth' discourse, coming mainly from the civil society activists interested in livelihoods and community rights. A good articulation of this discourse could be seen in a paper published in the *Economic and Political Weekly* in 2009 (Bhaduri and Patkar 2009; see also Kothari 2013). The following extract from the paper shows an alternative vision of economic development:

The composition of our GDP must change. It should be produced by the majority for their own use, while playing their rightful dual role as consumers and producers. The composition of output, produced in this manner at the local level would require less energy; no big dam would be needed to provide electricity nor would expensive and dangerous nuclear power be required; production in general would become much less intensive in its use of natural resources like land, water, forest and mineral products (Bhaduri and Patkar 2009, p. 13).

Climate change concerns

Climate change concerns are entering the poverty reduction and social protection discourses in the form of an emphasis on 'greening' and the sustainability of interventions carried out under different schemes and programmes. These concerns have been articulated by the Union minister for rural development himself:

For the people in rural areas, particularly the marginalized communities, healthy ecosystems support sustainable agriculture-based livelihoods and essential services such as drinking water, sanitation and health

⁴² <http://epanchayat.gov.in> (accessed 05 May 2013).

⁴³ There are special measures for left-wing insurgency affected districts, such as relaxation of some provisions related to diversion of forest lands for development projects. In the 60 worst affected districts, an Integrated Action Plan is being implemented (Planning Commission 2012).

⁴⁴ Companies with a net worth of 5 billion rupees or more, turnover of 10 billion rupees or more, or net profit of 50 million rupees or more in a financial year.

⁴⁵ <http://mca.gov.in> (accessed 05 May 2013).

⁴⁶ There is already a 5% compulsion for public sector enterprises, but the results have not been very encouraging.

⁴⁷ The CII-ITC Centre of Excellence for Sustainable Development has documented many innovative models and practices under its SI2 initiative (Joshi 2010).

care. Investing in natural resources also strengthens adaptation and resilience of communities towards climate change and natural disasters (GOI and UNDP 2012a, p. iii).

There is a growing realisation within poverty reduction and social protection policy circles that poverty reduction and economic growth can be sustained only if natural resources are managed on a sustainable basis. It has also been realised that addressing climate change concerns has to be an integral part of the 'greening' process. For example, of the five broad green outcomes listed in a key 'greening' document, two relate to climate change (see Box 3).

The MoRD has been recommended to establish a green cell, issue green guidelines, establish a green innovations fund and publish an annual green report (GOI and UNDP 2012a). There is a particular focus on MGNREGA as this initiative is widely felt to offer a major opportunity to enhance climate resilience and to achieve other environmental objectives.⁴⁸ The Approach Paper for the Twelfth Five Year Plan also notes:

MGNREGS has helped generate employment and income in rural areas but it can do much more to increase land productivity, particularly in rainfed areas. This calls for redesign of the programme in the Twelfth Plan (Planning Commission 2011).

There is considerable focus on leveraging MGNREGA investment for climate resilience and other environmental outcomes. 115 pilot districts for convergence in 22 states have been identified jointly with the MoEF, the Ministry of Water Resources and ICAR, from where best practices will be scaled-up nationally.⁴⁹ There has already been some good experiences of convergence from states such as Andhra Pradesh, Kerala, Uttar Pradesh, Gujarat, Chhattisgarh and Madhya Pradesh (Sharma 2010), but some observers felt that a lot more needs to be done to achieve greater convergence between MGNREGA and other government programmes and schemes at the field level.

Some observers also believed that the current shelf of permissible projects under MGNREGA was restrictive. Some were of the view that the current list of projects was developed with drylands in mind and therefore is not appropriate for intensively irrigated areas where the extent of commonlands is much less. Other observers felt that its scope should be increased beyond manual labour, and that handicrafts/artisanal work should also be permitted. The key challenge will be to develop a Schedule of Rates for such work.

BOX 3. KEY GREEN OUTCOMES

1. Improved natural resource conservation
2. Increased efficiency of resource use
3. Reduced negative environmental impacts
4. Strengthened climate resilience of communities
5. Contribution to climate change mitigation

Source: GOI and UNDP (2012a).

Policy arena gatekeepers

Table 2 shows the major policy arena gatekeepers that have been identified.

Main programmes⁵⁰

There are numerous government and civil society initiatives related to poverty reduction and social protection. Only the key initiatives of direct relevance to climate change resilient landscapes and livelihoods are discussed in this section.

MGNREGA: MGNREGA is the main programme in the area of wage employment. Its objective is to enhance the livelihood security of rural poor by providing 100 days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work. It also provides space for people to actively engage in the design and implementation of the programme. The programme started in February 2006 with the 200 most 'backward' districts of India. It was extended to an additional 130 districts in 2007-08 and to the entire country in 2008-09 (Planning Commission 2010). MGNREGA had an estimated budget of 330 billion rupees (\$7.13 billion) in 2012-13.⁵¹

UNDP India is working with the Indian government to strengthen the institutional capacity to support MGNREGA at different levels. Some of the promising activities under this programme are increasing transparency and accountability through ICT pilots, capacity-building for social audits across 23 states, and monitoring of convergence pilots.

NRLM: The main programme in the area of self-employment is NRLM. The key focus areas of NRLM, almost all of which are relevant for climate change resilience, are listed below (MoRD n.d.b).

⁴⁸ Several pilot studies have indicated this potential (see Sharma 2010).

⁴⁹ Source: note on 'UNDP support to implementation of Mahatma Gandhi National Rural Employment Guarantee Act'.

⁵⁰ Apart from the main programmes listed in this section, some other major rural development schemes are the National Drinking Water Programme, Indira Awaas Yojana (housing), Nirmal Bharat Abhiyan (sanitation) and Pradhan Mantri Gram Sadak Yojana (rural roads).

⁵¹ <http://rural.nic.in> (accessed 20 April 2013).

Table 2. Key policy arena gatekeepers in poverty reduction and social protection sectors

GATEKEEPER ⁵²	ROLE
MoRD	The MoRD is the nodal ministry for rural poverty alleviation and manages flagship schemes such as MGNREGA and NRLM.
Planning Commission	The Planning Commission plays an important role in debates regarding the poverty line and poverty estimates. It also plays a critical role in allocating funds for poverty alleviation programmes.
NAC	The NAC provides policy and legislative inputs to the government with a special focus on social policy and the rights of disadvantaged groups. It also reviews the government's flagship programmes and suggests measures to address any constraints in their implementation. ⁵³
Ministry of Consumer Affairs, Food & Public Distribution	This ministry runs several schemes that contribute towards social protection.
Ministry of Health & Family Welfare	This ministry runs several schemes that contribute towards social protection.
Civil society groups	There are numerous civil society actors (individual activists, organisations, and networks) that work on poverty alleviation and social protection issues. Some of the key civil society groups include the Self Employed Women's Association, BASIX, the Entrepreneurship Development Institute of India, and Mazdoor Kisan Shakti Sangathan. The National Consortium on NREGA is a network of civil society organisations working on MGNREGA. The MoRD has also promoted a network – the Professional Institutional Network – that includes many civil society organisations and academic bodies. The network supports the implementation of MGNREGA (see www.nrega.net , accessed 11 September 2011).

⁵² This is not an exhaustive list.

⁵³ <http://nac.nic.in/> (accessed 11 September 2011).

- *Social inclusion, mobilisation and institutions* – One of main activities will be mobilisation of the poor to form their 'own institutions', which are seen as a key prerequisite for large-scale poverty reduction.
- *Financial inclusion* – Linking the poor to mainstream financial institutions is a core strategy.
- *Livelihoods* – The aim is to stabilise and promote existing livelihood portfolios of the poor, in both farm and non-farm sectors. To cope with risks, poor households pursue diverse and multiple livelihood strategies; interventions will be needed across all these layers to reduce vulnerability, increase employment and support enterprises.
- *Convergence and partnerships*
- *Panchayats* – Formal mechanisms for regular interface between the institutions of the poor (SHGs) and *panchayats* are considered important.
- *Support structures* – Dedicated support structures at different levels.

NRLM had an estimated budget of 39.15 billion rupees (\$846 million) in 2012-13.⁵⁴

Social security: Table 3 lists some of the important social security programmes (excluding MGNREGA, NRLM and PDS).

⁵⁴ <http://rural.nic.in> (accessed 20 April 2013).

Table 3. Major social security programmes in India

PROGRAMME	DESCRIPTION	ALLOCATION FOR 2009-10 (BILLION RUPEES)
National Social Assistance Programme and Annapurna	Non-contributory pension for the elderly, maternity benefit, and assistance in case of death of the primary wage-earner Supply of food grains to the elderly under Annapurna	51.09 (\$1.10 billion)
Indira Awaas Yojana	Subsidies for rural BPL families for house construction	79.20 (\$1.71 billion)
Mid Day Meal Scheme	Hot meals for children in grades I to VIII in government and aided schools	80.00 (\$1.73 billion)
Aam Aadmi Bima Yojana	Free insurance cover for natural death, disability, and accident for rural landless households	-
Swabhimaan	Financial inclusion initiative that aims to provide branchless banking in un-banked areas	-

Source: http://rural.nic.in/nsap_1.htm (accessed 05 August 2011); World Bank 2011; MoEF 2011.

Ecosystem and natural resources management

India is a megadiverse country with ecosystems ranging from the snow-clad Himalayas to rainforests. The major policy focus is on the links and tradeoffs between the environment and economic growth. There is also considerable emphasis on people's participation in natural resources management, which has led to emergence of programmes such as Joint Forest Management and Participatory Irrigation Management. In recent years, this discourse has also moved towards rights-based approaches, reflected in legislations such as the Forest Rights Act. Climate change concerns are being addressed through the Green India Mission, which focuses on the restoration of degraded ecosystems and habitat diversity through active involvement of local communities.



Context

India is the world's seventh largest country with a geographical area of around 329 million hectares (Gol 2008b). The country is endowed with diverse ecosystems ranging from the snow-clad Himalayas to rainforests, making it one of the world's megadiverse countries (NFC 2006). India accounts for 11 per cent of the world's floral (MoEF 2009) and 7.4 per cent of the world's faunal species (ZSI 2011). It is also among the top ten forested countries in the world; the total forest and tree cover in the country is estimated to be over 78 million hectares, or 23.8 per cent of the country's geographical area (FSI 2011).

While policies for the management of natural resources have existed since colonial times, concern over the environment emerged at the national level in the 1970s. A National Committee on Environmental Planning and Coordination was set up in 1972, as an apex advisory body, for all matters relating to environmental protection and improvement. A number of important legislations, such as The Wildlife (Protection) Act 1972 and The Water (Prevention and Control of Pollution Act) 1974, were enacted (MoEF n.d.). During the 1970s, the central government also starting playing a more direct and proactive role in issues related to the ecosystem and natural resources management (NRM). As per the Constitution of India, the subject of 'forests' and 'protection of wild animals and birds' were in the state list. These were moved to the concurrent list in 1976 through the 42nd Constitutional Amendment (MoEF n.d.).⁵⁵

Concern over the environment increased significantly in the 1980s. The Forest (Conservation) Act and The Air (Prevention and Control of Pollution) Act were enacted in 1980 and 1981, respectively. A separate Department of Environment was established in 1980 and a full-fledged MoEF came into being in 1985. A comprehensive Environment (Protection) Act was enacted in 1986 (MoEF n.d.).

The last 25 years have seen the emergence and evolution of several policy discourses related to the ecosystem and NRM. Some of these discourses have weakened considerably (e.g. wastelands) while others (e.g. increasing forest/tree cover) are still going strong.

Dominant policy narratives

The following current dominant policy discourses related to ecosystem and NRM could be discerned:

Environment and growth: A major current policy discourse is on the link between the environment and

economic growth (often referred to as development). The Twelfth Five Year Plan document notes:

The Twelfth Plan must devise a strategy of development which effectively reconciles the objective of development with the objective of protecting the environment (Planning Commission 2012a, p. 9).

Achievement of rapid and sustainable growth is critically dependent on our ability to manage our natural resources effectively... In recent years, the deficiencies in the way in which we manage natural resources have come under increasingly critical scrutiny... Agitations... have become more common. These are no longer peripheral issues: They are issues which demand mainstream attention and pose challenges which this Plan must address squarely (Planning Commission 2012a, p. 20).

This implies that economic growth and development have to be guided by the compulsion of sustainability... (Planning Commission 2012a, p. 112).

The policy focus on the link between the environment and economic growth/development is even more obvious in the strategic plan of MoEF for the Twelfth Five Year Plan:

Vision: Conservation of environment and natural resources for the present and future generations in a manner consistent with the aspirations of the country for growth and development (MoEF n.d., p. 3).

Mission: To plan, promote, coordinate and oversee the implementation of environmental and forestry programmes in order to protect the environment and maintain a balance between conservation and development activities (MoEF n.d., p. 3).

The new strategy will have to be proactive rather than only reactive and must be consistent with the national policy paradigm and the country's overall objective of high economic growth. Thus the purpose of the new strategy will be to ensure environmental conservation without compromising on the goal of rapid economic growth. The environmental architecture will accordingly have to be strengthened and redesigned. It can also provide an impetus to growth by promoting green technologies (Extract from 'Purpose of the new strategy', MoEF n.d., p. 30).

That this issue has been exercising the minds of national policymakers for some time is evident from the text of the National Environment Policy that was announced in 2006:

The key environmental challenges that the country faces relate to the nexus of environmental degradation with

⁵⁵ The Constitution of India apportions responsibilities of governance between the centre and states. The legislative powers of the centre and states are listed in the Union List and the State List. Matters over which both the centre and states have the power to legislate are termed as concurrent matters and given in the Concurrent List. These lists form the Seventh Schedule of the Constitution of India. It is noteworthy that matters related to land and water (except issues related to inter-state rivers) have continued to be on the State List. Interestingly, 'environment' is not listed in any of the three lists.

poverty in its many dimensions, and economic growth (National Environment Policy 2006).

