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RESEARCH ARTICLE

Identifying operational mechanisms for mainstreaming community-based adaptation in Nepal

Bimal Raj Regmi* and Cassandra Star

Discipline of Politics and Public Policy, School of Social and Policy Studies, Faculty of Social and Behavioural Sciences, Flinders University, GPO Box 2100, Adelaide, SA 5001, Australia

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Mainstreaming is a feasible and viable option for scaling up initiatives on community-based adaptation (CBA) to climate change. However, there is little evidence on how to get CBA mainstreaming feasible and to work effectively. This paper aims to investigate two major questions: (1) what kind of policies favour mainstreaming CBA; and (2) what kinds of approaches or practices are required to operationalize CBA mainstreaming in the case of Nepal? The field research for this paper was conducted in the Dhading, Nawalparasi and Pyuthan districts of Nepal. The research used a mix of approaches and methods for data generation and analysis. The findings reveal that policies to operationalize CBA mainstreaming should build on past policy successes and include community-centric provisions that empower local institutions and encourage them to practice inclusive decision-making and benefit-sharing mechanisms. One lesson from this analysis of the practices of mainstreaming in Nepal is that an integrated co-management approach to mainstreaming is necessary to overcome the barriers related to knowledge, finance and technology. It is concluded that the operational mechanisms of mainstreaming CBA in development should have an inclusive local structure and be responsive to national policies and governance arrangements.

Keywords: climate change adaptation; community-based adaptation; mainstreaming; Nepal

1. Introduction and background

Community-based adaptation (CBA) to climate change, which has developed considerable currency with civil society organizations, is designed to help the poorest and most vulnerable adapt to climate change (Huq & Reid, 2007). It has often been referred to as a bottom-up adaptation approach, recognizing that the poorest and most vulnerable people should have direct access to the majority of finance for climate change adaptation, including technological support. CBA aims to build the resilience of communities by enhancing their capacity to cope and better adapt to both climate variability and changes (Ayers, Alam, & Huq, 2010). Despite rapid progress in the development and sharing of knowledge about CBA, challenges remain in expanding small, localized project responses to reach the wider communities. Reid, Huq, and Murray (2010) argue that whilst the number of CBA case studies is proliferating, it will be important to find practical ways to scale up the experiences and lessons to wider communities.

The literature has outlined that CBA is more likely to be effective if it is mainstreamed in national and local development (Ayers et al., 2010; Ayers & Huq, 2013). There is no universally accepted definition of mainstreaming; it has

been variously described. Agrawala (2005, p. 15) defines mainstreaming as ‘the integration of climate change vulnerabilities or adaptation into some aspect of related government policy such as water management, disaster preparedness and emergency planning or land-use planning’. Similarly, Huq et al. (2004, pp. 35–36) define it as the integration of information, policies and measures to address climate change in ongoing developing planning and decision-making. Based on these definitions, mainstreaming in this paper is regarded to entail both policy responses as well as the practice of integrating climate change issues into regular development policy and planning, at all levels.

Analyses suggest that incorporating adaptation into mainstream development is a ‘win-win’ approach and that capitalizing on synergies in this way will lead to more efficient resource mobilization (Ayers & Huq, 2013; Huq, Reid, & Murray, 2006) and more sustainable, effective and efficient use of resources (Ayers & Huq, 2009; Huq & Ayers, 2008a; Huq et al., 2004, pp. 35–36). Similarly, other literature has outlined additional potential contributions of mainstreaming climate change adaptation, which may include avoidance of policy conflicts, reduction of risks and vulnerability, and promotion of individual/

*Corresponding author. Email: regm0003@flinders.edu.au; bimalrocks@yahoo.com

organizational efficiency (Agrawala, 2004; Lebel et al., 2012; Persson, 2008; Srinivasan & Uchida, 2008). Specifically with regard to mainstreaming CBA, Ayers, Huq, Faisal, and Hussain (2013) argue that mainstreaming climate change adaptation will also contribute to the spirit of advancement in community-based initiatives as well as provide opportunities for effectively channelling adaptation financing and implementation. CBA is seen as an important strategy because it also helps to mainstream local-level adaptation innovations into development policy and practice (Reid & Schipper, 2014).

However, there is little evidence on how to ensure CBA mainstreaming works effectively. Debates about mainstreaming are dominated by issues related to policy and planning agendas, whilst in many countries the main challenge is to translate policy into action. This paper explores both these policy and implementation perspectives in relation to mainstreaming in Nepal. Such analysis is significant for Nepal and indeed other least developed countries (LDCs) as it will inform decision-making and planning regarding the best approaches for identifying operational mechanisms for mainstreaming CBA in development, and its wider scaling.

Nepal was selected as the case study in this paper because it is one of the most vulnerable LDCs due to its fragile landscape and poor socio-economic status (Ministry of Environment, 2011a). As with other LDCs, mainstreaming CBA to climate change is a priority for Nepal. The government of Nepal is making progress in devising policy to address climate change adaptation, mostly linking local, CBA practices with national level policies and plans. The experiences of Nepal are valuable for other LDCs seeking to mainstream CBA in national policies and programmes.

