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# An overview of the opportunities and challenges of promoting climate change adaptation at the local level: a case study from a community adaptation planning in Nepal

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**Abstract** As the practice of Community Based Adaptation (CBA) to climate change in countries like Nepal is growing, the literature has pointed out the need for more research in order to test the effectiveness of CBA in reaching the most vulnerable households and its wider applicability. This paper reviews a Community Adaptation Plan (CAP) piloted and implemented in Nepal. The study involved interviews and interaction with a wide range of relevant stakeholders, in order to map their perceptions on the effectiveness of CAP. The findings show that the CAP process and implementation provided for recognition of the role of local communities in climate change adaptation, and ensured their participation and leadership in the planning process. However, due to issues related to the local structure and governance of community-based organizations, the benefits of climate change adaptation support were enjoyed mostly by elites and powerful individuals. The paper suggests that more inclusive approaches are needed, so as to ensure the planning and governance of local institutions is more accountable and responsive to vulnerable households. This could be achieved by devolving decision-making power to the vulnerable households and ensuring inclusive provisions in membership, representation and resource allocation that encourage more equitable sharing of benefits.

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# 1 Introduction

The global interest in climate change adaptation has recently shifted its focus, paying increased attention to the need for practical approaches to adaptation (Regmi 2012; Ayers and Huq 2013). Given that climate change impacts, appropriate responses, and, to some extent, adaptive capacity, are location-specific, measures that can be implemented at the community level are critical to the process of adaptation (Adger 2003; Tompkins and Adger 2004). The scholarship of community based development has greatly influenced the genesis of community based adaptation (Dodman and Mitlin 2013; Hickey and Mohan 2004), as did research on participatory disaster risk management (Mercer et al. 2008; Van Aalst et al. 2008). The broad hypothesis is that, while the problem is global, the action has to be local (Rashid and Khan 2013, p. 244).

CBA is a community-based approach designed to help the poorest and most vulnerable to adapt to climate change (Huq and Reid 2007). Community-based adaptation is defined as a community-led process, based on communities' priorities, needs, knowledge and capacities and empowers people to plan for and cope with impacts of climate change (Reid et al. 2010). Community-based adaptation aspires to build the resilience of communities by enhancing their capacity to cope and better adapt to both variability and change of climate conditions (Ayers et al. 2010).

There are many advantages to promoting CBA projects in developing countries. CBA can be regarded as a governance tool (Knieling and Leal 2013) and is a promising way to manage the risks associated with climate change, as it can empower communities and offer synergies with broader poverty and sustainable development objectives (Heltberg et al. 2009). It can also serve the purpose of addressing vulnerability issues (Jacobs et al. 2014), especially when considering complex matters such as water use (Hurlbert 2009). Despite rapid progress in the development and sharing of knowledge about CBA, many challenges remain (Regmi 2012; Huq and Ayers 2008). Some scholars criticise the CBA approach and its associated theory (Dodman and Mitlin 2013; Cannon 2013; Reid et al. 2010). Lack of strategic has been a key weakness of CBA (Reid et al. 2010). Dodman and Mitlin (2013) and Cannon (2013) are critical about the approach of CBA. They argue that the first generation of CBA projects did not take a view of disaggregating communities into different groupings of poverty and vulnerability. Due to the lack of disaggregation of target groups, most of the interventions have been focused to development rather than addressing climate risk and vulnerability.

In addition, power relations, access to resources, favouritism, and geographical location have been identified as key equity dimensions of CBA (IIED and BCAS 2013). One of the most important factors shaping the adaptive capacity of individuals, households and communities is their access to and control over livelihood assets, access to basic services and social networks which provide more livelihoods options (Adger et al. 2004). Adger et al. (2006); Dodman and Mitlin (2013) and Regmi et al. (2014) argue that given the exclusion of certain groups from the planning and decision-making process, CBA strategies may end up benefiting the less vulnerable in the community and further risk the exploitation of poor and vulnerable households. The gender disparity is another major issue in many LDCs because of the cultural context where males dominate decision-making (Forsyth 2013; Ayers and Huq 2013; Regmi 2012).

According to Cannon (2013), 'unified community' is illusory, and communities should not be thought of as 'warm and cuddly'. Anything that is 'community-based' relies on forms of participation. Ayers (2011) also supports this view, arguing that clarity is needed in CBA in terms of the participatory processes and community engagement involved. Other authors

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(Ayers and Forsyth 2009; Dodman and Mitlin 2013) state that simply organising participatory exercises at the level of 'the community' does not necessarily empower vulnerable households and groups. Initiators of CBA projects must instead understand local power relations and plan participation and engagement accordingly.