Some observers believed that environmental issues started receiving more attention in recent years when a particular minister took charge. It appears, however, that overall the imperative of development has remained stronger than environment concerns. For example, the National Environment Policy lists 14 Principles on which it is based. In spite of it being the *environment* policy, the first three principles actually emphasise the need for development:

1. *Human beings are at the centre of sustainable development concerns*
2. *The right to development*
3. *Environmental protection is an integral part of the development process* (National Environment Policy 2006).

It seems that there is now a move to de-emphasise the trade-offs between environmental and development goals. A senior environmental planner said that the 'environment should not be talked about in negative terms only, it should be linked to development'. The idea is to look for win-win solutions, such as the release of waste sites or the restoration of mined out areas for other purposes. There is also a move to streamline the process of environmental clearances and the handling of disputes/grievances. For example, a Green Tribunal was appointed in 2010 and a statutory body (the National Environmental Assessment and Monitoring Authority) for environmental appraisal and monitoring has been proposed. There is also a shift from a project focus to an area focus for environmental clearances (looking at, for example, how much more pollution an area can withstand). The following extract from the MoEF's Strategic Plan for the Twelfth Five Year Plan makes the emerging discourse clear:

Project EIAs [environmental impact assessments] do not adequately consider the cumulative impacts caused by several projects or even by one project's subcomponents or ancillary developments. The new trend is to address environmental issues earlier in planning and policy making processes. This could be done through cumulative impact assessment (MoEF n.d., p. 35).

The above steps all reflect a major overhaul of the country's environmental governance structure. A linked discourse is on identifying areas of critical environmental importance (inviolable zones), such as no-go forest areas for coal mining, critical wildlife habitats under the Forest

Rights Act (FRA),⁵⁶ critical tiger habitat, or entities with 'incomparable' values. Mining is an area under particular focus due to the strong overlap between mineral and forest resources and a spate of controversial mining projects and corruption scandals.

A key development related to the environment-growth linkage was the creation of the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) on the order of the Supreme Court of India. This body was entrusted with the responsibility of managing funds obtained from the user agencies in lieu of forest land granted for non-forestry purposes. A large amount of funds accumulated under CAMPA within a few years.⁵⁷

Quantity to quality: For a long time, the environment discourse in the country was dominated by the goal of achieving forest/tree cover for one third of the country.⁵⁸ This is beginning to change. Not only is focus within forestry shifting to the qualitative improvement of forests rather than just area expansion, but increasing attention is also being given to other important ecosystems such as wetlands and grasslands. Tree cover is no longer unquestionably accepted as the only indicator of ecological health. This shift in discourse is clearly perceptible in the key policy documents. While the Approach Paper for the Tenth Five Year Plan listed an increase in tree and forest cover as one of its eleven main monitorable targets, the Eleventh Five Year Plan and its Mid-Term Appraisal questioned the very basis of this approach:

Increase in forest and tree cover to 25% by 2007 and 33% by 2012 (Planning Commission 2001, p. 3).

The target of 33% forest and tree cover reflects the tree component without accounting for other vibrant non-tree natural biomes like grasslands...Further recognition of biodiversity characteristics and ecological services rendered by habitats like grasslands, natural desert ecosystems, alpine, and riparian habitats suggests that several biomes, even if devoid of tree component, can be recognized as 'green cover' and accounted so (Planning Commission 2007, Paragraph 9.1.18).

There is a need to change our mindset away from a 'quantity' focus towards a 'quality' focus. We should not merely focus on increasing the area under forest and tree cover, as we have traditionally done, but instead focus on increasing the quality of our forest and tree cover. This would mean greater emphasis on increasing the density of our existing forests, regenerating our degraded forest land, and eco-restoration of our scrub and grass land, mangroves, wetlands, and

⁵⁶ The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006. The Act is commonly referred to as the Forest Rights Act or FRA.

⁵⁷ The total fund size had reached over 250 billion rupees (\$5.4 billion) by March 2012 (Source: Minutes of the Fourth Meeting of the National CAMPA Advisory Council held on 25 January 2012).

⁵⁸ It was articulated for the first time in the National Forest Policy of 1952.

other ecological assets (Planning Commission 2010, Paragraph 22.4).

However, the quantitative focus has not entirely gone away, as can be seen from the following monitorable target (one of 25 core indicators) of the Twelfth Five Year Plan:

Increase green cover (as measured by satellite imagery) by 1 million hectares every year during the Twelfth Five Year Plan (Planning Commission 2012a, p. 35).

People's participation to the rights-based approach: From the 1980s onwards, there was considerable emphasis on people's participation in NRM. This emphasis was reflected in key national policies brought out at that time: the National Water Policy 1987 and the National Forest Policy 1988.

Efforts should be made to involve farmers progressively in various aspects of management of irrigation systems, particularly in water distribution and collection of water rates. Assistance of voluntary agencies should be enlisted in educating the farmers in efficient water use and water management (National Water Policy 1987, Paragraph 12).

[One of the basic objectives of the policy is] creating a massive people's movement with the involvement of women, for achieving these objectives and to minimise pressure on existing forests (National Forest Policy 1988, Paragraph 2.1).

This focus on participation led to the emergence of programmes such as Joint Forest Management (JFM) and Participatory Irrigation Management (PIM), which took centre stage during the 1990s. However, the discourse has subsequently shifted towards rights-based approaches. In the case of forests, this is most notably reflected in the enactment of the FRA. A high-level committee constituted jointly by the MoEF and the Ministry of Tribal Affairs (MoTA) recommended that all JFM areas should be managed as community resources under Section 3(1)(i) of the FRA (MoEF and MoTA 2010). In the case of irrigation, the discourse is reflected in the enactment of legislations such as the Maharashtra Management of Irrigation Systems by Farmers Act 2005 and similar laws in Uttar Pradesh, Arunachal Pradesh and Andhra Pradesh (Planning Commission 2010). There is also a renewed focus on the Panchayats (Extension to Scheduled Areas) Act 1996, which gives extensive rights over natural resources to local people in Schedule V areas (tribal areas). The recently introduced Mines and Minerals (Development and Regulation) Bill 2011 is also a step in the same direction. There is also considerable emphasis on improving non-timber forest produce (NTFP) governance and a rehabilitation

and resettlement package for people affected by various projects. Some observers see these moves as an attempt to counter growing naxalism (left-wing extremism) in forest/tribal areas. In fact, a separate form has been developed by the MoTA to monitor the implementation of FRA in the states affected by left-wing extremism.⁵⁹

Watershed Plus: A key development in the field of NRM took place in 1994 when a government committee⁶⁰ recommended that all major land development schemes be implemented on a watershed basis. As watershed development was primarily seen as a strategy for protecting the livelihoods of people living in ecologically fragile areas (MoRAE 1996; Rao 2000), up to 50% of rural employment scheme funds were reserved for watershed development projects (MoRAE 1999). A common set of guidelines to be followed by all relevant schemes were issued in 1995, which were revised in 2001 and in 2003.⁶¹ In 2005, another committee⁶² reviewed the watershed programme (MoRD 2008) and suggested its further strengthening and expansion (DoLR 2006). Based on these recommendations, the Integrated Watershed Management Programme (IWMP) was launched by the MoRD and a new set of guidelines issued in 2008 (MoRD 2008).

The sheer scale of the Indian watershed programme can be gauged from the fact that as much as 50.899 million hectares (over 15 per cent of the country) had been covered by the end of the Tenth Five Year Plan (Planning Commission 2007). The sustainability of efforts is a big issue, however, and according to a former policymaker, the entire effort collapses within a few years. He considered this a generic problem and not limited to the watershed programme; unless there is a strong NGO working in the area for long periods, sustainability is difficult. He added that in such a vast country, there may be barely 500 villages that could be considered 'success stories'.

An attempt is being made to converge all watershed programmes in the Department of Land Resources. There is also a focus on a cluster approach and allocating a significant amount of the project budget to livelihood support, production systems and micro-enterprises, which is sometimes referred to as 'watershed plus'. The continuing policy emphasis on the watershed approach can be seen from the fact that between the latter half of 2009-10 (when sanctioning of new projects under IWMP commenced) and the formulation of the Twelfth Five Year Plan (2012-13), an area of 15.13 million hectares had been sanctioned (Planning Commission 2012a).

⁵⁹ <http://tribal.nic.in/writereaddata/mainlinkFile/File1305.pdf> (accessed 30 August 2011).

⁶⁰ Technical Committee on DPAP and DDP constituted under the Chairpersonship of Prof C.H. Hanumantha Rao.

⁶¹ See <http://www.dolr.nic.in/fguidelines.htm> (accessed 30 August 2011).

⁶² Chaired by S. Parthasarathy, report submitted in January 2006.

Biofuel plantations: During the early- and mid-2000s, there was great interest in establishing biofuel plantations, especially of *Jatropha curcas* and *Pongamia pinnata* (Planning Commission 2003; MoRD 2004, 2006, 2008). The stated objectives included ‘rehabilitating degraded lands’ and reducing the country’s huge oil import bill (Planning Commission 2003, p. ix). In addition, the ‘India Vision 2020’ document issued in 2002 also contemplated energy plantations for generating as much as 100,000 megawatts of power (Planning Commission 2002a).⁶³ It seems, however, that enthusiasm for biofuel plantations has begun to wane somewhat. According to a senior analyst, huge investment was made in Chhattisgarh but yields have not been good. One of the main benefits of jatropha was that it was not going to compete with other crops for land and water, but field studies have indicated that the species/varieties used in India need a lot of water. Finding land for establishing these plantations has also not been easy. In Rajasthan, 11 potential districts were identified where official records indicated that 729,312 hectares of ‘culturable wastelands’ were available. When district collectors were asked to identify blocks for biofuel plantations, however, only 40,495 hectares (5.55 per cent) could be identified.⁶⁴

Ecosystem services: There is a growing interest in ecosystem services, at least at the rhetorical level, and the language of ecosystem services is slowly increasing in prominence in domestic policies. The draft National Working Plan Code developed by the Forest Research Institute emphasises the need to manage forests for multiple ecosystem services (see FRI 2012). The Himalayan Chief Ministers’ Conclave, held at Shimla on 30 October 2009, demanded ‘payment for ecosystem services’ that the Himalayan states are providing to the rest of the country:

The Conclave agreed to pursue the common agenda to protect, conserve and enhance forests and other natural resources of the state. They will work to ensure that financial incentives are provided for natural resources, which capture the cost of ecosystem services, carbon sequestration as well as land and livelihood opportunities. They prioritised the need for the 13th Finance Commission to enunciate the principle of payment to Himalayan states for the protection, preservation and enhancement of forests and other natural resources and desired that the Commission should provide adequate and ample resources for sustainable development (Extract from the Shimla Declaration on Sustainable Himalayan Development, Shimla, October 30, 2009).

The Twelfth and Thirteenth Finance Commissions (2005-10 and 2010-15, respectively) accepted the principle of payment for ecosystem services in their recommendations.⁶⁵ The proposed payments are in addition to the routine allocations and have been packaged as incentives to state governments to maintain/enhance their environmental performance. The Twelfth Five Year Plan has included a mechanism for operationalising this principle by developing an Environmental Performance Index. This Index, based on 16 variables, will be the basis for providing incentive payments to states and union territories through budgetary allocations (Planning Commission 2012a).

There is also considerable excitement about the concept of Reducing Emissions from Deforestation and Forest Degradation (REDD+). The key challenge, however, will be to balance the interests of those focusing on stocks (e.g. those interested in carbon sequestration) and those interested in flows (e.g. the livelihood needs of local communities), who are also likely to have the greatest opportunity costs.

Biodiversity: The dominant discourse in the area of biodiversity conservation is the establishment of protected areas. India currently has a network of 668 protected areas comprising 102 National Parks, 515 Sanctuaries, 47 Conservation Reserves and 4 Community Reserves (MoEF 2012). There is also considerable focus on community-based biodiversity conservation initiatives, especially among NGOs/civil society groups. According to some observers, there is greater emphasis on charismatic species, such as tigers, compared with overall biodiversity. It is generally a niche debate but it receives greater attention when it is linked to a larger debate such as land rights or forest rights. The links between climate change and biodiversity are just beginning to be explored. Referring to climate and biodiversity, a senior official of a conservation organisation said that ‘everyone comments on it but there isn’t a huge amount of work on it’. He added, however, that there has been some interesting work on receding vegetation on mountains.

Alternative discourses

There are a number of alternative discourses in the area of ecosystem and NRM. This section discusses some of those that could be discerned.

Complexity: Some observers considered ecosystems and NRM to be one of the most complex themes of climate change resilience. It is not only difficult to precisely define ecosystems, but also extremely challenging to value their services. One observer

⁶³ The ambitious nature of this target is evident from the fact that the total installed capacity for power generation in the country at that time was also just over 100,000 megawatts (Planning Commission 2002a).

⁶⁴ Progress Report of Biofuel Authority Rajasthan, June 2009.

⁶⁵ The Finance Commission defines financial relations between the centre and states.

considered the current work in this area to be mere 'romanticism'. While there is a lot of talk, there is little concrete action on the ground. Monitoring is thought to be one of the most challenging areas, as a range of factors such as seasonality, inter-linkages among different ecosystem components, and long-term impacts need to be considered. According to the head of a widely-respected environment and development organisation, 'the problem is that we don't know even the right questions to ask'. As an example of complexity, one observer mentioned that past flood control measures may have actually exacerbated the problem by increasing the impact of extreme events.

