

Journal of

Forest and Livelihood

Vol 11 (1)

March 2013

ISBN 1684-0186

Climate Change Adaptation and Local Institutions: How to Connect Community Groups with Local Government for Adaptation Planning

Dil B Khatri, Rajesh Bista* and Niru Gurung**

*ForestAction Nepal

Editors

Hari Dhungana

Hemant Ojha

Krishna K. Shrestha

Rahul Karki

Design and Layout

Sanjeeb Bir Bajracharya

© **ForestAction Nepal**

Email: fa@forestaction.org; **Web site:** www.forestaction.org

Climate Change Adaptation and Local Institutions: How to Connect Community Groups with Local Government for Adaptation Planning

Dil B Khatri*, Rajesh Bista* and Niru Gurung*

*ForestAction Nepal

Corresponding author: khatriadb@gmail.com

Abstract: The impact of climate change has become apparent in rural lives in developing countries like Nepal. There is a growing realisation that local institutions have an important role to play in adaptation to climate change. This paper examines the role of community groups in adaptation and the issues and challenges related to local-level adaptation planning. It argues that local adaptation planning can benefit from the experience and institutional base of diverse community groups, but they should be coordinated by the local government at village level (Village Development Committee or VDC). Field research conducted in Lamatar VDC of Lalitpur district, using different qualitative research tools, suggests that the activities of diverse community groups working within the VDC do contribute to adaptation, but these activities are not coordinated to form an effective local adaptation plan at VDC level. The VDC, as a government unit that is closest to the people, could bring community-based organizations (CBOs) together and coordinate their activities to form local adaptation plans. The CBOs, including community forest user groups (CFUGs), can offer an institutional base for planning and implementation of adaptation activities. However, they face several challenges, such as limited capacity of VDC, absence of elected local government and lack of clarity of policy. It requires clarifying the role of community groups and local government in policies related to adaptation and developing capacity of local government to coordinate the activities of community groups and provide leadership in local adaptation planning. As election to the local government is uncertain, there is need for an interim strategy for an accountable decision-making mechanism in local government.

Key words: Climate adaptation, local institutions, community groups, local government, Nepal

INTRODUCTION

As impact of climate change is localised and more severe among those who depend on natural resources for their livelihoods, action against climate change impacts is required at the local level. There is a growing realisation that local institutions have an important role to play in planning and implementation of adaptation activities at the local level (Agrawal and Perrin 2009; Agrawal *et al.* 2009; Amaru and Chhetri 2013; Rodima-Taylor *et al.* 2011). However, ongoing initiatives on climate adaptation have been focused more at the national level, either on development of policies and plans or on building capacity of national-level stakeholders (*ibid*). But a review of the National Adaptation Programme of action (NAPA) of 45 countries shows that the role of local institutions has received little attention (Agrawal and Perrin 2009). In Nepal, NAPA (GoN 2010) and

Climate Change Policy 2011 (GoN 2011a) have identified community organisations, including community forest user groups (CFUGs), farmer and water user groups as local units of planning and implementation of adaptation activities. However, there is a lack of clarity in policy about the role of the community groups and the local government. NAPA and Climate Change Policy view community groups as the main unit of adaptation planning, whereas the Local Adaptation Plan of Action (LAPA) framework (GoN 2011b) foresees the local government at the centre of adaptation planning, but the role of community groups is not explicit.

On the other hand, it has been suggested that adaptation planning at the local level can draw valuable lessons from decentralised resource governance and community-level institutions

(Agrawal *et al.* 2009; Agrawal and Perrin 2009). In particular, rich experiences from Nepal's community-based resource management could be valuable. But, it has yet not been understood as to what the community groups can offer for adaptation planning at the local level and to what extent their existing activities contribute to adaptation.

Scholars in climate adaptation and institutions have emphasised the significant role of local institutions in climate change adaptation. Indeed, adaptation does not occur in an institutional vacuum; institutional and social factors play a key role in shaping the extent to which rural households and communities become vulnerable to different environmental risks and respond to such risks (Agrawal *et al.* 2009; Amaru and Chhetri 2013). Institutions are defined as the formal and informal rules through which social structures share decision-making and take collective action (Agrawal *et al.* 2009). Agrawal and Perrin (2009) argues that institutions are leverage points to determine the direction and magnitude of flow of resources to different social groups.

This signifies the role of local institutions in adaptation planning at local level. However, it is necessary to unpack local institutions, which consist of two distinct layers. First are the community institutions which operate at community level in the management of natural resources and development delivery. These are community groups which organise citizens for collective action around resource management of community development. The second comprise the local government, which is a formal structure with elected representatives. These two have distinct roles to play in resource management and local development. The community groups are responsible for management of resources and their appropriation to meet the demands of their members, whereas the local government coordinates the planning and implementation

of development activities at the local level. The local governments that have mechanisms of democratic election are more accountable to the people and are effective and legitimate bodies for planning and implementation of development activities at local level (Agrawal and Perrin 2009; Ribot 2007).

