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STRENGTHENING RESPONSES TO CLIMATE VARIABILITY IN SOUTH ASIA

Discussion paper: Nepal

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Executive summary

Drawing on field-research and consultations with policymakers, practitioners and academics, this case study seeks to identify obstacles to and opportunities for interventions to build resilience to interlinked environmental and security risks in fragile, post-conflict contexts in Nepal. The case study compares Rolpa, a district which is characterised by high vulnerability to drought and landslides, with Dang and Banke, which face low/moderate exposure to climate change, to identify the different dimensions of resilience in these varying districts.

In order to understand local resilience, the case study aims to address two key questions:

1. What are the root causes of vulnerability (to climate and conflict risks)?
2. How can external adaptation interventions (by the state or international institutions) address these root causes of vulnerability?

Findings from this study point to the following as key priority areas to build resilience:

- Stronger communication between capital and local leaders to ensure greater awareness and effective implementation of national climate change plans and policies at the local level;
- Stronger local fund management mechanisms to ensure effectiveness of resilience building initiatives;
- Planning for how best to manage future migration in a peaceful way;
- Promoting an enabling environment for climate-sensitive business, where the private sector can play a key role in building resilience by promoting alternative climate-resilient livelihoods.

This study is one of a series of regional studies which aim to present evidence of the interactions between environmental, social, political and economic risks at the local level in Bangladesh, India, Nepal and Pakistan.

1. Introduction

This case study looks at opportunities for strengthening resilience in fragile contexts. It aims to do so by identifying the root causes of vulnerability and non-adaptation. The study focuses on three districts in Nepal: one which is more highly exposed and sensitive to climate and environmental risks (Rolpa); and two districts which face relatively low exposure and sensitivity to climate and environmental risks (Dang and Banke).[1] It looks at the consequences of climate change and climate-related interventions in these districts and how respective communities perceive their options for building resilience. The study aims to understand how fragility affects climate change adaptation. It seeks to identify obstacles to and opportunities for interventions to build resilience to interlinked environmental and security risks in fragile post-conflict contexts in Nepal.

Climate change impacts will inevitably be experienced at the local level and, as a result, responses which address these local impacts will be the most effective. However, desk research in preparation for this project revealed that the large majority of policies on adaptation are made at the capital city or headquarters level. Furthermore, there is little empirical evidence of local-level experiences of climate change impacts, taking into account existing peace and security challenges faced in fragile contexts, available to inform top-down approaches.

In order to understand local resilience, the first question which this case study aims to address is: **what are the root causes of vulnerability (to climate and conflict risks)?** For this, we first looked at the nature of the environmental risks faced and their interaction with existing dimensions of peace and security at the household and village level. The second central question of this paper is: **how can external adaptation interventions (by the state or international institutions) address these root causes of vulnerability?**

This study is one of a series of regional snapshots, which aims to present current empirical examples and qualitative evidence of the interactions between environmental, social, political and economic risks at the local level in Bangladesh, India, Nepal and Pakistan. The research is part of a small-scale pilot project. It is therefore beyond the scope of this paper to provide a comprehensive national

1 Note: In the Combined Vulnerability Index, Rolpa ranked 33rd out of 75 countries, indicating a "moderate" level of climate change vulnerability. Dang and Banke ranked 66th and 73rd respectively out of the 75 countries, indicating a "low" and "very low" vulnerability rating. See: Government of Nepal (2010). *Climate change vulnerability mapping for Nepal*. National Adaptation Programme of Action to Climate Change. Kathmandu: Ministry of Environment. p.84. Available at http://www.napanepal.gov.np/pdf_reports/CLIMATE%20CHANGE%20VULNERABILITY%20MAPPING%20FOR%20NEPAL%20INNER.pdf

survey or in-depth analysis of climate data. Some of the views expressed will be contested, contradicted and contentious, but the research methodology aimed to ensure that as broad a range of views as possible could be collected, so that those developing adaptation responses could have a deeper understanding of the complexities around perceptions and realities. It is intended that further analysis will build on these reflections as part of a necessary discussion on adaptation and resilience in conflict-affected contexts. A summary of key findings from across the four case studies and policy recommendations can be found in the separate executive summary.

2. Context

Nepal is the 15th poorest country in the world, with over 55 percent of the population living under the international poverty line of $1.25 a day.[2] It is a landlocked country divided into three primary ecological zones, mainly running east to west: the Terai; the Hill area in the middle; and the Mountain area in the north. There are five administrative development regions: Eastern, Central, Western, Mid-Western and Far-Western. The country is further divided into 75 districts.

Nepal is also one of the most climate vulnerable countries in the world.[3] The country is also emerging from a 10-year civil war and the peace agreement remains fragile. Poverty reduction, climate resilience and inclusive governance are therefore top priorities. These priorities are reflected in donor aid financing to Nepal. The National Planning Commission of Nepal has recently developed and released a climate change budget code in line with the Nepal Climate Change Policy 2011.

The country's Ministry of Science, Technology and Environment (MoSTE) has responsibility for climate change and manages Nepal's National Adaptation Programme of Action (NAPA) as well as all financing for climate change adaptation coming into Nepal.

2 DFID (2011). *Operational plan 2011-2015 – DFID Nepal*. Kathmandu: DFID. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67549/nepal-1.pdf

3 The Climate Change Vulnerability Index, which calculates susceptibility to impacts of climate change over the next 30 years, places Nepal 4th out of 170 countries.

3. Methodology

Definitions

In this study, climate risks are conceptualised as the product of exposure, sensitivity and adaptive capacity.

Exposure: 'The nature and degree to which a system is exposed to significant climate variations.'

Sensitivity: '... the degree to which a system is affected, either adversely or beneficially, by climate-related stimuli.'

Adaptive capacity: 'The ability of a system to adjust to climate change to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.'[4]

The study opts to supplement the Intergovernmental Panel on Climate Change (IPCC) definition of adaptive capacity to take account of broader social issues. As such, we adopt the term "resilience". The concept of resilience lacks a universally accepted and precise definition. However, for this project, we adopt a framework for resilience that is based on a broad conceptualisation of the term and that also draws on the principles of resilience to conflict.[5]

We define resilience as: 'The ability of countries, communities and households to anticipate, adapt to and/or recover from the effects of potentially hazardous occurrences (natural disasters, economic instability and conflict) in a manner that protects livelihoods, accelerates and sustains recovery, and supports economic and social development.'[6]

When looking at exposure and sensitivity, this research does not aim to distinguish between climate change and environmental change, but rather considers the two together. Only weather-related events – for example, storms, floods, temperature extremes, extreme events and changing rainfall patterns – are incorporated.

4 Intergovernmental Panel on Climate Change (IPCC) (2001). *Climate change 2001: Impacts, adaptation and vulnerability*. Annex B: Glossary of terms. pp.981-996. Available at http://www.ipcc.ch/ipccreports/tar/wg2/

5 See: D. Smith (2004). *The Joint Utstein study of peacebuilding*. Evaluation Report 1/2004. Oslo: Norwegian Ministry of Foreign Affairs.

6 Interagency Resilience Working Group (2012). *The characteristics of resilience building: A discussion paper*. Available at http://community.eldis.org/?233@@.5ad4406d!enclosure=.5ad4406e&ad=1

The study looks at responses to climate variability which can build resilience to combined climate and conflict risks. It is worth noting here that it is violent and armed conflict that we are interested in preventing. **Conflict** occurs when two or more parties believe their interests are incompatible, express hostile attitudes or take actions that damage the other's ability to pursue its interests. "Violence" is often used interchangeably with "conflict", but violence is only one means among many that parties might choose to address a given conflict. Non-violent conflict is a normal part of development and human interaction. When violence erupts, however, a profound breakdown in social relationships occurs that will have destructive effects. Armed conflict takes this even further, when violence is organised and sustained over a period of time.

