

Barriers in Local Climate Change Adaptation Planning in Nepal

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Abstract

The impacts of climate change are vivid in under-developed, landlocked, and mountainous country like Nepal. Adaptation to climate change is emerging as an important developmental challenge in Nepal. This paper examines the barriers in local climate change adaptation planning at a Local level i.e. Community, Village Development Committees (VDC) in Nepal. The methodology consists of participatory qualitative tools such as focus group discussion, key informant interviews, stakeholder consultation, and direct observation. Primary and secondary data were analyzed by pattern coding to create typologies and non-parametric tests (the sign test was used for statistical analysis). Analysis conclude that, improper institutional arrangement, insufficient of public awareness and participation, inadequate consultation with community and local government, absence of the elected representative at village development committees, unclear role of community groups are few barrier that exists in efficient implementation of local adaptation plan at local level in Nepal. The local government should take their response along leadership in adaptation planning and implementing climate change adaptation plan. Furthermore, the clear and coherent operational guidelines should be prepared for initiating the collaboration and partnership amongst different governmental and non-governmental stakeholders.

Keywords: Local Adaptation Plan for Action Framework, Barriers, Climate Change Adaptation, Village Development Committees.

1. Introduction

Nepal is one of the climatically vulnerable countries in the world due to its fragile, climate sensitive ecosystem and socioeconomic circumstances (Tiwari *et al.* 2014). The impacts of climate change are vivid in under-developed, landlocked, and mountainous country like Nepal and is susceptible to floods, landslides, glacial lake outburst floods and earthquakes (Petley *et al.* 2007; MoHA 2015). It has been an urgent necessity to address the issue of climate change by formulating a policy and implementing relevant program to minimize the existing effects (GoN 2011). In order to assess and prioritize climate change vulnerability and identify adaptation measures National Adaptation Program of Action (NAPA) was endorsed in September 2010 (MoE 2010). Based on NAPA inception workshop held in May 2009 and provision of climate change policy of Government of Nepal (GoN), Local Adaptation Plan for Action (LAPA) framework was devised and approved by the Ministry of Environment in 2011 for the effective implementation of the urgent adaptation needs (GoN 2011; MoE, 2010). Nepal's Initial National Communication to the UNFCCC (2004) and National Capacity Self-Assessment (2008) pointed out some problems in relation to adaptation activities including inadequate financial, technological and human resources.

LAPA aims at identifying the most climate vulnerable areas at local units e.g. VDCs/wards/communities and their adaptation needs and options. LAPA also supports preparing the plan and integrating them into local development planning process in accordance with fourteen steps planning process of government of Nepal. The LAPA ensures that the process of mainstreaming climate change adaptation from local to national planning is bottom-up, inclusive, responsive, and flexible approach (MoE, 2011). The Village Development Committee (VDC) and the Municipality are the most appropriate operational unit for integrating climate change adaptation into local level development planning processes and contribute to the national level as well (Rai *et al.* 2015).

2. Barriers in local adaptation planning

The NAPA urged the preparation of LAPA through country driven operational process for the effective implementation of the urgent and immediate adaptation (MoE 2010 & Helvetas Nepal 2011). The LAPA framework was endorsed by the government to implement NAPA and its climate change policy in 2011 (MoE, 2010 & 2011). Nepal is now ready to implement these local adaptation plans in some communities, and thus facilitating communities to better adapt to climate variability/change and safeguard its development. Although the LAPA framework and climate change related policies are promising, it is very challenging to effectively initiate, integrate and implement those policies at a community level in Nepal (Tiwari *et al.* 2014). Weak government institutional arrangement, lack of infrastructure, limited financial and human resources, and lack of

public awareness on climate related disasters and climate change issues are the major barriers for implementing adaptation activities and thus increasing the resilience of the vulnerable communities (Tiwari *et al.* 2014). LAPA framework has put absolute focus on local governments and community in adaptation planning and implementation of the plan but doesn't explicitly mention the clear role and responsibility of the community and vulnerable household for the implementation (MoE 2011 & Paudel *et al.* 2013). The ministry (Ministry of Federal Affairs and Local Development in Nepal) responsible for local government do not perceive climate change issues as their mandate (Paudel *et al.* 2013). Nepal's climate change policy, program and plan are still in the beginning stages and need to be developed further with strong institutional commitment to implement these policies (Helvetas Nepal 2011). There is huge variation even within the leaders of a particular political party (Paudel, 2010) including other stakeholders regarding the issue of climate change and adaptation. LAPA framework provides process for preparing separate climate change adaptation plan though it emphasizes on integrating climate adaptation into development planning process of Nepal (MoE 2011& Paudel *et al.* 2013).

