

Overcoming social barriers to adaptation

By Lindsey Jones

Recent years have seen adaptation come to the fore of the international climate change debate. The focus is centred largely upon enhancing the capacity of developing countries and the poorest to adapt to the impacts of climate change. As a result, interventions to facilitate adaptation need to identify and address key barriers to ensure that societies are resilient in the face of a changing climate and foster successful adaptation.

This Background Note explores the influence of social barriers to adaptation using insights drawn from field work in rural subsistence communities in western Nepal, and findings from a related ODI project in rural India. It explores the role of social institutions in determining how individuals adapt to climate stress and shock, and examines how restrictive cultural environments can limit successful adaptation. It concludes by providing recommendations for adaptation policy interventions that seek to recognise, address and overcome social barriers to adaptation.

Characterising adaptation

Given the inevitability of changes to the global climate, adaptation actions are needed to ensure that societies are resilient to harmful impacts, and take advantage of any new opportunities. While the term adaptation is in wide circulation, there is no single definition that is applied universally. The broad description given by the Intergovernmental Panel on Climate Change is a useful starting point, defining adaptation as ‘adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities’ (IPCC, 2001).

At its simplest, adaptation within social systems relates to the processes people use to reduce the adverse effects of climate on their livelihood and well-being, and take advantage of new opportunities provided by their changing environment (TERI, 2007). Adaptation can be categorised more specifically into various types and forms: in terms of timing it can be ‘anticipatory’ or ‘reactive’, and on the level of preparation and outside intervention, it can be either ‘planned’ or ‘autonomous’ (Tol et al., 2009). Adaptation within natural and ecological systems is reactive, while adaptation at the individual and societal levels can be both anticipatory and reactive in light of observed and expected climate.

In practice, adaptation actions tend to constitute ‘on-going processes, reflecting many factors or stresses, rather than discrete measures to address climate change specifically’ (IPCC, 2007: 720). It is important to note that adaptation actions, though prompted indirectly by climatic events, will often occur as a result of a whole host of non-climatic shocks and stresses, such as conflict over scarce resources or rising prices of food and water. Adaptation actions are considered to be tangible alterations, or changes in decision-making environments, to enhance resilience or reduce vulnerability to the current or expected climate. Examples of planned interventions to promote effective adaptation include the establishment of Flood Early Warning Systems (EWS) in areas seen as vulnerable to future flooding, and the adoption and dissemination of more drought-resistant crop varieties in areas increasingly exposed to drought (see Table 1).

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Table 1: Examples of adaptation interventions relating to present and future climate shocks and stress

Country	Climate-related shock or stress	Adaptation intervention
Nepal	Glacial melt	Reducing the risk of Glacial Lake Outburst Floods (GLOFs) from Tsho Rolpa Lake by lowering the lake's water level by 30 metres
Bangladesh	Sea-level rise; salt-water intrusion	Consideration of climate change in the National Water Management Plan; building of flow regulators in coastal embankments; use of alternative crops and low-technology water filters.
Mali	Rainfall variability and uncertainty	Collection of climate data by farmers and integration of that data into planting decisions
Botswana	Drought	National government programmes to re-create employment options after drought; capacity building of local authorities; assistance to small subsistence farmers to increase crop production
Sudan	Drought	Expanded use of traditional rainwater harvesting and water conserving techniques; building of shelter-belts and wind-breaks to improve resilience of rangelands; monitoring of the number of grazing animals and cut trees; set-up of revolving credit funds

Source: Adapted and expanded from excerpts by McGray et al. (2007) and IPCC (2007).

Inevitably, efforts to facilitate successful adaptation face a number of constraints and barriers to promoting the adaptive capacity of those who are most vulnerable. As the need to adapt to a changing environment is increasingly recognised, the international community, national governments and civil society alike will need to address and overcome the various barriers and limits to adaptation.

What are the barriers to adaptation?