'Climate change' label: There is a view that climate variability has been around since time immemorial, though the problem may have become acute now. There is a long history of interventions to enhance the resilience of landscapes and livelihoods to climate variability, though the label 'climate change' has more recent origins. Earlier, these interventions may have been carried out to address droughts or floods. One observer commented that there isn't much difference between climate change adaptation and old-style 'development'. She used the analogy of an elephant (as in the 'Seven Blind Men and the Elephant' parable) to describe the current state of climate change adaptation in the country. According to a senior official, 'climate sells' these days so this label is being used everywhere.

Commodification: Some observers view various mechanisms being developed to finance/support carbon sequestration and storage as the 'commodification' of forests. The following extracts from a recent book illustrate this discourse well:

These processes of alienating trees from forests, counting, valuing in abstraction and exchanging them for other products or services of development point to the commodification of forests (Kohli and Menon 2011a, p. 13).

The financing of the GIM⁶⁶ is through the CAMPA, REDD and carbon forest markets all of which treat forests as a mobile, tradable commodity either at the national or the global scale. Each time the unit of measurement changes, it adds more money to the forest coffers, either through the pretext of diversion or conservation. The GIM also works well within a global system where it is possible to show forests as sovereign assets which can be made available, at a cost, to provide carbon forest credits to global players (Kohli and Menon 2011b, p. 7).

FRA and 'encroachments': Although there is continuing policy support for the FRA as seen in the draft action plan of the National Mission for a Green India and also the draft National Land Acquisition and

Rehabilitation & Resettlement Bill, some questioning of its impact on forests has also begun. According to an observer, the Act included a conservation angle, but there is not much focus on it. The following extract from the Act indicates this purported focus on conservation:

Whereas the recognised rights of the forest dwelling Scheduled Tribes and other traditional forest dwellers include the responsibilities and authority for sustainable use, conservation of biodiversity and maintenance of ecological balance and thereby strengthening the conservation regime of the forests while ensuring livelihood and food security of the forest dwelling Scheduled Tribes and other traditional forest dwellers... (The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006).

Although organisations such as Kalpavriksh are trying to use the space opened up by the FRA to promote community-based conservation (e.g. recognition of community-conserved areas), the reality is that the majority of claims filed have been for individual rights (mainly for agriculture) and very few claims have been filed for community rights (to manage forests). The high-level committee constituted to review the FRA noted that '[t]he progress of implementation of the Community Forest Rights (CFRt) under FRA is abysmally low' (MoEF and MoTA 2010, p. 15).

There is a feeling among some analysts that this Act should not have been uniformly applied across the country; the North-Eastern states and some other parts of the country have a different reality. There is also concern over the 'honeycombing' of forests. Organisations such as Seva Mandir are spearheading a campaign for the protection and preservation of forest and other commonlands, and are not in favour of blanket regularisation of encroachments. The recent Supreme Court judgement on the issue of encroachment on commonlands may re-ignite the encroachment removal debate:

Before parting with this case we give directions to all the State Governments in the country that they should prepare schemes for eviction of illegal/unauthorized occupants of Gram Sabha/Gram Panchayat/ Poramboke/Shamlat land and these must be restored to the Gram Sabha/Gram Panchayat for the common use of villagers of the village (Judgement in CIVIL APPEAL NO.1132 /2011 @ SLP(C) No.3109/2011, Paragraph 22).

JFM: Although JFM continues to find favour in the national forestry policy circles and is in fact a major pillar of GIM, it is increasingly being challenged, especially by those in favour of rights-based approaches. In a meeting on the FRA, the Union Minister for Tribal Affairs made the following comments:

⁶⁶ National Mission for a Green India is commonly referred to as the Green India Mission or GIM.

He specially drew attention to the issue of Joint Forest Management and stated that this scheme has largely been “reduced to an employment generation scheme in which people receive small wages for working in forestry projects.” He reiterated that it should not be confused with community powers and rights over forest management under the Forest Rights Act as all decisions under this scheme remain effectively in the control of officials. Therefore, under the Forest Rights Act, community rights cannot be given to JFM committees; these committees cannot exercise the powers given to gram sabhas and village level institutions under section 5 of the Act and cannot serve as management committees; gram sabhas are free to dissolve these committees and assume their benefits at any time; and it is preferable that, to avoid conflict, JFM programmes should be phased out and replaced with support for community forest management under the FRA (Gol and UNDP 2012b).

Compliance: According to an industry observer, the private sector looks at ecosystem and NRM issues mainly through a legal lens (i.e. compliance) and hasn’t started addressing these issues proactively. These issues are becoming increasingly important, however, as private sector companies face problems accessing land, water, and other resources. The companies are anticipating a carbon tax such as that being introduced in Australia. The interest in climate issues is evident from the companies’ enthusiasm for the Corporate Climate Change Strategies course run by the Confederation of Indian Industry (CII), which is always oversubscribed.

Ecosystem and market orientation: While most organisations are focusing on ‘community-based adaptation’ where the community is the starting point, some are focusing on ‘ecosystem-based adaptation’ where the ecosystem is the starting point. Some are also trying out market-based approaches, such as forest certification. WWF India is working with the Global Forest Trade Network, and is also working to expand such approaches in agriculture through the ‘thirsty crops’ project. However, some observers felt that caution is needed in this approach as the conservation organisations’ brands could be affected by certain practices of the network members. Organisations such as WWF India and the Foundation for Ecological Security also have a considerable focus on landscapes. For WWF India, this emerged from the need for wildlife corridors.

Forest certification: There is a growing acceptance of the concept of forest certification in India. The latest available Annual Report of the MoEF notes:

Certification and Eco-labelling are the new mantras to enhance the product positioning for a premium price

on one hand and ensuring better forest management practices on the other hand (MoEF 2012, p.33).

In September 2010, the Forest Certification Council of India was registered as a Trust.⁶⁷

Green GDP: There is a discourse that questions the current economic growth paradigm, and especially the calculation of high GDP growth figures. According to this discourse, the real growth would be much lower (perhaps even negative) if the depreciation of natural capital were properly accounted for. This discourse is manifesting itself through attempts to calculate ‘green GDP’ and the valuation of environmental services. The GIST Advisory Services is a prominent player in this area. The Twelfth Five Year Plan document notes:

Conventional ways of measuring GDP in terms of production do not take into account the environmental damage caused by production of goods and services. Only after GDP is adjusted for environmental costs that growth of adjusted GDP can be called a measure of the increase in total production in the economy. Recognising this problem, the Planning Commission has commissioned an Expert Group under Professor Partha Dasgupta to prepare a template for estimating green national accounts, which would measure national production while allowing for the negative effects on national resources (Planning Commission 2012a, pp. 112-113).

Out-of-the-box thinking: There is also a discourse on the need for innovative ‘out-of-the-box’ thinking to address immense challenges facing ecosystems and NRM. One observer gave the example of *The Blue Economy*, a book that lists 100 innovative nature-inspired technologies that could help in making aspects of world economy sustainable. In the Indian context, one example of such ‘out-of-the-box’ thinking is an attempt to address climate change through focusing on girls’ education.⁶⁸

Climate change concerns

There is increasing focus on climate change mitigation and adaptation in the context of ecosystems and NRM. The chapter on ‘Environment, Forestry and Wildlife’ in the Twelfth Five Year Plan provides a vision statement that explicitly refers to climate change:

Managing Environment, Forests, Wildlife and challenges due to Climate Change for faster and equitable growth, where ecological security for sustainability and inclusiveness is restored, equity in access to all environmental goods and ecosystem services is assured through institutionalisation of people’s participation... (Planning Commission 2012a, p. 202).

⁶⁷ <http://fcci.in> (accessed 05 May 2013).

⁶⁸ This is based on the premise that improving girls’ education will reduce the number of children they bear in future, thereby affecting climate change indirectly.

The dominant current thinking on ecosystem and NRM issues in the context of climate change is reflected in the draft action plan of the GIM. The Mission takes a holistic view of greening (not just plantations for carbon sequestration, but also ecosystem restoration, biodiversity, etc.) with a clear focus on local communities and their livelihoods. The Mission aims to generate about 2.4 billion person days of employment (MoEF 2010), and the following have been identified as its key objectives:⁶⁹

- Increased forest/tree cover on 5 million hectares of forest/non-forest lands and improved quality of forest cover on another 5 million hectares
- Improved ecosystem services including biodiversity, hydrological services and carbon sequestration as a result of the treatment of 10 million hectares
- Increased forest-based livelihood income for 3 million forest-dependent households
- Enhanced annual CO₂ sequestration of 50-60 million tonnes by the year 2020

The Mission has clear targets for different forest types and ecosystems including degraded forests, degraded grasslands, wetlands, mangroves, cold deserts, ravines, abandoned mining areas, and agro-forestry systems. There is also a proposal to develop a cadre of 'community foresters' who will be educated youth drawn from forest-dependent communities (MoEF 2010). The Mission also represents a revival for JFM: although there was a decline in interest in JFM since the enactment of the FRA,⁷⁰ there is considerable emphasis on JFM in the GIM. This is not surprising, considering that there are over 100,000 Joint Forest Management Committees (JFMCs) protecting/managing around 22 million hectares of forest lands (MoEF and WII 2006) and these offer unparalleled reach into remote forest areas.⁷¹ The Mission suggests the conversion of JFMCs as a committee of the *panchayat's* general body or *Gram Sabha*. There is also a move to revamp the Forest Development Agencies (FDAs – registered federations of JFMCs) that were created and supported under the National Afforestation Programme (NAP) (see below).⁷² Another important initiative is the setting up of the REDD Plus Cell in the MoEF (MoEF 2010). It is believed that '[a] majority of interventions under the Mission have potential to qualify under REDD/REDD Plus' (MoEF 2010, p. 36). Implementation of the Mission has been proposed over a ten-year period spread over

the Twelfth and Thirteenth Five Year Plans (MoEF 2010). Interestingly, initial financial support for the Mission has come from the National Clean Energy Fund,⁷³ which has been set up by imposing a cess on coal production (Planning Commission 2012a).

Policy arena gatekeepers

Table 4 lists the major policy arena gatekeepers that have been identified.

Main programmes

There are numerous government and civil society projects and programmes in the field of ecosystem and NRM. This section discusses some of the key national-level programmes that have a direct relevance to climate change resilient landscapes and livelihoods.

FRA: This is one of the most important initiatives in recent years for devolving powers over forest lands to local people. Available data from 14 states indicated that to 31 March 2013, as many as 3.25 million claims had been filed and over 1.28 million land titles, covering nearly 2 million hectares of forest land, had been distributed under the Act. Most of the claims/titles were in the individual category, however, and there was relatively less progress regarding community rights.⁷⁴

National Afforestation Programme (NAP): This is the main centrally sponsored scheme for supporting JFMCs in the country, operating through the institutional structure of FDAs. During the Eleventh Five Year Plan, the target was to cover 100,000 hectares and to operationalise 3,000 additional JFMCs (Planning Commission 2007; Planning Commission 2010).

Compensatory Afforestation Fund Management and Planning Authority (CAMPA): In recent years, CAMPA has emerged as an important source of funds in the forestry sector and a number of programmes are being drawn up at the state level to utilise CAMPA funds. These funds are meant for the development, maintenance and protection of forests and wildlife management as per CAMPA guidelines. The amount potentially available through CAMPA now exceeds the regular central budgetary provisions for forestry.⁷⁵

IWMP: IWMP is the main programme for watershed development in the country and is being implemented as per the common guidelines issued in 2008. A feature of this programme is the emphasis given to livelihoods in addition to resource conservation.⁷⁶ The importance

⁶⁹ Source: Presentation made by MoEF to the Prime Minister's Council on Climate Change, 22 February 2011.

⁷⁰ The decline becomes apparent when one considers that during the Tenth Five Year Plan, there was an attempt at 'universalisation of JFM' (Planning Commission 2002b).

⁷¹ It is unlikely that all of the JFMCs are active, but the programme is still easily among the most ambitious community-based NRM efforts in the country.

⁷² One observer termed the creation of FDAs as the 'biggest retrograde step' in JFM.

⁷³ Set up in 2010. The government expects to collect 100 billion rupees (\$2.16 billion) in the Clean Energy Fund by 2015 (Planning Commission 2012a).

⁷⁴ <http://tribal.nic.in> (accessed 27 April 2013).

⁷⁵ Source: Presentation made by MoEF to the Prime Minister's Council on Climate Change, 22 February 2011.

⁷⁶ <http://dolr.nic.in/> (accessed 06 August 2011).

Table 4. Key policy arena gatekeepers in ecosystem and natural resources management sectors

GATEKEEPER ⁷⁷	ROLE
MoEF	The MoEF is the nodal ministry for all environmental and forest-related issues. It sets policies and regulates these sectors. GIM and a part (governance) of the National Mission for Sustaining the Himalayan Ecosystem (NMSHE) are coordinated by the MoEF.
Planning Commission	The Planning Commission plays a key role in deciding the broad policy aims, especially through the mechanism of Five Year Plans. The Planning Commission is emphasising inclusive and <i>sustainable</i> growth in the Twelfth Five Year Plan, for example.
Judiciary	The higher judiciary plays an important role, mainly through 'public interest litigations' and sometimes through taking <i>suo moto</i> notice of issues related to ecosystem and NRM. Through various judgements, the judiciary has laid down several important principles of environment management in the country. A number of ecosystem- and NRM-related Regulations, Authorities and Guidelines can be attributed directly or indirectly to the judiciary.
Central Empowered Committee (CEC)	The CEC was constituted by the Supreme Court in 2002 to assist in an ongoing case (popularly known as the 'Godavarman' case or 'forest' case). It plays an important role in matters related to forest land diversion for various industrial and other projects.
MoTA	MoTA is the nodal ministry for the implementation of the FRA.
Major NGOs	Several NGOs are making important contributions to many policy discourses. Some of the prominent national-level NGOs are the Centre for Science and Environment, The Energy and Resources Institute, Development Alternatives, the Ashoka Trust for Research in Ecology and the Environment and WWF India.
Civil Society Groups	Several civil society groups and networks are actively contributing to ecosystem- and NRM-related discourses. Some of the influential groups include Kalpavriksh, Campaign for Survival and Dignity, Bharat Jan Andolan, Ekta Parishad, and Narmada Bachao Andolan.
Funding Agencies	Several funding agencies support projects and programmes in the ecosystem and NRM field, and directly or indirectly contribute to policy discourses. 5.6 per cent of the approved outlay of the MoEF in the Eleventh Five Year Plan was contributed by externally-aided projects (Planning Commission 2010). Although several international funding agencies are active in India, the Japan International Cooperation Agency (JICA) seems to be the most prominent player in forestry. The other noteworthy players in the environment and forests sector are the World Bank and the UK's Department for International Development (DFID).