Conflict sensitivity is defined in this project as the capacity of an organisation or individual to:

- Understand the context in which it operates;
- Understand the interaction between its operations and the (conflict) context; and
- Act upon the understanding of this interaction in order to avoid negative impacts and maximise positive impacts on the (conflict) context and the intervention.[7]

Site selection

Case study area: Banke, Dang and Rolpa

7 Conflict Sensitivity Consortium (2003). *Conflict-sensitive approaches to development, humanitarian assistance and peacebuilding: A resource pack*. Available at http://www.conflictsensitivity.org/publications/conflict-sensitive-approaches-development-humanitarian-assistance-and-peacebuilding-res

The field research was conducted at Village District Committee (VDC) level in Banke, Dang and Rolpa districts,[8] all of which fall into the Mid-Western administrative region and span the Terai and Hill area in terms of ecological zones. The case study compares Rolpa, a district which is characterised by high vulnerability to drought and landslides, with Dang and Banke, which are ranked as facing low vulnerability to climate change. The aim here is twofold: firstly, to assess the extent to which other factors, such as the political context and external interventions, affect resilience; and secondly, to determine whether respondents in the less climate vulnerable districts experienced greater levels of resilience at the household level than those in Rolpa.

Dang borders the Indian state of Uttar Pradesh and is characterised by valleys and plains. Although livelihoods here are largely dependent on agriculture, the district suffers from poor soil quality and dependence on seasonal river flow for water. It is a highly diverse district in terms of ethnicity and caste; the majority ethnic group are the Tharu, and the major power holders are the Bahun and Chhetri castes. Dang benefits from the main east-west highway running through the district, which enables better trade links with the rest of the country.

Banke, in the Terai region, is home to the regional headquarters of Nepalgunj, which is the base location for the majority of international institutions and development agencies working in the Mid-West region. As such, despite being less vulnerable to climate and environmental impacts,[9] Nepalgunj in particular and Banke in general enjoy greater service provision than the other two study areas. The district is relatively food secure, with widespread irrigated paddy cultivation. However, border regions are characterised by higher than average rates of criminality and ethnic divisions.

Rolpa, by contrast, is a remote hill district. Its isolated position and poor road network is one of the reasons why it is underdeveloped, even by Nepali standards. The district is dependent on the Mardi Khola stream for irrigation, although upland fields are unsuited to rice cultivation and the region is therefore highly food insecure. Rolpa was also a major flashpoint in Nepal's civil war and divisions between the Pahadi, Bahun and Chhetris, as well as other groups such as the Magar Kham, can still be seen in the allocation of fertile land and access to water.

8 While the original project was designed to cover two districts (Dang and Rolpa), due to indefinite strike action limiting our research in Rolpa to three days, the research team also conducted research in the district capital of Nepalgunj and in the Banke district to maximise research findings. The following case study thus draws on findings from Banke, Dang and Rolpa.

9 Government of Nepal (2010). Op. cit.

Data collection and analysis

Data collection methodology drew on grounded theory (GT) and elements of structured focused comparison (SFC). Given the small-n and comparative nature of the study, GT alone would not have been suitable to build a theory based on such a small and diverse sample size. However, since the first aim of the research was to understand the dimensions of resilience and the implications of climate change and conflict, aspects of the GT approach offered an effective way to conceptualise what was going on. The broad survey questions were designed to be sufficiently open to capture what specific issues were being faced at the local level, what the main challenges faced by the participants were and how they were trying to solve them.

The interviews were structured and questions were loosely focused around the independent variables (climate and environmental change events, political context and external interventions). However, they were sufficiently open to also capture other factors outside of these which could play a significant role in affecting resilience as well.

The study adopts an analytical framework for resilience which aims to understand the root causes of vulnerability to complex risks, as identified by respondents in the field research. The framework thus integrates a livelihoods approach and disaster risk-reduction approach. Moreover, given the focus on fragile contexts, it draws heavily on the peacebuilding frameworks[10] which identify the foundations for peace and security.

The field research is based on 18 key informant interviews and five focus groups with 72 respondents.[11] The respondents were drawn from women's groups, natural resource user groups, the business sector, government officials, political parties and beneficiaries of the local development projects. The research team visited nine VDCs in the Banke, Dang and Rolpa districts between 12th and 28th November 2011.

To supplement the field research, a desk review of national policies was conducted and an additional 14 experts from governmental and non-governmental organisations (NGOs) were interviewed in Kathmandu between November 2011 and January 2012. Based on these findings, we identify discrepancies between national adaptation strategies and interventions and local dimensions of risk and

10 D. Smith (2004). Op. cit.

11 Some 27 respondents were female. All efforts were made to ensure that different socio-economic, age and ethnic perspectives were also covered in our selection of respondents.

resilience. The final section of this case study identifies key actors and priority areas of engagement to effectively strengthen resilience to climate variability while doing no harm to peace and security.

4. What are the climate and environmental change related risks faced by communities?

This section looks at actual experiences of exposure and sensitivity to environmental risk encountered at the community level.

The vulnerability mapping conducted for Nepal's NAPA ranks all 75 districts according to various vulnerability indices – such as flood, drought, landslides and infrastructure adaptive capacity.[12] Rolpa consistently ranks within the lowest two quintiles for all vulnerability indices, whereas, on average, Dang and Banke rank within the second and third quintiles of vulnerability. The vulnerability indices in the NAPA do not look at political or conflict risks. The assessments are based on environmental risks and a range of socio-economic factors such as population density and infrastructure.

The environmental risks in Banke, Dang and Rolpa identified by our respondents and in our desk research are as follows: increased forest fires during the dry season; winter drought and excessive rainfall in the monsoons; and landslides. However, despite the difference in their topography (Dang being a valley, Banke being plains and Rolpa being middle hills), the major factor affecting local resilience in all three locations is the unpredictability of these events. This uncertainty is manifested in monsoons shifting from between a number of weeks to a number of months year on year, in fluctuations in temperature reaching new highs in the summer and, in some cases, in failed rains. One respondent in Dang commented that in 2011 farmers had to deal with the 'changes in seasons' timings – rainfall was not on time, temperatures were too hot in the summer and there were thus changes in the flowering time of plants'.[13] National-level observations of changes in the annual rainfall cycle, intense rainfall and longer droughts have been observed. According to the Ministry of Environment's *Climate change policy, 2011*, 'both days and nights are presently warmer. The number of days with 100 millimetres of heavy rainfall is increasing. The timing and duration of rainfall is changing. As glaciers recede from rapid snow and ice melting, glacier lakes are expanding. The adverse impacts of climate change have been noticed in agriculture and food security, water resources, forests and biodiversity, health, tourism and infrastructure.'[14]

12 Government of Nepal (2010). Op. cit.
13 Comment by a male respondent from a forestry programme in Dang.
14 Ministry of Environment, Nepal (2011). *Climate change policy, 2011*. Kathmandu. p.3. Available at http://www.climatenepal.org.np/main/?p=research&sp=onlinelibrary&opt=detail&id=419