We have taken both community institutions (community groups) and local government for this study. As Village Development Committee (VDC) is the local government unit closest to the people, we have considered it as a useful unit to link the activities of community groups to local government. On the other side, we have considered CFUGs as a significant community group because of its prominence in terms of institutional base for adaptation planning. First, it has been argued in literature that CFUGs have sound institutional base for management of forest based on democratic decision making (Pokharel *et al.* 2007). Second CFUGs are increasingly considered as a suitable unit for community adaptation planning and are being mobilised for this purpose. More than 2,000 community-based adaptation plans have been prepared by CFUGs in Nepal (Paudel *et al.* 2013). We have also taken other community groups which are involved in natural resource management and community development because their activities and experience are also useful for climate change adaptation.

This paper examines the role of community groups and local government, particularly the VDC, in local adaptation planning and explores the possibilities and challenges of linking the activities of community groups into local adaptation planning. It also explores the role of VDCs in coordinating the local groups' activities to contribute to local adaptation planning. The paper is based on a case study of Lamatar VDC of Lalitpur District. The qualitative information was gathered from community groups and VDC using key informant interviews (9), focused group discussions (4) and observation of

activities. We have also interviewed VDC staff and politicians to understand the activities and mandate of the institution. We have also used data from a structured survey (51 respondents) to understand people's perception on impact of climate change.

The section following this introduction provides background information on how communities in rural parts of the country have been experiencing climate change impacts. Section three presents the findings of the study where we outline the landscape and activities of local institutions. In section four, we discuss what the community institutions offer for local adaptation planning and how their activities can be integrated at local government level. Finally, the paper concludes by describing policy and wider knowledge implications of the findings we have drawn from in this paper.

CHANGING CLIMATE AND ITS IMPACT IN RURAL LIVES

Though climate change has impact across the globe, developing countries are more vulnerable to its impact because they have low capacity to cope with (Mirza 2003; Mendelsohn *et al.* 2006). Communities in developing countries are heavily dependent on climate-sensitive resources like forest, agriculture and fisheries but have less capacity to adapt, and thus are more vulnerable to the effects of climate change (Mendelsohn, *et al.* 2006; Mirza 2003). The effects of climate change are most pronounced among the poor and marginalised communities (Rodima-Taylor *et al.* 2011).

Nepal's annual temperature increase is reported to be around 0.04°C–0.06°C, which is higher than the global trend of 0.02°C, and it is not uniform throughout the country due to the geographical diversity of the country (GoN 2010). From the trend observed between 1976 and 2005 it is expected that the regions with already high precipitation will receive more

rainfall and those with low precipitation will see further decrease (Practical Action 2010).

Nepalese communities, especially those living in rural areas, have been experiencing some impacts of the above-mentioned changes in climatic variables. People are now experiencing unusual changes in temperature and rainfall patterns, which were supported by a number of indicators such as decreased rainfall over the years, increased rainfall intensity within short duration, invasion of weeds and alien species, outbreak of pests and diseases, and increase in water-induced disasters (GoN 2010; Piya *et al.* 2012). A case study conducted in a village of Chitwan district by Practical Action (2008:4) shows that rural communities are exposed to the changes in climatic variables, having impacts on their lives:

In Jugedi watershed of Chitwan, weather has been observed to be hotter in the summer months, yet colder in the winter, whilst quantity and quality of water resources have fallen. Monsoon rainfall has increased whilst winter rainfall has become scarcer and periods of drought have become longer. Higher levels of sediment have altered the course of rivers, liver disease has been observed in cattle and cereal crop production has fallen. The effect on livelihoods has been seen through an increase in alcohol production to offset the failure of agriculture, whilst paddy fields have been converted to maize, millet and gram fields as the agricultural conditions change.

This sets the scene about how climate change is affecting the lives of rural people in poor countries like Nepal. The rest of this section presents how climate change has impacted the lives of the people in Lamatar VDC, where this study was undertaken. We present the evidence based on the perceptions of the respondents (farmers) of the survey.

Data for this study was gathered from Lamatar VDC of Lalitpur district, which is located about 10 km east of Kathmandu. The VDC has a mixed community of different castes (29.66% Chhetri, 27.69% Brahmin, 15.21% Tamang, 10.75%

Newar, 3.68% Dalit and 13% others). The principal occupation of the inhabitants of this VDC is agriculture, which is mainly for subsistence. The local farmers grow paddy, wheat, maize and millet as major cereal crops.

There is an increasing trend of commercial farming, particularly of vegetables.

People in Lamatar VDC have reported changes in climatic parameters. Table 1 provides a summary of the perceptions of the respondents.

