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# Disinterested agents or mismatched plans?

## Public administration capacities and climate change responses in the least developing countries

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### Abstract

**Purpose** – Developed countries agreed at COP15 to pay US\$100bn annually for adaptation and mitigation in developing countries. This paper aims to evaluate how prepared are donors and recipients to spend this money well by analyzing institutional and organizational capabilities for climate change adaptation in least developed country (LDC) administrations using the case of Nepal, a country which can be considered to be an archetypal LDC.

**Design/methodology/approach** – The authors conducted over 100 in-depth structured qualitative interviews with government officials from across the organizational chain in the ministries concerned with climate change, ranging from the lowest-ranked employee to just under the ministerial ranks. This was supplemented with detailed surveys of three representative communities from different ecological zones in Nepal. Data were analyzed using Ostrom's IAD framework.

**Findings** – Local administrations are more motivated and capable than are given credit for by donors but nevertheless face critical barriers in being able to function autonomously and confront climate change challenges. These barriers create three interrelated challenges: An organizational challenge to create intrinsic incentives which empower and grant autonomy to front line agents, an institutional challenge to go beyond accountability-focused process validation and a policy-choice challenge which avoids the temptation to write aspirational policies without clear and feasible strategies to obtain the resources necessary for their implementation.

**Practical implications** – The findings point to ways climate assistance can be restructured for more reach and effectiveness.

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**Originality/value** – This paper fills a gap in the literature because community structures and institutions have been extensively analyzed in the context of adaptation, but despite being criticized, administrative structures have rarely been directly studied.

**Keywords** Agriculture, Nepal, Donors, Public administration, Forestry, Climate change adaptation

**Paper type** Research paper

## 1. Introduction

At the Copenhagen Conference of Parties (COP15) in 2009, developed countries committed to funding (by 2020) climate change mitigation and adaptation efforts in developing countries to the tune of US\$100bn annually. While the modalities of climate finance are still being worked out – there are debates about the relative amounts of funds which should come out of the public and private sectors and about the relative amounts which should be spent on adaptation and low-carbon development – the least developed countries (LDCs) have already started receiving substantially increased flows.

Our paper stems from concerns about the effectiveness of these expenditures, and it investigates the challenges faced by donors and local administrations in the LDCs to spend this money well. We address this issue using the case of Nepal, which can be considered to be an archetypical LDC with problems associated with internal socio-ethnic cleavages, weak government, political conflict and uncertainty, severe organizational resource constraints and, of course, widespread poverty. Our analysis, grounded in the case and based on over 100 in-depth structured qualitative interviews with government personnel from across different organizational chains as well as detailed surveys of three representative communities, identifies the critical barriers government agencies face in being able to function autonomously and confront the challenges of climate change. By providing a comprehensive empirical analysis of the institutional and organizational capabilities for climate change adaptation in the public sectors, we address critical questions about whether and how LDCs can absorb more donor funding and about the risks and returns involved.

This research fills an important gap in the literature. While the concept of adaptive capacity has been in conceptual and theoretical development for decades, the empirical examination of such capacities is still scarce (Lemos *et al.*, 2013). The IPCC had noted that in contrast to the scientific research on natural systems, research on social systems and institutions is not as voluminous. Partly because of this, adaptation concerns have been discussed and dissected much less than mitigation ones (IPCC, 2007; Klein *et al.*, 2005) leading to an ongoing challenge in the development of practicable knowledge about climate change adaptation. Fortunately, over the past few years, a substantial literature has begun to emerge on adaptation issues, which is both theoretical (Folke, 2006), and place-based (Goldman and Riosmena, 2013; Jones and Boyd, 2011). Most of these studies, especially in developing countries, have initiated the research agenda by focusing first on communities. Government and administrative structures have not yet been extensively analyzed. Even many critiques of administrative structures, for example the case of forest rights in Springate-Baginski *et al.* (2013), have generally reported from the communities' points of view without performing an institutional or organizational analysis of the bureaucracies themselves. Meanwhile, most of the information available about the public sector and climate expenditures in the LDCs is anecdotal. By formally investigating public administration, our paper complements the research on local community-based institutions for climate change adaptation.

In Nepal too, there are no comprehensive analyses of public administrations and climate change or about how these institutions and corresponding organizations are responding to

climate challenges. Among the existing studies, [Yates \(2012\)](#) found that institutional responses to vulnerability are highly variable, depending often on physical distances from decision-making structures. In his analysis, vulnerability is a representational issue. [Jones and Boyd \(2011\)](#) analyzed how embedded social processes create discriminatory practices based on caste and gender which are barriers for adaptation action. Other studies such as [Onta and Resurreccion \(2011\)](#) focused on elite control and gendered responses to adaptation capacities in Nepal, shedding light on problems with a broader distribution of entitlements. From these studies, we can conclude that community-based institutions are prey to traditional social and ethnic cleavages, but still none of these studies engaged with wider sets of the relevant structures of public action, such as government and administrative organizations, to see whether the latter were more or less subject to these cleavages.

In the absence of such studies, the public sector is usually caricatured in Nepal and elsewhere as incapable, unmotivated and rent-seeking and little effort is made either to understand the constraints under which the public sector operates or to theorize on how to leverage its existing resources for climate change adaptation. Thus, while they are arguably among the most important institutions in the development and environment spheres, public sector organizations in developing countries have often remained a bystander in climate adaptation initiatives. In an analysis of 118 adaptation cases drawn from the United Nations Framework Convention on Climate Change (UNFCCC) database, [Agrawal \(2010\)](#) finds that in the overwhelming majority of cases (102 out of 118) civic organizations worked alone in facilitating adaptation to climate change, while public organizations working alone figured in only six cases. The dominance of civic organizations in this arena can be explained mostly by the centrality of donor funding for climate change adaptation in the LDCs which tends towards contracting NGOs and CSOs to conduct project-based adaptation activities but while these may have several advantages vis-à-vis the public sector, notably in the spheres of probity and attitudes, the former also suffer from several critical limitations – particularly in terms of territorial reach, funding dependence, continuity and a programmatic focus – and it should not be expected that they can credibly supplant the latter in achieving long-term transformative goals based on, as [Banks et al. \(2015\)](#) put it, their success in service delivery projects of modest and discrete scale.

## **2. Conceptual approaches to investigating institutional and organizational capabilities for climate change adaptation**

### *2.1 Spheres of adaptation action: a focus on livelihoods*

Adaptive capacity is generally understood to mean the ability of a community to deal with its vulnerability to exogenous shocks and maintain its viability and welfare. It is known to be a function of both the resources available to the community and the decision-making processes through which a community distributes and expends these resources in anticipation of or in reaction to a shock. The relevant resources include productive and financial assets as well as knowledge and practices.