In Banke, Dang and Rolpa, the only discernible climate pattern is the increase in the unpredictability of rainfall. For example, in 2009 in Rolpa, there was both a severe drought and excessive rainfall.[15] The 2009 monsoon experienced a significant delay. According to the UN World Food Programme's (WFP) *Crop situation update*, the rains started on 23rd June and became active only after 25th July. It remained active until 15th October, extending the retreat period by more than 20 days. Normally, monsoon rains start on 10th June and remain active until 23rd September. June and July are the critical months for the plantation of main summer paddy in Nepal. Irrigation facility is available in only about one-third of the cultivated area; hence, rain-fed irrigation is the only alternative source for summer crops. The late start of the monsoon affected the paddy crop adversely: paddy plantation occurred in only 95 percent of the areas as a whole; farmers had to plant mature seedling excessively, especially in the hills and mountains, and this resulted in low paddy productivity.[16]

By contrast, the 2011 monsoon started just within three days of the normal timing of 10th June. It was relatively less active during the third week of July, but it became active from the second week of August until mid-October 2011. According to the Department of Meteorology and Hydrology, the average rainfall measured in various meteorology stations across the country was 110 percent, 96.3 percent, 96.7 percent and 101.3 percent compared to normal in June, July, August and September, respectively. Owing to the timely rainfall during monsoon, the total area planted for paddy has increased by 2.3 percent, for millet by 3 percent and for buckwheat by 0.3 percent, compared with last year. The area planted for maize, however, has declined by 3.8 percent.[17]

Dang has experienced floods and landslides every year since 2007 as well as an increased incidence of forest fires more recently. Respondents in Dang mentioned difficulties in planning their lives around this uncertainty. One respondent outlined: 'There was no rainfall this year and for the past 25 years the yield has been down.' Farmers said that they have had to use different drought-resistant crops under the new agricultural policy; however, faced with the recent flux, these new seeds have failed. One farmer stated: 'A life dependent on farming cannot be sustained if this kind of rainfall continues.'[18]

15 Ministry of Agriculture and Cooperatives, Nepal and UN World Food Programme (WFP) (2010). *Crop situation update*. Issue 10. Available at http://wfp.nepasoft.com.np/nefoodsec/Crop%20Situation%20Update/CropSituationUpdate_issue10English.pdf

16 Ibid.

17 Ministry of Agriculture Development, WFP and Food and Agriculture Organization (2012). *Crop situation update: A joint assessment of 2012 winter crops with comprehensive data on 2011/12 crop production*. Available at http://wfp.nepasoft.com.np/nefoodsec/Crop%20Situation%20Update/Crop%20situation%20update%20July%202012.pdf

18 Comment by a female respondent from a local NGO in Dang.

In three VDCs that we visited in Banke, there has been significant use of groundwater. A considerable number of respondents noted that conflicts have arisen between neighbouring farms over deep boring, because each deep boring hole affects or reduces the amount of groundwater left for the rest of the community. The most common conflict described by villagers related to groundwater use is between the neighbouring farmers. If the neighbouring pieces of land use their deep boring machines at the same time, both of them will not have sufficient water for their land and this is where the conflict arises. This has also led to some altercations in the past. However, deep boring remains unchecked by local authorities because there is no government monitoring. Presently, disputes are resolved within the community. Furthermore, villagers and key informants explained that digging bore holes remains the preserve of the wealthiest in the community, as it requires hiring heavy machinery; this means that access to water is decided on economic grounds. We did not come across any collective action for deep boring to irrigate fields.

Rainfall fluctuations were the most prominent climate and environment related risk identified by respondents in all three locations. Farmers can no longer tell seasons apart or count on the monsoon rain coming at the right time, making it difficult to know when to plant crops. These changes have meant that famers have had to face a wider range of problems: for example, different and more pests affecting crop yields, different cropping cycles and the diminished viability of certain crops. These impacts are very specific to small geographic areas (varying from one village to the next in the same district), especially in Rolpa because of the micro-climate in the mountains.

The impact of climate and environmental change is not always negative. For example, there were floods in Dang in 2011; however, in 2012 farmers there observed an increase in paddy production but a decrease in maize production. A number of farmers noted that the risk they face is uncertainty in weather patterns because they cannot plan. While forest fires were mentioned by a number of respondents as a change in environmental conditions, these were not seen as a major obstacle to resilience.

Landslides were also mentioned in Rolpa and in some villages in Dang as a significant risk to lives and livelihood. As well as the direct risk to physical safety when people are caught in a landslide, respondents identified knock-on implications on health, education and especially trade when landslides cut off roads, limiting access to hospitals, schools and markets.

5. What are the pre-existing social, political and economic risks faced?

It was evident that households were not experiencing or coping with a single environmental risk in isolation. When asked to describe the major challenges posed to lives and livelihoods in an open-ended question, no respondents in our survey specifically cited climate change as the biggest risk they faced. Instead, the majority of responses cited at least two of the following: political instability, lack of jobs, weak local governance mechanisms, corruption, poor infrastructure, lack of access to credit and problems with debt. These responses were clustered by theme and coded around five areas which can be taken to encompass the dimensions of local resilience: **governance and power, livelihoods and assets, justice and equity, safety and security, and wellbeing.**

Governance and power

The general attitude towards the government among community-level respondents in Banke, Dang and Rolpa was apathy. The large majority of respondents (78 percent, unprompted) expressed feeling disconnected from the national political process following over six years of waiting for a new political settlement after the Comprehensive Peace Agreement was signed. Many respondents were critical of the political stalemate and thus lack of prioritisation of development and climate change responses. Even when the government and political parties agree to climate change plans, such as the NAPA at the national level, local government officials and NGOs cited the political transition as a reason for the lack of implementation of development issues and service provisions at the local level.

Respondents frequently listed criticisms of local government officials. Corruption and nepotism appeared to be deeply entrenched in almost all of the VDCs we visited. For example, in both Dang and Rolpa, respondents stated that certain state services such as citizenship, disability certificates and new (hybrid) seeds are granted as political favours in return for political affiliation. There was a strong sense that local elites control access to information in order to maintain their positions of power. There was also a perception that local and especially national government officials do not make adequate efforts to consult ordinary villagers about their views and priorities. Local departments of each line ministry are often more accountable to their ministries in Kathmandu than to their local communities (especially since these roles are often unelected political appointments). According to one key informant in Banke, Nepalgunj: 'The government should feel they have a responsibility to their people, but at local level they are not elected so [there is] no accountability to citizens.'

Respondents outlined that they have yet to feel the government's presence at the village level and at times feel that the presence is limited only to the district headquarters level. In Dang, VDC leaders, who should be immersed in local village dynamics, were found to be living in the district capital, which in many cases is many hours' walk away from their villages. To these people, travelling to meet local government officials at headquarters can be costly and time-consuming. Moreover, it is barely worth the effort if officials are dismissive – a problem related to class, gender, age, education and caste profiles. In one village in Rolpa where most men had migrated for work, the women said that, since they received adequate remittances, they did not bother taking part in local political consultations and forums as it was not worth their while. Rather than viewing political participation as a means of empowerment, they viewed it as a waste of their time, judging that they would be more resilient if they stayed working in their village and relied on remittances rather than lobbying for political resources. This results in fostering political disengagement and a weakening of the social contract.