This study draws on an analysis of national level policy and empirical findings from the field. The policy analysis involves a review of major development and climate change policies of Nepal relevant to CBA mainstreaming. The empirical community research includes a field study focusing on the Dhading, Nawalparasi and Pyuthan districts of Nepal, selected because they were the pioneer districts involved in piloting the mainstreaming of climate change adaptation in Nepal. The experiences of these three districts are relevant to inform policy and practice on future up scaling of CBA practices in Nepal and other LDCs.

This paper argues that mainstreaming is a feasible and viable option for scaling up CBA initiatives so that they constitute more than just the sum of small, localized activities. However, mainstreaming CBA must be supported with integrated policies and efficient governance mechanisms that are accountable and responsive to vulnerable households and communities. Reporting on a research study, this paper investigates two major questions: (1) what kind of policies favour mainstreaming CBA; and (2) what

kinds of approaches or practices are required to operationalize CBA mainstreaming in the case of Nepal?

The following two sections outline the research methodology and discuss the findings in relation to these major research questions, the latter providing (a) information and evidence to justify the type of policy process and content required to mainstream CBA in development planning processes in Nepal; and (b) an analysis of the effectiveness of translating policies into practice, to examine how climate change adaptation is mainstreamed in this country.

2. Research methodology

This study involved primary research and was qualitative and exploratory in nature. Different methodological approaches were used to analyse policies and progress in their implementation. The methods for analysing policy built on existing literature relating to public policy analysis, namely the approaches proposed by Lasco et al. (2009) and Walt and Gilson (1994). Both approaches facilitate a systematic analysis of the many factors (content, process, context and actors) affecting climate change and development policy.

The advantage of using the model proposed by Walt and Gilson (1994) is that it analyses climate change and development policy from an actor-oriented perspective. The approach proposed by Lasco et al. (2009) used a mix of analyses in assessing how far climate change has been integrated in major development plans and programmes of the government: looking at policy and programme documents and interviewing people to map their perceptions. The advantage of both models is that they emphasize the views of those impacted by the policies.

The framework for mainstreaming adaptation into development planning proposed by Huq and Ayers (2008b) describes a linear sequence of building awareness and scientific capacity, targeting information, training key stakeholders, undertaking pilot studies to inform policy-makers, and integrating 'learning' into 'doing' (Lebel et al., 2012). This framework is relevant for examining mainstreaming initiatives at the national level but it cannot be applied to the local context. For the current study a slight modification was made to look at how mainstreaming has contributed to: enhancing collaboration amongst agencies; building stakeholder capacity; strengthening the availability of information and knowledge; and institutionalizing/scaling up CBA.

There are prerequisites for successful CBA mainstreaming. Involving a diversity of actors and promoting a multi-stakeholder approach can help to address the complexities and uncertainties associated with climate change. Agrawal (2008, pp. 3–5) argues that the multifaceted nature of climate change demands institutional innovation and learning to forge partnerships and collaboration amongst

diverse actors and agencies and to leverage the huge requirement for financial and technological resources. Similarly, Ridder and Team (2006) and Lobo (2011) argue that due to the complex nature of and uncertainty relating to climate change, stakeholders should learn together and forge strong alliances for knowledge and resource sharing.

This study examines progress in mainstreaming by looking at two specific case studies in Nepal. A case study approach was favoured because it supports in-depth analysis (Sjoberg, Williams, Vaughan, & Sjoberg, 1991). The two cases are the Poverty Environment Initiative (PEI) implemented by the Ministry of Local Development in Nepal with support from the United Nations Development Programme (UNDP); and the Local Adaptation Plan of Action (LAPA), which is seen as a means of integrating adaptation options into development policy and planning processes in Nepal and supporting local CBA practices. Local and CBA planning under the LAPA has been conducted in selected areas by the Livelihoods and Forestry Programme and national non-government organizations (NGOs). Whilst both case studies specifically tackle the mainstreaming of CBA, they differ notably in the fact that each is led by different agencies (government, donors or NGOs). Fieldwork for this research was conducted in the Jogimara, Sukrauli, Dhungegadi and Bangesal Village Development Committees (VDCs) in Nepal.

Jogimara VDC in Dhading district was selected as a case study because it is one of the first VDCs where a PEI has implemented mainstreaming of climate change in development planning. The second case study involved Sukrauli VDC of Nawalparasi and the Bangesaal and Dhungegadi VDCs of Pyuthan district were selected because they were the first three VDCs to carry out piloting of CBA mainstreaming through implementation of LAPA initiatives (see Figure 1 for the location of the study areas).

The data reported on in this paper were derived from four sources:

- (1) secondary sources (government policies, plans and project documentation);
- (2) opinions/perceptions of selected policy-makers and practitioners;
- (3) opinions/perceptions of locals (local communities and community groups, for example, community forestry user group/farmers group); and
- (4) field observations.

