

Does Nepal's Climate Change Adaptation Policy and Practices Address Poor and Vulnerable Communities?

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Abstract

Climate change (CC) impact, adaptation practices and policies are an emerging area of research and development in Nepal. Many households were deeply affected by, climatic variability and natural disasters coupled with a decade-long conflict, leaving them with few options to cope with CC in Nepal. The study was done through reviewed CC related policies and programs initiated at the national to local level. Additionally, study was conducted to analyze different CC adaptation programs and practices in different eco-region from Himalaya to Inner Terai region of center and western Nepal through shared learning dialogue, field observation, key informant interview, regional and district level consultative workshop and focus group discussion.

To address the issues of CC, different government and nongovernment institutions have initiated its adaptation programs in Nepal. NAPA and LAPA- Nepal highlighted the adaptation practices and adaptation framework from national to local level. These national programs initiatives have been endorsed by the GoN (Government of Nepal) through the promulgation of CC Policy Nepal 2011. The policy has focused on interdisciplinary approach with 80% funds allocated at the local level particularly for poor and vulnerable groups. Some district level offices have initiated CC adaptation activities such as construction of water harvesting pond for irrigation, water source protection, agroforestry practices and training on CC adaptation and mitigation. Similarly, in some project supported districts, community level and VDC level five year local adaptation plans have been prepared. However, it is observed that there is a big gap in institutional arrangement, capacity to implement and mechanisms for adaptation programs at local level and poor communities. It was also observed that different GOs programs and NGOs were involved to improve the livelihood of the poor and vulnerable communities through pro-poor programs at local level which resulted improve CC adaptation capacity. It is suggested that CC policy in Nepal be formulated with holistic approach, institutionalized implementing mechanism and focus on livelihood improvement of the poor and vulnerable communities that have joint environmental, social or economic benefits.

Keywords: Community, Institutions, NAPA, no-regret approach, LAPA, Livelihood, Vulnerability

1. Introduction

Nepal is one of the climatically vulnerable countries in the world due to its fragile, climate sensitive ecosystem and socioeconomic circumstances. IPCC (2007) report states that CC is already having discernable impacts particularly in least developed counties like Nepal which are more vulnerable from the impacts because of their inability to cope with these climatic shocks. CC is expected to have serious environmental, economic, and social impacts in South Asia in particular, where rural farmers whose livelihoods depend on the use of natural resources are likely to bear the brunt of its adverse impacts (ICIMOD 2009). The region is also confronted with issues like poverty, environmental degradation, natural resources depletion, shrinking water resources, and desertification (Schid 2008). Climatic variability in this fragile ecosystem and nature based livelihood system of the rural communities has further threatened the livelihood of the local people.

There are many important dimensions of poverty in Nepal. Poverty issues have received national policy attention from time to time. The Government of Nepal (GoN) has been carrying various poverty reduction activities since early 1970s (NPC 2007). In spite of these pro poor programs and activities, the percentage of poor people has not been reduced as per the targets. In view with considerable figures of poor population in the country, poverty alleviation has been constantly the top prioritized agenda of the nation in the last three periodic plans. Poverty alleviation program has been the most prioritized agenda of the Government since 1990. The Millennium Development Goals and the efforts to integrate Poverty Reduction Strategies Programs (PRSPs) are the latest in development approaches and priorities for the developing countries (Millennium Project 2005.) Following the restoration of democracy in 1990, poverty reduction was one of the main objectives of the Eight (1992-1997) and Ninth (1997-2002) Periodic Plans. Looking at the widespread poverty in the nation poverty reduction was the only goal of the Tenth Five Year Plan (2002 – 2007) which is also Nepal's PRSP (NPC 2007). Some of the key concerns of the plan are to reduce the levels of poverty in the country by making growth more broad based, ensuring that development activities are working more effectively for the poor, making services more accessible, and strengthening enabling environment through better governance, transparency and accountability (NPC 2002). The Three-Year Interim Plan (TYIP) (2006/07–2009/10) adopted after the Tenth Plan maintained the focus on poverty reduction and growth but also stressed the need for the state to assume a greater strategic