3. Research methodology

3.1 Description of the study area

The study was undertaken at Ayodhyapuri VDC of Chitwan and Taple and Simjung VDCs of Gorkha districts of Nepal. Those VDCs were chosen for the study because community adaptation plan of action (CAPA) and local adaptation plan of action (LAPA) were already prepared and implemented in those VDCs. In addition, Ayodhyapuri VDC of Chitwan district is very vulnerable from flood and wildlife invasion since this VDC is in the vicinity of Rapti River and Chitwan National park. Likewise, Simjung VDC of Gorkha district is a rural VDC where LAPA was prepared and implemented but still this VDC was affected by landslide. Additional reasons for choosing those VDCs for our study are i) available climate change adaptation plan and Local disaster risk management plan, ii) existing vulnerabilities such as floods and landslide, iii) ecological variability i.e. Terai and hilly region, and iv) recommendation from relevant expert.

3.2 Research methods

Twenty seven respondents were interviewed as a part of our data collection process. The interviewee were affiliated to institutions such as Buffer zone/community forest users groups (BZ/CFUGs), Community Based Disaster Risk Management Committee (CBDRMC), Community learning and action center members (CLAC), Individuals, Local disaster management committee (LDMC), Village/district development committee (VDC/DDC), International/Non-governmental organizations (I/NGOs), Political Parties and Ward citizen forum (WCF).

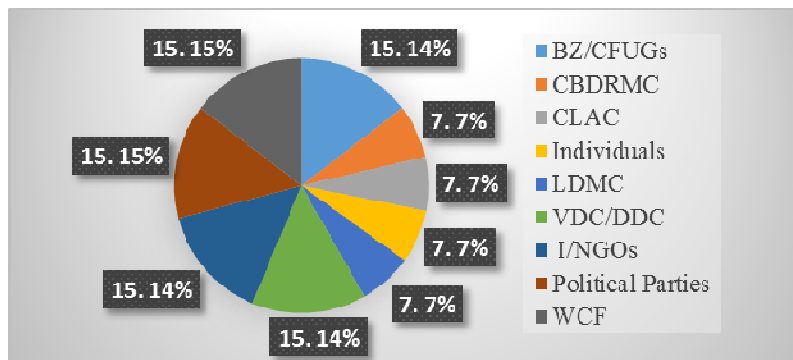


Figure 1. Percentage of respondent by different group's affiliation

Four focus group discussions (FGD) were held in Gorkha and Chitwan districts and expert survey was conducted via email. Systematic recording of the community perception and pattern coding were used to analyze the dataset. Typological categories derived after performing pattern coding on the collected data were used for making inferential coding as per the research questions and were analyzed using MS Excel. The responded information was categorized, summed and grouped according to the total number of responses mentioned by each affiliated group (Miles & Huberman 1994). Recorded qualitative data was analyzed and interpreted using frequency table, bar graph, pie chart etc. Vanesa Valeria D'elia (2005) used non-pragmatic test: the sign test and the Wilcoxon signed rank test to examine the impact of environmental news. Likewise, sign test was incorporated in our research for measuring the perception of respondent on barriers in local climate change adaptation planning.

4. Results and discussion

4.1 Understanding on climate change adaptation

Most of the respondents know about the climate change adaptation (CCA). However, people have different

perception of understanding. Majority of the respondent (59.3%) state that adaptation to climate change (CC) and Application of adaptation activities is CCA (figure 2). Likewise, their understanding of climate change adaptation also refers to extreme climatic condition like more rainfall in less time, no rainfall for a long time, existence of drought, application of adaptation measures and changing community habit as per the changing situation.