Justice and equity

The issues here centred on disagreements among different *Janjati* (indigenous) groups regarding the allocation of the national development budget. While some districts in Nepal, particularly those in the Far-Western Mountains, are relatively ethnically homogenous, our three research sites were significantly ethnically diverse. This was particularly the case in the border towns of Banke and Dang. There are 12 major ethnic/caste groups and four languages spoken in Dang. Ethnic divisions remain a complex and widespread risk factor across Nepal. In Banke, deep grievances exist between the Pahadi (hill people) and the Madeshi (people from Madesh/Terai). The definitions of these ethnic identities remain contested. One historical dimension of this grievance is land – where the Pahadis are seen by the Madeshis as settlers on Madeshi land under the 1962 land reform policy. While tensions may not have arisen at the time, they are escalating now in the context of the political transition and resource grab. There is a high risk of ethnic violence between the Madeshi and Pahadi in Banke, especially in border towns, and one small incident can escalate into violence. In Rolpa, ethnic issues were less pronounced, as the district is more ethnically homogenous. However, in Dang, various pre-existing ethnic issues became increasingly pronounced during the conflict and intensified after the Comprehensive Peace Agreement.

The national government has tried to ensure that indigenous groups receive development assistance by allocating 15 percent of all district development funds to indigenous groups. However, in practice, it is difficult to distinguish between

what benefits indigenous groups and what benefits the community as a whole. For example, in eight VDCs in Dang, the money is being allocated to infrastructure (roads, community buildings and electricity poles). However, indigenous people feel that 'roads aren't helpful for the Janjati'. Their stated priority is projects to empower indigenous people to claim their rights – such as training in modern agricultural techniques, development of market linkages and measures for income generation. However, when questioned, respondents also explained that they cannot make any progress on these without roads or electricity.

Conflicts arise out of the complex ethnic identities in Nepal, making the definition of an "indigenous person" vague and subjective. As such, certain groups such as the Tharu community dispute the rights of others, such as the Pahadi ethnic communities, to access these funds. Conflicts can also become violent: two VDC offices in Dang (Saigaha and Manpur) were burnt down by indigenous groups just in advance of our research trip. The perpetrators, members of an "indigenous community", claimed to have acted in retaliation after the VDC monitoring committee did not renew a grant to this group because the committee found the grant to be mismanaged. The indigenous group cited a provision under the International Labour Organization's Convention 169 on the rights of indigenous people, claiming that they were being discriminated against and opting to use violence and criminality in response.[19] As ethnicity becomes more politicised under the current political transition and discourse, the risk of heightened violence around identity is increasing.

Livelihoods and assets

Livelihood security was the most pressing concern, raised by over 90 percent of respondents across all three study locations. The predominant source of livelihood in all VDCs visited was agriculture, with very limited alternatives. Most respondents spoke about current challenges affecting their ability to farm at present and were not thinking about changes and the future.

Labour migration – either to the cities in Nepal, to India (most cited location was Delhi) or to the Middle East – was the main alternative livelihood option identified by the majority of respondents, especially for the younger generation (see section on wellbeing below for more details).

Some individual farmers are trying to adapt to the changing rainfall patterns and temperatures by moving from water and labour-intensive crops, such as paddy, to less climate-sensitive or labour-intensive and more high-value cash crops, such as

19 Various respondents in Dang.

banana or oranges. These changes tend to be predominantly on a smaller scale and experimental basis, practised by wealthier farmers who can afford to make long-term investments and absorb risks. Some of these shifts are encouraged by external interventions which aim to support food security. However, poorer farmers raised concerns about the consequences of these initiatives on labour. Some see shifts from cereals such as paddy to high-value cash crops that are less labour intensive as reinforcing local inequalities, leaving poor people with fewer options since such shifts reduce the demand for agricultural labourers.

Business and industries are a core part of resilience in Nepal, because the agricultural sector is vulnerable to climate change. Many respondents, particularly rural youth, said they wanted to be involved in small businesses rather than farming. However, private sector growth, particularly among small and medium-sized businesses, is slow in Nepal as a whole. In particular, it is limited by ongoing political volatility and weak infrastructure – especially energy supply and roads. While Dang is strategically located on the main east-west highway, the poor quality of the roads and frequent landslides mean that this greater access to markets is not capitalised upon. A further obstacle to private sector development is poor electricity supply.[20] Nepal's power shortage is severe, with seasonal outages of up to 16 hours a day.

Business communities are controlled by the elite caste/ethnic groups (Bahun, Chhetri, Newar and Gupta mostly). This means that less powerful social and ethnic groups are further down the supply chain. For example, the Tharus are mostly involved in farming and less in business, although they are now becoming involved in small-scale agro-businesses. Promoting or creating opportunities for more people from different social groups, castes and ethnic groups to be engaged in small-scale business would promote livelihood resilience in climate-affected contexts.

Safety and security

Concerns about physical safety and security ranked lowest as a main concern among the majority of respondents in Rolpa, but were higher in Banke and Dang. In Rolpa, concerns were raised about loss of and damage to property and assets, particularly in the context of unclear rights and land tenure. In Banke and Dang, threats to physical security have a political dimension, with significant conflict arising between the Madeshi and Pahadi and between different political parties; a further problem raised was involvement of 'political actors' in criminal activity, such as theft or looting.[21]

20 A survey by the Asian Development Bank (2011) found that 76 percent of companies identified electricity supply as a key constraint to business.

21 Respondents in Dang, Rolpa and Banke, 2011.

Box 1: Latent political conflict hinders local governance-strengthening initiatives

In one VDC on the Indian border in Dang, the process of forming a community awareness centre (a forum for community members to communicate with local leaders at ward level) required security from the police to help social mobilisers (who anticipated violence). At the first meeting, one member who was affiliated to the Madeshi party declared himself to be the president and dominated the processes, insisting that all of his people had to be in the community awareness centre. The group then split into two camps on political lines: the Madeshi and the Unified Marxist-Leninist (UML) alliance. A police presence was needed to conduct the ward-citizen forum. However, local criminal leaders still dominated the forum and pressured decisions.

Wellbeing

A significant phenomenon affecting wellbeing within the household is changing migration patterns. Comparing responses from Dang and Rolpa, there is a trend of increasing seasonal migration and for longer periods of time in the hill communities. Respondents with migrant family members explained that this is partly because the cost of staying is increasing. Small farmers require high capital investment for modernisation of agriculture in order to be able to make a living – for example, to bore deeper to reach groundwater. As a result, smallholder farmers are increasingly tempted to use savings to leave rather than to invest. Many farmers and key informants in NGOs working on food security explained that changing migration patterns were also affecting farming patterns. Movements are most commonly internal and seasonal – although, according to a number of the respondents, patterns and duration of stay of seasonal economic migrants are changing (becoming longer), partly due to changing environmental patterns. Hill farmers would traditionally migrate to cities during the fallow period between planting and harvesting, but they would return periodically to tend to and weed the crops before harvest. However, now, because crop yields are becoming more variable, farmers say that they tend to stay away for longer and not to tend to crops between planting and harvest. This results in lower quality and quantity of yields, which is affecting the availability of locally produced food stuffs.

The trans-boundary migration, predominantly labour migration of young men to India or to Arab states, appears to build resilience among the remittance recipient families because of the remittances. On the other hand, local or national migration or resettlement poses a greater risk to local security and gives lower economic

benefits to the families or migrant workers. However, while labour migration results in more female-headed households for longer periods of time, especially in the hills, these households noted that the remittances they received mitigated any negative impacts on their wellbeing caused by the absence of male members from the household. In Rolpa, the female household heads we interviewed did not experience an increased security risk in the VDCs, attributing low levels of criminality to strong social bonds within and between mountain villages.