Adaptation initiatives and research in the LDCs usually focus on livelihood strategies ([Paavola, 2008](#); [Chhatre and Agrawal, 2009](#)). This approach operates under the assumption that vulnerability is a function of the available livelihood options ([Jodha, 2005](#)) and that the poor are especially vulnerable to environmental shocks because of their dependence on natural resources for subsistence and income ([Agrawal and Perrin, 2009](#)). Although [Agrawal \(2010\)](#) argues that development and adaptation are two separate conceptual spheres because the latter is explicitly focused on being able to deal with unpredictable variations in outputs rather than on reducing poverty levels, the two are closely intertwined because poverty limits the investments a community can make in protective and productive

infrastructure and the buffers that it can accumulate for dealing with shocks. Moreover, there is a large body of literature which argues for mainstreaming climate change adaptation and risk management into developmental processes (Huq *et al.*, 2004). In the case of Nepal itself, for example, Biggs *et al.* (2013) found that most adaptation strategies in the agricultural sector were developmental. Thus, even if the concepts of development and adaptation are distinct, they are objectively linked in poorer societies and the institutions and organizations which deal with livelihood, development and climate change are the same or work in overlapping spheres, even if they do not always collaborate.

In sector-specific terms, grounded research on adaptation action generally focuses on a well-known set of productive sectors. In the case of Nepal, the relevant sectors are identified by its UNFCCC mandated National Adaptation Plan of Action (NAPA) as forests and agriculture. The research agenda in both these areas is well-developed, and the literature available in these arenas informs the kinds of adaptation action which are needed and the roles public agencies may need to play in these arenas.

*2.1.1 Forests.* In the case of forests, there is an extensive literature linking livelihoods and conservation, but the assumption that there is a win-win between conservation and poverty alleviation does not find unequivocal evidence (Sunderlin *et al.*, 2005; Agrawal and Redford, 2006) and the outcomes seem to depend strongly on contextual factors (Persha *et al.*, 2011). Nevertheless, forests do play a role as a shock-absorber which makes it directly relevant from an adaptation perspective.

A major shift in forestry management in developing countries over the past few decades has been the progressive devolution of rights and responsibilities to the communities which live in and around these areas. Many legislative battles and community struggles have been extensively documented and the outcomes of community forestry have also been comprehensively studied, the conclusions being generally favorable though cautious. The logic of community forestry is based on virtuous local collective action, but while the conditions for ensuring these virtuous structures might sometimes appear spontaneously, in the majority of cases where they do not quite some social engineering is required because of the number of variables involved for successful community action, by one count (Agrawal, 2001) over 30.

The literature thus presents the key challenges of forestry from a livelihoods perspective as to first ensure that forest resources are protected for the local communities and then at a subsequent stage to ensure that these resources are exploited to create community assets and income opportunities rather than rents. Insofar as using forest resources for sustainable livelihood generation is concerned, researchers have found that in Nepal forests currently contribute only between 3 to 11 per cent of total income for the poorest forest dwellers even as many forest areas in the plains and high mountains are still underutilized, indicating that allowing more commercial timber harvests could be a win-win opportunity (Meilby *et al.*, 2014). However, they do not address the institutional requirements or change processes that might be needed to introduce desirable flexibility in forest management. Meanwhile attempts by the state to reassert some degree of control over the forest are severely opposed and criticized (Sunam *et al.*, 2013), indicating that there are contentious political issues which need to be resolved.

*2.1.2 Agriculture.* In the case of LDCs, the relevant unit of analysis of agriculture from an adaptation perspective is the smallholder farm. The Food and Agriculture Organization (FAO) estimates that over 98 per cent of all farm holdings worldwide are family-based and indeed most adaptation projects in Nepal also deal with communities where small holder farming is the dominant mode of production. Here, there is an extensive literature which, arguing that more research and development on its own now has limited potential for

increasing productivity and well-being, engages with the issue of inserting small family farms into more commercial value chains as a means of agricultural development (Lowitt *et al.*, 2015), thus combining the push of agricultural extension work with the pull of market networks. These chains include not only the more sophisticated and widely reported-on global value chains but also those between rural communities and local markets. Another stream in the literature on rural livelihoods emphasizes the importance of income diversification strategies to both increase and smooth net incomes, mirroring in a sense the advice given to investors on portfolio diversification. This presents an intriguing challenge because some researchers have identified dueling arguments on the competing benefits accruing from specialization and diversification, pointing to how value chains may undermine traditional diversification practices through a greater emphasis on market relations (Jodha, 2005).

While the literature and the associated debates indicate the need for a more intensive accompaniment of agricultural development in the most vulnerable areas to coordinate insertion and diversification, the role of the state and public sector organizations has been underappreciated in the resilience literature. The main challenges to rural development which have been identified so far, including land tenure, finance, economic scale and productivity, clearly argue that beyond a few project-based initiatives, only the public sector is *potentially* capable of addressing these at a regional scale. The alternative, of course, is that market forces will shape these spheres in their own inimitable way where the outcomes can be positive but in reality have so far have usually been problematic for vulnerable communities and groups, especially women (Chege *et al.*, 2015; Wood, *et al.*, 2013). While much adaptation work is still not routed through the government, some have started to recognize that international organizations and donors were wrong in promoting a reduced public sector role in agricultural development (FAO, 2013).

In Nepal, as agriculture still represents 34 per cent of economic production and as 81 per cent of the population still resides in rural areas and depends at least partly on agriculture<sup>[1]</sup>, the potential effect of climate change on agriculture is a significant threat to well-being. Climate models suggest that although the total amount of water available for agriculture may not decrease in Nepal – with increased snow-melt balancing more irregular monsoons and increased evapotranspiration – increasing variability of weather punctuated by potentially more frequent natural calamities may have serious consequences on crops (Eriksson *et al.*, 2009). Climate change impacts are already visible in agriculture, with both positive and negative effects. On the positive side, increasing temperatures allows crops to grow at higher altitudes and for longer periods. On the negative side, farmers report production at lower altitudes is suffering from more irregular water availability, increased pest attacks and heat damage, both phenomena requiring place-based interventions.

### 3. Methodology

As our objective is to provide a structural-institutional perspective on the organizational performance for managing climate challenges in Nepal, we study the effects both of formal rules and regulations, and of organizational structures and organizational capacities on decision-making in communities and administrative agencies. In our study, we make a distinction between organizations and institutions. We treat the former as constellations of agents with both a common purpose and individual interests, while we approach institutions as the formal and informal, written and customary rules and ways of behavior which guide decisions in defined arenas. Thus, unlike many other scholars, our approach classifies the various ministries as organizations because we are more focused on their interests and motivations, while we treat the community forest users groups (CFUGs)

described below as an institution because we are more interested in how rules affect the decisions taken within them. This is also consistent with the approach in Ostrom's Institutional Analysis and Design (IAD) framework. This framework allows researchers to organize "diagnostic and prescriptive inquiry" by identifying the major types of structural variables in a multi-tier conceptual map (Ostrom, 2011, 2007). IAD, in particular, developed the concept of an action arena – consisting of an action situation and actors – within which the researcher can study the way relevant variables interact to determine actors' decisions and the outcomes which result. It has been used in a variety of resource-use settings ranging from fisheries management (Imperial and Yandle, 2005; Rudd, 2004) and land-use planning (Pethe *et al.*, 2012) to co-management (Whaley and Weatherhead, 2014).