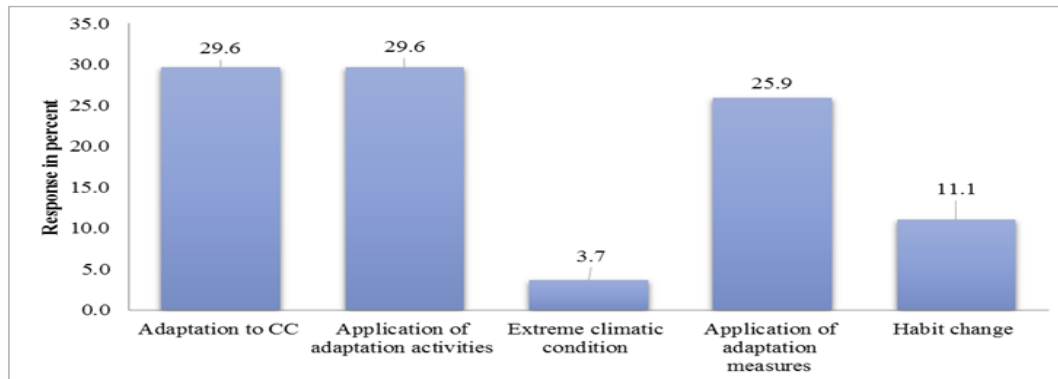


Figure 2. Understanding on climate change adaptation

It is evident from the household survey that majority of the respondent (80.96%) are aware about CCA issues to a certain extent. Television, radios, training, workshop and internet were identified as the major source of information about climate change adaptation. In recent time due to the high presence of the CCA project and program in climate change and adaptation sector in Chitwan and Gorkha, people are more aware about climate change and disaster. The study result suggests that communication media has an important role in educating individuals about CCA. Respondents also mentioned that their communities and households are being more vulnerable due to the poor management and use of new technologies however, installation of early warning system has played a vital role for climate change adaptation and disaster risk management.

4.2 Knowledge on climate change adaptation policy and practices

Analysis of the climate change and adaptation related policies of Nepal, FGD and key informant interviewee (KII) showed that majority of the respondent (31.0%) have knowledge on Local adaptation plan for Action (LAPA), 24.1 percent have knowledge on climate change policy (CCP), 20.7 percent have knowledge on community adaptation plan of action (CAPA), and 17.2 percent have knowledge on National adaptation program of action (NAPA) as presented in figure 3. Some of the respondent (6.9%) even they don't have knowledge on local level climate change adaptation planning guideline/practices but still they are involved in planning process at VDC, municipality and community.

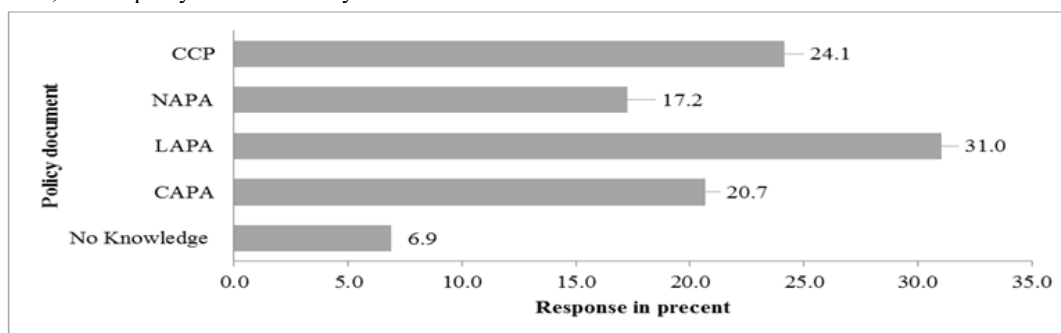


Figure 3. Knowledge on climate change adaptation policy and practices.

(Note: CCP= Climate Change Policy, NAPA= National Adaptation Program of Action, LAPA= Local adaptation plan for Action, CAPA=Community Adaptation Plan of Action)

The ministry responsible for local government (Ministry of Federal Affairs and Local Development in Nepal) do not perceive climate change issues as their mandate. LAPA have identified that VDC/Municipalities are the main institutions at the grass root level to plan and implement the climate change adaptation practices. The policies are recently endorsed from the government and there is no any institutional arrangement at the local level to implement the program. In present context of Nepal, absence of locally elected body at the local level has hindered the implementation and ownership of these policies at the community level. Nepal's climate change policy, program and plans are still in a budding phase and needs to be developed further with strong institutional

commitment to implement these policies in effective and efficient manner (Helvetas Nepal 2011).