However, some scholars of multi-level governance for climate change adaptation conclude that local action is rarely free to implement adaptation, and hence is dependent on other levels ranging from global, regional, national, to provincial and local (Baker et al. 2012; Corfee-Morlot et al. 2011; Keskitalo and Kulyasova 2009). According to the literature, this has quite a bearing on CBA's potential to be effective on the ground and mostly addressing the vulnerability of climate impacted communities. As noted by Dodman and Mitlin (2013), while there has been much work on the development of participatory tools and methods for enabling community-based development at the project level, relatively little attention has been paid to building up the links with political structures above the level of the community.

While, adaptation decisions are taken at household and institutional level, societal power relations (Agrawal 2010), governance and government policies guide the adaptation decisions (Adger 2003). Community-based adaptation has used local institutions to improve the adaptive capacity of vulnerable households and communities. Although community based institutions have been instrumental in mobilizing local communities (Ayers 2011; Ayers and Forsyth 2009), local institutions face the challenge of fair governance around the structure and composition of the institutions, decision making processes and outcomes, responsiveness to all voices of the society and accountability to the people (Adger and Vincent 2005).

CBAs are implemented into a social and cultural context that can both constrain and enable adaptation at the local level. Adaptive capacity is highly heterogeneous within a society or locality<sup>^</sup> (Adger et al. 2007, p. 729) and is often influenced by factors such as class, gender, social status and ethnicity. Nielsen and Reenberg (2010) concur that adaptation to climate change will never be a homogenous process agreed upon by all parties, but one influenced by factors such as the society's social, cultural and political circumstances.

The focus of this study was to develop deeper insights into how we can understand and improve institutional capacity to plan and deliver fair, inclusive and accountable CBA at the local level. This study is significant as it contributes to the theoretical underpinning of community-based adaptation by locating the factors influencing vulnerability and suggests improvements to CBA that would address these issues. The paper also provides specific input to the improvement of CBA in Nepal and in other Least Developed Countries (LDCs) by demonstrating how institutional structure and power relationships at the local level influences attempts to build adaptive capacity of vulnerable households and communities.

This paper argues that the success of building adaptive capacity of communities through CBA approaches depends on the inclusiveness and responsiveness of local institutional structures and their internal governance. It will outline those factors that contribute to an increase in vulnerability among the poor and vulnerable groups in communities. Lack of participation, lack of access to resources, benefit sharing mechanisms and power structures within the socio-institutional and cultural context are crucial issues. CBA initiatives do not have clear guidelines on how to evaluate these factors within communities. This paper has used the widely accepted measures in the development literature of the most poor and vulnerable, including people with low economic status, women, lower castes and other marginalised groups such as ethnic minorities, the disabled, the elderly, and children. However, this study has focussed on the poor, women and lower castes as particularly vulnerable categories in the Nepalese context.

This paper particularly assesses the effectiveness of CBA implementation for different well-being groups in rural communities of Nepal by evaluating:

- a) how participation is controlled and managed at the local level; and,
- b) how the differences in power structures at the local level influence benefit-sharing mechanisms that are promoted by CBA initiatives.

Consistent with the need to address these issues, the following four sections outline the research methodology, discuss the findings in relation to these major research questions, discuss the implications of the findings and provide conclusions on these questions.

## 2 Methodology and context

The presented research was conducted in Nepal, a country situated northern of India, in the Himalayas. Nepal is a country of great geographic, cultural, ethnic and religious diversity. Nepal is currently in stage of social and political transformation. However, as Hindus make up 80 % of the population, the Hindu caste system influences some aspects of rural livelihoods such as access to resources and benefit sharing (Jones and Boyd 2011). Across the diversity, some sections of communities in Nepal are still patriarchal. Within the rural Nepalese context, gender, and class, along with ethnicity, influences which individuals, households and communities aggregate for collective action, and in what ways.

The study assessed the effectiveness of CBA in the Pyuthan, Kapilvastu, Baglung and Dhankuta districts the Livelihood and Forestry Programme (LFP). The Livelihood and Forestry Programme was a bilateral project supported by United Kingdom's Department for International Development (DFID) and implemented in 15 districts of Nepal. The major aim of the LFP was to reduce the poverty and vulnerability of poor and marginalised households and communities dependent on climate sensitive sectors such as agriculture and forest resources. The climate change adaptation interventions were focussed on reducing vulnerability and increasing the adaptive capacity of vulnerable households and communities.