presence in development, especially in remote areas, and for socially marginalized groups to be included. The plan after that, the Three-Year Plan (TYP) (2010/11–2013/14), continued the call for strategic investment in areas in need of greater focus if Nepal's MDGs are to be achieved. Despite these various efforts of poverty alleviation over the different periodic plans of the state, there is around 24 % population living below the absolute poverty line (CBS 2013) and Human Development Index (HDI) value for 2012 was 0.463 having low human development category—positioning the country at 157 out of 187 countries (UNDP, 2013). In general, poor and vulnerable households and communities suffer most from CC, because of their higher exposure and sensitivity (of assets and livelihoods) to hazards associated with CC and their low capacity to manage risks and prevent negative impacts (Mearns and Norton, 2010).

Countries like Nepal where more than 80 % population depends on agriculture and whose livelihood depends on climate sensitive resources are the most vulnerable to CC. Nepal's remoteness, undulating terrain, fragile landform, and extremely diverse landscape poses different levels of location and context-specific CC impact. CC has now added extra challenges to improve livelihood of the rural communities of Nepal. It is reported that Nepal is ranked and listed as one of the most climate vulnerable countries in the world (GON 2011). The situation is made worse by poverty, population pressures, land degradation, food insecurity, and deforestation. As one of the most vulnerable countries from the CC perspective, it becomes even more crucial for its CC policy to be centered on rural communities in order to ensure optimum benefits to the climate vulnerable communities. Formulating possible future local adaptation policy is essential to CC impact and vulnerability assessment. Therefore, assessing the potential CC impacts on livelihood is urgently needed for the survival of these rural communities.

In the past CC agenda was ignored due to uncertainties and no past recorded data and was assumed to be negligible when compared with other more important issues (eg, poverty alleviation and economic development). Under a changing climate it is becoming increasingly clear that existing planning process may require adjustment in order to incorporate uncertainty of future CC (Dessai & Wilby 2010). Integration of CC adaptation and adaptive capacity issues within development processes is now a central issue for development policy and practice. The policy has to link and integrate across the scales, meaning interlink across local, regional, national and also international level. To address the issues of CC, Nepal prepared both a national and several local adaptation plans of action to meet the requirements of the UN Framework Convention on Climate Change (UNFCCC). The strategies and actions of the former seek to increase the adaptive capacity of communities through livelihood support, improved environmental resource governance, collective response, improved service delivery, and access to green technology and finance (MOE 2012). In this context, policy makers, planners and implementers require understanding all the issues to integrate the program and implementation. Therefore, the study was conducted to assess the CC impact, adaptation practices in rural areas of different physiographic regions of Nepal and how national policies and program address these CC issues to reduce the vulnerability of the poor communities.

2. Research Method

2.1 Study area

The study was conducted in three eco-regions: High Mountain (Mustang districts), Mid-Mountain (Kaski, Myagdi and Dhading districts) and Siwalik/Terai (Chitawan and Nawalparashi districts) of the Narayani river basin which is the major tributary of the Ganga river. The area is located in central Nepal between 27035' and 29033' N latitudes and 82088' and 85080' E longitudes. The study area is the most suitable in order to study CC impacts, adaptation practices and food insecurity because of diversity it captures among the physiographic regions, communities and ethnic groups of Nepal (Figure 1).

2.2 Research data collection

This study is based on both primary and secondary data collection. Primary data were collected through focus group discussion, share learning dialogue, interaction workshops with district level stakeholders (GOs/NGOs), key informant interviews of the locals, district level technicians, as well as national level policy makers, and field observations. CC related policies, program, and documents were reviewed for policy analysis from national to local level.

3. Result and Discussion

3.1. Local Adaptation measures on CC

Different types of local adaptation practices were encountered from High Mountain to Inner-Terai region. In general, communities have adapted traditionally based on available resources and their experiences, but adaptation in a changing climate brings new challenges.