We use this framework for our research, defining the action arenas that are most relevant to studying Nepal's responses to climate change and then studying their operational rules and organizational resources to understand the nature of the spaces within which decisions about resource use and livelihood planning under climate change pressures are taking place.

### 3.1 Case selection

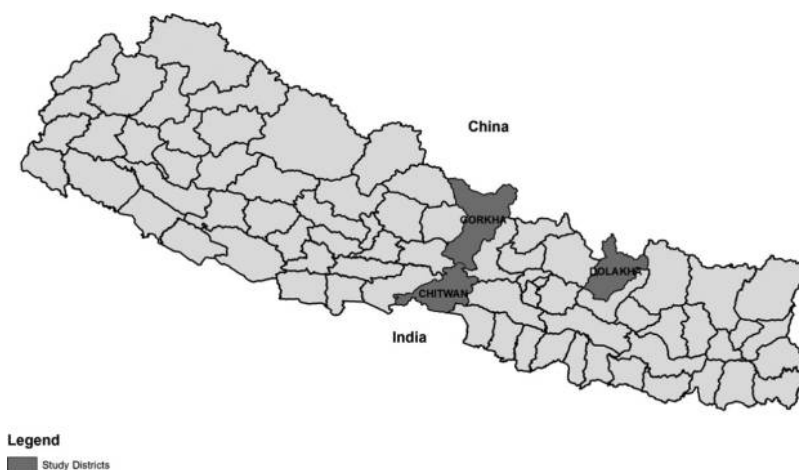
Sandwiched between the Tibetan Plateau and the Gangetic Plains, Nepal is divided roughly evenly among the high mountains, middle hills and the plains forests. For our study, we selected three rural districts (based on suggestions by relevant stakeholders) representative of each of these geographic zones to incorporate variation in remoteness and community structures (Table I; Figure 1)[2]. In each of the districts, we concentrated on two action arenas which were identified by Nepal's NAPA and other stakeholders as being especially relevant to adaptation activities: forest management and agricultural development. The apex ministries in these arenas are the Ministry of Forests and Soil Conservation (MoFSC) and the Ministry of Agricultural Development (MoAD). As indicated in Nepal's NAPA,

Item	Plains/ <i>Terai</i>	Middle hills	High mountain
District name	Chitwan	Gorkha	Dolakha
Location (Province)	Central Development Region	Western Development Region	Central Development Region
Main livelihoods	Agriculture, livestock, poultry, wage/salary,	Agriculture and livestock, foreign employment, daily wage labor	Agriculture and livestock, businesses, government jobs
Total area	2238 sq. km	3610 sq. km	2191 sq.km
Poverty Rate	8.89%	20.41%	25.99%
Population	579,984	271,061	186,557
GDP (in million US\$)	338.98	106.72	65.34
Infrastructure and accessibility	88.90 km national highway, 83.49 km feeder road and 61.00 km postal road 96.2% of households have improved source of drinking water 94.1% of households have toilet facility 86.3% of households have electricity for lighting	279.24 km feeder road and 31 km mid hills road 65.4 % of households have improved source of drinking water 73% of households have toilet facility 76.7% of households have electricity for lighting	258.75 km feeder road 78.5% of households have improved source of drinking water 69.5 % households have toilet facility 82.1% of households have electricity for lighting

**Table I.**

Detail of study sites

**Source:** Adapted from: GoN (2013, 2014a, 2014b and 2016a)



Climate  
change  
responses

**Figure 1**  
Study sites

several other ministries and departments are also relevant for a more complete approach to climate change management but a scoping exercise we performed determined that a more comprehensive treatment including these other organizations would be mostly duplicative.

### 3.2 Data collection and analysis

We conducted over 100 hour-long structured open-ended interviews with government officials from across organizational chains in the concerned ministries as well as with villagers, quizzing them on climate change knowledge, policies, administrative conditions and community decision-making structures. The interview questions for government officials varied slightly based on the rank of the interviewee while those for villagers were standard. In the villages, we purposively interviewed both men and women, those from different castes, and community members who were active in community decision-making structures and those who were merely passive participants. Some of the enquiries were of a sensitive nature, so sometimes we used multiple questions with different phrasings to enable triangulation. Data collected were analyzed mostly qualitatively in the manner in which [Feldman et al. \(2004\)](#) described as beneficial for studying public administration, i.e. in using events, experiences and actions to understand a meaningful whole.

## 4. Arenas for climate change adaptation action

Here, we discuss the critical institutional and organizational dynamics we found in the selected action arenas and make some concluding observations which indicate the areas of particular concern to climate adaptation interventions. The aggregate table of IAD findings using its formal terminology is presented below and followed by a discussion of the salient observations. This table and the discussions following clearly show that authority and aggregation rules are oriented toward validating processes rather than developing livelihood-based solutions to addressing climate challenges ([Table II](#)).

### 4.1 Forest management

About half of Nepal's forests are under traditional government management, while about 34 per cent are under community control. National Parks areas, which are under special management systems, make up 17 per cent of the country's forest areas. Private forests are



**Table II.**  
Action situations and  
rules analysis

SN	Rule	Explanation of rule	Forest management	Agricultural development
1	Position rules	The roles and types of positions that participants can assume in an action situation	Decision-making positions in CFUG open to all community members Mandatory representation quota for women and disadvantaged Forest department officials prepare the plans which guide how much forest resources, esp. timber can be harvested Politicians have informal access Access to CFUG management positions by community consensus Forest department personnel posted for average tenure of 3 years Community forestry rules apply to 34% of national forests Direct MoFSC administration over 49% of national forests Special protected forest rules apply to 17% of national forests CFUGs may decide on allowable cut, royalties, but in reality operational plans heavily influenced by MoFSC staff	Farmers typically assume passive recipient role vis-à-vis agricultural extension workers Agricultural department workers position of authority with respect to rationing their services
2	Boundary rules	Rules for entry to and exit from a position in an action situation		For marginal farmers, outmigration or local service sector jobs (scarce) Government personnel routine transfers
3	Scope rules	Designation of areas to which rules apply (jurisdiction)		n/a
4	Choice rules	Actions participants may perform		Agricultural extension agents have broad latitude in deciding to whom to offer services Agricultural agents have no choice with regards to which services to provide No information available to community members about available funds for agricultural extension activities
5	Information rules	Quantity and type of information available to participants	Little concrete information about forest inventory and condition	