⁷⁷ This is not an exhaustive list.

of the programme is evident in the outlay of 153.59 billion rupees (\$3.32 billion) that was made for it in the Eleventh Five Year Plan (Planning Commission 2010).

MGNREGA: Although the main objective of MGNREGA is wage employment, its secondary objective is the creation of productive physical assets in villages. The sheer scale of the programme and its

focus on issues such as drought proofing and flood control makes it potentially one of the most important programmes from the perspective of ecosystem and NRM.

GIM: Once GIM becomes operational, various initiatives under it will become the most important programmes in the ecosystem and NRM sector from the perspective

of climate change. The projected *additional* budget requirement for the Mission is 460 billion rupees (\$9.94 billion) over the next ten years. This is considerably more than the outlay of 100 billion rupees (\$2.16 billion) received by the MoEF in the Eleventh Five Year Plan. Although it is not clear if this level of money will actually be available (the initial funding support was provided through the National Clean Energy Fund), it is almost certain that even with a reduced level of funding, the Mission will still be among the most important initiatives in the field of ecosystem and NRM in the coming decade.

Climate change risk management

India is vulnerable to a range of natural disasters, which cause considerable human and economic loss; climate change is likely to exacerbate an already serious situation. Natural events-related risk management in India falls into two main categories: disaster management and agricultural risk management. The key policy focus for both categories is on establishing an institutional structure at different levels and risk reduction through measures such as capacity building of local communities and crop insurance. Climate change concerns have entered the risk management discourse mainly due to alarm over the increasing frequency and magnitude of extreme weather events. They focus on integrating climate change concerns within existing DRR responses – elements of the emerging discourse on climate smart DRR includes a focus on disaster preparedness alongside disaster response.



Context

A large proportion of India is considered vulnerable to natural disasters. Around three-quarters of the coastline is considered to be at risk from cyclones, over two-thirds of the country is considered susceptible to droughts, and over 8 per cent of the country is considered prone to floods (Planning Commission 2007). These and other natural disasters cause considerable human and economic loss; climate change is likely to exacerbate an already serious situation.

Dominant policy discourses

Although institutional mechanisms for dealing with droughts and floods (and famines) have been in place since colonial times (e.g. the Famine Code, the Office of the Relief Commissioner and the Calamity Relief Fund), a modern institutional structure for risk management is a relatively recent development in India. Natural events-related risk management in India falls into two main categories: disaster management and agricultural risk management.

Disaster management

There has been considerable focus on disaster management in the country during the past decade.⁷⁸ Although a National Disaster Mitigation Programme had been operational from 1993-94 – with a focus on training and capacity-building of government functionaries and other stakeholders⁷⁹ – it was the Odisha super cyclone (1999) and the Gujarat earthquake (2001) that highlighted the need for a comprehensive disaster management plan. Consequently, the Tenth Five Year Plan (2002-07) recognised disaster management as an important issue and devoted a full chapter to it for the first time (Planning Commission 2007). The next major watershed was the Hyogo Framework of Action, a ten-year plan adopted by 168 member states of the United Nations in 2005 at the World Disaster Reduction Conference that took place just a few weeks after the Indian Ocean tsunami.⁸⁰ Following this, India passed the Disaster Management Act 2005.

The following dominant policy discourses on disaster management could be discerned:

Institutional structure: Since the enactment of The Disaster Management Act in 2005, there has been considerable emphasis on establishing an institutional structure for disaster management at different levels⁸¹ and under the Act, Disaster Management Authorities have been set up at the national, state and district levels. Other elements of this institutional structure are the National Institute of Disaster Management (NIDM)⁸² for capacity-building, the National Disaster Response Force for rapid action,⁸³ and the National Disaster Response and Mitigation Funds.⁸⁴ The policy importance being attached to the institutional infrastructure of disaster management is evident from the fact that the prime minister is the chairperson of the National Disaster Management Authority (NDMA). The NDMA has prepared guidelines for dealing with various kinds of disasters, natural and man-made. There is considerable focus on the involvement of Panchayati Raj institutions at the local level. Some observers felt, however, that there is not enough space for civil society participation. Further, there is hardly any focus on insurance issues within the institutional structure that is being developed.⁸⁵

Disaster risk reduction: With the establishment of the institutional structure, the focus moved from relief and rehabilitation to prevention, preparedness and mitigation (Planning Commission 2007).⁸⁶ In recent years, there has been a perceptible shift from a natural calamity ('act of God') approach to disaster risk reduction (DRR) (see Menon 2009).⁸⁷ Under DRR, a more holistic view of disasters is taken by considering issues that may not be directly linked to a particular event (such as poverty and its root causes) but that nonetheless profoundly influence the impact of that event on the affected people.

Community-based disaster risk reduction: There is considerable interest, especially among civil society actors, in community-based disaster risk reduction (CBDRR). This is based on the realisation that local people are usually the first responders and

⁷⁸ Although disaster management is primarily the responsibility of state governments under the Indian federal system, the central government also plays an important role (Sinha n.d.).

⁷⁹ A National Centre for Disaster Management was set up at the Indian Institute of Public Administration through the scheme.

⁸⁰ <http://www.unisdr.org/we/coordinate/hfa> (accessed 31 August 2011).

⁸¹ The Act defines disaster management as a 'continuous and integrated process of planning, organising, coordinating and implementing measures which are necessary or expedient for (i) prevention of danger or threat of any disaster; (ii) mitigation or reduction of risk of any disaster or its severity or consequences; (iii) capacity-building; (iv) preparedness to deal with any disaster; (v) prompt response to any threatening disaster situation or disaster; (vi) assessing the severity or magnitude of effects of any disaster; (vii) evacuation, rescue and relief; (viii) rehabilitation and reconstruction' (Source: The Disaster Management Act, 2005, Section 2 (e)).

⁸² The National Centre for Disaster Management was upgraded to the NIDM. It also hosts the SAARC Disaster Management Centre and works as its national focal point.

⁸³ An eight-battalion strong force comprising of 144 specialised response teams.

⁸⁴ <http://ndma.gov.in> (accessed 31 August 2011).

⁸⁵ Some civil society groups (e.g. Oxfam India) have experimented with micro insurance in their programme areas.

⁸⁶ Relief also continues to be important, however.

⁸⁷ Disaster risk reduction is defined as 'a set of activities carried out to minimise vulnerabilities and disaster risks in a society, and avoid (prevention) or to limit (mitigation and preparedness) the adverse impact of hazards within the broad context of sustainable development' (Padmanabhan 2009a, p. 1).

consequently need to be actively involved in planning and executing DRR strategies. There is a particular emphasis on capacity-building of local people as well as the use of locally available materials and technologies. UNDP India, which entered the disaster management arena after the Maharashtra earthquake in 1993, has played an important role in institutionalising CBDRR within the government apparatus (Padmanabhan 2009b). An important element of the CBDRR strategy is the active involvement of communities in developing and maintaining key infrastructure and resources for DRR. For example, the use of shelters for community benefit in normal times (e.g. as schools) encourages local people to contribute to their maintenance (Jafar 2009). Within the CBDRR discourse, there are several sub-discourses focusing on particular groups or activities. The specific target groups include *inter alia* women, children, people with disabilities and specific occupational groups (e.g. salt farmers). The targeted activities include *inter alia* health, sanitation, agriculture and local capacity-building for rescue and relief (see UNICEF 2009).⁸⁸

International aid: According to some observers, there seems to be reluctance on the part of the central government to request or accept international aid in times of disaster. One observer, who has worked in the disaster management field for several years, thought that this could be linked to the changing self-image of the country as an emerging power and also linked to 'a sense of pride'.

Agricultural risk management

The second component of the climate change-related risk management strategy is agricultural risk management. The following dominant discourses on agricultural risk management could be discerned:

Institutional structure: As with disaster management, there is an emphasis on the development of appropriate institutional structures at different levels. The current thinking in policy circles on this issue is reflected in the following extract from the Eleventh Five Year Plan:

India has developed response mechanisms for primary (crop failures) and to some extent secondary (livestock deaths) consequences of climate variability. However, a tertiary mechanism which goes beyond resource transfer to resource assessment and management, through climate forecasting, climate information generation and dissemination, early warning system, mapping of agricultural losses through remote sensing technology, and a pre- and postclimate [sic] change response need to be put in place on a decentralized

basis (Planning Commission 2007, Chapter 1, Paragraph 1.66).

One senior agriculture official informed that detailed contingency plans are being prepared for the country's different agro-ecological zones. The development of adequate food storage facilities (in both the public and private sectors) is another important thrust area.

Crop insurance: One of the main strategies to manage climate-related risk in agriculture is crop insurance, which has existed in India for some time. The main government scheme at present – the National Agriculture Insurance Scheme (NAIS) – has been available since 1999–2000, and by 2008–09 134.7 million farmers were covered under it (Planning Commission 2010).⁸⁹ The scheme has not performed very well, however (Planning Commission 2007), with the main problem being that it is not really actuarial insurance. The premiums for different crops are usually fixed at the national level, irrespective of locality-specific risk. Further, the government pays for the excess of claims over premiums. Being compulsory for loanee farmers and with few non-loanee farmers involved, the NAIS mainly insures banks against default. The scheme is not very popular with farmers as it is based on crop-cutting experiments, which delays payment until well after harvest. Further, as a 'block' is taken as the lowest unit, the farmer is paid only if there is yield shortfall at the block level (Planning Commission 2007).⁹⁰ In spite of all the problems, the scheme is likely to continue in the near future and in the mid-term appraisal of the Eleventh Five Year Plan, it was suggested that the scheme could be taken up as a non-plan programme with a larger coverage of farmers (Planning Commission 2010).

Alternative discourses

This section discusses the various alternative discourses on climate change risk management that could be discerned.

Disasters and development: There is a discourse, especially among civil society actors, that disasters and development should not be seen as separate issues. At present, however, there is little synergy between the two. As the government spends an enormous amount of money every year on development programmes such as MGNREGA, these could make a significant contribution to DRR if designed properly. Climate change is also seen as critical for human development in the future. A UNDP report notes that '[c]limate change may be the single factor that makes the future very different, impeding the continuing progress

⁸⁸ For example, CASA India trains disaster response volunteers from the local community. In Odisha, the role of these volunteers has been recognised by the State Disaster Management Authority. Some civil society groups (e.g. the Gorakhpur Environmental Action Group) are focusing on building the adaptive capacity of local communities through participatory planning for better management of natural disasters and to develop better strategies at the community level for coping with them.

⁸⁹ A recent estimate suggests that crop insurance schemes reach about 25 per cent of farmers/cropped area of the country (DAC 2013).

⁹⁰ A block is a rural area comprising of several *gram panchayats* (local administrative unit at the village level), which is delineated for administrative and rural development purposes. It is administered by a Block Development Officer.

in human development that history would lead us to expect' (UNDP 2010, p. 102).

It was also mentioned by several respondents that many environment and development projects that didn't have an explicit climate focus also contributed significantly to building climate resilient livelihoods and landscapes. The DFID-supported Western Orissa Rural Livelihoods Project was cited as an example. There is some work being carried out by civil society actors on disaster-resilient community development, but the scale of the efforts is small compared with the need.

A related discourse focuses on infrastructure development, with two distinct strands. The first is that due to climate change, huge investment will be needed just to maintain the current level of benefits from physical infrastructure, e.g. to raise the level of culverts to maintain their utility. The second strand pertains to the need to integrate DRR in all infrastructure projects as well as the Environmental Impact Assessment (EIA) process. During interviews, examples of recent massive floods of the Kosi river and more diffuse localised flooding due to the construction of highways and roads (e.g. under the Pradhan Mantri Gram Sadak Yojana) were cited to highlight the importance of integrating DRR with infrastructure project planning.

Climate change as an opportunity as well as a risk: The private sector views climate change as both an opportunity and a risk. The opportunity is mainly seen in terms of developing new low carbon technologies and products and in the carbon trade itself. The risk is seen in broad terms and is not limited to physical risk alone. The likely tightening of the regulatory environment⁹¹ and a potential increase in liability are also seen as major risks associated with climate change (see CDP 2010). It is important, however, to note that there is no one consolidated discourse in the entire private sector. There is a sharp distinction between large and small enterprises, and also between 'enlightened' enterprises and others. The climate change-related discourse is largely limited to large/enlightened enterprises; the majority of small enterprises have a short-term perspective and 'understand only financial language'. At the moment, those that are engaging with climate issues are doing so mainly because of their rising energy bills. They usually react to such issues only if pressure is exerted through the supply chain. It is also being increasingly realised, however, that given the scale and importance of small enterprises in India,⁹² it will not be possible to address climate change concerns without actively engaging with them (Soni 2009).