Table 1: Respondents' perception of change in climatic parameters

Climatic Parameter	Respondent perception (in percent)				
	Increased	Decreased	No Change	No idea	Total
Temperature (summer)	93	7	0	0	100
Temperature (winter)	17	76	3	4	100
Rainfall intensity	33	57	10	0	100
Rainfall frequency	10	77	13	0	100
Drought length and severity	87	3	7	3	100
Drought frequency	93	7	0	0	100
Hailstorm amount and severity	10	63	17	10	100

Source: Field Survey, 2011

Table 1 shows that more than 90 percent of the respondents reported an increase in temperature and about 85 percent reported increase in droughts over 10 years. Similarly, more than 75 percent of the respondents believed that rainfall pattern had changed. Such changes in climatic parameters have some positive impacts in terms of introduction of new farm and fruit crops, for example, papaya and mango, which were not grown in the area in the past. However, there are more negative impacts on local lives, particularly for those who depend on agriculture. First, the variations in precipitation and temperature have affected the crop cycle and productivity. Farmers reported that agricultural productivity has fallen about 20-35 percent compared to 10 years ago. There could be other socio-economic reasons for such a decline, but the farmers saw a link between the changing climate and agricultural productivity. Farmers have been experiencing decrease in production of wheat and legumes

and they are exposed to unpredictable agriculture calendar. Similarly, they are facing increasing problem of new crop diseases like blast (*dadhuwa*) in paddy and yellow disease in wheat.

The change in rainfall pattern has also led to depletion in water sources. More than 80 percent of the respondents stated that availability of water for drinking and irrigation has decreased over 10–20 years. Many traditional water sources like well and dug well have dried up. One of the farmers said:

About 20 years ago, there were more than a dozen water sources in this VDC. Many of them have disappeared and others have very little water.

Another farmer told the story of decreased water in Raj Kulo¹ (irrigation canal). Though water scarcity may also be due to increase in demand for water as a result of increased population or intense farming, people have the perception that climate has some role to play.

¹ Small water channel constructed for irrigation and drinking purposes by Royal Palace during 1700

Despite such impacts, Nepal has very rich experience in community institutions engaged in natural resources management and supporting livelihood of the community. The institutional foundation they have laid and the experience they have gained over the past few decades can benefit the climate change adaptation initiatives. The next section presents the results of our field study.

COMMUNITY GROUPS AND THEIR ACTIVITIES IN LAMATAR: HOW THEY CAN CONTRIBUTE TO ADAPTATION

There are diverse types of community groups in Lamatar VDC, which manage resources or diversify income of villagers. In this research, we focused on the groups engaged in management of natural resources and community development. In doing so, we identified six major types of groups: CFUGs (9),

water user groups (10), agriculture related groups (23), livestock-based groups (7), savings and credit cooperatives (11) and women's group (4). As CFUGs are being used as the institutional base for climate change adaptation in Nepal, CFUGs were given more focus in this study. We have dealt with rest of the groups separately and described their activities and institutional approach of working. We present below the findings by two categories: CFUGs and other community groups.

Community forest user groups: diversity in activities

There are nine CFUGs in Lamatar VDC. The groups have not limited their activities to forest protection, management and utilisation, but are also engaged in diverse community development activities and are exercising grass roots democracy. Table 2 summarizes the activities of the CFUGs.

Table 2: Overview of CFUG activities

Description of CFUGs	CFUGs' major activities
Chisapani CFUG (area: 1.69 ha, households: 28 and handover in 2000)	Forest management activities (protection, harvesting, silvicultural operation etc), water source conservation and management of community resource centre
Dhiks Pakha CFUG (area: 37.8 ha, households: 126 and handed over in 1997)	Forest management activities that includes plantation, silvicultural activities, fire line construction, contribution of rural road, water resource conservation, income-generating activities like bio-briquette and eco-tourism promotion by development of hiking route
Goldada CFUG (area: 199.25 ha, households: 83 and handed over 2000)	Forest management activities (protection, silvicultural activities, including conversion of coniferous forest to broad-leaf ones), water resource conservation and forest road construction
Gomati CFUG (area: 60 ha, households: 66 and handed over in 1995)	NTFP cultivation (cardamom, broom grass, bamboo), fire line construction, forest management including protection and conversion of coniferous forest into broadleaf, water resource conservation and plantation and eco-tourism promotion

Kafle CFUG (area: 94 ha, households: 65 and handed over in 1995)	Silvicultural operation (removal of mature tree and promotion of natural regeneration), bio-engineering work for landslide control, fire line construction, water resource conservation, eco-tourism promotion and carbon measurement (demo plot established with support from ICIMOD)
Mathilo Patle CFUG (area: 56.5 ha, households: 67 and handed over in 2000)	Water resource conservation, fruit and fodder tree plantation, eco-tourism promotion and Payment of Ecosystem (PES) mechanism (MoU signed with hotel for water supply)
Padali (area: 46 ha, households:110 and handed over in 1996)	Bio-briquette and charcoal production, eco-tourism promotion and hiking route development inside the forest
Patle (area: 104.6 ha, households: 158 and handed over in 1994)	Nursery of NTFPs, fire line conservation, water resource conservation, bio-briquette production, eco-tourism promotion and adoption of PES mechanism
Shree Ganesh (area: 5.9 ha, households: 66 and handed over in 2005)	Plantation, forest fire control and regular silvicultural operation