A review of climate change literature reveals that limits and barriers to adaptation can be broadly categorised into three distinct, yet inter-related groupings (see Figure 1). Ecological and physical limits comprise the natural limitations to adaptation, associated largely with the natural environment, ranging from ecosystem thresholds to geographical and geological limitations. For example, rapid sea-level and temperature rises could present critical thresholds beyond which some systems, such as mangrove and coral reef ecosystems, may not be able to adapt to changing climate conditions without radically altering their functional state and system integrity. In the context of sustainable development, a limit of notable concern for developing country policy-makers is the point at which the ecosystems upon which communities depend will no longer be able to support and sustain livelihoods (Barnett and Adger, 2003).

A second category is human and informational resource-based limits relating to knowledge, technological and economical restrictions. These include the various spatial and temporal uncertainties associated with forecast modelling, and low levels of awareness and information amongst policy-makers on the impacts of climate change, as well as a lack of financial resources and assistance to facilitate adaptation interventions. For example, while much of Europe and

North America enjoys access to a wealth of observational data and climate modelled projections to inform adaptation policy, many Himalayan and sub-Saharan countries are left with scant historic meteorological information and dependent on coarser, large-scale model predictions (ICIMOD, 2009).

In addition, there is a concerted need to acknowledge and address social barriers to adaptation. These barriers comprise the psychological, behavioural and socio-institutional elements that dictate how individuals and societies react in face of climate stress and change, and are important components of adaptation that are often neglected within wider adaptation debates.

Uncovering social barriers

Social barriers to adaptation are concerned with the social and cultural processes that govern how people react to climate variability and change, be they in the form of prolonged drought, heavier and uncertain rainfall, or rising temperatures. The IPCC notes that, to date, 'social and cultural limits to adaptation are not well researched', acknowledging the scant attention within the climate change literature devoted to addressing social limitations thus far (IPCC, 2007: 737).

Social barriers are made up of various processes relating to cognitive and normative restrictions that prevent individuals or groups from seeking the most appropriate forms of adaptation (see Table 2). A key aspect relates to the organisation and structure of social institutions. Institutions in this context are taken to represent the 'rules of behaviour' that govern belief systems, norms and behaviour, and organisational structure. Social institutions are diverse in nature, and can be seen in the form of local farmer collectives, indigenous knowledge institutions, or collective ownership rights to forest resources. Such