Climate change concerns

Climate change-related issues started entering the DRR discourse mainly due to concern over the increasing frequency and magnitude of extreme weather events. Although there is still considerable confusion at the ground level regarding the attribution of particular risks to climate change, climate concerns are gaining prominence within DRR. The growing policy importance of climate issues is reflected in the Incheon Declaration issued after the 4th Asian Ministerial Conference on DRR in Seoul, 25-28 October 2010:

...climate change is already dramatically magnifying the disaster risks threatening many developing nations and especially the very existence of certain small island developing States, and which recognised that addressing the underlying causes of disaster risk therefore offers the potential for a 'triple win' – for disaster risk reduction (DRR), climate change adaptation (CCA), and poverty reduction (Incheon Declaration on Disaster Risk Reduction in Asia and the Pacific 2010).

The integration of climate concerns with DRR is leading to the emergence of a new discourse on 'climate smart disaster risk management', based on three pillars:

- Tackle changing disaster risks and uncertainties
- Enhance adaptive capacity
- Address poverty and vulnerability and their structural causes

The main difference from earlier approaches is that rather than focusing on pillar one, equal emphasis is put on the second and third pillars as well (Mitchell *et al.* 2010). Although climate concerns are increasingly being articulated within the DRR community, one observer – who has been closely associated with the DRR field – commented that he was not sure how much of it was due to a genuine concern over climate change and how much was due to climate change becoming a 'buzz word'.

Another route through which climate change concerns are being integrated into risk management discourse is the introduction of weather-based insurance products. In recent years, public sector and private insurance companies, such as the Agriculture Insurance Company of India, ICICI-Lombard and IFFCO-Tokio, have become involved in weather-based insurance (Planning Commission 2007). These products cover the deviation of certain weather parameters (mainly rainfall and temperature), which are deemed to affect crop

⁹¹ Large companies are also monitoring the regulatory environment in other countries. For example, if a carbon tax is imposed on the Australian mining industry, the raw material cost for Indian companies may go up as many of them import coal and other raw materials from Australia.

⁹² There are an estimated 26 million micro, small and medium enterprises in India that employ 59 million persons. These enterprises account for about 45 per cent of the manufacturing output and 40 per cent of the total exports from the country (MMSME 2011).

production. The two main advantages of weather-based insurance are its relative simplicity (and therefore lower administration cost) and reduced chances of moral hazard compared with insurance linked directly to crop productivity (Planning Commission 2010). Although weather-based insurance has good potential to mitigate agricultural risks related to climate change, it is still at a nascent stage in the country.

Policy arena gatekeepers

Table 5 lists the major policy arena gatekeepers that have been identified.

Table 5. Key policy arena gatekeepers in climate change risk management

GATEKEEPER ⁹³	ROLE
Ministry of Home Affairs (MHA)	The MHA is responsible for disaster management in the country.
MoA	The MoA is responsible for tackling risk in agriculture.
NDMA	NDMA is the apex national body that is mandated to lay down the policies, plans and guidelines for disaster management to ensure timely and effective response to disasters.
State Disaster Management Authorities (SDMAs)	The role of SDMAs at the state level is similar to that of NDMA at the national level.
NIDM	NIDM has been assigned nodal responsibilities for human resource development, capacity-building, training, research, documentation and policy advocacy in the field of disaster management.
UNDP India	UNDP India has played an important role since the mid-1990s in strengthening institutional and local communities' capacity for DRR.
UNICEF India (United Nations Children's Fund)	UNICEF India has supported CBDRR in collaboration with several state governments (UNICEF 2009).
The World Bank	The World Bank supports national efforts to reduce risks from cyclones.
National Alliance for Disaster Risk Reduction	The National Alliance for Disaster Risk Reduction promotes enhancement of resilience of communities by attempting to influence policies and practices.
Sphere India	Sphere India is a national coalition of humanitarian agencies that includes government agencies, NGOs and their networks, and UN agencies working in India.
International and national NGOs	Several international and national NGOs are active in the field of disaster management. Some of the key players that were mentioned during the interviews include the Red Cross, SEEDS India, Christian Aid, Concern Worldwide, Save the Children, Oxfam India, Plan India and CASA India.
Armed forces	The armed forces play a major role in rescue and relief operations and thus have a say in policy matters. The shifting of disaster management from the MoA to the MHA indicates the importance of response and security issues.

⁹³ This is not an exhaustive list.

Main programmes

A number of programmes related to climate change risk management are being implemented by government agencies and NGOs in India. As it is not possible to list all of these, this section briefly discusses a few that are most relevant from the perspective of climate change resilient landscapes and livelihoods.

Disaster Risk Management Programme: UNDP supported the central and state government agencies in implementing the Disaster Risk Management Programme from 2002 to 2009, which focused on

institutionalisation and community preparedness covering approximately 30 per cent of India's population across 176 disaster-prone districts. Under the programme, multi-hazard disaster management plans were prepared at the district (243), block (1,465), *gram panchayat* (32,374) and village (72,239) levels, enhancing community preparedness and emergency response mechanisms. The programme also helped in the development of two web portals: the India Disaster Resource Network and the India Disaster Knowledge Network.⁹⁴ A follow-on programme was also carried out between 2009 and 2012.⁹⁵

National Cyclone Risk Mitigation Project:

This project, being implemented with the help of a \$225 million loan from the World Bank, aims to strengthen early warning and communication systems and to establish a network of access roads, saline embankments and cyclone shelters in coastal Odisha and Andhra Pradesh. It is hoped that the project will subsequently be extended to other vulnerable parts of the country.⁹⁶

National Disaster Communication Network:

Under this initiative, an additional satellite-based communication network (VSAT Network) is being established to overcome the problem of terrestrial communication system failure during disasters.⁹⁷

Capacity-building and school safety: NDMA is carrying out training and capacity-building programmes for Panchayati Raj institutions and urban local bodies in collaboration with the Indira Gandhi National Open University. A separate scheme for school safety is also being implemented in 43 districts across 22 states.⁹⁸

UNICEF CBDRR Project: UNICEF India launched a pilot CBDRR project in West Bengal following a flood disaster. It subsequently launched similar initiatives in other states such as Bihar, Rajasthan, Maharashtra and Madhya Pradesh (Stojanovic 2009). The West Bengal project is considered particularly successful as it led to both the emergence of a 'social movement' and the creation of an appropriate institutional structure by the state government, in the form of a civil defence department (Padmanabhan 2009a).

Pilot Weather-based Crop Insurance Scheme:

A Pilot Weather-Based Crop Insurance Scheme (WBCIS) (central sector scheme) was started in 2007-08.⁹⁹ To make the scheme competitive, the premium charged to the farmers is restricted to the premium

payable under NAIS, with the difference between the premium charged and the actuarial rate being paid by the government. Some private insurance companies have also been involved to improve service delivery. In *Khari*¹⁰⁰ 2008, around 140,000 farmers with 187,000 hectares of crop area were insured under this scheme (Planning Commission 2010). The scheme had a budget of 6.55 billion rupees (\$141 million) in 2012-13, which was fully utilised (DAC 2013).

Greening the industry: CII is working on several programmes that could directly or indirectly help industry players in climate change risk management. Under the Green Supply Chain Project, the focus is on specific sectoral and geographical industry clusters, such as the auto industry. Under the Carbon Disclosure Project, the top 200 companies (by market capitalisation) were requested to disclose information on climate change-related strategies as well as their GHG emissions. 51 companies (25.5 per cent) responded to the information request, with a third of these sharing their GHG emissions data. As part of the Green Public Procurement project, guidelines for public procurement are being developed for 19 product categories (CDP 2010).

Inter-agency groups: Sphere India is promoting inter-agency groups at the local level that help in undertaking coordinated action in case of disaster. At the national level, it is trying to put together a 'unified response system' to avoid duplication and to help in coordination between civil society groups and government agencies.

⁹⁴ http://www.undp.org/cpr/documents/disaster/asia_pacific/India_Disaster%20Risk%20Management%20Programme.pdf (accessed 10 September 2011).

⁹⁵ <http://ndma.gov.in> (accessed 27 April 2013).

⁹⁶ <http://www.worldbank.org.in/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/INDIAEXTN/0,,contentMDK:22808745~menuPK:295603~pagePK:2865066~piPK:2865079~theSitePK:295584,00.html> (accessed 10 September 2011).

⁹⁷ <http://ndma.gov.in> (accessed 27 April 2013).

⁹⁸ <http://ndma.gov.in> (accessed 27 April 2013).

⁹⁹ <http://agricoop.nic.in/Compedium7410.pdf> (accessed 05 August 2011).

¹⁰⁰ Monsoon season crop.

Climate change concerns in the Indian Himalayan Region

The Indian Himalayan Region covers over 16 per cent of the country. The region contains over a third of the country's forest cover and nearly 50 per cent of the country's flowering plants. About 17 per cent of the region is under permanent snow cover and glaciers, and around 30 to 40 per cent receives seasonal snow cover. Through this snow cover, the region feeds the subcontinent's major perennial rivers that provide drinking water, irrigation and hydropower. One of the key policy discourses concerns the importance of the Himalayan landscape for the ecological security of the country. The focus on the region in the context of climate change is most clearly reflected in the National Mission for Sustaining the Himalayan Ecosystem, the only mission under the National Action Plan on Climate Change that focuses on a particular landscape.



Context

The Indian Himalayan Region (IHR), including the Himalayas proper and the north-eastern hill states, is spread over 53 million hectares, over 16 per cent of India's geographical area. From east to west, it stretches over 2,500 kilometres and its width varies from 150 kilometres to 600 kilometres. The IHR is critical for the ecological health of the country, and indeed the entire subcontinent. The region contains over a third of the country's forest cover and nearly half of the 'very good' forest, and supports nearly 50 per cent of the country's flowering plants and covers 70 per cent of the Himalayan biodiversity hotspot. About 17 per cent of the region is under permanent snow cover and glaciers and around 30-40 per cent gets seasonal snow cover. Through this snow cover, the IHR feeds the subcontinent's major perennial rivers that provide drinking water, irrigation and hydropower. Although it is home to less than 4 per cent of the country's population, around 30 per cent of the Scheduled Tribes in the country are found in this region (MoEF and GBPIHED n.d; Planning Commission and GBPIHED 2010). The IHR is considered particularly vulnerable and susceptible to climate change (DST 2010).

In the initial decades after independence, policies for the IHR were no different from the rest of the country. From the Fifth Five Year Plan (1974-79) onwards, however, there has been a realisation that development issues, needs and problems of hill areas are different from those of the plains, and require a different set of policies and programmes. Based on this realisation, a special Hill Area Development Programme was initiated during the Fifth Five Year Plan (Planning Commission and GBPIHED 2010).

Dominant policy discourses related to climate change

Ecological security: One of the key policy discourses is regarding the importance of the Himalayan landscape for the ecological security of the entire country. The National Environment Policy 2006 noted the key role of the mountain ecosystems and also suggested an Action Plan to address various challenges:

Mountain ecosystems play a key role in providing forest cover, feeding perennial river systems, conserving genetic diversity, and providing an immense resource base for livelihoods through sustainable tourism. At the same time, they are among the most fragile of ecosystems in terms of susceptibility to anthropogenic shocks (National Environment Policy, Paragraph 5.2.6).

A Task Force constituted by the Planning Commission to look into issues related to hill areas also emphasised the ecological role of the IHR, especially in the provision of fresh water. It noted:

Therefore, the IHR States must be persuaded to emphasize on a development path that does not disturb the primary colours of this picture: white, blue, green and brown representing the precious natural resources of the IHR, namely the snow and water, forest, and land (Planning Commission and GBPIHED 2010, p. 10)

The Task Force also suggested the establishment of a special fund to compensate IHR states for their opportunity cost:

Set up a non-lapsable, IHR Gap Fund from sources to be identified by the IHR States with the Planning Commission, for compensating IHR states for sacrificing conventional development in favour of ecologically sustainable and water conserving initiatives (Planning Commission and GBPIHED 2010, p. 13).

The focus on the IHR in the context of climate change is most clearly reflected in the NMSHE, one of the eight Missions under the NAPCC. It is the only Mission that focuses on a particular landscape, and its document reflects the ecological security discourse:

[The] Himalayan ecosystem is vital to the ecological security of the Indian landmass, through providing forest cover, feeding perennial rivers that are the source of drinking water, irrigation, and hydropower, conserving biodiversity, providing a rich base for high value agriculture, and spectacular landscapes for sustainable tourism (DST 2010, p. 2).

Capacity-building: A dominant policy discourse regarding addressing the challenges facing the IHR is on capacity-building – both human and institutional. The following is the stated primary objective of the NMSHE (draft document):

The primary objective of the mission is to develop in a time bound manner a sustainable National capacity to continuously assess the health status of the Himalayan Ecosystem and enable policy bodies in their policy-formulation functions and assist States in the Indian Himalayan Region with their implementation of actions selected for sustainable development (DST 2010, p. 3).

There is a particularly strong emphasis on strengthening existing institutions, including traditional institutions of local people. In some fields where there are few or no existing organisations (e.g. glaciology or cryospheric research), the creation of new organisations will be supported.

Governance: Another related discourse is on the need to improve governance. This discourse is reflected in an important document prepared under the NMSHE, which lists guidelines and best practices for a range of issues such as urbanisation, infrastructure, tourism, energy, water security and forest management (see MoEF and GBPIHED n.d.). The document also lists several key initiatives of relevance to climate change adaptation, such as the Swajal initiative of Uttarakhand and an

initiative to create low-cost artificial glaciers for irrigation in Ladakh (MoEF and GBPIHED n.d.).

Hydropower: The IHR is estimated to represent as much as 79 per cent of the total hydropower potential of the country. There is considerable emphasis on development of this potential to meet the country's rapidly growing energy demand. The Planning Commission Task Force on hill areas noted:

Since the demand for power in India has increased manifold, especially in the northern region of the country, tapping the hydropower potential of the Himalayan rivers has become a national planning priority (Planning Commission and GBIHED 2010, p. 32).

It seems that due to a number of factors, however, the focus is now on small rather than large projects:

There is every reason to suggest that the standard pattern for hydro power generation, distribution and consumption within the IHR should be decentralized and networked through small projects only (Planning Commission and GBIHED 2010, p. 33).