As shown in table 2, there are three broad types of CFUG activities: forest management and utilisation; afforestation and conservation of water resources; and community development activities for supporting the livelihood of members of the user groups. All these activities are directly or indirectly supporting the community to reduce vulnerability to climate change and contribute to adaptation. First, forest management-related activities have been contributing to improve the ecosystem health, improve water resources and reduce soil erosion and landslides. For instance, the VDC secretary said,

The CF programme has decreased deforestation and improved forest condition over the past decade. This has decreased landslide and soil erosion in the village.

Second, improved forest has been contributing to meet the forest product need of the households who are organised into CFUGs and

are managing the forest. Respondents stated that they were getting more forest products and were spending less time in collecting forest products compared to 10 years ago.

Third, CFUGs have been conducting a number of community development activities (Table 2). The major development activities include construction of road, promotion of eco-tourism and income-generating activities for group members. There have been reports that CFUGs are contributing significantly to community development across the country by supporting health services, education, rural transportation, irrigation and drinking water (Pokharel *et al.* 2007). This contribution of CFUGs has been remarkable in terms of rural development even during the 10 year-long civil war, which paralysed the local government (*ibid*).

Fourth, in recent years, CFUGs are supporting the poor and marginalised households through

different activities related to income generation and entrepreneurship development. For example, some CFUGs in Lamatar have been promoting NTFP cultivation, production of charcoal and processing them to make bio-briquette. Three CFUGs, namely Dhikas Pakha, Padali and Patley, have been producing bio-briquettes from Banmara (*Lantana camera*), a weed species, since 2011. They produced more than 1,000 pieces of bio-briquette as a trial production in 2011. They received good response from the market and were encouraged to produce more in the subsequent years. They signed a memorandum of understanding with Tribhuvan University, which is helping the community as part of their action research. The support in briquette production was targeted for poor and women of the CFUGs.

Similarly, CFUGs have initiated activities to promote ecotourism in the area. Patle and Mathilo Patle CFUGs are constructing tracing trails, putting up sign posts for trekkers and promoting home-stay. With support from InWent Alumni², the CFUGs have formulated an eco-tourism development plan and formed a committee to lead its implementation for diversifying the income of CFUG members. In addition to the above, the CFUGs have been involved in climate change and disaster management activities in recent years. Most of the CFUGs have the provision of providing free of cost timber and other forest products for those households which are affected by disasters like fire and landslide. For example, Padali CFUG has provided 80 cft of timber to three fire-affected households. The CFUGs are also collaborating with research/development agencies to conduct basic awareness

development activities on climate change. For example, two CFUGs of the VDC have been supported by ForestAction Nepal to prepare a model operational plan incorporating the provisions related to climate change and generating income of the poor and marginalised members of the group.

These activities are directly or indirectly contributing to reducing vulnerability of the community to climate change. These activities are enhancing the ecosystem health and providing different products and services to the users. In many cases, the improved forests are contributing to reducing landslide and soil erosion. Income generation and enterprise-related activities contribute to diversify income of the poor and marginalised groups, which reduce the vulnerability of those members. Besides CFUGs, there are other diverse groups working in the field of resource management, community development and income generation of the villagers. The following section presents the activities of those diverse groups and discusses how these activities contribute to climate change adaptation.

Other community groups and their activities

There are a number of other community groups working for the management of natural resources and community development. As discussed earlier, we have considered the organizations related to resource management and community development which are linked with reducing vulnerability of the people to climate change. Table 3 provides an overview of the activities of such groups.

² InWent Alumni is a loose network of former InWent (German) Nepalese grantees.

Table 3: Overview of the activities of community groups

Description of the CBOs	Key activities
Water resource user committees (10). Formed to manage drinking water and irrigation schemes	<ul style="list-style-type: none"> • Operate the drinking water and irrigation system and collect revenue • Conduct basic maintenance of system • Maintain hygiene of water (drinking water committees) • Explore additional source of water in case of water shortage
Agriculture (23) and livestock groups (7). Group of farmers adopting commercial agriculture and livestock practice	<ul style="list-style-type: none"> • Introduce new technology and inputs like pesticides, fertilizer, medicine to livestock • Link the farmers with market • Introduce improved varieties like (tomato, seasonal and off-season vegetables) and livestock breeds • Recently, some groups are innovating climate-friendly techniques like drip irrigation; disease- and pest-resistant crop varieties
Dalit women groups (4). Groups are supported by Feminist Dalit Organization (FEDO)	<ul style="list-style-type: none"> • Savings and credit activities for Dalit women. • Advocate for Dalit women’s rights • Initiate income-generating enterprises (livestock, vegetable, etc)
Cooperatives (11). Cooperatives registered in Division Cooperative Office Lalitpur	<ul style="list-style-type: none"> • Savings and credit activities, which is acting as a rural bank for those without collateral • Provide soft loans for income-generating activities • Some have initiated to provide relief fund for disaster victims