4.3 Barriers in LAPA framework and planning

The LAPA framework is now endorsed by the government of Nepal to be operationalized as national adaptation program of action framework. The respondents were consulted for identifying the barriers during the climate change adaptation planning. Consultations were focused on identifying barriers type by framework, planning and its implementation process. Systematic recording of the community perception were measured using sign test (significant at 95%, Z calculated is 1.73 being greater than Z tabulated that is 1.645). The results of the sign test reveal that there are barriers in local climate change adaptation planning. Improper government institutional arrangement at local level; lack of infrastructure; limited financial and human resources; insufficient of public awareness and mainstreaming adaption in sectoral agencies; not valuating indigenous knowledge and technology etc. on climate related disasters and climate change issues are the major barriers for implementation (Tiwari *et al.* 2014).

The respondents have expressed concerns that framework was prepared by the government of Nepal without enough consultation with the community and local governmental authorities. While discussing concepts, tools, methods and approaches with the community members, LAPA framework have only focused on increasing resilience to climate change induced disaster and has completely undermined human induced disasters. However, communities have included such human induced disaster in their adaptation plan. The framework also does not address any issues regarding climate change mitigation, differentials impact induce by climate change. According to the community members, the framework has included some sophisticated tools which are difficult to understand for the community people. The methods for adaptation planning were totally dependent on community perception rather than some scientific evidence. Because of the elite influence for the VDC/Community selection including the adaptation planning as observed by Rai *et al.* (2015), the process of developing LAPA has become complicated. Likewise this method doesn't provide the framework for integrating the plan with government planning process at VDCs and Municipality level. The findings show similarity with previous study (Paudel *et al.* 2013) that LAPA emphasizes integrating climate adaptation into development planning. It also provides a framework and process for preparing a separate plan for climate change adaptation without integrating it into local development plans. The framework has broader sectoral planning approaches but the management of budget and institution at local level is inefficient. The study by Tiwari *et al.* (2014) concluded that the quality of governance, at all levels, is likely to be the biggest challenge for effective initiation, integration and implementation of climate activities including the LAPA.

Amongst the total respondent, 92.6 percent of the respondent are aware of the fact that LAPAs are implemented by VCD committee, CCA and disaster risk reduction (DRR) committee, adaptation committee, sub-committees of BZ/CFUGs whereas 7.4 of the respondent are unaware of the personnel responsible for its implementation. Out of 92.6 percent, 74.1 percent of the respondent stated that the VDC committee coordinated by VDC secretary is responsible for the implementation of the local and community level climate change adaptation plan implementation. 11.1 percent of the respondents expressed that the LAPA is implemented by integrated committee which include village level local adaptation and disaster management co-ordination committee. Likewise, 3.7 percent respondents stated those adaptation plans are being implemented by sub-committees of buffer-zone community forest user groups. Our findings suggest that the committees coordinated by the VDCs seem more successful for the adaptation planning and its implementation. A study conducted by (Khatri *et al.* 2013) also conclude that VDCs are the only governmental unit that is closest to the people which 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. The prepared adaptation plans are at high risk of being limited just in the papers. This is not only due to the lack of financial resources and ownership of the documents, but also due to the lack of clear guidelines and initiations for integrating LAPA activities with that of the regular development activities (Rai *et al.* 2015). Donor agencies are regularly providing technical and financial support for implementation of climate change adaptation plan. Research conducted by Paudel *et al.* (2013) conclude that non-state development agencies are effective at implementing the adaptation plan since such agencies have little political ownership and follow an accountable mechanism to integrate adaptation with local development. Local governments either ignore or at most are marginally involved in the process of local-level adaptation planning. In central level the Local disaster risk management plan (LDRMP) is the mandate of Ministry of federal affairs and Local Development whereas ministry of science and technology takes lead in LAPA. At the community level, LDRMP is the mandate of VDCs whereas LAPA gets low priority. Devolution and decentralization appears to be one of the major elements which will have a major implication to climate adaptation program (Paudel 2010). More than 50% percent of the respondent stated that accountability and legitimacy for adaptation planning is not sufficient in absence of the elected representative at VDC and municipality level. Research conducted by Tiwari *et al.* 2014 also express their doubts regarding the implementation of the climate change adaptation program

particularly for the benefit of poor and vulnerable in absence of elected representative. As suggested by the Khatri *et al.* (2013) 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.