Figure 1: Conceptual grouping of limits and barriers to adaptation

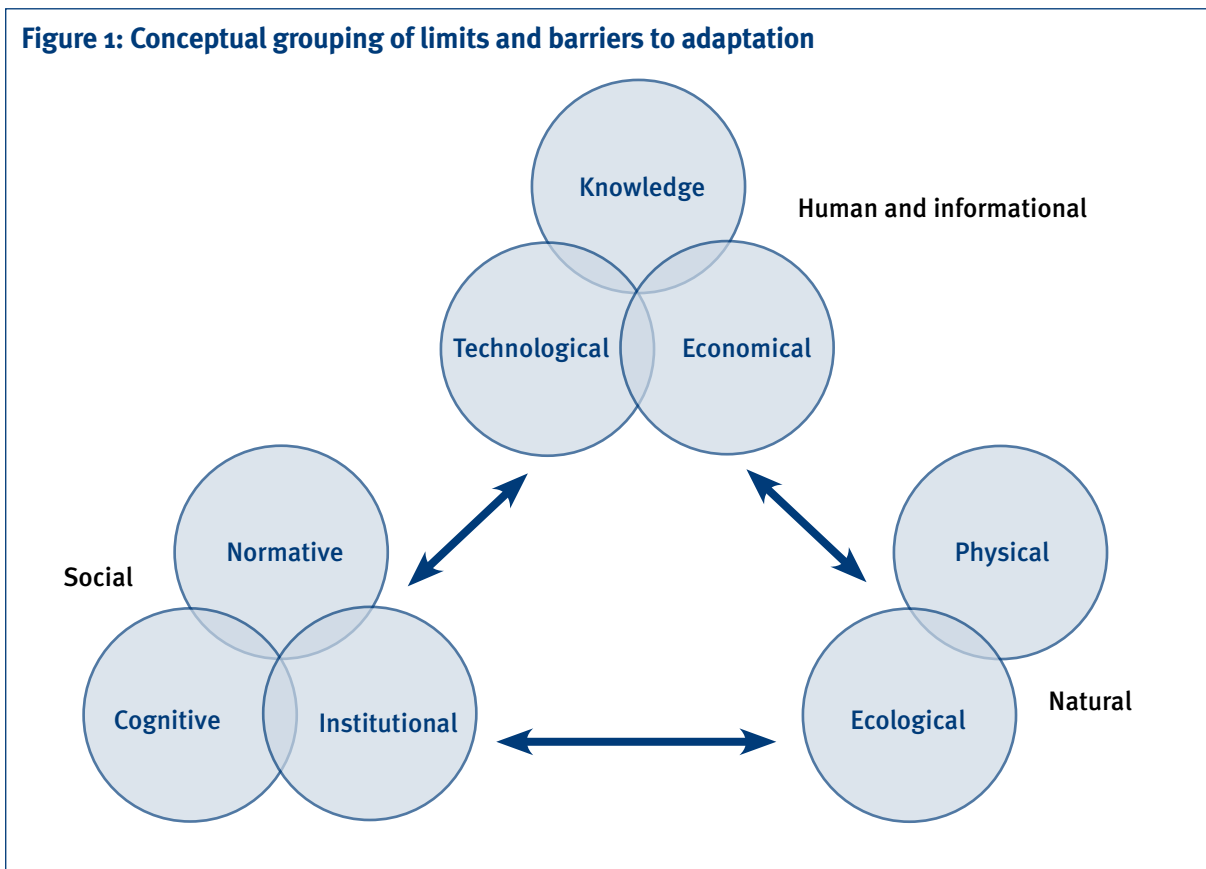


Table 2: Elements of social barriers to adaptation

Social barriers	Examples
Cognitive	<ul style="list-style-type: none"> • Belief that uncertainty is too great to warrant taking adaptation action now • Lack of acceptance of risks associated with implementing adaptation action • Change not yet seen as a problem: temptation to wait for the impact then react
Normative	<ul style="list-style-type: none"> • Cultural norms that discourage change and innovation: an unwillingness to adopt new practices • Traditional means of reacting to climate stress and shock may no longer be appropriate given that there is no cultural memory when it comes to future climate change • Restrictive traditional and religious norms (i.e. reliance on traditional means of weather forecasting and planting, restricted role of women in the household/community, dependence on traditional means of coping with climate hazard)
Institutional	<ul style="list-style-type: none"> • Institutional inequities and social discrimination restrict access and entitlement for certain groups • Social/cultural rigidity: lack of institutional flexibility

institutions dictate, to a large extent, the appropriate adaptation actions and the behaviour of individuals when faced with the threats posed by climate variability and change.

The social sciences have long been aware that an individual’s action and behaviours are shaped by deeply embedded cultural and societal norms and rules (Ostrom, 2005). Natural resource management literature maintains that ‘barriers to community or individual action do not lie primarily in a lack of information or understanding alone, but in social, cultural, and institutional factors’ (Tompkins and Adger, 2004: 15). It is, therefore, important to bear in mind that logical behaviour in reaction to climate stress and shock may not always follow the development of adaptation

policy, even with adequate knowledge and awareness (see Box 1 overleaf).

Crucially, the various sets of rules and norms within which the individual must act may consist of various institutional layers, each with their own influences on dictating appropriate behavioural action, or more importantly, inaction. For example, the behavioural environment of lower caste Hindu women in parts of western Nepal will consist of not only the various local informal institutional ‘rules of the game’ that apply for women, such as household duties; unequal access to education in comparison to males; and inability to participate in village meetings and politics. It will also include the appropriate behavioural norms that are afforded to the lower castes: restrictions in the ability

Box 1: Social barriers matter: how cultural restrictions can increase vulnerability to hazards

Chowdhury et al. (1993) show how cultural norms in a number of south Asian nations increase female vulnerability to flooding, resulting in a disproportionate amount of female deaths. Local institutional restrictions prevent women from learning how to swim, as opposed to not being able to swim. In addition, women feel obliged to wear clothing that inhibits swimming and are constrained in their access to emergency warnings and cyclone shelters as a result of cultural norms, substantially increasing their vulnerability in the face of water-related hazards (Twigg, 2004). These social barriers occur not as a result of their femininity, but rather through the institutional and cultural environment that governs acceptable behaviour and entitlement towards women (Bowen and Khadgi, 2008).