Source: Field Survey, 2011

As shown in Table 3, different groups in Lamatar are involved in diverse natural resource management and community development activities, which are directly linked to their livelihood. As majority of the villagers depend on agriculture for their livelihood, the groups have been organized to introduce new technology in agriculture and livestock and to manage irrigation. For example, they are collaborating with support agencies to promote improved technologies like improved varieties of seasonal and off-season vegetables, pesticides, improvised livestock varieties, particularly cow and pigs. In this sense, agriculture and livestock groups are acting as a bridge between the agriculture service providers (both government and non-government) and farmers. Their roles have been more prominent as farmers are

gradually moving from subsistence to commercial farming. In recent years, they have also initiated climate-friendly techniques to tackle the problem on decrease in water availability. For example, community people have started drip irrigation in vegetable farms.

As discussed in section two, water is becoming scarce for both drinking and irrigation. This new challenge, which is often attributed to climate change, has added the responsibilities of water user committees. These committees focus their activities on regulating water distribution and revenue collection. In recent years, they are working to protect the existing water sources to ensure quality and quantity of water and are also exploring new sources. They have joined hands with organizations like District Soil Conservation Office (DSCO) and a Non

Governmental Organization (NGO) called Share and Care to conserve water sources and enhance ground water recharge. Initiatives have also been taken to improve access of marginalised communities to water sources, which has historically been a problem in the village. For example, a *Dalit* settlement in ward no. 5 had problem of drinking water scarcity in the past. They were relying on a traditional well, which was not sufficient for them. They demanded a tap from a drinking water scheme from the VDC and got it after years of struggle. However, the user committee blocked that water supply, arguing that the *Dalits* had not paid money. The *Dalit* community then collaborated with a local CBO, Sangam Vikas, for activism. The collective efforts worked and now they are constructing a new water supply system from the Chisapani community forest.

Other CBOs in Lamatar, such as cooperatives, are also orienting themselves towards responding to climate-related risks. For example, Jawafdehi Cooperative has made provision of *Rabat Kosh* (relief fund) and *Jageda kosh* (reserve fund) for helping its members in case of disasters, like fire and landslides.

Overall, the other group's activities are contributing in many ways to support the livelihood of the villagers. These activities will help decrease the vulnerability of the poor and marginalised communities to climate change impacts. The groups are also innovating different ways to deal with the problem they have been facing due to climate change. But the issue is how such diverse activities are integrated into a climate change adaptation plan at community and village levels. There has not been even a single case where external agencies supported in developing of an adaptation plan. Nevertheless, their activities are similar to those included in community adaptation plans prepared elsewhere in the country (Paudel et al.

2013). In the following sub-section, we discuss whether VDCs can coordinate the activities of the diverse community groups towards integrated adaptation plan at local level.

Village Development Committee: mandates and activities

The Local Self-Governance Act 1999 and regulation provide a framework for local development and specify the roles of local government, including the VDC. The VDCs are primary institution to conduct the development activities at the village level. Besides this, the legal framework has envisaged the VDC to coordinate local development planning and effective implementation of development activities. It has been given the role of coordination and monitoring of the activities of different line agencies, like agriculture, veterinary, water system, education, and health and the activities of the community groups (GoN 1999). However, the LSGA has not provided a legal authority and mechanisms for such coordination (CCD 2009).

Similarly, the local government, including the VDC, has been functioning without elected representatives over a decade. Since 2002 (when tenure of the elected local government came to an end), the local government has been functioning without elected representatives. There are different forms of informal mechanisms that include village council consisting of VDC secretary and representatives from the health post, agriculture service centre and veterinary service centre and later an all-party mechanism (APM)³.

Lamatar VDC receives about 3 million Nepalese Rupees every year from the central government and generates its own revenue, which it invests in local development. The VDC's funds are principally invested in local infrastructure development. In 2011, the Ministry of Federal Affairs and Local Development (MoFALD)

³ All-party mechanism (APM) was an interim mechanism set for decision making in local government since 2007 where major political parties represented in constitution assembly were involved.

brought out guidelines that made stipulates 35 percent of VDC budget to be invested in targeted programmes for *Dalit*, women, ethnic groups and environment-related activities. The remaining fund is allocated to development activities as decided by the VDC council. Road construction frequently receives priority of investment, but, in recent years, irrigation and drinking water are also gaining priority.

Such shift in priority is related to how decisions of budget allocation are made. Earlier, the decision of VDC budget allocation was made by the APM that favoured bigger infrastructure like road. After the APM was dissolved in 2012, MoFALD introduced the idea of ward citizen forum⁴ for identifying priority projects for specific wards, which are then consolidated in the VDC council. As stated by a local social leader,

The ward citizen forum has provided opportunities to citizens to set their development priorities and get VDC fund for implementation. After this mechanism was put in place, demand for VDC budget has shifted towards small projects for irrigation, drinking water and income-generating activities related to agriculture and livestock.