(continued)

SN	Rule	Explanation of rule	Forest management	Agricultural development
6	Payoff rules	Rewards and punishments, or costs and benefits obtained from sets of actions	<p>Monitoring done by community</p> <p>Official sanctions against offenders light and unreliably (rarely) administered</p> <p>Social sanctions light for both elite offenders (because of status) and poor offenders (because of need)</p> <p>Focus on subsistence-level extraction and conservation and rather than livelihoods generation</p> <p>Tendency for community members to illegally extract from government managed forests where enforcement is non-existent rather than CFUG managed forests</p> <p>No transformation of livelihood opportunities</p>	<p>For Agricultural department staff, less work pressure if they provide services to those expressing demand (better-off community members) than focusing on those who require more attention (the disadvantaged groups)</p> <p>Assistance provided to better off members using <i>logic of convenience</i>.</p> <p>High levels of dissatisfaction with agency</p>
7	Aggregate rules and outcomes			

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Climate  
change  
responses

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Table II.

negligible. With the 1993 Forest Act and the 1995 Forest Regulations, government-managed forests were increasingly transferred to community control exercised by CFUGs, and it is expected that this trend will continue.

CFUGs are broad-based organizations open to all community members who make collective decisions over levels of extraction of forest products, especially timber, and formally have collective responsibilities for determining extraction, distribution and maintenance of forest resources. They raise money from forest product royalties and membership dues and spend them on community infrastructures and other social and development programs.

CFUGs have clear rules regarding the composition of their management committees, which includes mandatory representation of women and disadvantaged groups. Representation does not of course guarantee genuine participation. Responses to the question on who speaks the least in meetings generally showed that it was women and ethnic minorities or the *Dalits*. But while the observation of one woman in the CFUG that she was in the committee only “to fulfill the quota of women” is an accurate characterization of the nature of many women’s involvement in community management structures, it is not the only type of outcome. A few women who have participated in these committees report greater and continuing awareness and involvement in community resource management. The results in terms of the empowerment of disadvantaged groups are therefore varied and often depend on idiosyncratic factors like strength of personality. Nevertheless, the space created by CFUGs is progressively lowering the bar for genuine participation of disadvantaged groups.

Our question to community members as to who benefits the most from CFUGs elicited an interesting contrast. While some of the poorer respondents indicated that the wealthier benefitted more because they were able to purchase more of the timber on offer by the CFUG, some of the better-off respondents as well as some of the poorer ones responded that the weaker groups benefitted more because the CFUG royalties funded earmarked benefits such as scholarships for poor children. This indicates that certain protocols have the effect of establishing and at least minimally safeguarding entitlements for the weakest community members. So while we can confirm the distributional biases in CFUGs found by others (Iversen *et al.*, 2006), we can also see that the biases do not completely erode the entitlements.

While some rules of community forest management, such as those related to representation, have contributed to better securing economic entitlements for the poorest, others have prevented community forests from playing a significant role in local economic growth. Rules guiding CFUG management allow only subsistence-level of timber extraction by community members. A typical family, we were told, might collect 30 kg of firewood and 210 kg of fodder per week, in addition to about 50 cubic feet of timber for house construction or repair when required. This is not insignificant, but certainly it is too little to transform livelihoods. Although the CFUGs do charge royalty for timber, the allowed cut is rather small. Our findings thus reflect the consensus among many researchers (Meilby *et al.*, 2014) that forests in Nepal are underused, even though there is persistent demand for more timber.

Almost all administrative agency respondents pointed out severe resource constraints in personnel, equipment and funds to execute mandated tasks. These inhibit MoFSC staff’s ability to enforce rules related to forest encroachment and timber smuggling. Field level staff repeatedly indicated that they cannot prosecute offenders. As one Ranger put it, “we don’t even have a vehicle to take the offender before a judge.” Even if the vehicle were available, local politicians almost always intervene to ensure that cases are never brought before a judge. Enforcement is therefore limited to at most confiscating the timber or temporarily impounding cattle grazing without a permit (though these are quickly released

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as the forest department would otherwise have to itself provide fodder for these animals). But most breaches are never detected. As one Ranger noted, he has to look after 58 forest parcels and, lacking transport, does not visit most of them. Similar limitations also prevent MoFSC field staff from carrying out accurate and complete forest inventories. Indeed, when questioned about which tasks they are *not* able to perform because of resource limitations, the most common answer was forest inventory and management, which is their primary responsibility. Instead, managing CFUG affairs took up most of their time.

This is one of the main reasons behind the failure to develop strategies for employing forest resources to transform livelihoods. Governance structures are partly responsible for the rules which result in low economic activity around forests products. Transfer of forests to the CFUGs does not remove the MoFSC from the picture. CFUG protocols, heavily tutored by donors whose focus was more on conservation, require preparation of forest management plans which include basic inventorying for determining sustainable harvest levels, and it is the local staff of the MoFSC which prepare these plans. Indeed, much of the time of the field staff of the MoFSC goes into preparing these plans and because it is an administrative requirement, the preparation of the plans takes precedence over on-the-ground activities such as patrolling. However, the plans are often ritualistic for even the basic inventorying of the forest which is required to prepare them is usually not done because of manpower and basic equipment shortages. Without an adequate inventory, an increase in forest exploitation can be risky. The conservationist approach followed by the forest staff is justified to some extent because a permissive management approach would require monitoring capabilities which are beyond the reach of the MoFSC and therefore almost blanket-bans are necessary to simplify the task environment. Our respondents indicated that the prohibitive bias and administrative restrictions and regulations in the management of community forests prevent most forms of economic exploitation, and this extends even to the few tracts of private forests. Such approaches result in little being done for forest-dependent communities beyond safeguarding subsistence level entitlements and forest conservation.

Resource limitations also affect staff motivation. We gathered from interviews that MoFSC staff believes itself to have technical skills in forest management issues and regret that they are unable to practice what they refer to as *Scientific Forest Management (SFM)*. While they rarely have the time or the equipment to perform the tasks that validate them professionally, they are also squeezed by community demands for which they are also unprepared. One Ranger explained “Forest users do not want to upgrade the regulations. They want us to do it, but we have enough budget only for preparing the operational plan.”

Organizational theory posits that resource constraints generally lead to conflict and in this environment we would expect to find a strained relationship between forest staff and communities, but our findings are more nuanced. The literature from India, for example, claims that forest bureaucracies actively resist community rights (Matta and Kerr, 2007; Kumar and Kant, 2005). In Nepal, however, the forest staff has a more balanced view on the matter. Almost everyone interviewed expressed themselves in favor of community forest management and said they had good relations with the CFUG despite also reporting that there are frequent conflicts with the community. They recognized that they lacked the ability to adequately patrol and protect the forests and that community management reduces the number and extent of local level violations but they also remarked that community members (and this was confirmed by the villagers) now tended to exploit state forests more.