Niche products: There is a discourse that suggests certain environment-friendly niche products and services, for which the IHR has a competitive advantage, should be developed. There is a specific focus on horticulture crops and a 'technology mission' for the same has been launched (Planning Commission and GBIHED 2010).

For the Himalayan region, the key players at the national level are the Ministry of Science & Technology, the MoEF, and the G.B. Pant Institute of Himalayan Environment & Development. The International Centre for Integrated Mountain Development (ICIMOD), located at Kathmandu, is also an important player, and there are several civil society groups and networks active in the Himalayan region.¹⁰¹

A number of research and capacity-building programmes have been initiated under the NMSHE. Over 100 institutions working in the IHR have been invited to submit pre-proposals and over 60 had already been received by the Mission up to March 2013 (DST 2013).

¹⁰¹ For example, Mountain Forum Himalayas focuses on disaster response and DRR.

Sources of evidence

The policy arena gatekeepers use a range of evidence from different sources to inform their positions, policies and programmes. This includes *inter alia* the five-yearly national planning process, formal data collection mechanisms such as the census, committees and commissions, 'success stories', particular events, media reports, judicial interventions, and international processes.



The policy arena gatekeepers use a range of evidence from different sources to inform their positions, policies, and programmes. This section discusses the major evidence sources that could be discerned.

National planning process: The quinquennial process of preparing national plans is a major exercise in evidence gathering, which has a direct bearing on the policy formulation process. The broad objectives of the national plan are first enunciated by the Planning Commission in an 'Approach Paper'. The details are then worked out by different sectoral groups constituted specifically for the purpose. The scale of this exercise can be gauged from the number of such groups constituted: for the Eleventh Five Year Plan (2007-12), as many as 110 Working Groups, 32 Steering Committees, 27 Sub-Groups, 12 Task Forces and one Expert Group were constituted. Another major evidence-gathering exercise is undertaken mid-way through the plan in the form of a 'Mid-Term Appraisal' prepared by the Planning Commission.¹⁰²

Formal data collection mechanisms: There are a number of formal data collection mechanisms, which are used by policymakers to inform policy decisions. Some of the main mechanisms include:

- *Census of India:* Demographic data is collected every ten years by the census commissioner.
- *Central Statistical Office (CSO) and National Sample Survey Office (NSSO):* These offices, under the Ministry of Statistics and Programme Implementation, monitor a range of issues at the national level including socio-economic parameters, industrial production and prices.¹⁰³
- *Ministry-level monitoring:* Several ministries collect data themselves on issues of direct interest to them. For example, the Directorate of Economics and Statistics in the MoA compiles data on various agricultural issues on a regular basis.¹⁰⁴ The Forest Survey of India under the MoEF monitors forest and tree cover in the country on a biennial basis.¹⁰⁵ The MoRD has conducted a BPL census to identify poor households three times so far – in 1992, 1997 and 2002 (MoRD 2009a). The last proved contentious and an exercise is currently under way to conduct a fresh survey.¹⁰⁶ Some major programmes, such as MGNREGA and the FRA, are also closely monitored¹⁰⁷ and in some schemes, external 'national level monitors' have been appointed. There is also transfer of learning from one scheme to another;

RADP, for example, has incorporated learning about livelihood focus from the watershed development programme.

Committees and commissions: An important mechanism for gathering evidence on specific issues and sectors is the constitution of committees and commissions. These have played a key role in the development of new initiatives and programmes. For example, the Parthasarathy and Radhakrishna Committees played a critical role in the launch of IWMP and NRLM, respectively. Similarly, the National Commission on Agriculture in the 1970s and the more recent National Commission on Farmers have had a profound impact on agriculture (and forestry) policy. Another relevant example is that of the recently constituted 'Expert Group on Low Carbon Strategies for Inclusive Growth', which is working on strategies to reduce India's emissions intensity by 20-25 per cent by 2020.

Success stories: The perceived success of certain approaches and strategies at specific sites is sometimes used as evidence of their efficacy. The perceived success of watershed approach at sites such as Ralegaon Siddhi and Mittermari, for example, influenced the Hanumantha Rao Committee to recommend the adoption of the watershed approach across the country. Similarly, the perceived success of the Rural Development Self Employment Institute¹⁰⁸ – a collaborative partnership between the SDME Trust, Syndicate Bank and Canara Bank – has formed the basis for the establishment of Rural Self Employment Training Institutes across the country under NRLM.

Research and analysis: Research and analysis also generates evidence to inform policy. With regards to climate change, the Indian Network for Climate Change Assessment (INCCA) – a national network of over 120 institutions – was created in October 2009 through the efforts of the MoEF and is conducting collaborative research on various aspects of climate change. In May 2010, it issued its first report (INCCA 2010a) that estimated India's greenhouse gas emissions for the year 2007.¹⁰⁹ This research showed that although India stood fifth in overall emissions (behind the US, China, the EU and Russia), its per person CO₂e (carbon dioxide equivalent) emissions were still quite low, at 1.5 tonnes. More importantly, the research also showed that emissions intensity declined by over 30 per cent between 1994 and 2007 (INCCA 2010a). INCCA subsequently published an

¹⁰² <http://planningcommission.nic.in> (accessed 10 September 2011).

¹⁰³ <http://mospi.nic.in> (accessed 13 September 2011).

¹⁰⁴ http://eands.dacnet.nic.in/latest_2006.htm (accessed 13 September 2011).

¹⁰⁵ <http://www.fsi.org.in/> (accessed 13 September 2011).

¹⁰⁶ It is interesting to note that while the overall national poverty estimate is made by the Planning Commission on the basis of NSSO data, the identification of BPL families is carried out by the MoRD through the BPL census (MoRD 2009a).

¹⁰⁷ <http://nrega.nic.in/> and <http://tribal.nic.in/index1.asp?linkid=360&langid=1> (accessed 13 September 2011).

¹⁰⁸ <http://www.rudsetitraining.org/home.asp> (accessed 16 September 2011).

¹⁰⁹ It is believed to be first such report by a non-Annex 1 country.

assessment of the likely impact of climate change on key sectors and landscapes (INCCA 2010b). The National Communication project (NATCOM) is another mechanism to generate evidence.¹¹⁰ A number of other research efforts with possible policy influence are also under way in the country. For example, the German agency GIZ¹¹¹ has supported a study to compile various climate change adaptation initiatives in the country.¹¹² Such research may also have an impact on future policies. In the field of agriculture, the ICAR is the premier national research agency. At the time of data collection for the present study, it was involved in 88 research projects, including 61 All India Coordinated Research Projects.¹¹³ The ICAR generates a lot of research-based evidence on a regular basis which is considered to be technically sound. One observer, however, considered it mostly theoretical and not very useful (in that person's opinion) for addressing urgent practical implementation issues. The research-based evidence is also used by the private sector for desired policy change, for the approval of genetically engineered crops, for example. One observer claimed that in some cases, the private sector also funds ostensibly neutral groups to carry out research in areas of importance to their business interests. The policies and programmes of civil society groups are also influenced by research. For example, research carried out by TearFund that suggested money invested in disaster preparedness could lead to substantial savings in rescue and relief expenses prompted many civil society groups to focus more on preparedness. One prominent civil society activist recently carried out a field survey through a group of students to show that PDS was important for food security of the poor. Some civil society organisations base some of their programmes on their own research. The Foundation for Ecological Security, for example, is engaged in long-term ecological monitoring at several of its field sites.

Direct experience: Many organisations working at the field level use their direct experience as evidence. In the case of several large national organisations that work through partners, it is often their partners' experience that influences their positions, policies and programmes. Many organisations also show 'path dependency' in the choice of their interventions – thematically as well as geographically. Some organisations prefer to work towards a 'policy-practice connect' by blending their direct experience with policy issues. In addition to organisational experience, personal experience also plays a part in shaping perceptions. For example, one observer felt that MGNREGA must be having an impact

on migration as some workers in a provision store in his locality did not return after they went to their village. A retired senior policymaker gave the example of taxi drivers' apprentices in New Delhi to emphasise the need for long-term hand-holding in training rural people for self-employment. He used the example to stress the inappropriateness of training imparted by Industrial Training Institutes (ITIs).

Bottom line: The industry observers mentioned that for several for-profit enterprises, the most convincing evidence (to adopt a new process, for example) is their bottom line. 'They want to see tangible benefits, then they listen'. Efficiency savings are therefore the key starting point for climate change-related and other environmental interventions. The National Energy Savings Scheme and proposed market-based mechanisms (e.g. Perform, Achieve, and Trade or PAT) are considered important steps to encourage industry to move towards a low carbon future. According to an industry observer, the star labelling scheme of the Bureau of Energy Efficiency (BEE) has had a much greater impact than 'slogans', as it is market-based and companies can see tangible results.

Events: Specific events are also used as evidence. The Bhopal gas leak tragedy in December 1984 was seen as evidence of the need for better regulation of the environment. The MoEF was established within a month of the tragedy and a year later, an umbrella legislation was passed by parliament in the form of the Environment (Protection) Act 1986 (MoEF n.d.).

The destruction caused by the Odisha super cyclone (1999) and the Gujarat earthquake (2001) was seen as evidence of a lack of a coherent disaster management policy, and an attempt was subsequently made to address this issue. One observer used events as a personal way of assessing policy effectiveness. According to him, while the 1977 cyclone in Andhra Pradesh caused considerable loss of life and property, subsequent similar events have been less destructive. He therefore concluded that the preparedness of government and other actors must be much better now.

Media reports: Sometimes media reports are taken as evidence to initiate a policy response. This often happens when *suo moto* cognisance of media reports is taken by judiciary or quasi-judicial bodies.

Democratic processes: Democratic processes, such as public consultation (directly or through the internet), are increasingly being employed to gather evidence and feedback for policy formulation. For example, the draft of

¹¹⁰ The project's role is communicating to the UNFCCC about anthropogenic emissions of GHGs from various sources and their removal by sinks not controlled by the Montreal Protocol (<http://www.envfor.nic.in>, accessed 11 May 2013).

¹¹¹ Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation).

¹¹² GIZ (along with some other agencies) is also supporting development of state level action plans in several states.

¹¹³ <http://www.icar.org.in/en/node/612> (accessed 13 September 2011).

the GIM document was published on the MoEF website for comments in addition to seven regional consultations being held in different parts of the country.¹¹⁴ Similarly, several public consultations were held before a decision was taken against introducing Bt brinjal in the country. The standing committees of the parliament offer another mechanism for gathering evidence for policy formulation. One observer felt, however, that inputs provided to such committees are not always of a high quality. In many cases, letters from the members of parliament are also considered as evidence to inform policy, for example for an agricultural loan waiver in a particular area.

International processes: International processes and deliberations are sometimes used as evidence to inform national policy. The United Nations Conference on the Human Environment, held in Stockholm in 1972, had a profound impact on the national discourse on environment-related issues. The following extracts from a MoEF publication show the importance of this event in India's environment history:

As a follow up of the resolutions adopted at Stockholm, the Government of India set up a Committee on human environment...to study the state of environmental problems in the country and the institutional set up, and to suggest measures (MoEF n.d., p. 7).

After the Stockholm Conference, it was considered necessary to enact uniform laws all over the country for tackling the emerging environmental problems endangering the health and safety of people, as well as the flora and fauna. The Water (Prevention and Control of Pollution) Act, 1974 was the first environment specific enactment in the country. It was a landmark legislation which not only provided a comprehensive set of rules for controlling water pollution but also gave birth to the first set of environmental regulatory agencies. The Pollution Control Boards at the Centre and in the States came into being as a consequence of this Act. Thereafter, in 1981, the Air (Prevention and Control of Pollution) Act was enacted (MoEF n.d., p. 8).

Given this background, the Central Government resorted to the expedient of implementing the decisions taken in the Stockholm Conference to enact the Environment (Protection) Act 1986 (MoEF n.d., p. 8).

The influence of international processes such as the Hyogo Framework of Action is clearly evident in disaster management in India. Similarly, the Biological Diversity Act 2002 is clearly related to the Convention on Biological Diversity. One observer also mentioned that reports by bodies such as the Intergovernmental Panel on Climate Change (IPCC) were used as evidence to modify several organisations' policies and programmes.

Networks and alliances: Most organisations are members of various networks and alliances. For international organisations that are part of a global family, many policies are decided globally and their country offices use global guidelines to formulate national policies and programmes. Alliances sometimes issue guidelines that form the basis of policies and programmes of individual organisations, an example being the minimum disaster relief standards agreed by Sphere India.

Campaigns: Many campaigns (e.g. the Campaign for Survival and Dignity and campaigns by Ekta Parishad) are also able to influence policy. They often use methods such as *jan sunwai* (public hearings), case studies and *padyatras* (foot marches) to gather evidence.

Judicial processes: There are several instances where evidence produced in specific cases has led to much broader policy ramifications. The Godavarman and Centre for Environmental Law at WWF India cases in forestry and the People's Union for Civil Liberties (PUCL) case regarding food security are good examples of the policy influence of specific court cases. The appointment by the Supreme Court of an *amicus curiae* and a 'central empowered committee' in the Godavarman case and 'commissioners' in the PUCL case are examples of evidence-gathering mechanisms employed by the higher judiciary.

Externally-aided projects: According to one civil society observer, the focus on evidence generation and validation is considerably more in externally-aided (i.e. foreign-funded) projects and programmes. He felt that a reduction in external aid is making this aspect weaker: 'There was a lot of discussion, analysis and learning in such projects'. Many observers commented that they anticipate a further reduction in external aid in the near future. The changing image of India, the establishment of India's own international aid agency, the enactment of a stringent (amended) Foreign Contribution Regulation Act 2010, and the global economic downturn were seen as key factors that could result in the decline of external aid to India. Many domestic actors are therefore anticipating the need to work more closely with government agencies and/or the private sector. This shift is likely to be important from the perspective of evidence generation and validation.