The paper assesses the pioneer CBA projects in Nepal that supported local communities to develop Community Adaptation Plans (CAPs) at the community level from 2009 to 2011. The Community Adaptation Plan (CAP) is both product (plan) as well as a process through which the vulnerable and poor households within communities get involved in assessing their vulnerability, identifying adaptation deficits and planning for responses and preparedness to deal with the adverse impacts of climate change (Regmi and Subedi 2011). Between 2009 and 2010, a total of 1500 CAPs were prepared involving community user groups and public land management groups in the 15 LFP districts. These CAPs were disseminated via a joint government and donor initiative called the Multi-stakeholder Forestry Programme (MSFP) initially in a total of 23 selected districts of Nepal, and preparation is underway to extend this to six other districts (Regmi et al. 2014).

This analysis of the effectiveness of the mainstreaming of CBA relies on the major adaptation interventions at the community level. As described earlier, this is case-sensitive and context-specific. Therefore, based on the review of the LFP project document and its intended objectives and activities, the analysis particularly examined whether or not CAPs contributed to increasing participation of poor and vulnerable

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households in adaptation planning and decision making, access to benefits and services for adapting to climate change and equitable benefit-sharing.

The districts selected for the current research to evaluate the CBA program represent all the four major geographical areas of the project i.e. east, west, mid-west and terai. These four districts were selected purposively because they were pioneers in implementing CBA and had more experience in terms of preparing and implementing adaptation plans compared to other LFP districts. The districts also represent different socio-economic, geographical and climate change contexts, thus offering a diverse perspective on the relevance and effectiveness of climate change adaptation planning in Nepal.

The research involved mixed methods for collecting data, including semi-structured interviews, focus group discussions and district-level workshops with multiple stakeholders. The use of mixed methods was preferred in order to triangulate the information collected and validate the findings. It also provided an opportunity to gain insight into different groups of stakeholders such as key informants, practitioners and policy makers, and obtain their specific views on the effectiveness of community adaptation planning and implementation. For example, interviews involved one-to-one discussions with the most vulnerable households. The focus group discussions included general discussion among community members on issues related to the implementation process.

Semi-structured interviews were carried out with selected households, practitioners, key informants and policy makers. Household interviews and discussions were only focused on the Bangesaal and Dhungegadi VDCs of the Pyuthan district. These communities were selected because of their experiences in the design and implementation of community adaptation plans. A total of 128 households in the two VDCs were randomly selected to map out their perception of the benefits of climate change adaptation planning and interventions. Stratified random sampling was used to represent different types of household based on their economic status and gender, in the areas of Dhungegadi and Bangesaal.

The focus group discussions involved 12 community-level discussions with more than 120 households in total. They were carried out to determine the perceptions of other households and stakeholders not captured via the interviews. Likewise, district-level consultations and workshops in the four districts were organized to gain the insight of district stakeholders on the effectiveness of CBA. More than 50 % of the practitioners involved in CAP design and implementation in each district were invited to participate in the district-level workshops.

The household survey data was the primary source of information derived in the study. The results from the survey were analysed using simple analysis such as table, graph and chart. The results of the household survey were further validated and supported by responses derived from semi-structured interviews and focus group discussions. The data derived from the focus group discussion and semi-structured interview was transcribed and entered in the N-Vivo software, which was then categorised according to the research questions.

## 2.1 Findings

The findings are divided into three major sections. Section one highlights the effectiveness of CBA implementation for different well-being groups in rural communities of Nepal by particularly evaluating participation at the local level. Section two explores the power structures at the local level and their impact on identification and targeting of poor and vulnerable households and benefit-sharing mechanisms.

## 2.2 Participation within community based adaptation

This section investigates how participatory CBA is and how participation is governed and managed at the local level, particularly in the four selected districts in Nepal. The major argument in this section is that representation and participation of poor and vulnerable households in adaptation planning is influenced by their socio-economic and gender status including their power and position in the society. The vulnerability of a household, in this paper, is determined by the extent of climate change exposure and sensitivity relative to their capacity to respond.