Where conflicts with communities did arise, forest department officials said they were a result of community members attempting to extract more than what CFUG operational

plans allow them to and these, the forest staff responded, are resolved by explaining the rules to the community and, often, involving the local politicians to intercede. We also enquired from community members as to who breaks the rules. Rather than point to the existence of some timber mafia, we were told that it is the poor who most often break the rules because they extract firewood to sell and supplement their meager incomes. This also explains the reluctance of forest staff and CFUG management committees to strictly enforce rules.

#### 4.2 Agricultural production

Economic conditions underlying Nepal's agriculture are challenging. In all the three sites we visited, production of staples such as rice and maize was at subsistence levels and even though there is potentially productive land lying fallow (about 10 per cent according to several respondents) and a preference for local varieties, unavailability of labor because of outmigration and inability to compete on price terms with imports because of insufficient capital inputs are substantial barriers to accessing markets[3]. Production of staples is nevertheless an important source of consumption in what are essentially cash-poor local societies and so to climate-proof farming is an imperative.

Unlike the CFUGs in forestry, agriculture in Nepal has no dedicated community deliberative space. The local agricultural technicians are under the District Agricultural Development Office (DADO) and in most cases villagers must approach DADO directly for access to programs and benefits. Here, there are no clear rules regarding agricultural program entitlements, as these vary from program to program and most farmers interviewed reported little familiarity regarding these entitlements.

Resource limitations are more keenly felt in agricultural extension than in forest management. Diffusing knowledge and innovation on how to deal with climate change is labor intensive and requires personal visits to individual households and hamlets over an extended period. Junior Technical Assistants (JTAs), the field-level agricultural extension workers, felt it physically impossible, given current staffing levels, to engage with the farmers to the extent which is necessary to spread knowledge and innovative practices.

As a result of resources limitations, JTAs gravitate toward providing services to the *less vulnerable* middle status farmers, even though the official policy is to prioritize poorer and backward classes. When queried about which persons most use their services, the JTAs indicate that middle class farmers who are "more likely to help themselves" and to "continue to follow the program and instructions." According to one JTA from Gorkha, only 10 per cent of farmers are interested in receiving information, while another asserted it was those who lived near the road, those who returned from foreign employment, those with medium wealth and men who were most proactive in approaching JTAs. One JTA was more categorical: "Brahmin and Chhetri farmers are more receptive, indigenous groups are slower and the Dalits are the most disinterested." These responses may reflect local prejudices, but they are in line with the long-established sociological literature on agricultural innovation which claims that it is the wealthier, more educated and higher status farmers who first adopt an innovation while poorer agriculturalists with smaller land holdings lag behind (Rogers, 1962). Given the fact that the programs themselves are insufficiently funded to reach all potential recipients, attention is rationed by the *logic of convenience* according to which persons that require the least outreach efforts receive services. Local inequalities are exacerbated as a result. For example, one JTA reported that the DADO allocated Nepalese Rupees 40,000 (~US\$370) for promoting beekeeping among unemployed youth, but many better-off farmers accessed this program instead.

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As in the case of forest management, resource limitations generate conflict, which is again mediated with the help of local political parties. One JTA put the whole cycle quite succinctly:

Limited program is disbursed from the district level, while the demand from farmers is high. This causes conflict while distributing program to farmer. Mostly the problem is solved by taking help from local politicians.

Not surprisingly, the majority of villagers who do not receive services reported being dissatisfied with the DADO. Dissatisfaction was the highest among those who have received no services and not had any contact with JTAs, while satisfaction levels were higher among those who had received some benefits such as subsidized seeds. Queried about whether they believed DADO has sufficient resources to provide the full extent of services desired by the community, many respondents said they believe that it did while only a few recognized the staffing constraints and almost none recognized the financial limitations. Such low levels of satisfaction can call into question legitimacy of the state apparatus unless the true extent of resource limitation is broadly understood.

Given this state of affairs, the proposed policy initiative within the MoAD to explore and prioritize off-farm employment is one of several examples of efforts which cannot be supported with the resources on the ground. Indeed, in our interviews, *none* of the agricultural department officials said they had any knowledge about ministerial initiatives to promote off-farm employment, a policy initiative which is clearly stated in the NAPA. Similarly, other interventions suggested by the rural development literature for livelihood improvements such as greater emphasis on market deepening (rather than just improving local productivity which may often lead to production gluts) are impossible without increasing staffing and funding in decentralized public agriculture agencies. In the meantime, villagers respond that they are haphazardly adapting to climate change by switching to varieties which require less water and by increasing their use of pesticides and fungicides.

## 5. Discussion: the state and adaptation capabilities in Nepal

In this study, we focused on the effects of formal and informal rules and of organizational capacities on decision-making in communities and in the front lines of administrative agencies in Nepal. In our interviews with both community members and administrative staff, we asked detailed questions about climate change impacts and responses, and we found that overall both groups of actors possessed detailed knowledge about climate vulnerabilities. We also reviewed Nepal's major climate policy documents, including NAPA, LAPA, Forest Sector Strategies, etc., and found them to be comprehensive and detailed. Indeed, many analysts (Ford *et al.*, 2013) consider Nepal's adaptation policies among the best in the world. Yet, despite this field level knowledge, comprehensive policies and the emergence of a growing epistemic community dedicated to responding to climate change, we found in our investigation of forests and agriculture in Nepal that implementation of climate adaptation strategies is superficial, uneven and inadequate.

In particular, we found institutional frameworks have been more successful in securing entitlements than in creating initiatives to address climate challenges by instigating social processes of livelihoods protection and transformation. Although still not ideal, representational safeguards in local level resource management and deliberative developmental spaces such as the CFUG ensure levels of resource distribution and transparency which are many degrees better than the situation which prevailed before these spaces were constructed. In contrast, deficiencies in developing adaptation and resilience

strategies based on livelihood improvements are severe. We trace these to administrative agencies that are as weak as the communities they must serve and interventions outside the administrative structures (i.e. by CSOs in donor-funded projects) that are sporadic and dispersed. At the same time, we found front line workers frustrated with the lack of resources for performing even the minimum of their assigned tasks.

Are the administrative staff in Nepal's frontline agencies suitable to deal with these challenges or are they incapable and disinterested? [Rutt and Lund \(2014\)](#) studied forestry projects and found that donors preferred giving money to CSOs rather than governments because they believed "capacity must precede empowerment" because the image of LDCs administrations is one of incapability and disinterest. While they pointed to the dangers of leaving government out, they did not actually study the local governments themselves and relied on eliciting opinions from CSOs and donors, which is similar to what other researchers on the issue have also done. By studying in detail the administrative structures as well as the communities they serve, we are able to offer some triangulated observations on this issue and find that the Nepalese front line agency workers and local governments are neither incapable nor disinterested.