6. What are the likely new and future vulnerabilities?

Environmental changes in Dang and Rolpa are already affecting the agricultural viability of land and livelihoods. These risks can compound existing grievances, particularly around access to and control of land and water. This section looks at some of the new and future risks posed by the interaction of environmental and political dynamics, and arising from external climate change interventions.

Many respondents within farming communities explained that they were not planning for the long-term future or that they no longer saw the purpose of long-term planning. Older respondents explained that this was due to the legacy of Nepal's decade-long civil conflict. During the war, there were high levels of uncertainty about what was going to happen. There was little state presence in many places, including Rolpa and much of Banke and Dang. Moreover, security and justice provision was unaccountable and arbitrary. Rights were not secure and basic services such as water for irrigation were not maintained. While people learnt to live without much state intervention, this living was on a subsistence, day-by-day level. People did not know what the future would hold and as such could not make any decisions about the future. This has meant that now, although the conflict is over, a strong culture of fatalism remains. Many traditional, historical adaptation approaches have fallen out of use and have not been passed on to the next generation, who grew up during the conflict. Furthermore, no new adaptive methods were developed during the conflict period; according to one key informant, this has held back farmers' adaptive capacity in Rolpa by 10 years. People have therefore fallen out of the habit of planning for the future.

Adaptation measures need to take into account the limitations of working in conflict and fragile contexts. In Rolpa, for example, due to instability lasting over a decade, the historical coping mechanism for dealing with water scarcity has not been used. Because of the volatility and instability of conflict, the people have been more focused on subsistence rather than on improving yield or resilient methods. While the context is more stable now, these methods have been abandoned. For example, despite six years of failed harvest, farmers will carry on planting the same crop in the same way. Increasingly, development agencies are promoting traditional or local coping mechanisms; however, there needs to be a realisation that, in protracted conflict settings, these mechanisms might have been lost or abandoned. For instance, people in Rolpa used to eat rice, millet, barley, maize and root crops; however, they no longer eat these, especially millet and root crops, due to over a decade of humanitarian food programmes offering them rice, in turn

creating a culture of rice dependence. Promoting indigenous and sustainable food sources such as root crops and millet will now be highly unpopular.

The politics of rice

The dependence on rice has not only created a disincentive for local farmers to adapt to changing climate and environmental conditions; it has also created an appetite and expectation for rice, even though it cannot be grown sustainably in the hills. While certain indigenous crops such as buckwheat, barley and millet are better suited than rice to Rolpa's climate, there are political drivers for continued paddy cultivation. Since the end of the conflict, there appears to be an emerging hierarchy in food staples, and rice is seen as a top food staple as it is eaten by the wealthy. Thus, whenever food aid is needed, the government distributes rice. This has created an appetite for and dependence on rice in regions that did not historically consume rice and where rice is not sustainable, particularly the mid-hills and the mountains in the west. As one respondent in Rolpa noted: 'Rice is good enough for the rich in Kathmandu, why isn't it good enough for us?' This demand for rice among the poor was reiterated by key informants working on food security projects in Banke. At the time of our research, food aid was being scaled down with a view to ending it in Rolpa. This means that local farmers would have to rapidly adjust to having to grow cereals in increasingly unviable or unpredictable environmental conditions. However, no political party will ever stop rice aid, as they will be seen as anti-development and discriminating against the poorest.[22] As such, the government of Nepal is going to have to ensure that affordable, sufficient and subsidised rice supplies reach Rolpa. The government is likely to face the risk of food riots if it does not maintain this.

There is much uncertainty around the long-term benefits of organic fertilisers versus chemical fertilisers and pesticides. A number of local and international NGOs in Dang and Rolpa are working to reduce the use of pesticides and promote organic fertilisers and natural compost. However, chemical pesticides yield faster results for communities, so it is hard to convince them to use local organic matter. The benefits of organic fertilisers are very slow to observe and less tangible. In addition, consumer tastes are changing – people want larger, perfect looking vegetables, not misshapen organic ones. Organic fertilisers require some amount of work to yield produce, whereas farmers can just use chemicals instead. As a result, communities are reluctant to change. Therefore, adaptation projects which promote environmentally friendly approaches such as organic farming must be sensitive to other development priorities such as economic resilience.

22 A range of key informants, including Practical Action and those working on food aid projects.

Competition over aid between different political parties is also perpetuating political segmentation within civil society, occasionally escalating into violent conflict. This was most evident in Dang and Banke. While these two districts were ranked as being significantly more resilient to climate risks than Rolpa, farming communities there expressed concerns about coping with uncertainty as well as the politicisation of aid (climate change and other sources). Despite its lower vulnerability ranking, Dang is a recipient of equal if not greater levels of climate change related aid and intervention as Rolpa.

While the political transition (and national processes regarding transition) might be cited as a reason for lack of prioritisation of local development goals, it must be noted that, historically, the central government's marginalisation of certain regional and ethnic communities is one of the main causes of conflict in Nepal. This marginalisation of the poor and certain ethnic groups was a very real root cause of the civil conflict in Nepal, and Rolpa is widely understood to be the district from which the civil war escalated. Based on our observations and interviews, climate aid, which is seen as disproportionately flowing to less vulnerable districts, could risk entrenching these historical and present lines of marginalisation and exclusion.

Table: Climate change impacts and their implications for conflict drivers

Climate/Environmental change impacts	Implications for existing conflict drivers/ risks to peace
Droughts and changing rainfall patterns affect water supply and predictability Limited access to water	• Elite capture of natural resources (including climate aid) • Wealthy individuals who can afford equipment for digging irrigation channels and boring holes claim water for agriculture and domestic use • Reinforcement of historical political divisions • Reinforcement of political apathy – lack of social contract
Increased landslides and environmental degradation Crop failures	• Increased dependence on aid • Food insecurity • Resentment of external intervention in agriculture (hybrid seeds which fail, new farming techniques) • Increased unemployment – especially among young men

Increased natural disasters (especially landslides)	• Increased pressure on already weak infrastructure – roads and electricity • Limited access to health and education • Reduced access to markets and lower levels of trade • Reduced per capita income due to deaths and injury within households (especially of men) • Increased migration of young working males
Natural disasters catalyse claims for land rights or compensation Changes in supply of and access to water	• Rights to land or compensation allocated on the basis of ethnic or caste lines or political allegiance • Rights to highly climate vulnerable (reserve) land granted as political favours (for votes during elections) • Limited access to rights for "settlers", certain ethnic/caste groups and women • Impunity
Migration Loss of assets in natural disasters	• Rural to urban migration puts increased strain on urban infrastructure • More female-headed households and greater physical isolation • Food insecurity as a result of insufficient agricultural labour because of migration • More children work rather than go to school, limiting their future options

7. What are the gender dimensions of climate risk and resilience?

Some of the knock-on consequences of climate and environmental risk have noticeably different implications for men and women. Families of migrant workers explained that men, especially young men in rural families, are often expected to migrate to cities where the cost of living is higher and where their wellbeing is lower than that at home. Respondents with migrant family members noted that, in some cases, their relatives cite serious threats to their physical safety from organised crime in the areas where they settle. When asked where their relatives would live when they are away from home, respondents noted that the men end up in hostels or in slums on the peripheries of the city. A number of respondents raised concerns that newcomers from villages, especially their sons (i.e. young men), are particularly vulnerable to being victims of or drawn into organised crime. Family members of workers migrating to the Middle East reported a number of unexplained deaths among boys and men from the village due to a lack of ventilation in labourers' dormitories.