Review of the adaptation planning process shows that representatives from communities and households were involved in preparing the Community Adaptation Plan (CAP). Engagement of communities was evident in the CAP process of assessing climate change impacts, identifying adaptation activities and prioritizing urgent adaptation actions. Some of the households were also engaged in awareness raising and capacity building activities. Analysis indicated that the majority of the interviewed households were satisfied with the supported community engagement in the CAP interventions in their villages.

As mentioned in methodology section, community forest groups and public land management groups were used in implementing the adaptation plan. Using existing institutional mechanisms like community forestry groups poses both opportunities and constraints with regard to ensuring local participation in planning. In the districts surveyed, community forestry user groups and public land management groups were used as grassroots institutions for preparing and implementing CAP. These institutions are member based and involve households with an interest and stake in the resources.

However, the household survey carried out in this research demonstrates that not all households in a particular community are members of community forestry or public land management groups. There were also concerns related to the non-participation of some households. Out of the total population, only 70 % are affiliated with community groups and organizations. Although the community forestry database within the VDCs shows that the majority of households are affiliated with a group, 30 % of households were excluded from adaptation interventions in Bangesaal. Similarly, 29 % of households were excluded in the Dhungegadi VDC. Existing provisions within cooperatives and community groups such as agriculture and forestry tend to exclude the poor. For example, only landowners form agriculture groups and cooperatives in the Dhungegadi VDC.

Only representing a small proportion of community members in the adaptation planning was also problematic. The household survey shows that more than 90 % of households were not directly involved in adaptation planning. It highlights that, in the studied districts, only a limited number of representatives were involved in CAPs design and preparation. A total of only 35-40 selected individuals were involved, which was less than 5 % of the total number of households affiliated with the forestry group. The participants in the CAP preparation process in Dhungegadi VDC indicates that out of 35 individuals, 22 were male and 17 from well off families. Similarly, the focus group discussion revealed that the selection of the participants did not follow any specific criteria other than the interests of the NGO and project staff members.

As with many other development projects, participation in adaptation planning was dominated by powerful individuals, in this case the executive members of the community group. It was found that the executive members were more actively engaged in deciding what should be the priority adaptation measures in the village. Analysis of the characteristics of executive members in the 20 community forestry user groups in the Dhungegadi and Bangesaal VDCs of



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Pyuthan district show that more than 70 % were male, 80 % were rich and educated, and 60 % belonged to the higher castes (Brahmin and Chettri). The majority of the key informants in the interviews agreed that elite and male members occupied most executive positions.

The findings of this study indicate that female participation is lower than the national average. A review report of 30 years community forestry published in 2013 by the Government of Nepal shows that the executive committees of forest user groups have representation that is nearly 30 % female (MoFSC 2013). The discussion with communities during the focus groups revealed that in the rural areas the division of roles and responsibilities constrain women's participation. As women have more workload compared to men, they have hardly any spare time to share for meetings or social functions. Similarly, male domination in household decision making provides men more choices than women in this context.

The interview outcomes also indicate that among the different socio-economic categories of household, more than 84 % of the well off households were satisfied with their participation while more than 88 % of very poor and vulnerable households were dissatisfied with their participation in the CBA activities. Among households, their level of participation had implications for their level of awareness and capacity with respect to climate change issues. There was also a significant difference between the awareness of male and female household. The majority of individuals, and particularly male members who were exposed and oriented to the issue, were more aware and knowledgeable about climate change compared with female households and others that did not take part in any of the events. The level of satisfaction among different categories of respondents in Pyuthan district were as follows:

- a) Very satisfied: 37 % among the well off and 25 % among medium class
- b) Satisfied: 47 % and 20 % among medium class
- c) Medium: 16 % and 12 % among medium class
- d) Not satisfied: nil among the well off and medium class, but 38 % among the poor and 44 % among the very poor
- e) Very dissatisfied: nil among the well off and medium class, but 44 % among the poor and 44 % among the very poor

The lack of participation also had implications for women's role in CBA implementation. The analysis shows that the majority of the individuals, and particularly the male members, who were in the executive committee and involved in CAPs design and planning, were more positive about how CAPs is implemented. They were very clear about its overall impact on building the adaptive capacity of communities compared to female-headed households and others that did not take part in any of the events. The majority of the women respondents (more than 60 %) interviewed in both the VDCs had little understanding of what CAP is, how it is implemented and how they could benefit from it. This finding demonstrates that gender disparity has implications for the success of CBA (Table 1).