Between December 2011 and March 2012, 17 policy-makers were interviewed and one focus group discussion (FGD) was held. Eight FGDs were carried out involving more than 150 households and 7 community groups. Two FGDs were carried out in Jogimara, Sukrauli, Dhungegadi and Bangesaal VDCs. A total of 28 practitioners representing both government and non-government agencies were

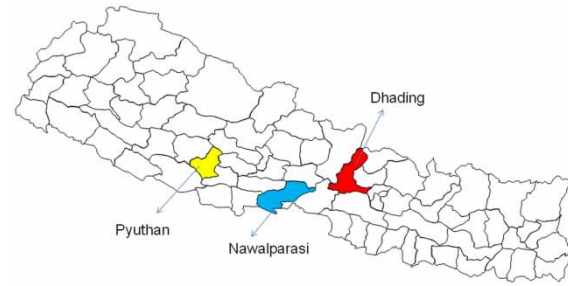


Figure 1. Study districts.

interviewed using a semi-structured interview method. In addition, 3 FGDs were conducted with 7–10 practitioners in each.

For the semi-structured interviews, an open-ended questionnaire was used, focusing on aspects of: the policy-making process; the effectiveness of mainstreaming initiatives; and overall benefits of climate change interventions to the households and communities. FGDs involved a general discussion with households and communities in the study locations, and were used to map the perceptions of different categories of household and community members (based on ethnicity and gender) on the significance of mainstreaming CBA in local development planning.

Purposive sampling was used to select participants. This is a form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher, based upon a variety of criteria (Oliver & Jupp, 2006). The criteria for participation used in this research included the possession of specialist knowledge and experience by policy-makers, practitioners and communities involved in climate change mainstreaming initiatives, and their willingness to participate in the research. The FGDs and interviews were focused on questions and issues relating to how climate change mainstreaming was supported in terms of policy and practice.

3. Major findings

3.1. Policy environment: what kinds of policies support CBA mainstreaming?

This research looked particularly at provisions for mainstreaming climate change adaptation within development and climate change policies, programmes and plans. The main aim was to identify the kind of policies, policy content and processes that support CBA mainstreaming. Past sectoral development policies (forest, agriculture and water resources), three-year interim development plans, climate change policy, and the National Adaptation Programme of Action (NAPA) and LAPA process and policies were analysed in terms of both content and process. These

data were further supported by the outcomes of interviews and consultations with policy-makers, practitioners and communities.

The findings of this analysis suggest that climate change is not specifically addressed within sectoral plans and past development policies. Major development plans and sectoral policies in the agriculture, forestry and health sectors lack provisioning for climate change. Climate change seems not to have been prioritized in these sectors prior to 2007. However, the recent Three-Year Interim Plan (2010–2013) is more specific and comprehensive in terms of providing space to address climate change adaptation (Government of Nepal, 2010b), stressing the need for harmonizing sectoral plans by incorporating climate change issues. The specific provisioning for climate change adaptation in this interim plan creates opportunities for mainstreaming CBA. In terms of policy design, however, the majority of the development policies – including the Three-Year Interim Plan – were designed centrally, with limited consultation at both national and local levels.

The Ministry of Environment's climate change policy (2011a) has provisions for dealing with climate change issues. Although it does not specifically refer to mainstreaming climate change adaptation in development, it mentions linking and implementing climate adaptation with socio-economic development and income-generating activities to the greatest extent possible (Ministry of Environment, 2011a, p. 6). Adaptation is not given that much emphasis in the climate policy, however, despite the need for Nepal to prioritize this. Most policy-makers and participants consulted for this study were critical of the climate change policy. They felt it was very generic, outdated and driven by external agendas rather than country needs, because risk reduction was prioritized more than resilience building (interviews with policy-makers, January–March 2012). Existing literature also criticizes this climate change policy because of its failure to include key stakeholders in the process and its focus on approaches related to adjusting risk and 'climate proofing' against climate change (Helvitas, 2011).

The NAPA content and process, by contrast, looks favourable for scaling up and mainstreaming CBA. The document focuses on the interface between climate change adaptation and development and includes a section entitled 'National development planning as a framework for climate adaptation' (Ministry of Environment, 2010, p. 3). This discusses Nepal's development planning process and its responses to climate change issues. It also stresses specific links between the six thematic areas identified under the NAPA framework and national development goals (Ministry of Environment, 2010, p. 4). Interviews with policy-makers and practitioners revealed that these provisions within the NAPA reflect the importance the programme places on establishing links between adaptation

and development. Interviews also showed that ownership of the NAPA process amongst those consulted was very high. Previous research studies analysing the NAPA process in Nepal also suggest that Nepal's NAPA is highly participatory and inclusive (Ayers, 2011; Ghimire, 2011; Roberts, 2011).

The LAPA framework also looks very promising for supporting CBA in Nepal. This framework discusses the links between climate change adaptation and development and the impact of climate change on socio-economic development. The framework also recognizes that climate change vulnerability is specific to context, varying from place to place. The LAPA framework adopts bottom-up approaches and emphasizes the need for: communities to understand changing and uncertain future climatic conditions and engage effectively in the process of developing adaptation priorities; and for local adaptation priorities to be mainstreamed within local development planning and processes (Ministry of Environment, 2011b, Paragraph 4, p. 5). According to most of the policy-makers interviewed, this appreciation of the links to local planning processes could be a strategic entry point for mainstreaming CBA in development. It was also found that the LAPA design process was very localized and ensured community participation.