In the interviews, almost no staff reported policy or procedural barriers to taking initiative, although they did say there were no incentives other than self-satisfaction to doing so. In spite of this, several staff members were able to describe specific occasions when they acted on their own initiative indicating that frontline staff did see the ability to deliver services and solve community problems to be motivational factors notwithstanding the high levels of frustrations with working conditions. Moreover, they consistently expressed a desire for more (and frustration with current) equipment and training, which indicates that they do wish to receive validation from their work.

Intrinsic incentives for organizational performance – i.e. those which actors derive merely from involvement in an activity and not from external rewards – are emphasized as predictors of organizational success in the organizations literature based on psychology and behavioral economics. We find that these are not absent in Nepal. This is significant because behavioral research suggests that intrinsic incentives allow individual interests to align more naturally with organizational interests ([Frey et al., 2013](#)). This stands in juxtaposition to a principal-agent optic (which orthodox economists and donor agencies emphasize) that require expensive agency-based enforcement structures. Such structures have high fixed costs and therefore economies of scale, which make them appropriate for wealthier and larger economies but unaffordable in poorer and smaller ones. The takeaway from this is that LDCs like Nepal cannot be expected to have the kinds of regulatory apparatus that donor countries possess and expect and therefore more emphasis should be placed on the cultivation of intrinsic incentives.

Intrinsic incentives still require adequate manpower and capacity for creative organizational design of the kind vividly described by [Tendler \(1997\)](#) in the case of health-care extension workers in Northeast Brazil – a case which was, in fact, predicated upon massive hiring of *new* staff. Basic resources are also important. Our field visits revealed that while the capillary structures of the state are present in the districts and villages, they are rudimentary and fragile. Almost no forest or agriculture offices exist beyond the district level and even at the district level the quantity and quality of the construction and equipment is a common cause for dissatisfaction among staff. Not infrequently, front line staff have to work out of what they called "briefcase offices", that is they lack even a building to work in. In other cases, the offices themselves are in precarious conditions. One of the district forest service offices we visited even had a tree branch precariously holding up the roof. Many such offices collapsed in the 2014 earthquake.

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Rather than disinterest, Nepal's public administration suffers from a mismatch between expected responsibilities and available resources. Comparing the diffuse responsibility and broader claims to government programs with the focused and adequately funded (in terms of staff including expensive foreign experts, equipment and salaries) donor programs will no doubt result in impressions of poor performance in the former, especially among community members who are not in a position to understand the background of differential access to financial resources. This also explains incidence of and frequent complaints about the low uptake by local governments of development projects initiated by CSOs using donor funds.

Related to this, we find that performance and organizational goals included in the NAPA and associated plans (GoN, 2016b, 2014c, 2011a, 2011b) diverge too much from organizational resources and capabilities for them to be realistic. These goals are not trickling down to the field level even though the policies are comprehensive in their texts and the central government staff is well-versed in them. Not surprisingly, implementation of these plans and the functioning of the new climate change management organizations that they established are moribund. For example, the Climate Change Council – a body whose establishment was mandated by the NAPA with the responsibility for managing and coordinating various programs at the political level (it is supposed to be chaired by the Prime Minister and composed of the ministers of all the relevant ministries) and approving the annual Climate Change Fund expenditures – has a Web page which was last updated in 2012 and referred to the fact that the Council had met four times in 2010.

The tendency to overprescribe an agenda for LDC administrations – which derives from the structural realities of climate change adaptation management where policy texts are paid for by donors and written by consultants – comes with several attendant risks, including that of a deteriorating relationship between governments and donors. While it could be argued that identifying needed policy actions brings into sharp relief the capacity gap which exists and in doing so provides also a road map for capacity development (Willems and Baumert, 2003), our research and the empirical record over the past several years indicates that the capacity gap is too large and the required resources for filling this gap are still being negotiated, as a result of which policies such as the NAPAs are already becoming obsolete and, worse yet, more promising and realistic policy options are not being developed or implemented.

Instead, we found evidence from our interviews to suggest that a mismatch between capacities and expectations are stressing relations between community members and state structures. These constraints reinforce local-level asymmetries of power in access and in entitlements as work pressures leave the staff unable, even if willing, to resist maneuvering for privileged access to limited resources and programs. Because of this, low-level conflict has increased as different interests grapple for the few resources that do trickle down. Ambitious plans and policies as are generally written into most NAPAs create expectations and a failure to fulfill these or lack of expectations management erodes trust and legitimacy between a government and its citizens. This, in fact, may be one of the reasons that the impression of an unresponsive state.

Moreover, if targets are not calibrated to capabilities, then the persistent tendency towards failures engendered by the bridge-too-far syndrome erodes organizational and individual self-confidence and heightens passivity in the face of risks. Approaching the issue of targets from the perspective of organizational psychology, March and Shapira (1992) had theorized that risk-seeking behavior increases as the targets come into view. This insight helps explain the idleness of bureaucracies in LDCs. Risk taking is essential in the



process of finding and implementing solutions because the potential for error is inherent in trial and learning processes. Risk averseness in organizations and societies that derives from mistrust and resource constraints thus limits progress and increases passivity which, in the presence of imminent threats like global climate change, exposes the entity to even more danger.

## 6. Conclusions

The reliance of LDCs on donor financing for climate change adaptation has introduced several distortions which derive principally from:

- a lack of trust in the LDCs administrative structures and the consequent reliance on contracting CSOs to propose and manage discrete projects; and
- a mismatch between ambitious climate change adaptation policies written by consultants and on-the-ground capacities.

Bringing the government back in is a challenge and enabling administrative agencies to address climate change rests on a tripod of solutions to what is partly an organizational challenge, partly an institutional challenge and partly a policy-choice problem. The organizational challenge is to be able to create protocols and intrinsic incentives which empower and grant autonomy to front line workers, and to complement these with necessary rightsizing of line departments so that abilities match expectations. Moreover, given inevitable limitations on oversight capacity, more creative thought needs to be directed towards improving intrinsic incentives for the staff. The institutional challenge, given limited enforcement capabilities, is to reorient rules towards outcomes and search for solutions that stimulate intrinsic rewards rather than towards process validation rules which numbs them. Distribution of entitlements is important and we find the first generation of reform in community forestry and village councils has made substantial progress in these arenas. The second generation of reforms would need to build on this by emphasizing local institutional arrangements which induce risk sharing and development. Finally, the policy-choice challenge is to avoid the temptation to write aspirational policies which do not have clear and feasible strategies to obtain the resources necessary for proper policy implementation. The resulting policies may be less ambitious but more actionable and would allow much better leveraging of institutional and organizational capacities and potential that currently exist even as we wait for transformational developments in the field of climate change finance and management.