Despite the fact that VDCs have an important role to play in village-level development planning and coordination, they have been constrained due to various reasons. In the first place, there is lack of an elected body which has the key role to play in planning and oversight of development activities. Second, as discussed earlier, there is lack of clear legal mandate and clear guidelines for the VDC to coordinate development activities. Third, there are very limited human resources; Lamatar VDC, for example, is run by just two people, comprising a secretary and a technical assistant. This has limited the capacity of the VDC to perform their stipulated roles. This has huge implications in terms of whether VDC will be

able to coordinate the activities of community groups and incorporate them in village-level adaptation plan. Here comes the role of external agencies to strengthen the VDC capacity in this respect. The following section presents the activities of external agencies (both government and non-government) in the VDC and to understand whether they are supportive towards strengthening the VDC role in integrating development and climate change-related activities at the local level.

Role of external agencies: strengthening the role of local government?

There are more than a dozen external agencies (both government and non-government) working in Lamatar VDC in natural resources management and community development. The key government agencies include District Forest Office (through range post), District Agriculture Development Office (through service centre) and Livestock Development Office (through service centre). The District Forest Office supports the CFUGs in forest management and capacity development. Similarly, the agriculture and livestock offices support the farmers by transferring improved technology like improved seed of cereals and vegetables and animal breeds through farmers' groups. Besides the (DSCO) and the Department of Water Supply and Sewage (DWSS) are working in the VDC. DSCO has been working to construct conservation ponds and irrigation canals. These activities are intended to respond to the shortage of water for both drinking and irrigation. Similarly, it has also constructed small bio-engineering structures to stabilise small scale landslides and prevent soil erosion in ward no. 7 and 8. The DWSS has the specific role of constructing and repairing and maintaining drinking water schemes.

⁴ The Ward Citizens Forum is an interim arrangement of 'bottom-up' planning process of local government to fill the gap of lack of elected representatives. The forum facilitates to bring voice of village dwellers in the VDC Council.

There are about half a dozen NGOs, International Non Governmental Organizations (INGOs) and development projects supporting the community groups in resource management and community development. For example, Lutheran World Federation (LWF) and Share and Care Nepal are supporting water user groups for maintenance of drinking water schemes and raising awareness on sanitation. FEDO is working with Dalit women groups for empowering them and improving their access to resources like water. The Project for Agriculture Commercialisation and Trade (PACT) is supporting agriculture groups for commercial cultivation and marketing.

Some organisations like the International Centre for Integrated Mountain Development (ICIMOD) and ForestAction have also initiated some climate change-related activities in the VDC. ICIMOD has worked with CFUGs for piloting measurement of carbon stock in community forest. ForestAction has conducted a workshop on climate change and supported a CFUG for creating a community resource centre on forest and climate change.

The external agencies are supporting the community groups to strengthen their capacity, manage natural resources and to enhance access of marginalised groups to natural resources, and supporting the poor and marginalised households in income generation. However, there is not even a single organisation working to support the VDC and strengthen its capacity to coordinate the activities of diverse groups or line agencies and integrate them into the village-level planning process. This has raised the issue that the existing capacity of the VDC and the working approach of the external agencies are hindering the VDC from coordinating community-level activities. This has huge implications in the future in terms of integrating the community actions for local-level adaptation planning. In the following section, we will relate

these findings with the wider literature on the role of local institutions and local government in climate change adaptation planning and discuss the possibilities and challenges of integrating community actions into local adaptation planning.

COORDINATING COMMUNITY ACTIONS INTO LOCAL ADAPTATION PLANNING: ISSUES AND OPTIONS

Evidence from Lamatar VDC shows that diverse community institutions are conducting various activities related to natural resource management, community development and empowerment of marginalized sections of the community. In recent years, a few of them have initiated some activities related to climate change issues and developed strategies to deal with the problems they have been facing, i.e. shortage of water. Though not informed about the current climate change discourse, their activities are very similar to what community-based adaptation plans have included in other parts of Nepal (Paudel *et al.* 2013). Their activities relate to promoting ecosystem health, managing scarce resources like water, enhancing access of marginalised communities to those resources and supporting the communities for income diversification. Most of those activities will support, directly or indirectly, to reduce vulnerability of the villagers to climate threats and enhance their adaptive capacity.

Thus, the community groups in the VDC can offer an institutional platform for planning and implementation of adaptation activities at community level. The CFUGs have robust grass roots institutional base with established practice of participatory decision making and mobilisation of resources, which include natural resources that they are endowed with, financial resources generated by themselves and human resources of the group members (Pokharel *et al.* 2007; Kanel 2006; KC 2005; Pokharel and

Nurse 2004) They have also experience of acquiring external financial and technical support and in mobilising this resource in forest management and community development. Such an established institutional base and experience can be valuable for planning and implementation of adaptation activities. As reported by Paudel *et al.* (2013), CFUGs have already been used as an institutional base for preparing community adaptation plans in many districts. Thus, they can become the institutional locus for community-based adaptation planning in different parts of the country.