Analysis of key policies in terms of their focus suggests that one can find entry points within existing policies and systems for mainstreaming climate change adaptation. Challenges remain, such as the devolution of power and authority to local institutions, but building on successful practices, such as mobilizing local institutions and decentralization of decision-making, can benefit both climate change adaptation and development. Policies in sectors such as forestry and agriculture neglect climate change but look very promising in terms of addressing climate change risk and vulnerability, because they refer to practices, technologies and institutional mechanisms that can support successful implementation of adaptation priorities. There are also strong policy provisions for empowering community networks. Community forestry user groups and their network, mandated by the Forest Act of 1993, are locally popular and capable of managing the forest to which they are entitled (Acharya, 1999). Such experiences provide a strong basis for promoting CBA.

Similarly, the participants of the FGDs were asked to rate the statements derived by them. The ranking methods and indicators were discussed and identified by the policy-makers involved in the FGD. The focus group participants in this study felt that the entry point for CBA was based on the fact that development policies and plans tend to decentralize decision-making to local institutions and communities (see Table 1).

Discussions with policy-makers and practitioners revealed, however, that decentralization attempts in many other sectors in Nepal have been less successful. Policy

Table 1. Synergies amongst development and climate change policies in Nepal.

Major policies/plan	Focus on development (poverty alleviation)	Focus on climate change adaptation	Provision for decentralization
Three-Year Interim Plan	++++	+++	++++
Sectoral policies: forestry and agriculture	+++	None	++++
Climate change policy	++	++++	+++
NAPA	++++	++++	+++
LAPA framework	+++	++++	++++

Source: FGD with policy-makers, February (2012).

Note: + is the lowest and +++++ is the highest ranked score provided by policy-makers.

implementation has failed to fully realize the ideals of self-governance, not only because of the vacuum of elected representatives in local government units, but also because of limits placed on the devolution of authority, funding and other resources (Gautam & Pokharel, 2011). Similarly, Dhungel (2011) found that decentralization policies have not changed the traditional way of operating at the local level. This kind of decentralization is called ‘de-concentration’, and

merely involves the shifting of workload from central government ministry headquarters to staff located in offices outside of the national capital. Likewise it does not allow the local units ample freedom to take initiatives and decisions without the consent of the central authority. (Rondinelli et al., 1989, p. 76)

Those aiming to mainstream CBA must learn lessons from such past failures and devise ways of addressing them. One of the lessons from this for mainstreaming CBA is that decentralization alone is not enough, as it cannot guarantee the inclusion and empowerment of households and communities in the process. This mirrors the rich experiences and learning from the field of common property resource management, which stresses both decentralization and devolution as keys to the success of community-based natural resource management (Murphree, 2000; Reid, 2001). Devolution is relevant because it is a process whereby full authority and power is delegated to the local level, to empower vulnerable households and local communities and institutions to take decisions, and adaptation of practices that favour the inclusion of households and communities in the process (Litvack, Ahmad, & Bird, 1998, pp. 4–6). This implies that both decentralization and devolution are important policy reforms needed to mainstream CBA in development processes.

The local-level administration in Nepal can potentially handle its new role of managing climate change at the local level and use it to improve CBA. However, it depends upon the supportive role of the central government to fully delegate resources and provide capacity support to the local government to function effectively. Various scholars (Capistrano & Colfer, 2005; Ribot, 2006; Tacconi, 2007)

also confirm that decentralization shows promise in terms of increasing adaptive capacity at the local level and enhancing the role of local government and institutions to collectively deal with local issues.

3.2. Operationalizing mainstreaming: can existing mainstreaming approaches and mechanisms support scaling up of CBA in Nepal?

This section of the analysis looks at how climate change adaptation is mainstreamed in Nepal. The main objective of this section is to draw lessons on whether or not the existing mainstreaming approaches and mechanisms support scaling up CBA in Nepal. It specifically examines the contributions that two case studies – the PEI and the LAPA – make to the steps identified by Huq and Ayers (2008b) as critical for mainstreaming: increasing collaboration between agencies; increasing awareness of and knowledge on climate change at the local level; improving the knowledge base for informed decision-making; and integrating climate change adaptation into development planning.

3.2.1. Case study one: PEI

3.2.1.1. *Moving beyond silos: integrating and deepening collaboration.* The PEI shows that adopting a top-down process cannot successfully enhance local-level collaboration and synergy amongst stakeholders. The PEI programme document indicates that ‘The key implementing partners for the PEI will be the National Planning Commission (NPC) and Ministry of Local Development’ (Government of Nepal, 2010a, p. 15). This has limited the role of other stakeholders. Two practitioners interviewed felt that the PEI contributed little to bringing local stakeholders together and increasing collaboration between different agencies. They felt that the PEI was centralized, limited to a few agencies and overlooked the role of other stakeholders (interview with practitioners, January 2013).