In summary, it was found that the effectiveness of CBA is dependent on the composition and role of local institutions. CBA approaches that rely on local community groups do not guarantee that the resources will be distributed to the most needy households and communities. The findings imply that a more inclusive and participatory processes and targeted interventions are needed to ensure poor and vulnerable households' participation in planning and decision-making is ensured.

Table 1 Respondent's perception on the clarity on CBA implementation activities

Response	Dhungegadi		Bangesaal	
	Male	Female	Male	Female
Very clear	5 (16 %)	2 (6 %)	4 (13 %)	0 (0 %)
Clear	16 (50 %)	4 (13 %)	18 (56 %)	5 (16 %)
Medium	6 (19 %)	7 (22 %)	5 (16 %)	7 (22 %)
Not Clear	5 (15 %)	11 (34 %)	5 (16 %)	9 (28 %)
Not clear at all	0 (0 %)	8 (25 %)	0 (0 %)	11 (34 %)

### 2.3 Benefit sharing mechanism at the local level

This section of the paper particularly investigates the local dynamics of making decision and control over decision-making processes. It particularly evaluates whether or not the households involved were satisfied with the targeting of the CAPs prepared in their respective villages and the distribution of financial and technological benefits.

Community adaptation planning by community groups is one effective means of identifying vulnerable communities and mobilising them for adaptation actions. The major objectives of the CAPs investigated here were to reduce the impacts of climate change and increase the adaptive capacity of vulnerable households and communities. It was found that the CAPs process, adopted in all the study villages, used participatory tools such as a wellbeing ranking, in order to identify the most vulnerable households and communities.

There were positive lessons in terms of the participatory approaches used by the CAPs process in the research villages. According to the interviews with the project staff and community members involved in CAPs process in Pyuthan and Nawalparasi districts, the Participatory Well Being Ranking was redesigned, during the CAPs piloting, to include climate change indicators. This was an attempt to include both climate risks and development indicators to identify the most vulnerable households at the community level. It was found that in Dhungegadi, all nine-community forestry user groups revisited their Participatory Well Being Ranking categorisation and included climate risk and vulnerability indicators.

However, the CBA interventions used an ad-hoc approach by not targeting interventions based on the vulnerability status of the household. Interventions were targeted to the general public that included both well off and poor households, despite their adaptation needs. The table shows that most of the activities are targeted towards the general public and interestingly some of the activities were only targeted to well off and medium wellbeing categories of users. For example the irrigation, training and improved cook stoves are targeted to well off and medium households (Table 2). Since the targeting was decided upon by the executive committee of community forest user groups, which are dominated by higher caste, male and well off households, it is clear that the targeting has been to their benefit.

The findings show that the benefits of climate change adaptation interventions have not reached the majority in these communities. The existing community-based institutional mechanisms, which are mostly dominated by elites, do not guarantee that poor and vulnerable households will benefit. Most of the interventions implemented in both VDCs, such as water resource management, infrastructure development, plantation and conservation activities, benefitted well off households regardless of their need. The majority of the participants in the focus group discussions revealed that only very few activities such as income generation

Table 2 The targeting of CBA to different categories of users

CBA activities	Targeting to different categories of users			
	Well off	Medium	Poor	Very poor
Water supply	X	x	x	x
Income generation	X	x	x	x
Fire equipment's	X	x	x	x
Health campaign	X	x	x	x
Forest conservation	X	x	x	x
Irrigation improvement	X	x		
Training and orientation	X	x		
Improve cook stoves	X	X		

activities, benefited the vulnerable households. According to respondents, most did not receive any monetary incentives or support during the implementation of adaptation interventions (see Fig. 1 below). The dissatisfaction level also indicates that there were households that were deprived of such benefits. There were also limitations to benefit sharing at the local level due to resource constraints.

The vulnerable people do not always conform to popular ideas of vulnerability, such as women or people of low caste, because development interventions tend to treat communities as homogenous. The findings show that the benefits were distributed unevenly and not specifically to poor and vulnerable households. The participants stated during discussions that most of the allocations made in the name of the poor and vulnerable were distributed to higher caste and well-off households. Out of the total groups' investment across both the study VDCs, less