Activities and experience of other community groups will also be valuable in planning and implementation of adaptation activities in the future. But the question this paper strives to answer is how to coordinate such diverse activities and experience for effective local adaptation planning. The VDC has to coordinate adaptation planning and link such plans to the local government planning system. However, as discussed in section three and reported in literature (Paudel *et al.* 2013; UNCDF *et al.* 2010), the local governments are heavily constrained due to very limited human resources and their inadequate capacity to deal with emerging agenda of climate adaptation. They also lack elected representatives, which has undermined their accountability and legitimacy. Consequently, local governments have not been able to assume the central role of coordinating and monitoring development activities.

Literature around climate adaptation, especially Agrawal *et al.* (2009), emphasise drawing lessons from decentralised resource management being practised in many developing countries. Our finding shows that groups can offer not only experience and lessons but also an institutional base for adaptation planning and implementation. But it is important to unpack the local institution and distinguish the role of community institutions and local government,

which has often been confused in adaptation literature. Community institutions (groups) are the ones operating at grass roots level and involved in resource management and community development. They might be operating informally like many women groups and formally like CFUGs, whereas, the local government (VDC) is a formal unit with elected representative.

The local government has significant roles in effective development delivery because of elected representatives who are accountable to their constituencies (Rebot 2007). Agrawal and Perrin (2009) stresses the importance of accountability of the institutions to their constituency for effective delivery of their services. This raises the question whether the local government in Nepal can play the role of coordination of community-level activities related to climate change adaptation in the future. The lack of elected representatives, as discussed earlier, becomes the fundamental problem, especially given that when next election will be held is still uncertain.

Similarly, the issue of capacity also becomes equally important for the local government to take the lead role in adaptation planning. The local government lacks capacity in terms of understanding the science behind climate change and use it in adaptation planning. A review of the community adaptation plans in different parts of the country shows that the local government lacks capacity and resources to plan and implement adaptation activities (Paudel *et al.* 2013). The role of external development agencies is important here to develop the capacity of the VDC. But, evidence from the field suggests that activities of external agencies are not coordinated and not supportive. Rather, they are fragmented and limited to the specific interest of the institutions and not even a single organisation is working with the VDC.

On the other hand, Agrawal and Perrin (2009) argues that local institutions have given very

limited attention while developing NAPA and climate adaptation strategies in least developed countries. Nepal's climate adaptation-related policies (NAPA and Climate Change Policy 2011) have made provision that 80 percent of climate change adaptation resources will be allocated to local level. These documents have also projected community groups like CFUGs and water user groups as an institutional base for community-level adaptation planning. However, there are policy contradictions with respect to defining the role of community institutions and local government in adaptation planning. As argued by Paudel *et al.* (2013), the policies (NAPA, Climate Change Policy and LAPA Framework) often contradict and fail to provide a consistent and coherent framework. NAPA projects community groups as the key institutional base for implementation and remains silent about the role of local government, whereas the LAPA framework sees a central role for the local government.

CONCLUSION

We have analysed the role of local institutions in local-level adaptation planning and implementation in Nepal, taking the case of Lamatar VDC of Lalitpur. There are diverse community groups working in natural resource management and community development and their activities directly or indirectly contribute to adaptation. They can offer not only lessons but also an institutional base for adaptation planning at local level. Yet, there is a need for coordinating their activities at higher level (at local government level), which will contribute to developing local adaptation plans as stipulated by the climate change adaptation-related policies. The VDC could coordinate the activities of community groups and contribute to local adaptation planning, but it faces many challenges.

The CFUGs, which have robust institutional and resource base can become the institutional

locus for adaptation planning and implementation. Similarly, the rich experience and institutional base of other community organisations can be valuable for local adaptation. Significant part of their activities is directly or indirectly contributing to adaptation to the climate change either by reducing vulnerability of the community or by enhancing their adaptive capacity. Yet, there has been very limited attention to build on such vast experience and institutional base for effective local adaptation planning. It is evident from the research that external development agencies are far from harnessing this potential.

As argued in some literature on decentralisation and local governance, local government have a privileged position to play this role (Agrawal and Perrin 2009; UNCDF *et al.* 2010). For this, there is a need for a functional and competent local government. The democratic local government with elected representatives has the legitimacy for decision making and development planning (Ribot 2007; Agrawal and Perrin 2009). In addition, it is equally important for the local government to have the required capacity for understanding the issue and effectively planning for adaptation. Unfortunately, the local government in Nepal lacks both. The local government in Nepal, which has been functioning without elected representatives for a decade, lacks capacity in both concept of climate change and planning (Paudel *et al.* 2013). This has serious implications for planning and implementation of adaptation activities at the local level and action is called for to develop capacity of the local government and devise an interim strategy until an elected local government is in place.