The Dhading district case study showed that the issue of lack of collaboration amongst stakeholders had

impacted on the implementation of policies and plans in benefit of local communities. For example, the PEI initiative intended to regulate the established – but unregulated – sand, gravel and stone industries along the riverbanks and reduce environmental destruction in the case study area, but failed to achieve progress because of a lack of support from local stakeholders. Communities consulted during the FGD in Jogimara VDC argued that they felt less motivated to participate in the activities that ignored their role. The majority of the practitioners interviewed also argued that in the absence of strong working collaborations, attempts to address complex issues like environmental and climate change are almost impossible.

The majority of participants in the two separate FGDs ($n = 30$), which involved representatives of local community groups in Jogimara VDC, argued that even with the implementation of climate change mainstreaming in local development planning, in practice, nothing has changed and the situation continues to deteriorate at the study site. The lack of collaboration amongst agencies had also impacted the response at the community level. For example, the local farmers' groups and cooperatives in Jogimara VDC said that they have not received any funding support from the government and other agencies in terms of implementing their community action plans.

3.2.1.2. Information and knowledge: the basis for informed decision-making. Information and knowledge on climate change in Nepal is very limited. Findings from interviews with policy-makers in this study show that the PEI carried out case studies on sand, gravel and stone and rural roads to investigate the impact of unplanned development interventions on the environment. These studies are also used to increase national and local awareness of the importance of mainstreaming poverty and environmental issues into development plans and programmes. The PEI also revised the Planning and Decision-Making Guidelines of the Local Bodies of Nepal, and the Minimum Condition and Performance Measures Guidelines (Poverty Environment Initiative, 2011).

The PEI did not, however, make any reference to the use of existing climate change information and databases when conducting various studies to inform policy-making and practice. The local government practitioners during the interview shared that, in the absence of information and knowledge on climate change, the integration of climate change adaptation practices in the annual development plan was difficult. They cited this as one of the reasons why mainstreaming climate change into local planning was challenging.

The lack of information and knowledge also had impacts at the community level whilst identifying local adaptation priorities. The majority of the communities

who participated in the FGDs and informal interactions ($n = 30$) revealed that they did not know what really caused the environment and climate change problems in the study area and how it could be addressed. They further argued that this is why the adaptation activities they included in their adaptation plan related more to their development experiences and everyday livelihood needs and may not specifically address climate-related risks and impacts. For example, the adaptation plan of one of the community groups in Jogimara VDC included activities such as control of open defecation, biodiversity conservation, conservation awareness and community-based seed bank management activities.

3.2.1.3. Increased awareness, capacity and skills: the basics for mainstreaming. PEI progress on awareness and capacity building at the local level is limited. The PEI annual progress report mentions that,

... orientation trainings and resource materials provided to community organizations in 2011 have empowered these groups to demand the integration of poverty-environment climate concerns in local planning and budgeting processes. (Poverty Environment Initiative, 2012, p. 3)

The report cites examples, such as

... in response to the demand of Ward Citizen Forum, one small community-based organization, whose members include women and representatives from marginalized communities, and community forest user groups, the Jogimara VDC, Dhading has for the first time approved climate change adaptation activities to be implemented in 2012. (p. 3)

Data from the field observation and FGDs with the communities and local officials in Jogimara VDC also showed that besides training, no further activities had been conducted. Communities in Jogimara VDC ($n = 30$) revealed that none of them were involved in orientation and capacity building activities conducted by the local government on climate change. The agriculture group who prepared their climate change adaptation activities received support from a NGO but had no support from the local government. The majority of the FGD participants argued that most of the awareness and capacity building activities in fact do not reach actual households, but often focus on a few handpicked individuals and organizations.

According to the majority of the communities and practitioners consulted, the capacity building approach of the PEI case had little impact because it consisted of limited activities that focused on only a few individuals within the government system. Some practitioners stated that, in the absence of the required skills and capacity, they were

reluctant to include climate change adaptation activities within their local development plan.

3.2.1.4. *Institutionalization and scaling up: sustaining mainstreaming.* Project documentation shows that the PEI seems to have strategic influence over government planning processes. The National Planning Commission has adopted a climate resilience framework and integrated addressing climate change into the Three-Year Interim Plan. Similarly, the Ministry of Local Development addressed environment and climate change in its monitoring framework and appraisal system. Recently, the Ministry of Finance developed a budgetary code for climate change expenditure. These policy changes resulted from PEI interventions at the national level. However, there were very few attempts by other ministries and stakeholders to mainstream climate change into their annual planning processes, because these agencies were not engaged actively.

One of the issues that emerged from local-level discussions relates to the approach to mainstreaming. Currently, PEI takes top-down planning as the entry point to mainstreaming climate change adaptation measures in development. Most practitioners and communities interviewed and consulted said that current government planning and service delivery structures are constrained in terms of effectively responding to local needs as well as increasing the direct access of communities and households to services and resources. Communities consulted during the FGD of Jogimara VDC said that the annual development planning cycle is rigid and accountability is upwards and towards government agencies only, as opposed to downwards towards vulnerable communities. They further argued that long-term climate change issues and associated uncertainties cannot be dealt with because the annual planning cycle is limited in terms of time and resources. They suggested reforming the planning process to suit the climate change context.