Lobbying: Some observers commented that policymaking is not such a straightforward exercise and there are often many political considerations as well as powerful lobbies at work behind the scenes. One observer commented that big business drives policy in many cases, but no-one will admit this openly. Another observer felt that there is a rural bias in policy circles

¹¹⁴ Source: Presentation made by MoEF to the Prime Minister's Council on Climate Change, 22 February 2011.

and many policies are made with the 300 backward districts in mind.

NAPCC:¹¹⁵ There is considerable research being carried out to develop action plans for various Missions under the NAPCC. The evidence gathered for formulating the Mission plans is likely to influence future policies related to climate change mitigation and adaptation.

¹¹⁵ http://pmindia.nic.in/climate_change.htm (accessed 04 August 2011).

Conclusions



The objective of this study was to understand key policy discourses related to selected themes in India, especially in the context of climate change resilient landscapes and livelihoods. This report presents an overview of the major policy discourses that could be discerned from the study along with key policy arena gatekeepers and programmes.

Although the study focused on a few selected themes, it revealed several broad policy trends as well. It is obvious from the discussion in the previous sections that there is considerable policy attention on economic growth as well as poverty reduction. In this context, the key policy *mantra* is 'inclusive growth'. Simultaneously, there is an increasing realisation in the policy circles about the need to manage negative environmental impacts of economic growth and to ensure sustainability of various development interventions. An attempt is being made to mainstream these environmental concerns through 'greening' of development. Issues related to resilience are also entering the national policy discourse, especially in the context of disaster-risk reduction.¹¹⁶ There is also an emerging focus on landscapes, as is evident from the establishment of the NMSHE and the 4x4 report by INCCA (INCCA 2010b), which focuses

on four critical sectors and landscapes.¹¹⁷ There is also a general move towards a rights-based approach as reflected in the introduction of Right to Information Act 2005, the FRA 2006, the Right to Education Act 2009, and the Draft Food Security Bill that is on the anvil (Sharma 2010).¹¹⁸

Interaction among these varied policy trends has led to the development of several initiatives that are significant for climate change resilient landscapes and livelihoods. Table 6 provides a summary of the main programmes and initiatives identified under each selected theme. While all these programmes and initiatives are important, some, such as MGNREGA, NRLM, the FRA and IWMP, are particularly significant due to their sheer scale. There are already considerable public resources being invested in these initiatives, but there is still scope to improve outcomes for climate change resilient landscapes and livelihoods. For example, innovative practices such as 'social audit' under MGNREGA could be strengthened to plug leakages and the legal space created through the FRA could be used to sustain forest landscapes while also meeting the livelihood needs of local communities.

Table 6. Main programmes and initiatives identified under the selected themes

THEME	MAIN PROGRAMMES/INITIATIVES IDENTIFIED
Agricultural innovation and food security	<ul style="list-style-type: none"> ▪ RKVY ▪ RADP ▪ NHM ▪ US-India Knowledge Initiative on Agriculture ▪ Action Plan to Address Agrarian Distress in India ▪ Food and Nutrition Schemes
Poverty reduction and social protection	<ul style="list-style-type: none"> ▪ MGNREGA ▪ NRLM ▪ Social Security Programmes
Ecosystem and NRM	<ul style="list-style-type: none"> ▪ FRA ▪ NAP ▪ CAMPA ▪ IWMP ▪ MGNREGA
Climate change risk management	<ul style="list-style-type: none"> ▪ Disaster Risk Management Programme ▪ National Cyclone Risk Mitigation Project ▪ UNICEF CBDRR Project ▪ Pilot Weather-based Crop Insurance Scheme ▪ Greening the Industry ▪ Inter-Agency Groups

¹¹⁶ See Bahadur et al. 2010 for a discussion on resilience issues in the context of climate change and disasters.

¹¹⁷ The four landscapes covered in the report are (1) The Himalayan Region, (2) The Western Ghats, (3) North-Eastern Region, and (4) The Coastal Region.

¹¹⁸ Some states have also enacted legislations for time-bound delivery of government services to the citizens.

The policy arena gatekeepers use a range of evidence from different sources to inform their positions, policies and programmes. This *inter alia* includes the five-yearly national planning process, formal data collection mechanisms such as the census, committees and commissions, 'success stories', particular events, media reports, judicial interventions and international processes. While climate change has not been the main policy driver so far, climate concerns have started entering policy discourses in various themes and sectors. The establishment of NAPCC in 2008 could be considered a watershed in this regard. The eight missions that were established under NAPCC have provided platforms for articulation and incorporation of climate change concerns in the key sectors. Another significant development has been the announcement by the Government of India of a voluntary mitigation goal of reducing the emissions intensity of its GDP by 20-25 per cent (over 2005 levels) by 2020.

Various developments at the South Asia level (SAARC¹¹⁹) – such as the Dhaka Declaration, the Action Plan on Climate Change (2008) and the Thimpu Statement on Climate Change (2010) – indicate that climate change concerns are gaining importance in policy circles and discourses in other countries of the region as well.

Finally, it should be borne in mind that policy discourses are dynamic in nature and evolve over time. While this study presents a snapshot of current policy discourses, these may change in the future, sometimes even radically. The community forestry discourse in India is a case in point (see Box 4).

BOX 4. EVOLUTION OF THE COMMUNITY FOREST DISCOURSE

Dominant discourse in the mid-1970s

'Free supply of forest produce to the rural population and their rights and privileges have brought destruction to the forest and so it was necessary to reverse the process. The rural people have not contributed much towards the maintenance or regeneration of the forests. Having over-exploited the resources, they cannot in all fairness expect that somebody else will take the trouble of providing them with forest produce free of charge' (National Commission on Agriculture, 1976).

Dominant discourse in the late-1980s

'The life of tribals and other poor living within and near forests revolves around forests. The rights and concessions enjoyed by them should be fully protected. Their domestic requirements of fuelwood, fodder, minor forest produce and construction timber should be the *first charge* [emphasis added] on forest produce' (National Forest Policy, 1988).

¹¹⁹ South Asian Association for Regional Cooperation.

References

- Apthorpe, R. 1984. Agriculture and strategies: The language of development policy. In Clay, E.J. and Schaffer, B.B. (eds). *Room for Manoeuvre: An exploration of public policy in agriculture and rural development*. Heinemann Educational Books, London, 127-141.
- Bahadur, A.V., Ibrahim, M. and Tanner, T. 2010. *The Resilience Renaissance? Unpacking of resilience for tackling climate change and disasters*. Strengthening Climate Resilience Discussion Paper 1. Institute of Development Studies, Sussex.
- Bhaduri, A. and Patkar, M. 2009. Industrialisation for the people, by the people, of the people. *Economic & Political Weekly*, 03 January, 10-13.
- Boserup, E. 1965. *The Conditions of Agricultural Growth: The economics of agrarian change under population pressure*. George Allen & Unwin Ltd., London.
- Carbon Disclosure Project [CDP]. 2010. *India 200 Report*. Confederation of Indian Industry, CII-ITC Centre of Excellence for Sustainable Development, and WWF, New Delhi.
- Chandurkar, D., Shekhar, S. and Sharma, V. n.d. *Furthering Climate Change Adaptation: Impact of DFID rural programmes in India*. Discussion Paper 1. Sambodhi, New Delhi.
- Department of Agriculture & Cooperation [DAC]. 2007. *National Policy for Farmers*. DAC, Ministry of Agriculture, Government of India, New Delhi.
- Department of Agriculture & Cooperation [DAC]. 2010a. *Annual Report 2009-2010*. DAC, Ministry of Agriculture, New Delhi.
- Department of Agriculture & Cooperation [DAC]. 2010b. *National Mission for Sustainable Agriculture: Strategies for meeting the challenges of climate change (draft)*. DAC, Ministry of Agriculture, New Delhi.
- Department of Agriculture & Cooperation [DAC]. 2013. *Annual Report 2012-2013*. DAC, Ministry of Agriculture, New Delhi.
- Department of Agricultural Research and Education [DARE] and Indian Council of Agricultural Research [ICAR]. 2013. *Annual Report 2012-13*. DARE and ICAR, New Delhi.
- Datta, S. and Sharma, V. 2010. Overview of livelihoods situation. In Datta, S. and Sharma, V. (eds). *State of India's Livelihoods Report 2010: The 4P report*. Sage Publications, New Delhi, 1-14.
- Dev, S.M. 2011. *Climate Change, Rural Livelihoods and Agriculture (Focus on Food Security) in the Asia-Pacific Region*. Indira Gandhi Institute of Development Research, Mumbai.
- Development Alternatives. 2010. *MGNREGA: A review of decent work and green jobs in Kaimur District in Bihar*. International Labour Organization, New Delhi.
- Department of Land Resources [DoLR.] 2006. *From Hariyali to Neeranchal – Report of the Technical Committee on Watershed Programmes in India*. DoLR, Ministry of Rural Development, New Delhi.
- Department of Science & Technology [DST]. 2010. *National Mission for Sustaining the Himalayan Ecosystem: Draft mission document*. DST, Ministry of Science & Technology, New Delhi.
- Department of Science and Technology [DST]. 2013. *Annual Report 2012-13*. DST, New Delhi.
- Fairclough, N. 2003. *Analysing Discourse: Textual analysis for social research*. Routledge, London and New York.
- Foucault, M. 1972. *The Archaeology of Knowledge*. Tavistock Publications, London.
- Forest Research Institute [FRI]. 2012. *National Working Plan Code (draft)*. FRI, Ministry of Environment and Forests, Dehradun.
- Forest Survey of India [FSI]. 2011. *India State of Forest Report 2011*. FSI, Ministry of Environment and Forests, Dehradun.
- Government of India [GoI]. 1976. *Report of the National Commission on Agriculture, Part I*. Ministry of Agriculture and Irrigation, New Delhi.
- Government of India [GoI]. 2008a. *National Action Plan on Climate Change*. Prime Minister's Council on Climate Change, New Delhi.
- Government of India [GoI]. 2008b. *India 2008: A reference manual*. Ministry of Information and Broadcasting, New Delhi.

- Government of India [Gol] and United Nations Development Programme [UNDP]. 2012a. *Greening Rural Development in India, Volume 1*. UNDP India, New Delhi.
- Government of India [Gol] and United Nations Development Programme [UNDP]. 2012b. *National Meeting on Implementation of the Forest Rights Act: Amendments in the rules and the way forward*. Gol and UNDP, New Delhi.
- Gulati, A., Jain, S. and Satija, N. 2013. *Rising Farm Wages in India: The 'pull' and 'push' factors*. Discussion Paper No. 5. Commission for Agricultural Costs and Prices, Ministry of Agriculture, New Delhi.
- Hoben, A. 1996. The cultural construction of environmental policy: Paradigms and politics in Ethiopia. In Leach, M. and Mearns, R. (eds). *The Lie of the Land: Challenging received wisdom on the African environment*. The International African Institute in association with James Currey, Oxford and Heinemann, Portsmouth, 186-208.
- Horesh, E. 1985. Labelling and the language of international development. In Wood, G. (ed.). *Labelling in Development Policy: Essays in honour of Bernard Schaffer*. Sage Publications, London and Institute of Social Studies, The Hague, 161-172.
- Indian Network for Climate Change Assessment [INCCA]. 2010a. *India: Greenhouse gas emissions 2007*. Ministry of Environment & Forests, New Delhi.
- Indian Network for Climate Change Assessment [INCCA]. 2010b. *Climate Change and India: A 4x4 assessment*. Ministry of Environment & Forests, New Delhi.
- International Food Policy Research Institute [IFPRI]. 2009. *Building Climate Resilience in the Agriculture Sector of Asia and the Pacific*. Asian Development Bank, Manila.
- Jafar, E. 2009. Building Safer Communities in South Asia: Good practice and framework for DRR. In United Nations Children's Fund [UNICEF]. *Conference on Community-based Disaster Risk Reduction, 26-28 November 2008, Kolkata, India*. UNICEF, New Delhi, 49-52.
- Joshi, S. 2010. *Sustainable & Inclusive Innovation: Strategies for tomorrow's world*. Confederation of Indian Industry and CII-ITC Centre of Excellence for Sustainable Development, New Delhi.
- Kohli, K. and Menon, M. 2011a. *Banking on Forests: Assets for a climate cure?* Kalpavriksh and Heinrich Böll Foundation, New Delhi.
- Kohli, K. and Menon, M. 2011b. *Loss or Gain All the Same: The national mission for a green India*. Kalpavriksh and Heinrich Böll Foundation, New Delhi.
- Kothari, A. 2013. *Development and Ecological Sustainability in India: Possibilities for the post-2015 framework*. Oxfam India Working Paper Series XVI. Oxfam India, New Delhi.
- Leach, M. and Mearns, R. 1996. Environmental change and policy: Challenging received wisdom in Africa. In Leach, M. and Mearns, R. (eds). *The Lie of the Land: Challenging received wisdom on the African environment*. The International African Institute in association with James Currey, Oxford and Heinemann, Portsmouth, 1-33.
- Li, T.M. 2005. Beyond "the state" and failed schemes. *American Anthropologist* 107(3) 383-394.
- Menon, V.C. 2009. Valedictory address. In UNICEF [United Nations Children's Fund]. *Conference on Community-based Disaster Risk Reduction, 26-28 November 2008, Kolkata, India*. UNICEF, New Delhi, 149-151.
- Mitchell, T. et al. 2010. *Climate Smart Disaster Risk Management*. Strengthening Climate Resilience. Institute of Development Studies, Brighton.
- Ministry of Micro, Small and Medium Enterprises [MMSME]. 2011. *Annual Report 2010-11*. MMSME, Government of India, New Delhi.
- Ministry of Agriculture [MoA]. 2000. *National Agriculture Policy, 2000*. MoA, New Delhi.
- Ministry of Environment and Forests [MoEF]. 1998. *Report of the Expert Committee on Review of Afforestation Policies and Rehabilitation of Wastelands*. MoEF, New Delhi.
- Ministry of Environment & Forests [MoEF]. 2009. *India's Fourth National Report to the Convention on Biological Diversity*. MoEF, New Delhi.
- Ministry of Environment and Forests [MoEF]. 2010. *National Mission for a Green India (Under the National Action Plan on Climate Change)*. Draft submitted to Prime Minister's Council on Climate Change. MoEF, New Delhi.
- Ministry of Environment and Forests [MoEF]. 2011. *Sustainable Development in India: Stocktaking in the run up to Rio+20*. MoEF, New Delhi.
- Ministry of Environment & Forests [MoEF]. 2012. *Annual Report 2011-12*. MoEF, New Delhi.
- Ministry of Environment and Forests [MoEF]. n.d. *Strategic Plan 2012-13 to 2016-17 (Aligned with 12th Five year Plan)*. MoEF, New Delhi.
- Ministry of Environment & Forests [MoEF] and G.B. Pant Institute of Himalayan Environment & Development [GBPIHED]. n.d. *Governance for Sustaining Himalayan Ecosystem: Guidelines & best practices*. MoEF and GBPIHED, New Delhi and Almora.