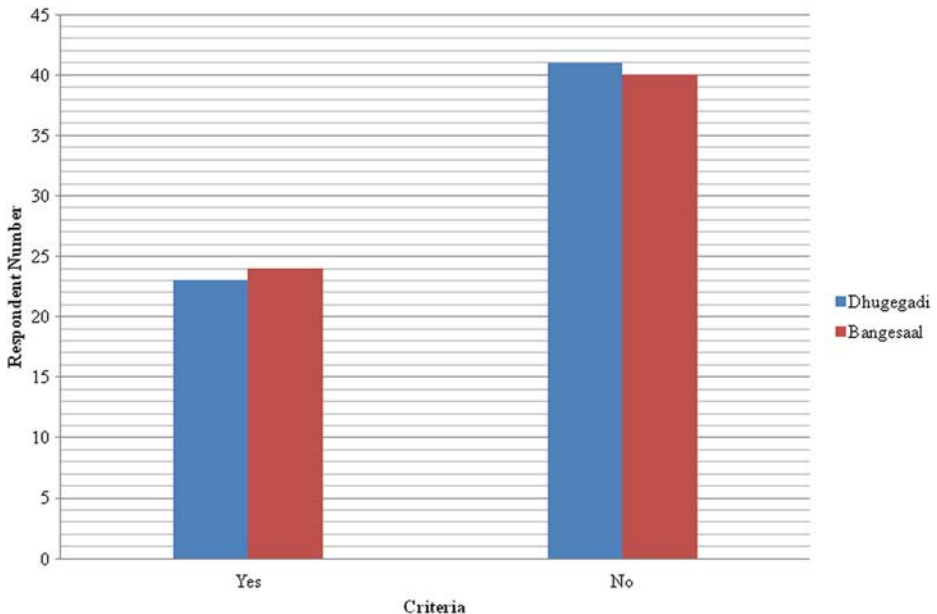


Fig. 1 Household perceptions of the benefits received from adaptation interventions (source: Author)

than 30 % of the resources were allocated in activities involving poor and vulnerable households, while more than 70 % was distributed for the benefit of the middle income and rich households (Fig. 2).

The disparity in benefit sharing arose because the decision making on resource allocation and prioritisation at the local level depended on the community forestry user group committees. The composition of the groups studied (more than 90 %) showed that elite, educated, male and higher caste people capture most of the local community based organisations. The majority of the participants in focus group discussions revealed that use of feudal legacies and societal positions are additional assets for well-off households to influence and utilize services and benefits. The committees were dominated by individuals belonging to middle income and rich households.

The findings show that socio-cultural context in Nepal shapes the success and failure of CBA. The poor and vulnerable households are dependent on the higher castes, elites and powerful individuals within the community groups for receiving benefits from the projects or programmes. This developed due to the practice of channelling resources through local institutions and elite groups, which are often male and elite dominated. Another reason is that the deep rooted culture at the local level constrained participation and access to benefits for the poor, women and other disadvantaged groups. This is a new form of dependency observed in the local context in Nepal.

### 3 Discussion

The evidence presented in this paper demonstrates that inclusive representation and participation of disadvantaged groups in the decision making of community-based organisations is more rhetoric than reality. Their inclusion is tokenistic, limited by practices that encourage elite influence and dominance in decision-making. This raises significant questions about how participatory the participatory process and localised bottom-up planning adopted in the CBA really is. These findings support arguments in the literature on the tyranny of participation

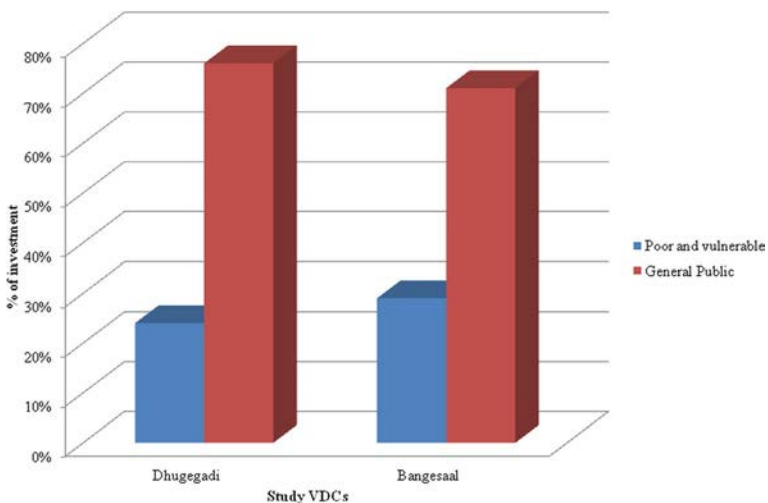


Fig. 2 Inequitable distribution of benefits among household groups (source: Author)

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debates. Simply doing participation does not automatically generate meaningful stakeholder inclusion in solving policy problems and greater attention is therefore needed to the politics of participatory spaces (Cooke and Kothari 2001; Cornwall 2000; Cleaver 2001; Cornwall and Gaventa 2000; Mansuri and Rao 2013).