There was evidence at the local level where the current government structure and planning acted as a barrier to scale up community initiatives. For example, during informal interactions and the first FGD with communities in Jogimara VDC, it was revealed that the agriculture group of the VDC, which had prepared a local-level climate change adaptation plan, could not implement its adaptation priorities because of a lack of support from the local government. Due to the fixed planning cycle and rigid structure, the local VDC officials could not accommodate and integrate the communities' adaptation plans within the annual development planning process. According to the communities, the VDC even failed to provide technical and financial resources to implement the adaptation plan of the group. The findings imply that in the absence of local ownership and government support, mainstreaming CBA remains challenging.

3.2.2. *Case study two: LAPA*

3.2.2.1. *Moving beyond silos: integrating and deepening collaboration.* The LAPA case study shows that the process has helped to raise awareness amongst local institutions and brought grassroots institutions together. The major stakeholders involved in the LAPA included: government, communities, NGOs, political parties and other social organizations. Amongst the stakeholders, communities' representation was relatively high in the LAPA preparation. Most FGD participants in Sukrauli, Bangesaal and Dhungegadi VDCs ($n = 120$) at the local level felt they had contributed to the adaptation planning process. Similarly, more than 64% of practitioner respondents ($n = 18$) felt that the LAPA had been instrumental in bringing different agencies together.

Field observations showed that many community-based organizations and households were part of the LAPA design and piloting process. The majority of the practitioners confirmed that at least 20–25% of the total households were directly engaged in the adaptation design process. Communities were observed assessing climate change issues, identifying adaptation priorities and suggesting institutional and financial mechanisms for implementing adaptation interventions. Most of the participants of the FGD in all three VDCs argued that the level of collaboration between community groups and local government agencies and NGOs has increased due to implementation of LAPA.

The LAPA pilot site showed positive outcomes from increased collaboration amongst stakeholders. This research found specific examples of resource leveraging as an outcome of improved collaboration between agencies. In the case of Terai District, a basket fund was established by each Village Forest Coordination Committee (VFCC). According to the communities and practitioners consulted in Nawalparasi district, a total of 35,097,490 (equivalent to 449,967 USD) Nepali Rupees was channelled from the basket funds to the community level prior to January 2012 from this fund. The participants of FGDs in Dhungegadi VDC ($n = 40$) revealed that the local communities were active in demanding services and communicating their needs and priorities to the service providers. Table 2 shows that almost all the community groups in Dhungegadi VDCs were successful in drawing down financial resources from local government and other agencies to implement their adaptation priorities.

Whilst the LAPA case study shows that collaboration amongst agencies is very high at the community and VDC level, it becomes more complicated at the district level and above. Cooperative work is still lacking in government institutions, particularly at the district level. District-level stakeholders struggled to find the right strategies and action plans to deal with climate change. Discussions revealed that this was in part due to the lack of

Table 2. Examples of community groups in Dhungegadi VDC receiving financial support to implement some of their adaptation priorities.

Types of activity funded	Groups receiving the fund	Amount (NPR) total 584,990 = 7780 USD
Bacchidanda water tank construction and emergency fund	Kalidhunga ward number 9	73,894
Khaltak Pani water tank construction	Ward number 5	50,886
Revolving fund and emergency fund	Khahare community forest	67,000
Revolving fund for supporting adaptation	Kamaladi ward number 6	60,000
Revolving fund for supporting adaptation activities	Bachimpokhara	35,000
Provision of fire control material	Kamaladevi, ward number 6	7500
Water tank construction	Bagedi, ward no 3	70,000
Gatkholra water tank construction	Chaukedawla, ward number 7	70,000
Dharadikhola irrigation support	Chabise, ward number 4	70,000
Plastic pond for water collection	Rangbang, ward number 8	51,210
Stretcher and medicine for emergency	Jaspur, ward number 8	29,500
Emergency fund establishment	VDC level	25,000

Source: Author.

central government guidelines and also ambiguity regarding what decisions to make due to a lack of information and knowledge on climate change (District-level multi-stakeholder brainstorming workshop, 13th January 2012). In addition, the bottom-up approaches adopted by the LAPA were limited because they focused more on NGOs and communities, and less on government. This is a strong reminder of the importance of involving a diversity of actors to address climate change issues, ranging from local communities to policy-makers.

3.2.2.2. Information and knowledge: the basis for informed decision-making. The findings show that the initial 18 months of the LAPA piloting process focused on identifying opportunities and challenges for mainstreaming. Several background studies were carried out to increase understanding of the local governance system, institutional and financial mechanisms, successful practices and available tools and approaches. According to the majority of the community groups consulted ($n=6$), the information generated and the testing of participatory approaches and tools provided a strong basis for designing and piloting the LAPA framework. One government official also argued that the systematic studies helped convince government policy-makers, practitioners and communities about the importance of supporting locally driven climate change adaptation (interview with policy-maker).