Examples used from Jones and Boyd (2010).

to own land; restrictions in employment and access to key resources; and untouchability, as well as those for their religious belief systems, including compliance with Hindu rituals, values, and beliefs; abiding by caste structures; and dietary restrictions. Each of these institutional layers will combine to determine, to a large extent, the individual's behaviour, access, and entitlement in the face of climate stress and change (Jones, 2009).

Nepal, caste and adaptation

Although its contributions to global greenhouse emissions remain negligible, Nepal is one of the countries most at risk to the detrimental impacts of climate change. This is, in large part, due to its fragile high-altitude mountain ecosystems, low socio-economic status, and heavy reliance on rain-fed agricultural production. As a result, the need for adaptation has gained widespread recognition and focus in recent years throughout the country.

Nepal is blessed with a rich and vibrant socio-cultural environment, with a multitude of ethnic, tribal and social groupings, and abundant diversity in its culture, literature and belief systems. As Hindus make up 80% of the population, the Hindu caste system influences various aspects of Nepali livelihoods. Indeed, Thomas-Slayter and Bhatt (1994) observe that within a rural Nepalese context, caste, along with ethnicity, constitutes the most important variable around which individuals, households and communities aggregate for common action.

Though not traditionally associated with efforts to address adaptation, caste plays a deep-seated role in determining behaviour and access in terms of how

individuals react to climate stress, variability and change. While formally outlawed in 1962, the caste system still dominates Nepal's culture, society and economy to this day (Bennet, 2004). This has significant implications for the individual's capacity to adapt, particularly those among the lower castes.

The consequences of neglect: lessons from mid- and far western Nepal

A failure to recognise social barriers can have dramatic consequences for an individual's capacity to cope with climate hazards, variability and change. This is particularly relevant for marginalised groups in developing countries. The following details the outputs of a 12-week research project looking into the impact of castes and gender on the ability of rural agrarian communities to deal with climate variability and change in western Nepal. The findings demonstrate how social barriers influence an individual's adaptive capacity and restrict behaviour and entitlement, as well as contributing to maladaptation.

Restricted entitlement. Though not typically addressed under conventional adaptation strategies, the research found that restrictions in entitlement were a considerable barrier to adaptation. The ability of a community to ensure equitable access and entitlement to key resources and assets is a fundamental characteristic of collective adaptive capacity.

- Within the research sites, the study highlighted significant caste inequalities in access and entitlement to key social safety nets, such as credit and the distribution of aid (from both government and NGOs), as well as a reluctance to support members of the community outside particular castes. For the lowest castes, known as Dalit, this may have considerable implications for their capacity to adapt, as key resources are not available to them during times of need. Moreover, access to spaces of political power at the community level, and the authority and autonomy associated with that access, remained solely within the hands of the upper caste. No formal barriers existed to prevent lower caste inclusion, but the informal institutional environment ensured the clear cultural hegemony of the upper castes. The research also pointed to clear psychological and cognitive barriers, as the lower castes had a distinct collective perception of themselves as weak, inferior and incapable of effectuating change.
- Traditionally, the caste system bars any lower caste individuals from acquiring land. Though formally outlawed, the findings revealed clear barriers to land acquisition amongst the lower caste. Higher rates of interest for Dalit from upper caste landlords, as well as preventing their access to the

most fertile areas of land, meant that a number of institutional and cultural limitations persisted.

The research strongly echoed a previous ODI study into access and entitlement to water resources in India, which described local institutional water policies as ‘poorly informed of axes of social mediation, like caste, class, age’ (Joshi, 2004). The Indian study demonstrated how the institutional and behavioural restrictions that apply to the lower castes reinforced underlying inequities and determined, to a large extent, the individual’s livelihood options and status. The findings of the study further highlighted how distribution and entitlement to water resources were dictated largely by evolving socio-political and institutional contexts, emphasising how the water-related needs of the poorest are not adequately articulated.