While the practice of public management in the developed countries stresses autonomy in public sector agencies based on neo-institutionalist and network theories – both of which extol autonomous agencies as necessary to cope with increasingly complex environments and emphasize the importance of performance incentives (Verhoest *et al.*, 2004) – in LDCs the overwhelming preoccupation is with accountability. This is both delaying the transfer of resources to these units and deferring the construction of incentive structures which facilitate entrepreneurial thinking. Nurturing these abilities would require policymakers and policy enablers to encourage autonomous decision-making at the local level through incentives and structural arrangements which are designed to develop and build support for more entrepreneurial public sector attitudes in collaboration with local communities. At the very least, significant increases in local staffing and financing will be required to replace sporadic initiatives with larger scaled responses, in the absence of which increased outmigration is likely to remain the main adaptive reaction (Jha *et al.*, 2017), at least for the younger and more educated.

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## Notes

1. World Bank Databank: <http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>(Agricultural production) and <http://data.worldbank.org/indicator/SP.RUR.TOTL.ZS> (rural population). (accessed 30 November 2016).
2. In the end, we discovered that more important than altitude was the presence of road connectivity. Dolakha district, for example, which is in the high mountains, has a good road connection with Kathmandu, which enables goods and services to move more quickly and cheaply. Indeed, as the Swiss-financed road connected the district, it has grown rapidly to become a regional hub.
3. Some cash crops such as vegetables and spices do find space in local markets, but the levels of production are low. One notable exception was in the case of Dolakha district, where potato cultivation has been successful and is marketed as far as Kathmandu.

## References

- Agrawal, A. (2001), "Common property institutions and sustainable governance of resources", *World Development*, Vol. 29 No. 10, pp. 1649-1672.
- Agrawal, A. (2010), "Local institutions and adaptation to climate change", in Mearns, R. and Norton, A. (Eds), *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*, The World Bank, Washington, DC, pp. 173-197.
- Agrawal, A. and Perrin, N. (2009), "Climate adaptation, local institutions and rural livelihoods", in Adger, W., Lorenzoni, I. and O'Brien, K. (Eds), *Adapting to Climate Change: Thresholds, Values, Governance*, Cambridge University Press, Cambridge, pp. 350-367.
- Agrawal, A. and Redford, K. (2006), "Poverty, development, and biodiversity conservation: shooting in the dark?", Wildlife Conservation Society Working Paper No. 26, Ann Arbor MI.
- Banks, N., Hume, D. and Edwards, M. (2015), "NGOs, states, and donors revisited: still too close for comfort?", *World Development*, Vol. 66 No. 1, pp. 707-718.
- Biggs, E.M., Tompkins, E.L., Allen, J., Moon, C. and Allen, R. (2013), "Agricultural adaptation to climate change: observations from the Mid-Hills of Nepal", *Climate and Development*, Vol. 5 No. 2, pp. 165-173.
- Chege, C.G., Anderson, C.I. and Aim, M. (2015), "Impacts of supermarkets on farm household nutrition in Kenya", *World Development*, Vol. 72 No. 1, pp. 394-407.
- Chhatre, A. and Agrawal, A. (2009), "Trade-offs and synergies between carbon storage and livelihood benefits from Forest commons", *Proceedings of the National Academy of Sciences*, Vol. 106 No. 42, pp. 17667-17670.
- Eriksson, M., Jianchu, X., Shrestha, A.B., Vaidya, R.A., Nepal, S. and Sandström, K. (2009), *The Changing Himalayas: Impact of Climate Change on Water Resources and Livelihoods in the Greater Himalayas*, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu.
- FAO (2013), *Smallholder Integration in Changing Food Markets*, Food and Agriculture Organization of the United Nations, Rome.
- Feldman, M.S., Sköldberg, K., Brown, R.N. and Horner, D. (2004), "Making sense of stories: a rhetorical approach to narrative analysis", *Journal of Public Administration Research and Theory*, Vol. 14 No. 2, pp. 147-170.
- Folke, C. (2006), "Resilience: the emergence of a perspective for social-ecological systems analyses", *Global Environmental Change*, Vol. 16 No. 3, pp. 253-267.
- Ford, J., Berrang-Ford, L., Lesnikowski, A., Barrera, M. and Heyman, S.J. (2013), "How to track climate change adaptation: a typology of approaches for national-level application", *Ecology and Society*, Vol. 18 No. 3, pp. 40-54.

- Frey, B.S., Homberg, F. and Osterloh, M. (2013), "Organizational control systems and pay-for-performance in the public service", *Organizational Studies*, Vol. 34 No. 7, pp. 949-972.
- Goldman, M.J. and Riosmena, F. (2013), "Adaptive capacity in Tanzanian Maasailand: changing strategies to cope with drought in fragmented landscapes", *Global Environmental Change*, Vol. 23 No. 3, pp. 588-597.
- Government of Nepal (GoN) (2011a), "Climate change policy, 2011", Government of Nepal. Ministry of Science Technology and Environment, Kathmandu.
- Government of Nepal (GoN) (2011b), "Role of Forest on climate change adaptation", Government of Nepal, Ministry of Forests and Soil Conservation. REDD Forestry and Climate Change Section, Kathmandu.
- Government of Nepal (GoN) (2013), "Nepal small area estimation of poverty, 2011 vol I", Government of Nepal, National Planning Commission Secretariat. Central Bureau of Statistics, Kathmandu.
- Government of Nepal (GoN) (2014a), "Nepal human development report 2014 beyond geography, unlocking human potential", Government of Nepal, National Planning Commission, Kathmandu.
- Government of Nepal (GoN) (2014b), "Population monograph of Nepal volume III (Economic demography)", Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu.
- Government of Nepal (GoN) (2014c), "Nepal national biodiversity strategy and action plan (2014-2020)", Government of Nepal, Ministry of Forests and Soil Conservation, Kathmandu.
- Government of Nepal (GoN) (2016a), "Statistics of strategic road network SSRN 2015/16", Government of Nepal, Ministry of Physical Infrastructure and Transport, Department of Roads, Kathmandu.
- Government of Nepal (GoN) (2016b), "Forestry sector strategy (2016-25)", Government of Nepal, Ministry of Forests and Soil Conservation, Kathmandu.
- Huq, S., Reid, H., Konate, M., Rahman, A., Sokona, Y. and Crick, F. (2004), "Mainstreaming adaptation to climate change in least developed countries (LDCs)", *Climate Policy*, Vol. 4 No. 1, pp. 25-43.
- Imperial, M.T. and Yandle, T. (2005), "Taking institutions seriously: using the IAD framework to analyze fisheries policy", *Society and Natural Resources*, Vol. 18 No. 6, pp. 493-504.
- Intergovernmental Panel on Climate Change (IPCC) (2007), "Climate change 2007-impacts, adaptation and vulnerability: Working group II contribution to the fourth assessment report of the IPCC (Vol. 4)", Cambridge University Press, Cambridge.
- Iversen, V., Chhetry, B., Francis, P., Gurung, M., Kafle, G., Pain, A. and Seeley, (2006), "High value forests, hidden economies and elite capture: evidence from Forest user groups in Nepal's Terai", *Ecological Economics*, Vol. 58 No. 1, pp. 93-107.
- Jha, C.K., Gupta, V., Chattopadhyay, U. and Sreeraman, B.A. (2017), "Migration as adaptation strategy to cope with climate change", *International Journal of Climate Change Strategies and Management*, Vol. 10 No. 1, pp. 121-141.
- Jodha, N.S. (2005), "Adaptation strategies against growing environmental and social vulnerabilities in Mountain areas", *Himalayan Journal of Sciences*, Vol. 3 No. 5, pp. 33-42.
- Jones, L. and Boyd, E. (2011), "Exploring social barriers to adaptation: insights from Western Nepal", *Global Environmental Change*, Vol. 21 No. 4, pp. 1262-1274.
- Klein, R.J., Schipper, E.L.F. and Dessai, S. (2005), "Integrating mitigation and adaptation into climate and development policy: three research questions", *Environmental Science and Policy*, Vol. 8 No. 6, pp. 579-588.
- Kumar, S. and Kant, S. (2005), "Bureaucracy and new management paradigms: modeling foresters' perceptions regarding community-based Forest management in India", *Forest Policy and Economics*, Vol. 7 No. 4, pp. 651-669.
- Lemos, M.C., Agrawal, A., Eakin, H., Nelson, D.R., Engle, N.L. and Johns, O. (2013), "Building adaptive capacity to climate change in less developed countries", in Asrar, G.R. and Hurrell, J.W. (Eds.), *Climate Science for Serving Society: Research, Modelling and Prediction*, Springer, Amsterdam, pp. 437-457.