The evaluation of CAPs in Nepal found that existing power relations and socio-cultural structures are a barrier for the poor, women and other vulnerable groups to benefit from CBA initiatives. Previous studies in the development sector in Nepal have indicated that the poorest and most marginalised members of communities receive the fewest benefits from economic gains, with some notable exceptions. For example, in some cases poor and marginalised groups have benefited from development interventions such as income generation activities (Bhattarai and Ojha 2001). But, a study on the distributional impact of community forestry concluded that poor users receive negative benefits, while middle-income groups achieve the highest net benefits, followed by the rich households (Bhattarai and Ojha 2001).

This study found that the exclusion of poor, women and disadvantaged groups in adaptation decision-making is influenced by the social and cultural context of Nepal Bennett et al (2006). Cultural barriers such as higher caste, male and elite domination in the committees posed a difficult challenge in implementation of CBA projects and programmes. Ostrom (2005) argued that the actions and behaviours of individual in community settings are shaped by deeply embedded cultural and societal norms and rules. The results have borne this out. Jones and Boyd (2011) describe the institutional, cognitive and normative barriers to climate change adaptation in a study in western Nepal. The institutional barriers presented include social and cultural rigidity which limits flexibility in actions.

These findings establish that community based approaches like CBA are not alone sufficient to address inequality and social exclusion at the community level. Indeed, the CBA process is complex and requires a detailed understanding of the local social economic and cultural principles behind it (Ensor and Berger 2009). This is especially relevant in Nepal, since the building of adaptive capacity of communities through CBA approaches requires a set of pre-conditions to be met, including understanding the socio-cultural context and addressing the existing exclusions, cultural hegemony and inequalities.

A number of other studies in Nepal have also found that in community forestry projects, elite domination is prevalent (Adhikari 2005; Dahal and Chapagain 2012; Kanel and Kandel 2004; Ojha et al. 2009). Mansuri and Rao (2004) also argue that although adopting a decentralised targeting mechanism in community-based development initiatives can improve outcomes, it does not automatically solve the problem due to deep-rooted inequality in local systems and culture. This raises the question of whether it is appropriate to use only existing institutions such as community-based groups as a vehicle to implement adaptation interventions, contrary to earlier findings (Agrawal 2010; Andersson and Agrawal 2011; Agrawal et al. 2012) that local institutions are significant in driving local adaptation and development agendas.

The findings suggest that in order to make local institutions and mechanisms more accountable to poor and vulnerable households and communities, it is necessary to have more targeted programmes and more inclusive institutional structures. Since the socio-cultural context is one of the major determinants of the success or failure of CBA projects, the cultural context needs to be acknowledged, considered and incorporated while designing projects and programmes. Options that give greater recognition to women and the poor by supporting inclusion and setting requirements for women and other vulnerable groups to be included in project design teams, or in community forestry groups, are sorely needed.

## 4 Conclusion and way forward

This paper assessed the effectiveness of CBA implementation for the well-being of different groups in rural communities of Nepal. The focus of this study was to develop deeper insights into how we can understand and improve institutional capacity to plan and deliver fair, inclusive and accountable CBA at the local level.

The findings show that although CAPs processes and interventions ensured bottom up planning and resource mobilisation at the community level, the power dynamics and the complex socio-political structures at the local level, failed to benefit poor and vulnerable households. The socio-cultural barriers, for example the imbalance of power structures within the society, gender discrimination and the difference in socio-economic status of households, all contributed to compromising the effectiveness of CBA interventions. In addition to physical risk, the socio-cultural determinants of vulnerability are crucial to understand CBA effectiveness.

The findings show that local action is alone not sufficient to address the complexities of climate change adaptation. In other words, in order to yield the expected benefits, adaptation has to be managed coherently across a range of scales using a multi-level governance approach. The findings from the current work stress that one possible avenue for addressing governance challenges at the local level is to involve a diverse range of stakeholders of various scales including local agencies, in order to catalyse socio-cultural and institutional change, leading to improvements in service delivery and inclusiveness.

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