ODI’s research documented how such institutional restrictions to water resources in India are reinforced during times of water stress and scarcity. The Indian case demonstrated that in many cases it is access and entitlement to water that pose significant obstacles to coping with climate hazard by those marginalised and vulnerable, as much as water shortages or excess. This will inevitably be a major challenge to any intervention aimed at facilitating adaptation should there be changes to rainfall variability and distribution.

Constrained behaviour. The ways in which individuals react to climate stress will be shaped largely by what is deemed appropriate and acceptable behaviour. Institutional and cultural restrictions in behaviour that apply to certain groups, such as caste, ethnicity and gender, serve in many instances to prevent the most appropriate and logical forms of reactive behaviour in reaction to climate hazards, variability and change.

- In one flood prone area described in the Nepalese study, community initiatives were in place to ensure relocation to designated ‘safe spots’ in the event of a flood. Many members of the lower castes revealed, however, that they were often told to find other – more vulnerable – places of refuge, away from the rest of the community and the safe spots. They reported being told to ‘move as you will make this place dirty’.

Behavioural restrictions in times of need were not limited to the lower castes. The study found that, within the research sites, members of the upper caste were prevented explicitly from begging for food or money in times of need, even those in a worse financial position than most Dalits. In contrast, begging constituted a principal source of livelihood for the majority of the lower castes, particularly during droughts.

- The option of a diversified livelihood is considered a crucial aspect of increasing an individual’s capacity to adapt. The study revealed that, within the two research sites, vocation remained principally determined by caste lineage, handed down along family lines. Restrictions in livelihood opportunity along caste lines have served to limit income diversification and skill acquisition, as well as adaptive capacity, particularly amongst the lower castes.

Likewise, when migrating to seek alternative employment and income – a key strategy employed by male members of household during times of climate stress – respondents noted that their caste largely determined the type of employment available, with many of the lower castes taking to adopting false names to secure better jobs. Such determinants were not the result of the individual’s education, skills or competency, but were dictated through cultural restrictions, biases and discrimination.

Maladaptation. One potential consequence of failing to adequately address social barriers is maladaptation. This refers to adaptation actions or processes that increases vulnerability to climate change-related hazards. Maladaptive actions and processes often include planned development policies and measures that deliver short-term gains or economic benefits but lead to exacerbated vulnerability in the medium to long term (UNDP, 2009). Historically, societies have developed distinct means of reacting to and coping with their environmental surroundings. These can be seen in various rituals, behaviours and coping strategies. These historic survival strategies will, in most cases, help to increase resilience. However, in the light of unprecedented climate change, certain actions may exacerbate rather than reduce vulnerability to the impacts of climate change.

- The traditional way to cope with drought in many households in mid-western Nepal is to send young men from the household to search for alternative employment for two to three months, typically to the lowland plains or to northern India. Recent decades have witnessed prolonged periods of drought, necessitating longer periods of migration of up to, and in excess of, six months. Focus group discussions reveal a high dependency on credit and aid from international non-governmental organisations as a result of the long absences of male family members.

Prolonged migration is not the most suitable form of adaptive behaviour in reaction to longer episodes of drought, and there are many other ways to adapt to an increasingly drought prone

environment. Few attempts to change to more suitable practices in the study area have succeeded, including a move to apple farming and a seed diversification initiative. This is the result, largely, of antipathy and a reluctance to change traditional practices (Jones, 2009). Instead, individuals persist with the familiar sole strategy of migration, largely as a result of this reluctance, coupled with a lack of knowledge about, or assistance in facilitating, more appropriate initiatives to address longer periods of drought.

Adapting policy to overcome social barriers: a vision for the future

The research studies in Nepal and India point to the inherent impact of social barriers in preventing successful adaptation. Though the insights are concerned predominantly with the effects of caste and gender, commonalities can be drawn with institutional restrictions associated with other groupings, such as ethnicity, age and class. It should be noted that simply recognising social barriers will not pull them down. Consequently, it is important to take proactive steps to overcome the barriers to adaptation:

- **Awareness, education and empowerment:** a concerted effort is needed to increase education and awareness in order to overcome social barriers, address institutional restrictions in behaviour and entitlement, and alter restrictive and maladaptive perceptions, norms and cultural constraints. Initiatives to foster adaptation will ultimately fail if they do not empower and inform individuals who remain confined in their adaptive behaviour and have limited access to key resources.