Similarly, confusions over climate change-related policies in terms of defining the role of community groups and local government in adaptation remains. The government of Nepal should clarify such confusion by harmonising

the policy provisions. Similarly, community organisations should be taken as the local unit for planning and implementation of adaptation activities, whereas the local government should coordinate their activities and engage in planning and monitoring.

ACKNOWLEDGEMENT

We acknowledge the financial support of Asia Pacific Network for Global Change for conducting the study. We appreciate the contribution and intellectual input of Naya Sharma and support of Rahul Karki to bring this paper to this shape. We also thank reviewers of this paper for sharing their valuable comments.

REFERENCES

- Agrawal, A. and Perrin, N.** 2009. Climate Adaptation, Local Institutions and Rural Livelihoods. In: W.N. Adger, I. Lorenzoni and K. O'Brien (Eds.), *Adapting to Climate Change: Thresholds, Values, Governance*. Cambridge, UK: Cambridge University Press.
- Agrawal, A., Perrin, N., Chhatre, A., Benson, C. and Kononen, M.** 2009. Climate Policy Processes, Local Institutions, and Adaptation Actions: Mechanisms of Translation and Influence. Washington, DC: The World Bank. (<https://openknowledge.worldbank.org/handle/10986/11111> accessed on 4 May 2013)
- Amaru, S. and Chhetri, N.B.** 2013. Climate Adaptation: Institutional Response to Environmental Constraints, and the Need for Increased Flexibility, Participation and Integration of Approaches. *Applied Geography*, **39**: 128-139.
- CCD.** 2009. Local Self Governance. Nepal Participatory Constitution Building Booklet Series 4. Kathmandu: Centre for Constitutional Dialogue.
- GoN.** 1999. Local Self Governance Act. Kathmandu: Government of Nepal.
- GoN.** 2010. National Adaptation Programme of Action (NAPA) to Climate Change. Kathmandu: Government of Nepal.
- GoN.** 2011a. Climate Change Policy, 2011. Kathmandu: Government of Nepal.
- GoN.** 2011b. National Framework on Local Adaptation Plans for Action (LAPA). Kathmandu: Government of Nepal.
- Kanel, K.R.** 2006. *Current Status of Community Forestry in Nepal*. Thailand: Regional Community Forestry Training Center for Asia and the Pacific Bangkok
- KC, C.** 2005. Capital Formation in Community Forest User Group in Nepal: A Case Study of Two CFUGs of Makwanpur District. Master's Thesis. University of Natural Resources and Applied Life Sciences (BOKU), Vienna, Austria.
- Mendelsohn, Robert, Dinar, A. and Williams, L.** 2006. The Distributional Impact of Climate Change on Rich and Poor Countries. *Environment and Development Economics*, **11**: 159-178.
- Mirza, M.M. Q.** 2003. Climate Change and Extreme Weather Event: Can Developing Countries Adapt? *Climate Policy*, **3**(3): 233-248.
- Paudel, N.S., Khatri, D.B., Ojh, H., Karki, R. and Gurung, N.** 2013 Integrating Climate Change Adaptation with Local Development: Exploring Institutional Options. *Journal of Forest and Livelihood*, **11**(1).
- Piya, L., Maharjan, K. L. and Joshi, N. P.** 2012. Perceptions and Realities of Climate Change among the Chepang Communities in Rural Mid-Hills of Nepal. *Journal of Contemporary India Studies: Space and Society*, **2**: 35-50.
- Pokharel B. K. and Nurse M.** 2004. Forests and People's Livelihoods: Benefiting the Poor from Community Forestry. *Journal of Forests and Livelihoods*, **4** (1).
- Pokharel, B.K., Branney, P., Nurse, M. and Malla, Y.B.** 2007. Community Forestry: Conserving Forests, Sustaining Livelihoods and Strengthening Democracy. *Journal of Forest and Livelihood*, **6**(2): 8-19.
- Practical Action.** 2008. Promoting Adaptation to Climate Change in Nepal. Brief Paper. Kathmandu: Practical Action Nepal.
- Practical Action.** 2010. Understanding Disaster Management in Practice: With Reference to Nepal. Kathmandu: Practical Action Nepal.
- Ribot, J.C.** 2007. Representation, Citizenship and the Public Domain in Democratic Decentralization. *Development*, **50**(1): 43-49.



Rodima-Taylor, D., Olwig, M.F. and Chhetri, N. 2011.

Adaptation as Innovation, Innovation as Adaptation:
An Institutional Approach to Climate Change. *Applied
Geography*, 1-5.

UNCDF, UNDP and UNEP 2010. Local Governance
and Climate Change. United Nations Climate
Development Fund, United Nations Development
Program and United Nations Environment Program.