- Ministry of Environment & Forests [MoEF] and Ministry of Tribal Affairs [MoTA]. 2010. *Manthan – Report of the National Committee on Forest Rights Act*. MoEF and MoTA, New Delhi.
- Ministry of Environment and Forests [MoEF] and Winrock International India [WII]. 2006. *Measuring Milestones - Proceedings of the National Workshop on Joint Forest Management (JFM)*. MoEF and WII, New Delhi.
- Ministry of Rural Areas and Employment [MoRAE]. 1996. *Annual Report 1995-96*. MoRAE, New Delhi.
- Ministry of Rural Areas and Employment [MoRAE]. 1999. *Annual Report 1998-99*. MoRAE, New Delhi.
- Ministry of Rural Development [MoRD]. 2004. *Annual Report 2003-04*. MoRD, New Delhi.
- Ministry of Rural Development [MoRD]. 2006. *Annual Report 2005-06*. MoRD, New Delhi.
- Ministry of Rural Development [MoRD]. 2008. *Annual Report 2007-08*. MoRD, New Delhi.
- Ministry of Rural Development [MoRD]. 2009a. *Report of the Expert Group to Advise the Ministry of Rural Development on the Methodology for Conducting the Below Poverty Line (BPL) Census for the 11th Five Year Plan*. MoRD, New Delhi.
- Ministry of Rural Development [MoRD]. 2009b. *Report of the Committee on Credit Related Issues under SGSY*. MoRD, New Delhi.
- Ministry of Rural Development [MoRD]. n.d.a. *National Rural Livelihoods Mission – Mission Document*. MoRD, New Delhi.
- Ministry of Rural Development [MoRD]. n.d.b. *National Rural Livelihoods Mission – Framework for Implementation*. MoRD, New Delhi.
- National Forest Commission [NFC]. 2006. *Report of the National Forest Commission*. Ministry of Environment and Forests, New Delhi.
- O'Reilly, K. 2005. *Ethnographic Methods*. Routledge, London and New York.
- Olmos, S. 2001. *Vulnerability and Adaptation to Climate Change: Concepts, issues, assessment methods*. Climate Change Knowledge Network. See www.iisd.org/cckn/pdf/va_foundation_final.pdf.
- Oxfam India 2012. *The Proposed Land Acquisition Bill: Putting livelihoods first*. Oxfam India Policy Brief No. 2. Oxfam India, New Delhi.
- Padmanabhan, G. 2009a. Executive summary. In United Nations Children's Fund [UNICEF]. *Conference on Community-based Disaster Risk Reduction, 26-28 November 2008, Kolkata, India*. UNICEF, New Delhi, 1-3.
- Padmanabhan, G. 2009b. CBDRM/DRM: A joint initiative of Government of India and UNDP. In United Nations Children's Fund [UNICEF]. *Conference on Community-based Disaster Risk Reduction, 26-28 November 2008, Kolkata, India*. UNICEF, New Delhi, 35-37.
- Papola, T.S. 2010. Livelihoods in Agriculture – Status, policies and prospects. In Datta, S. and Sharma, V. (eds). *State of India's Livelihoods Report 2010: The 4P report*. Sage Publications, New Delhi, 15-31.
- Planning Commission. 1951. *First Five Year Plan*. Planning Commission, New Delhi.
- Planning Commission. 2001. *Approach Paper to the Tenth Five Year Plan (2002-2007)*. Planning Commission, New Delhi.
- Planning Commission. 2002a. *Report of the Committee on India Vision 2020*. Planning Commission, New Delhi.
- Planning Commission. 2002b. *Tenth Five Year Plan*. Planning Commission, New Delhi.
- Planning Commission. 2003. *Report of the Committee on Development of Bio-fuel*. Planning Commission, New Delhi.
- Planning Commission. 2007. *Eleventh Five Year Plan*. Planning Commission, New Delhi.
- Planning Commission. 2010. *Mid-Term Appraisal of the Eleventh Five Year Plan*. Planning Commission, New Delhi.
- Planning Commission. 2011. *Issues for the Approach to the Twelfth Plan*. Planning Commission, New Delhi.
- Planning Commission. 2012a. *Twelfth Five Year Plan (2012-2017): Faster, more inclusive and sustainable growth, Volume I*. Planning Commission, New Delhi.
- Planning Commission. 2012b. *Press Note on Poverty Estimates, 2009-10*. Planning Commission, New Delhi.
- Planning Commission and G.B. Pant Institute of Himalayan Environment & Development. 2010. *Report of the Task Force: To look into problems of hill states and hill areas and to suggest ways to ensure that these states and areas do not suffer in any way because of their peculiarities*. Planning Commission, New Delhi.
- Rao, C.H.H. 2000. *Watershed Development in India: Recent experience and emerging issues*. Lovraj Kumar Memorial Lecture. Society for Promotion of Wastelands Development, New Delhi.
- Roe, E. 1994. *Narrative Policy Analysis: Theory and practice*. Duke University Press, Durham and London.
- Roe, E.M. 1991. Development narratives, or making the best of blueprint development. *World Development* 19(4) 287-300.
- Sathaye, J., Shukla, P.R., and Ravindranath, N.H. 2006.

- Climate change, sustainable development and India: global and national concerns. *Current Science* 90(3) 314-325.
- Scott, L. 2008. *Climate Variability and Climate Change: Implications for chronic poverty*. Working Paper No. 108. Chronic Poverty Research Centre, Overseas Development Institute, London.
- Sharma, A. 2010. *Rights-based Legal Guarantee as Development Policy: The Mahatma Gandhi National Rural Employment Guarantee Act*. Discussion Paper 2. UNDP India, New Delhi.
- Sinha, A. n.d. *Natural Disaster Management in India: Country report*. See www.adrc.asia/countryreport/IND/INDeng98/index.html (accessed 07 September 2011).
- Somanathan, E. and Somanathan, R. 2009. Climate change: challenges facing India's poor. *Economic & Political Weekly* XLIV(31) 51-58.
- Soni, P. 2009. Small-scale industries: small yet significant. In UNDP India. *Climate Change: Perspectives from India*. UNDP India, New Delhi, 55-62.
- Stojanovic, S. 2009. How UNICEF India promotes 'DRR with a human face'. In United Nations Children's Fund [UNICEF] *Conference on Community-based Disaster Risk Reduction, 26-28 November 2008, Kolkata, India*. UNICEF, New Delhi, 43-45.
- Swift, J. 1996. Desertification: narratives, winners & losers. In Leach, M. and Mearns, R. (eds). *The Lie of the Land: Challenging received wisdom on the African environment*. The International African Institute in association with James Currey, Oxford and Heinemann, Portsmouth, 73-90.
- United Nations Development Programme [UNDP]. 2010. *The Real Wealth of Nations: Pathways to human development*. Human Development Report 2010. UNDP. See hdr.undp.org/en/media/HDR_2010_EN_Complete_reprint.pdf (accessed 08 September 2011).
- United Nations Children's Fund [UNICEF]. 2009. *Conference on Community-based Disaster Risk Reduction, 26-28 November 2008, Kolkata, India*. UNICEF, New Delhi.
- Watts, M. 2001. Development ethnographies. *Ethnography* 2(2) 283-300.
- Wood, G. 1985. The politics of development policy labeling. In Wood, G. (ed.). *Labelling in Development Policy: Essays in honour of Bernard Schaffer*. Sage Publications, London and Institute of Social Studies, The Hague, 5-31.
- World Bank. 2011. *Social Protection for a Changing India, Vol. 1*. The World Bank, Washington, D.C.
- WWF. 2009. *Mega-Stress for Mega-Cities: A climate vulnerability ranking of major coastal cities in Asia*. WWF International, Gland.
- Zoological Survey of India [ZSI]. 2011. *Faunal Resources of India*. See www.zsi.gov.in (accessed 11 May 2012).

List of abbreviations

ATMAs	Agriculture Technology Management Agencies	MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
BEE	Bureau of Energy Efficiency	MHA	Ministry of Home Affairs
BPL	below poverty line	MoA	Ministry of Agriculture
BRGF	Backward Regions Grant Fund	MoEF	Ministry of Environment and Forests
CAMPA	Compensatory Afforestation Fund Management and Planning Authority	MoRAE	Ministry of Rural Areas and Employment
CANSA	Climate Action Network South Asia	MoRD	Ministry of Rural Development
CBDRR	community-based disaster risk reduction	MoTA	Ministry of Tribal Affairs
CCA	climate change adaptation	MSSRF	M.S. Swaminathan Research Foundation
CDP	Carbon Disclosure Project	NABARD	National Bank for Agriculture and Rural Development
CEC	Central Empowered Committee	NAC	National Advisory Council
CFR	Community Forest Rights	NAIS	National Agriculture Insurance Scheme
CII	Confederation of Indian Industry	NAP	National Afforestation Programme
CSO	Central Statistical Office	NASA	National Aeronautics and Space Administration
CSR	corporate social responsibility	NATCOM	National Communication project
DAC	Department of Agriculture & Cooperation	NAPCC	National Action Plan on Climate Change
DARE	Department of Agricultural Research and Education	NDMA	National Disaster Management Authority
DFID	UK Department for International Development	NFC	National Forest Commission
DoLR	Department of Land Resources	NGO	non-governmental organisation
DRR	disaster risk reduction	NHM	National Horticulture Mission
DST	Department of Science & Technology	NIDM	National Institute of Disaster Management
EGoM	Empowered Group of Ministers	NMSHE	National Mission for Sustaining the Himalayan Ecosystem
EIA	Environmental Impact Assessment	NRAA	National Rainfed Area Authority
FDA	Forest Development Agency	NRLM	National Rural Livelihoods Mission
FRA	Forest Rights Act	NRM	natural resources management
FRI	Forest Research Institute	NSAP	National Social Assistance Programme
FSI	Forest Survey of India	NSSO	National Sample Survey Office
GBIHED	G.B. Pant Institute of Himalayan Environment & Development	NTFP	non-timber forest produce
GDP	gross domestic product	PAT	Perform, Achieve, and Trade
GE	genetically engineered	PDA	policy discourse analysis
GHG	greenhouse gas	PDS	Public Distribution System
GIM	Green India Mission	PIM	Participatory Irrigation Management
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation)	PPP	public-private partnership
Gol	Government of India	PUCL	People's Union for Civil Liberties
IARI	Indian Agricultural Research Institute	RADP	Rainfed Area Development Programme
ICAR	Indian Council of Agricultural Research	REDD	Reducing Emissions from Deforestation and Forest Degradation
ICIMOD	International Centre for Integrated Mountain Development	RKVY	Rashtriya Krishi Vikas Yojana
ICT	information and communication technology	SAARC	South Asian Association for Regional Cooperation
IHR	Indian Himalayan Region	SDMA	State Disaster Management Authority
IIED	International Institute for Environment and Development	SGSY	Swarnjayanti Gram Swarozgar Yojana
INCCA	Indian Network for Climate Change Assessment	SHG	self-help group
IPCC	Intergovernmental Panel on Climate Change	SRI	system of rice intensification
IPRs	intellectual property rights	UID	unique identification
ITIs	Industrial Training Institutes	UNDP	United Nations Development Programme
IWMP	Integrated Watershed Management Programme	UNFCCC	United Nations Framework Convention on Climate Change
JFM	Joint Forest Management	UNICEF	United Nations Children's Fund
JFMC	Joint Forest Management Committee	WBCIS	Weather-Based Crop Insurance Scheme
JICA	Japan International Cooperation Agency	WII	Winrock International India
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act, 2005	ZSI	Zoological Survey of India

Policy discourse analyses (PDAs) draw on existing evidence and engage key stakeholders in a dialogue to review different policy arenas. IIED is undertaking case studies of countries participating in the PDAs and this report focuses on India, where a PDA was carried out to assess the extent to which climate resilience is factored into current policies and programmes. The report reviews recent developments in key policy areas relating to climate resilience, as well as the main discourses, policy objectives and stakeholders in key thematic areas to establish how climate risk management is being addressed. The report also identifies alternative discourses and evidence gaps to present opportunities and entry points for climate resilient development.

IIED is a policy and action research organisation working to promote sustainable development —development that improves livelihoods in ways that protect the environments on which these are built. Based in London and working on five continents, we specialise in linking local priorities to global challenges. In Africa, Asia, Latin America, the Middle East and the Pacific, we work with some of the world's most vulnerable people to ensure they have a say in the decision-making arenas that most directly affect them — from village councils to international conventions.



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