In Nepal, this requires the dissemination of knowledge and information on the impacts and vulnerabilities, and the most suitable and appropriate forms of adaptive behaviour, particularly where these conflict with ill-suited and maladaptive institutional practices. General awareness-raising and education on climate change has had some success within Nepal, after intense efforts in recent years by the government and civil society, particularly in the run up to COP-15 in Copenhagen. Yet, clear distinctions remain on the representation and empowerment of marginalised groups within institutional decision-making processes, relating in particular to women and the lower castes.

- **Mainstreaming social barriers within wider adaptation policy:** planned adaptation interventions need to recognise the obstacles that social barriers present to limit the success of their interventions. It is, therefore, vital to mainstream social barriers within wider adaptation policy frameworks, such

as the National Adaptation Programme of Action (NAPA) and Pilot Project for Climate Resilience (PPCR), to address the limitations posed by these social barriers. Rather than simply mentioning social barriers within the various frameworks, initiatives to address those barriers should be incorporated into practical, structural and, most importantly, output levels.

Initiatives are underway to prepare a parallel Local Adaptation Programme of Action (LAPA) for Nepal. This aims to address adaptive interventions at the sub-district and community levels, looking to assess, inform and adapt specific cultural and institutional environments through the development of local programmes of action. It seems a novel way to deal with adaptive interventions at local level, with the potential to address and overcome substantial social barriers in Nepal.

- **Combining climate adaptation and parallel approaches:** interventions to address disaster risk reduction, social protection and climate adaptation deal with similar underlying drivers of vulnerability, and face similar social barriers. Rather than attempting to address only the immediate concerns of each approach, there is a need to recognise complementarities and inter-relations, as well as the ways in which each approach incorporates and deals with social barriers. This would help to address and overcome the limitations such pose for adaptation.

The Strengthening Climate Resilience (SCR), and African Climate Change Resilience Alliance (ACCRA) projects, in which ODI plays an active role, are two examples of interventions to pioneer inclusive frameworks that draw on insights and commonalities from parallel approaches, with the potential to incorporate and learn from the various approaches used to tackle social barriers.

- **Supporting informed autonomous adaptation: the role of community-based adaptation:** though much of the focus remains upon planned adaptation, largely at the national level, most adaptive behaviour will occur autonomously at local levels. Given that many of the barriers and restrictions mentioned will apply to aspects of autonomous adaptation in particular, it is only through working at the community level and by appreciating, informing and supporting appropriate and logical autonomous actions at this level that restrictive and maladaptive elements within local institutions will, ultimately, be overcome.

One example is community-based adaptation (CBA). Tailored towards local cultures and conditions, CBA supports and develops informed autonomous adaptations to climate variability, involving

both local stakeholders, and development and disaster risk reduction practitioners. As such, it builds upon existing appropriate cultural norms, while addressing local development issues that help to alleviate climate vulnerability, making use of clear efforts to contextualise initiatives within the broader cultural environment (Ayers and Huq, 2009).

Social barriers pose serious obstacles for any intervention aiming to facilitate and enhance adaptive capacity. Yet, although interventions can enhance the adaptive capacity of people who are vulnerable to the harmful impacts of climate change, attempts to enforce social and cultural change carry with them many complex and sensitive ethical concerns. Indeed, while social and cultural transformation may

bring with it tangible benefits, demanding that other cultures change and deviate from long-standing cognitive, normative and institutional practices is a sensitive issue and presents a major challenge.

However, if interventions are carried out in a way that complements and respects the social and cultural environment of the local context, they can help to address the substantive limitations presented by social barriers. While cultural norms and institutions are largely responsible for the creation of barriers and restrictions, particularly at the local level, it is important to note that effective and equitable adaptation will only occur if these restrictions are recognised, influenced and overcome.

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Endnotes and references

Endnotes:

- 1 Autonomous adaptations are considered to be those that take place without the directed intervention of a public agency (Aguilar, 2001).

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