Conversely, a significant majority of female respondents, particularly in Rolpa (68 percent), mentioned increased wellbeing as a result of male migration. Women in villages where most of the men had migrated for work said that, since they received adequate remittances, they did not need to participate in local political consultations and forums as it was not worth their while. Rather than viewing political participation as a means of empowerment, they viewed it as a waste of their time, judging that they were more resilient if they stayed working in their village and relied on remittances rather than lobbying for political resources. However, this means that people have very little opportunity for interaction with their political representatives, thus fostering political disengagement and weakening the social contract.

Poor women are predominantly engaged in agricultural work, and many female respondents communicated their lack of interest in participating in ward-citizen forums and community development meetings. They found such activities to be time-consuming and involving a high opportunity cost. One female respondent commented that 'saving schemes are seen as a nuisance'.

Female respondents did not mention safety as a reason for not travelling; their predominant concern was time. Time spent collecting water and also in the field restricted their ability to participate in community governance matters. Another problem faced by women is being left alone, often in largely female-populated villages, as a result of young men migrating abroad. Almost all of the women

interviewed in Rolpa stated that the increased burden on their time from having to undertake all farming as well as domestic work prevents them from engaging in local development committees. However, migration has also positively impacted on the women and the villages through higher wellbeing and peace. With regular remittances sent back, there is money to hand and less of a need to be involved in the community. To an extent, therefore, male migration builds female resilience. Furthermore, because remittances go directly to a particular family, there is no conflict in the community over rights to the income because it is clear to whom the money goes.

8. Are there observable constituent factors of resilience in this context?

Migration

Migration is the main strategy for coping, particularly for those with an agricultural background and for young men and increasingly women. There are multiple reasons for migration such as: reduced income from agriculture; greater opportunities in India and the Gulf States; a tendency to follow friends and family members who are migrating; and existing power dynamics in the community. For instance, in an ethnically diverse community, where one ethnic group holds power, members from the other ethnic groups are likely to migrate. One respondent in Dang described this as "mental slavery", because his community does not have access to the state. Therefore, they choose to migrate to other places like India, and if they can afford it they target the Gulf countries.

Farmers noted that the cost of staying for smallholder farmers is also increasing. It takes high capital investment for the modernisation of agriculture (e.g. the need to bore deeper to reach groundwater). As a result, smallholder farmers are increasingly tempted to use their savings to leave rather than to invest.

Based on our interviews, **internal migration** seems to be more conflict prone than trans-boundary migration and needs to be managed with sensitivity. In an ethnically diverse community, where one ethnic group holds power, the other ethnic groups are likely to migrate. Resettlement after natural disasters such as floods can often cause conflict between the host and the resettled community. For example, the Bageshowri VDC in Banke is a largely resettled VDC made up of people from Surket and Dailekh. Although the Madeshi population form the majority in this area, the migrant incomers were Pahadi people from the hills. Due to the process of government-sponsored resettlement (originally for environmental reasons to increase agricultural livelihood prospects of the hill people), the previously homogenous community became heterogeneous in terms of caste and ethnic groups, which in turn promoted discrimination. Access to already restricted livelihood opportunities in Bageshowri remained limited for many caste groups. The Madeshi people felt that the incomers were putting increased pressure on resources, not just on water and land, but also on development projects and access such as highway access.

Small and medium-sized businesses

Engagement in small and medium-sized businesses provides an opportunity for farmers to diversify their livelihood options. Dang in particular has a lot more potential for increased industry, with limestone mines and two cement industries. Other industries are predominantly agro-based, revolving around daal, paddy and mustard seed oil. There are also about 10 brick kilns. Furniture production is rising, with the potential to grow through the availability of timber resources. However, both the brick and furniture industries that are growing in these districts have a negative impact on deforestation. As these activities are not climate sensitive, they will not be sustainable in the long run.

The majority of young men who were engaged in agriculture expressed a desire to be more involved in small businesses or their own businesses. While the young people explained that this was largely because farming is perceived as a lowly vocation, key informants from the local business communities and older community respondents noted that they could see that business is more resilient to climate change than being directly involved in agriculture. The Youth Self-Employment Fund, which offered a grant to young people to start their own businesses, received a tremendous national response, indicating that interest in small businesses is growing not just in these districts, but also across Nepal.

Local governance-strengthening projects

Evidence of local governance-strengthening projects was present in each study site. Perceptions of their impact on strengthening community resilience varied greatly from one VDC to the next. This reflects how intervention impacts are experienced differently by different communities along social, ethnic and geographic lines. The Local Government Community Development Programme (LGCDP) was the biggest such initiative (see Box 3). Although respondents raised a number of problems with the new initiative, positive impacts were also experienced – particularly where LGCDP groups have turned into cooperatives.

9. How does the national political context affect resilience?

As Nepal slowly emerges from a decade of civil war (1996–2006), governance remains fragile and government institutions are still young and characterised by a high level of aid dependency. Nepal's political context is highly shaped by its recent history of internal conflict, caste and ethnic divisions, as well as by periods of authoritarian rule interspersed with shifts to multi-party rule. The signing of the Comprehensive Peace Accord in 2006 between the government of Nepal and the Maoists signalled the end of large-scale violence, the re-establishment of competitive multi-party politics, the end of the monarchy and the beginning of the Maoists' transformation into a political party. However, the period from 2006 to the present has been characterised by political instability and frequent civil unrest.

Nepal's transition towards a post-conflict democracy means that national government and international donor priorities are dominated by state-building processes at national and local levels. This includes a debate on the federal restructuring of the state. The extremely politicised debate about federalism is not simply about the decentralisation of political power; it is also about the highly significant but less frequently discussed matter of natural resource distribution among the federal states.

People feel frustrated with the political parties. Many respondents spoke of feeling disillusioned and manipulated by the politicians' failure to meet promises made before the elections. One farmer articulated his reluctance to plan ahead: 'The biggest issue we face today is the political crisis and the problems from this. Political change means there is no strength to prevent or manage our problems.'

According to interviewed expert key informants working on peace in Nepal, this clear and sustained erosion of the social contract and the perceived political uncertainty and flux will not only make it harder for the government to effectively deal with environmental risks. It will also add an additional level of uncertainty and variability (on top of climate and environmental change) for farmers and businesses to plan and work around.

10. How do external interventions affect resilience factors?

Donors and development agencies are expected to work simultaneously with national governments to ensure that interventions are in line with national development goals. They are also expected to work with local government and implementing agencies to ensure effective disbursement of funds on the ground. Poor systems for communication and cooperation between capital and the districts as well as local power relations significantly hamper effective local programming, even where plans have been agreed by government and donor officials at headquarters level.

National law dictates that international organisations in Nepal cannot implement development activities themselves, but must work through District Development Committees (DDCs) and through local implementing agencies – be they NGOs or private companies. International institutions thus need to maintain strong links with local government, but also need to find resources to address the human resource and capacity constraints within local administrations.

However, the process of aid disbursement at the local level is politicised, with significant influence from political parties. In both Dang and Rolpa, required services such as citizenship, disability certificates and different (hybrid) seeds are granted as favours. Increasingly, as climate change makes the lives of the poor more challenging, any resources from climate change or development aid which might increase resilience will become highly susceptible to elite capture to distribute for political gain.