In the case of the LAPA, the review of adaptation planning processes and the plan itself indicated that adaptation planning and prioritization of adaptation options were based on the available information and knowledge of communities and staff from NGOs, and government organizations. Communities and practitioners relied on their experience of climate variability and current risk factors to devise adaptation options (FGD with practitioners in Pyuthan district). Whilst experience of development interventions is very valuable in terms of identifying adaptation options, the scale and magnitude of impacts expected

demand scientific knowledge and innovative technologies and practices to deal with climate extremes. The discussions with practitioners and communities in the two districts suggest that this sharing of knowledge and learning is lacking in the LAPA process.

The lack of information and knowledge was having an impact on the identification and prioritization of adaptation activities at the community level. The participants in all four FGDs carried out in Dhungegadi and Bangesaal VDCs revealed that investment was made mostly in infrastructure-related activities. In Dhungegadi alone, 60.5% of the funding support was invested (out of 876,690 NPR = 11,690 USD) in construction and maintenance of drinking water sources, a pipeline and reserve tank. Whereas in Bangesaal VDC, more than 67% (1,360,956 NPR = 18,146 USD) was invested in drinking water facilities and maintenance of irrigation channels. Communities argued that in the absence of knowledge and information about the technology and practices suitable for dealing with climate change activities, they preferred general development priorities.

The study data showed that the investment made in general development activities had only limited household and geographical coverage. The communities also revealed that the general development activities may not directly benefit the poor and vulnerable households:

There is now dissatisfaction among us regarding the allocation of resources and selection of investment areas. The resource allocation was made considering the group request rather than assessing the actual risk and impact of climate change. The community forestry groups that were vocal and influential received the support. Within the group also, the poor households in fact had nothing in their plate. (FGD participant in Dhungegadi VDC)

Analysis of the LAPA case study reveals that not enough has been done in terms of climate change information and knowledge generation. The LAPA has made comparatively good progress in terms of developing participatory

methodologies and approaches to fill knowledge gaps. However, local decisions on climate change relied on existing information on climate variability. To address the scale and magnitude of future climate risks, additional effort will be required, involving stronger interaction between households, communities and the scientific/research community.

3.2.2.3. Increased awareness, capacity and skills: the basics for mainstreaming. The findings show that LAPA initiatives have mobilized large numbers of communities, government line agencies, NGOs, donors and community-based organizations. Field observations and discussions with communities and practitioners in all three VDCs revealed that the LAPA process has enriched the interest of communities and community-based institutions at the local level. From the field observations, it was noted that local and CBA planning has been instrumental in sensitizing communities and households on climate change issues. Secondary information derived from project documentation indicates that a total of 9 events were organized in Pyuthan district, which sensitized 610 women and 560 men. Of these, 595 people were from disadvantaged groups, 450 from ethnic minorities and 50 from religious minorities.

The evidence gathered from community FGDs shows that the local and CBA planning was instrumental in sensitizing communities and households on issues related to climate change. It was found that the level of interest and awareness of local stakeholders had increased due to capacity building activities, and a large number of community groups in the research areas used the information and knowledge gained from the training to deal with climate change issues more systematically. For example, 31 community groups in Bangesaal, Dhungegadi and Sukrauli VDCs had prepared local and community adaptation plans (CAP) based on the training guidance to address climate change issues. These community groups had also formed an institutional mechanism, for example a VFCC, to coordinate the adaptation action carried out by different community-based institutions (see Table 3).

Field observation and interaction with communities and practitioners in Pyuthan district revealed that the LAPA piloting had also attracted the interest of communities and community-based institutions at the local level on climate change adaptation. More than 90% of community

respondents in the FGD in Bangesaal VDC and 92% of respondents in Dhungegadi VDC were satisfied with their exposure on climate change issues and their involvement in climate change adaptation planning as a result of the awareness activities. They further stated that due to local-level awareness on climate change issues, it has been easier for their community groups to receive support from external agencies such as NGOs and government. Many respondents, however, raised the need for better skills transfer and sustained capacity building.

Despite some good progress on raising awareness at the local level by the LAPA pilot activities, capacity and knowledge transfer remained challenging. This research found that knowledge and skills transfer to service providers, particularly government agencies, was limited. For example, the NGOs who were involved in facilitating local-level adaptation planning do possess experience and knowledge of the subject matter, but did not transfer this to the government service providers (mostly at the district level). Most of the practitioners ($n = 24$) argued that there is a lack of technical and human resources at the district level to help communities to respond well to climate change.

Similarly, there were issues relating to the identification of technologies and practices that best suit community needs. Communities and practitioners consulted felt that identification of adaptation options was ad hoc and constrained by limited knowledge and information about future climate risks and impacts. The majority of the practitioners interviewed (90%) revealed that they were reluctant to offer support to communities because of their limited capacity and skills on climate change adaptation. The findings imply that limited skill and capacity at the local level has institutional and policy implications for the scaling up of CBA within government institutions.