5. Conclusion

According to the findings of this research, we conclude that there are some barriers in climate change adaptation (CCA) planning at local level. The CCA planning at local level has not sufficiently involved community and local governments authorizes and undermined the voice of the vulnerable and historically marginalized communities, thus resulting in less ownership and limiting the process of integrating with local development planning. As reported by Jones & Boyd (2015), there is a need for better understanding of the diversity and complexity of social barriers, strategic planning and incorporation at national and local levels, as well as an emphasis on tackling the underlying drivers of vulnerability and social exclusion. The LAPA are not implemented in efficient manner; there is no clear and coherent institutional framework for implementing climate change adaptation activities at the local level and absence of a functional elected local government resulting in weak linkage of vertical policy integration (Bishwokarma 2014) from VDC/Municipality to District Development Committee (DDC) level. Study also concludes that the VDCs have very limited human resources, inadequate capacity to deal with climate adaptation issues, political instability, coordinate between different ministries and departments for effective and efficient local adaptation planning. Rather than the I/NGOs, local governments should be the locus of program design and implementation (Paudel 2010) and take the leadership in CCA planning. In addition, individual ministries, donors and agencies are currently working in isolation limiting the ability to adopt a common and integrated approach. Thus, Proper coordination between concern ministries, I/NGOs, donors and agencies on this issue is required. Furthermore, clear and coherent operational guidelines should be drafted for initiating comprehensive climate change adaptation and disaster management planning, collaboration and partnership amongst different governmental and non-governmental stakeholders.

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7. References

- Bishwokarma, D. (2014). Integrating Climate Adaptation Planning across Governance Levels: A Case Study of Nepal. Master's Dissertation. The Australian National University, Australia.
- D'ELIA, V.V. (2005). Measuring the impact of environmental news in Argentina: A non-parametric approach. GoN. (2011). *Climate Change Policy, Government of Nepal*.
- Helvetas Nepal. (2011). *Nepal's Climate Change Policies and Plans: Local communities' Perspective*.
- Jones, L. & Boyd, E. (2011). Exploring social barriers to adaptation: insights from Western Nepal. *Global Environmental Change*, 21(4), pp.1262-1274.
- Khatri, D. B., Bista, R., Gurung, N., & Shrestha, K. K., (2013). Climate Change Adaptation and Local Institutions: How to Connect Community Groups with Local Government for Adaptation Planning Climate Change Adaptation and Local Institutions: How to Connect. *Journal of Forest and Livelihood*, 11(1), 14–28.
- Miles, M.B. & Huberman, A.M. (1994). Qualitative data analysis: A sourcebook. *Beverly Hills: Sage Publications*.
- MoE. (2010). *National Adaptation Program of Action (NAPA) to climate change. Government of Nepal, Ministry of Environment*.
- MoE. (2011). *Local Adaptation Plan for Action (LAPA), Government of Nepal, Ministry of Environment*.
- MoHA. (2015). Government of Nepal, Ministry of Home Affairs and Disaster Preparedness Network-Nepal
- Paudel, N.S. (2010). Responding to climate change in a transitional politics: Review of political context in relation to designing LAPA in Nepal. *Study report prepared for CADP-N*
- Paudel, N.S., Ojha, H., Karki, R. & Gurung, N. (2013). Integrating climate change adaptation with local development: exploring institutional options. *Journal of Forest and Livelihood*, 11(1), pp.1-13.
- Rai, J. K., Gurung, G. B., & Pathak, A. (2015). *Climate Change Adaptation in MSFP Working Districts, Lessons from LAPA and CAPA Preparation and Implementation in the Koshi Hill Region*.
- Tiwari, K.R., Rayamajhi, S., Pokharel, R.K. & Balla, M.K. (2014). Does Nepal's climate change adaptation policy and practices address poor and vulnerable communities? *Journal of Law, Policy and Globalization*, 23, pp.28-38.