Some interventions to promote alternative livelihoods[23] seemed to have some positive impacts. For example, in Dang a move to high-value crops that are more resilient to rain fluctuations (camomile, mint, citronella and lemongrass) was piloted in 100 households last year, with positive results in just four months. However, poor farmers in Dang noted that these strategies are only open to wealthier (often higher-caste) farmers who own land and who can thus make decisions on cropping. Some also noted that shifts to cash crops have negative knock-on consequences for the poor, as they are left unemployed because orchards are less labour intensive than paddy or cereals, thus providing less work for agricultural labourers. Thus, these long-term investments can reinforce existing power dynamics.[24] It is also

23 For example, the Local Initiatives for Biodiversity, Research and Development (LI-BIRD) programme.

24 A sharecropping system exists in this region and most of the tenant farmers work under a system called *adhiya* farming, whereby tenant farmers give 50 percent of crop yields back to the landlord.

worth noting that there was a strong perception among farmers that there is no respect for farming as an occupation within the state or society. For instance, many younger respondents from farming communities did not aspire to remain in farming when asked about their future aspirations.

Creating climate resilient livelihoods can be a slow process and it takes time for people to see their benefits. Initiatives to promote diversification into high-value fruit crops such as apple saplings (which take five to 10 years to mature) are difficult to implement, as communities want quicker results or they see no reason to change from their current, albeit unsustainable and risk-prone, strategies. In addition, people are suspicious of moving towards change, such as switching to a different type of seed variety, when relations between the community and the local government are weak. In cases where the crop subsequently fails, farmers have been quick to blame the government and to point to its alleged collusion with big businesses.

Box 2: Feed the Future Programme

The Feed the Future Programme is the US government's five-year initiative on global hunger and food security in 19 countries, one of which is Nepal. In Nepal, the programme aims to work with the government of Nepal in addressing the country's most pressing food security, poverty and nutrition challenges through balanced interventions in high-value vegetable value chains and complementary support for growing rice, maize and pulses under an integrated farming systems approach. These measures include the following: promoting intercropping or relay cropping during the current fallow season; encouraging crop rotation to improve nutrient retention; introducing locally adapted improved varieties (i.e. high yielding, early harvest and flood tolerant varieties); and promoting minimal tillage systems with residue management, timely provision of quality inputs, water management and adapted mechanisation at farm scale.

Banke, Dang and Rolpa are all selected districts under the US government's Feed the Future Programme. Positive features of the programme in these districts include value chain enhancement along with improved education and literacy. Recognising that food security is a multi-faceted concept that includes not only availability of food, but also access, use and stability of supply, Feed the Future activities are diverse – ranging from interventions to boost agricultural yields for smallholder farmers, to activities that improve nutrition practices, to strengthening efforts to secure land rights for women.

Climate change features strongly in the programme, with major initiatives seeking to promote more resilient crop and livestock varieties. However, there

was space for deeper integration of the socio-economic factors that affect smallholder farmer vulnerability to climate change.

Farmers in Rolpa and Dang raised issues around land rights and access to water as their major concerns. They also expressed concerns about cross breeding and use of new seeds from India, to which they attributed the near extinction of local varieties of potato and mustard. Similarly, in the face of new hybrid seeds, old varieties of rice (such as Suraj and Prithvi) have also vanished. While the use of hybrid seeds can often increase yields in the face of climate uncertainty, they also pose risks – for example, they are sometimes affected by pests before seeding.[25]

Assisting small-scale food producers to adapt to climate change and better manage natural resources is essential for the long-term success of the Feed the Future initiative and efforts to promote sustainable development. For food producers, climate adaptation requires developing the tools and knowledge as well as building the capacity to address current hazards and manage risk and uncertainty associated with the weather. There is also a need to implement programmes that address power dynamics that shape access to natural resources essential for smallholder agriculture.

Box 3: The Local Governance and Community Development Programme (LGCDP)

The LGCDP is a national programme aimed at reducing poverty through improved access to locally and inclusively prioritised public goods and services. This is to be achieved through building the capacity of local governance systems and creating more transparent and accountable local governance systems. For instance, the DDCs and VDCs ensure greater accountability through increased involvement of disadvantaged groups and participatory community-led development, such as shared community decisions over block grant allocations. At the community level, specific mechanisms have been created to promote participatory decision making. These include: community awareness centres, where citizen-elected "community mobilisers" share information about LGCDP decisions and grants with community members; and ward-citizen forums, where citizens can raise ward-level concerns to their local Village Development Officer.

While the initiative is a positive step towards decentralisation and promoting subsidiarity, our research revealed a number of challenges in its implementation. A major challenge was ensuring that participation in decision making was not

25 Male respondent from a forestry programme in Dang.

captured by existing power holders in the community at the expense of others. Respondents highlighted that, under the LGCDP, the same group of people might be involved in multiple committees. For instance, in one VDC in the Banke district, the citizen awareness centre was dominated by one Bahun family: the son was the social mobiliser, the father was head of an NGO network and the mother was head of a human rights district network.

Another problem is poorer families who cannot spare the time to become engaged in participatory consultations, leaving space for the more influential and affluent families to dominate the agenda and set the village priorities. According to one community member: '[the citizen awareness centre] is a huge mess and savings schemes are seen by the communities as a nuisance.'

A representative from the Bageshowri Women's Development Group made the following remarks:

> 'We are not satisfied with the LGCDP project here. The meetings are not on time and the same people do not come to consecutive meetings. The group for the LGCDP citizen awareness centre has been formed, but the group is made up of people who have no idea of their entitlements and can't speak for themselves. We are also not satisfied with the policy of not including the political parties in the group. There should be people who can speak in the group. We are also not satisfied that the LGCDP fund can't be used by organisations and an individual person.'

11. What are the constraints on effective governance at the local level?

Most policies and activities are planned and prioritised from the capital, Kathmandu. Yet resilience to climate change risks is highly dependent on the local-level context. Desk research for this study supports perceptions from the field that there are insufficient efforts to address the local/national paradox in dealing with governance and power dynamics over natural resource access in climate responses. Nepal's NAPA commits to spending 80 percent of resources available for adaptation at the local level of implementation. However, local implementation has not been as effective as envisaged. In response, Nepal is also piloting a Local Adaptation Plan for Action (LAPA), which aims to reinforce the NAPA at the local level as it moves into its implementation phase.

However, the NAPA and other climate policies[26] do not address the root causes of unequal access to resources. Low levels of resilience are grounded in poverty and inequality. Addressing adaptive capacity requires ensuring fair and democratic access to resources for all. This inexorably entails addressing the power and politics of access to, and control of, resources.

Meeting the needs of those most vulnerable to climate change will also require a strong local finance delivery mechanism. In this regard, there are already identified weaknesses in the national financial management system.[27]

Furthermore, centralised party structures and autonomous local leaders mean that there is little communication between the capital and the grassroots leaders in the provinces. According to some respondents, party leaders in Kathmandu might actually agree to policy changes, but at grassroots party level local leaders might block already agreed national government plans – mostly due to ignorance of central policy decisions. This lack of communication causes confusion in implementing policies at the local level. For example, in Rolpa, the District Agriculture Development Office was promoting the use of a local variety of rice which had actually been banned at the state level.