3.2.2.4. Institutionalization and scaling up: sustaining mainstreaming. Findings from the interviews with communities in this study show that strong local institutional ownership was ensured during local mainstreaming activities. Community forestry user groups were mobilized as grass-roots community groups to coordinate adaptation initiatives at the household and community level. Similarly, at the VDC level, VFCCs were formed under the chairmanship of the VDC secretary, involving all forest user-group

Table 3. Number of community groups involved in adaptation activities.

Research site	Number of community groups involved in adaptation	Number of households benefited	Vulnerable households involved	Number of coordination mechanisms established
Bangesaal	11	1521	827	1
Dhungegadi	9	1177	579	1
Sukrauli	11	335	250	1

Source: Author.

Table 4. Scaling up the LAPA in Nepal.

Organization involved in scaling up LAPA	Number of LAPAs formed/targeted
Interim Forestry Programme/UK Department for International Development and Swiss Development Cooperation	298 LAPAs and 1468 CAP
World Wildlife Fund	3 LAPAs
Nepal Climate Change Support Programme	70 VDC-level LAPAs

Source: Author.

representatives, political parties, government service providers and local NGOs. Most of the communities in the FGD said that climate change adaptation is already part of their community-level plans and they are committed to implement the priorities identified in the plans.

The district-level FGD with practitioners and communities in Pyuthan district showed that the learning of Bangesaal and Dhungegadi had been scaled up in other areas of the district. A total of 58 CAP and 3 LAPAs had been prepared in the whole district up until 2012. Eleven VFCCs had been formed to support climate change adaptation work at the local level. In addition, the FGD with practitioners in Nawalparasi district indicated that learning of LAPA experiences in Sukrauli VDC has now been scaled up to other areas. A total of 88 VDC-level LAPAs and 165 community-level adaptation plans had been prepared and implemented in the district by 2012.

The available literature and field observations suggest that LAPA piloting has also been scaled out to other areas of Nepal and some bilateral donors are taking it forward. Table 4 demonstrates that LAPA piloting – particularly at the research sites – has geographically reached more than 40% of the country and 10% of VDCs.

There have been several challenges, however, related to scaling up CBA through the LAPAs. Due to resource constraints, most plans prepared at the community level have not been implemented. Communities also raised issues about the lack of funding and its impact on the implementation of priorities identified in their adaptation plans. According to the participants of FGD in Sukrauli VDC, due to financial constraints, 90% of their identified adaptation priorities have not been implemented so far.

The financial analysis of two VDC-level LAPAs in Bangesaal and Dhungegadi (Pyuthan District) shows that adaptation funding requirements are great but the current support is minimal. The Dhungegadi and Bangesaal LAPAs project requirements are US\$1.5 and US\$2.4 million, respectively, for the next 5 years to implement only the most urgent and immediate adaptation priorities. The funding available for implementing the LAPA until 2012, however, was only US\$6772 for Dhungegadi and US\$5591 for Bangesaal. Donors and government seem to

focus on preparing plans and moving into new areas without ensuring sustainability of the initiatives already started. This presents the challenge of how to ensure mainstreaming is sustainable and supports the needs of vulnerable communities and households.

The findings show that whilst there have been some initial efforts to mainstream climate change adaptation into development in Nepal, progress is limited.

Conclusion

This study looked into the policy environment and practices of mainstreaming in Nepal in order to identify operational mechanisms for scaling up CBA to Climate Change. The evidence shows that although Nepal's major sectoral policies lack a clear focus on CBA, the decentralization of power and authority to local institutions has progressed significantly over the last few years with regard to the sectoral policies. The success stories of decentralization and community development provide a favourable policy environment for mainstreaming CBA in development. However, it was also found that most of the policies were not being translated into action and were not in favour of the poor and vulnerable households.

The findings also reveal that there were both opportunities for and constraints to mainstreaming CBA in development in Nepal. The two mainstreaming initiatives analysed for this research demonstrate differences in mainstreaming progress due to the approach and strategy applied by each. The PEI has progressed more with respect to policy influence and less in terms of putting mainstreaming into action. Influencing policy and changing existing environmental regulation has occurred at the central level but policies have not been translated into action. In contrast, the LAPA mainstreaming initiative was successful in mobilizing local community groups and increasing their awareness. However, mainstreaming CBA in development at the operational level was constrained by: limited scientific information on climate change; limited knowledge on technology and practices of adaptation; limited awareness amongst practitioners and communities; a rigid planning structure; and limited financial resources.

The evidence suggests that there is a need for both integrated and inclusive policies in order to ensure wider participation in policy-making as well as efficient institutional, financial and knowledge mechanisms to effectively mainstream CBA in development. The most suitable operational mechanism specifically for Nepal, as argued in this research, is to have: (a) an overarching, integrated and locally accountable climate change and development policy that can achieve both development and climate change goals; (b) integrated and multi-stakeholder owned governance and institutional and financial mechanisms at

the national and district levels; and (c) locally inclusive and responsive institutional and delivery structures that address the equity issues and varied adaptation demands of households and communities.

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