- Lowitt, K., Hickey, G.M., Ganpat, W. and Phillip, L. (2015), "Linking communities of practice with value chain development in smallholder farming systems", *World Development*, Vol. 74 No. 2, pp. 363-373.
- March, J.G. and Shapira, Z. (1992), "Variable risk preferences and the focus of attention", *Psychological Review*, Vol. 99 No. 1, pp. 172-183.
- Matta, J.R. and Kerr, J. (2007), "Barriers beyond the partners: Bureaucratic and political constraints to implementing joint Forest management in Tamil Nadu, India", *Environment, Development and Sustainability*, Vol. 9 No. 4, pp. 465-479.
- Meilby, H., Smith-Hall, C., Byg, A., Larsen, H.O., Nielsen, Ø.J., Puri, L. and Rayamajhi, S. (2014), "Are Forest incomes sustainable? Firewood and timber extraction and productivity in community managed forests in Nepal", *World Development*, Vol. 64 No. 1, pp. S113-S124.
- Onta, N. and Resurreccion, B.P. (2011), "The role of gender and caste in climate adaptation strategies in Nepal: emerging change and persistent inequalities in the far-Western region", *Mountain Research and Development*, Vol. 31 No. 4, pp. 351-356.
- Ostrom, E. (2007), "Institutional rational choice: an assessment of the institutional analysis and development framework", in Sabatier, P. (Ed.), *Theories of the Policy Process*, 2nd ed., Westview Press, Cambridge, MA, pp. 21-64.
- Ostrom, E. (2011), "Background on the institutional analysis and development framework", *Policy Studies Journal*, Vol. 39 No. 1, pp. 7-27.
- Paavola, J. (2008), "Livelihoods, vulnerability and adaptation to climate change in Morogoro, Tanzania", *Environmental Science and Policy*, Vol. 11 No. 7, pp. 642-654.
- Persha, L., Agrawal, A. and Chhatre, A. (2011), "Social and ecological synergy: local rulemaking, Forest livelihoods, and biodiversity conservation", *Science*, Vol. 331 No. 6024, pp. 1606-1608.
- Pethe, A., Gandhi, S., Tandel, V. and Libeiro, S. (2012), "Anatomy of ownership and management of public land in Mumbai: setting an agenda using IAD framework", *Environment and Urbanization Asia*, Vol. 3 No. 1, pp. 203-220.
- Rudd, M.A. (2004), "An institutional framework for designing and monitoring ecosystem-based fisheries management policy experiments", *Ecological Economics*, Vol. 48 No. 1, pp. 109-124.
- Rutt, L.R. and Lund, J.F. (2014), "What role for government? The promotion of civil society through Forestry-Related climate change interventions in Post-Conflict Nepal", *Public Administration and Development*, Vol. 34 No. 5, pp. 406-421.
- Springate-Baginski, O., Sarin, M. and Reddy, M.G. (2013), "Resisting rights: forest bureaucracy and the tenure transition in India", *Small-Scale Forestry*, Vol. 12 No. 1, pp. 107-124.
- Sunam, R.K., Paudel, N.S. and Paudel, G. (2013), "Community forestry and the threat of recentralization in Nepal: contesting the bureaucratic hegemony in policy process", *Society and Natural Resources*, Vol. 26 No. 12, pp. 1407-1421.
- Sunderlin, W.D., Angelsen, A., Belcher, B., Burgers, P., Nasi, R., Santoso, L. and Wunder, S. (2005), "Livelihoods, forests, and conservation in developing countries: an overview", *World Development*, Vol. 33 No. 9, pp. 1383-1402.
- Tendler, J. (1997), *Good Government in the Tropics*, Johns Hopkins University Press, Baltimore, MD.
- Verhoest, K., Peters, B.G., Bouckaert, G. and Verschuere, B. (2004), "The study of organisational autonomy: a conceptual review", *Public Administration and Development*, Vol. 24 No. 2, pp. 101-118.
- Whaley, L. and Weatherhead, E.K. (2014), "An integrated approach to analyzing (adaptive) co-management using the 'politicized' IAD framework", *Ecology and Society*, Vol. 19 No. 1.
- Willems, S. and Baumert, K. (2003), "Institutional capacity and climate actions", OECD Environment Directorate, International Energy Agency, available at: [www.oecd.org/env/cc/21018790.pdf](http://www.oecd.org/env/cc/21018790.pdf) (accessed 10 November 2017).

Wood, B., Nelson, C.H., Kilic, T. and Murray, S. (2013), "Up in smoke? Agricultural commercialization, rising food prices and stunting in Malawi", World Bank Policy Research Working Paper, No. 6650, The World Bank, Washington, DC.

Yates, J.S. (2012), "Uneven interventions and the scalar politics of governing livelihood adaptation in rural Nepal", *Global Environmental Change*, Vol. 22 No. 2, pp. 537-546.

**Further reading**

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Rogers, E.M. (2010), *Diffusion of Innovations*, Simon and Schuster, New York, NY.

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