Lack of accountable and transparent local governance was also identified by respondents in all three districts as an issue of concern. Some community members

26 Such as the Pilot Programme for Climate Resilience (PPCR).

27 N. Bird (2011). *The future for climate finance in Nepal*. Overseas Development Institute (ODI) and Capacity Development for Development Effectiveness Facility for Asia and Pacific. Available at http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/7191.pdf

felt that an elected local body might improve things. Conversely, others could see how, in the absence of effective mechanisms to promote transparency and oversight, both elected and appointed models had their drawbacks. One NGO respondent in Dang commented that 'even if there is an elected body, it doesn't mean it will be fair. If it is an elected body, it will simply be five people deciding what happens for the whole village.'

A number of community members identified the lack of checks and balances on local governance holders. The Local Development Officer is unelected and holds power over all development projects and funding allocation in the district, including all future climate finance at the district level. Nevertheless, there is limited political or civilian oversight of this role. Some respondents suggested the need to increase participation of NGOs and international NGOs (INGOs) in reviewing official processes. However, corruption equally exists within some NGOs which receive INGO grants but which might not use the resources to implement projects. According to some respondents, the government does not have the capacity to implement and therefore INGOs work through NGOs, but these NGOs often do not get monitored.

Another particular problem of legitimacy and representation at the local-government level concerned overlapping layers of participation in key functions and the lack of clarity or awareness of different roles and remits. One example of this is where the responsibility for irrigation maintenance lies between the District Agricultural Development Office, the DDC, the District Environment Office and the Water Committee.

12. How can resilience be strengthened?

Successful and sustainable resilience building depends on the actions and capacities of local government and public service institutions to cope with variability and change. However, in Nepal, local government and public service institutions implement policies which are determined at the national level. There is little capacity for coordinated action at the local level. The following offer concrete suggestions aimed at addressing some of the specific obstacles to resilience identified in this case study.

Strengthen connections between the capital and the districts

Resilience to climate change is highly dependent on the local level context, governance and power dynamics over natural resource access. Yet most policies and activities are planned and prioritised from the capital, Kathmandu. Stronger communication between the capital and local leaders in the provinces can ensure greater awareness and implementation of national plans and policies at the local level. It can also ensure the effective disbursement of funds on the ground and effective local programming. With strengthened lines of communication between the two administrative tiers, processes relating to climate change adaptation and resilience can capitalise on successful community experiences. Without better links between national and local government, national adaptation plans will struggle to be embedded locally, with insufficient knowledge, capacity and incentives for leadership from local administrations. Furthermore, local resilience initiatives will remain stand-alone activities and will fail to be part of a national process. This will be even more pertinent if Nepal ever moves towards a new decentralised federal state structure.

Strengthen local governments' financial management capacity

The mechanics of local fund management for service delivery will be crucial if resilience building initiatives such as the NAPA, the LAPA and the Pilot Programme for Climate Resilience (PPCR) are to be efficient. However, our research supports other evaluations[28] that locate a key potential fracture point in local finance delivery mechanisms. Financial planning is not as well developed as broader climate change planning is in Nepal. This is particularly true in terms of costing proposed public sector investments, where estimated budgets appear to be initial approximations only (as suggested by the one-line summary of costs for each of

28 Ibid; L. Jones (2010). *Overcoming social barriers to adaptation*. Background Note. London: ODI. Available at http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/6048.pdf

the nine priority activities identified by the NAPA process). Many government institutions are considered a fiduciary risk. Some donors rely on external fiduciary controls because of their lack of confidence in the national system. Strengthening local government's financial management capacity is a crucial first step in effective service delivery but equally important is also ensuring that local governance processes are transparent, accountable, inclusive and participatory.

Support key climate-sensitive services to help build the social contract

Infrastructure and livelihood-related training were cited as two key dimensions of resilience. Members of the business community also pointed to the need for more technically trained young people with modern business skills, along with IT and management competencies. The provision of services such as infrastructure can help to build climate resilience, as well as building trust and confidence in local governance structures if they are seen to be effective in delivering key community priorities.

Encourage positive responses to migration

Contrary to general perceptions of migration as a problem, rural to urban and trans-boundary migration appear to build the resilience of the migrant's family back home. Remittances received outweigh the social challenges of female-headed households. Policymakers must therefore consider planned migration as a valid resilience option and plan how best to manage future migration in a peaceful way. Local or national migration or resettlement poses a risk to local security and to vulnerable migrants. Resettlement after natural disasters such as floods can often cause conflict between the host and the resettled community. Disaster response and resettlement plans therefore need to be designed and managed with conflict sensitivity.

This requires research on *where* people are moving to and *why*, rather than simply counting the number of migrants. Such research would help to inform policies that could promote peaceful management of migration – for example, by bolstering infrastructure and shelter provision or auditing livelihood options so that host communities can absorb incomers with less conflict. Negative perceptions of migrants by host communities also need to be addressed – for instance, by working with the media to address prejudices along with ethnic and social grievances between migrants and hosts.

Address unequal access to and control over resources

Issues of access to and control over resources are totally missing from the national climate policies and plans. While the NAPA and LAPA include provisions for participatory planning and assessments, there is no guidance on how marginalised people will be assured access to and control over resources. The LAPA explicitly aims to promote the targeting of climate change resources at the most vulnerable and bridges the gaps between vulnerability assessments and planning and implementation. However, an analysis of the programming areas shows that there is a lack of consideration of conflict and power dynamics in the implementation plans. For example, farmers might be supported with new seed varieties, but this is of little use if they do not have the capital required to buy seeds and fertilisers or to take out a lease. In other cases, they may not be in a position to change their practice if they are tenant farmers or sharecroppers who do not have access to or control over land or production patterns. To build resilience, policies need to address issues of fair land tenure, minimum wages, job security and access to credit.

Promote an enabling environment for climate-sensitive business

The private sector can play a key role in building resilience, particularly in capacity building of skills to promote alternative climate resilient livelihoods. Although this sector is currently involved in training, it is only on a small scale. A training initiative in May 2012 – which trained 500 people as part of a GIZ project in business management, accounts and taxation systems – was very well received and participants stressed the value of more training in the future. Given the lack of skilled business people with management and computer skills, it makes strong business sense for companies to invest in training programmes. Private-public partnerships between companies and donors are already proving to be effective and can be expanded. The profit motive of the private sector both provides the motivation and will as well as safeguarding against elite capture of trainings as favours.

For businesses to be sustainable and to grow, they need both energy and infrastructure such as road links to markets. However, to date there has been insufficient support from the government in developing the infrastructure required for economic growth. According to key informants from small to medium-size business, the key requirements for sustainable business include:

- technical knowledge support for farmers
- market linkages to national and international markets
- insurance
- amenities such as electricity and decent infrastructure
- better coordination among other districts
- support for increased export of goods

Implement climate interventions in a trust-enhancing way

Nepal's political stalemate since 2006 means that there is widespread mistrust in or disillusionment with local government. It is clear that local government needs to take responsibility for facilitating local resilience building measures; however, this is being hampered by distrust from the people they are meant to represent. A history of politicised bureaucracy means that people have come to expect that political decisions are made for political or financial gain, such as bribes for awarding contracts in infrastructure works. Although our study did not look into the truth of corruption allegations, public perception of endemic corruption within the government is sufficient to undermine trust in the future. Building trust is a vital component of strengthening responses to climate variability, especially when key challenges involve governance providers shepherding communities towards changing their behaviour – for example, by adopting alternative livelihoods or moving their assets. To promote a change towards climate resilient livelihoods, or indeed any other change in community attitudes and behaviour, there needs to be trust in the source that is encouraging the change. One way to approach this would be to ensure that, in implementing all interventions, actors are incentivised and capacitated to do so in a trust-enhancing way.

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