In high mountain regions adaptation measures were found very limited. It is reported that due to degradation of the grass land and low grass production, people have reduced the livestock numbers. Some respondents reported that hardship of the livestock raising and agriculture farming, due to rainfall uncertainty they either changed their

occupations to activities such as hotel business or out migration. It is because of uncertainty of rainfall and water scarcity. Furthermore, in Mountain and Siwalik region, local people have been managing forest as a community forest, or leasehold forest, which may increase the resilience of community by fulfilling the demand of forest products and minimize shifting cultivation by indigenous communities (Magar/Chepang) in Siwalik region. They have adopted Sloping Agriculture Land Technology (SALT) as an agroforestry practice in their steep land to minimize soil erosion. LIBIRD (2007) also reported that managing SALT technology in slopy mountain improves land condition and livelihood of the local community.

In case of market availability in the Mid-mountain region, majority of the local farmers were practicing vegetable farming instead of cereal crops as crop switching and livelihood diversification to earn more income. Tiwari *et al.* (2008) had reported that change in cropping pattern from cereal to intensive vegetable in the Mid-Mountain region resulted to increased food security and farm income there by reducing vulnerability of the poor communities for their livelihood. Local farmers reported the change in the seed sowing and planting time as well as adoption of early ripening and drought tolerant varieties in their farm lands. It is found that limited farmers have irrigation facilities for their crop production. Additionally, upstream communities have started rain water harvesting, conservation pond and utilization of excess drinking water for vegetable production. Farmers also expressed that drought was the major problem and if irrigation facilities provided, major CC impact will be minimized. The main alternate adaptation practice in this region is income from remittance to cope with climatic vulnerability.

3.2. CC Policy Initiatives in Nepal

The GoN has initiated several activities to implement mitigation and adaptation measures to combat CC problems. CC policy are the newest addition to Nepal's legislative framework. The policy has come with international signing of treaty and convention (Table 1). The impeding adverse impact of CC, the policy is being prepared in the wake of global CC awareness and need for urgent responses. Nepal participated in the CC business right from the Convention preparation process in 1991. Nepal signed the UNFCCC on 12 June 1992 during the UN Conference on Environment and Development (*Earth Summit*) at Rio de Janeiro, Brazil (Upreti 2009). A signed global treaty has provided the international framework for managing CC. The treaty has entered into force on 31 July 1994. Later on in 2005 Nepal has accessed and entered in the Kyoto Protocol. Ministry of Environment (MOE) has been assigned to promote and facilitate the activities related to Clean Development Mechanism (CDM) in the spirit of the Article 12 of the Kyoto Protocol (Kotru 2009). In line with the national and international commitments, GoN has accomplished various CC initiatives including Sustainable Development Agenda, Millennium Development Goals, National Capacity Needs Self Assessment (NCSA), National Adaptation Program of Action (NAPA), Local Adaptation Plan of Action (LAPA), Readiness Preparedness Proposal (REDD RPP), Pilot Program for Climate Resilience (PPCR) and CC Policy-2011 (Table 1). Similarly, Nepal has a lead role for Mountain Initiative (MI) in 2010 as a global initiative aimed to cover the common interest of the most of mountainous countries. The initiatives is expected to work together to understand better the chances occurring in mountains, CC issues and launch adaptation and mitigation program jointly (ICIMOD 2010).

Apart from policy documents prepared and promulgated by the CC Division of the MOE, various allied departments and ministries have drafted and implemented policies, Acts, and regulations associated with CC issues – both mitigation and adaptation. This analysis assesses the four policy documents on CC (CC Policy, NAPA, LAPA, and REDD RPP). Additionally, apart from above policy initiatives (Table 1), GoN issued the Three Year Plan Approach Paper (2010-2012) which includes the objectives of promoting green development, making development activities climate-friendly, mitigating the adverse impacts of CC, and promoting adaptation for the poor and vulnerable communities (NPC, 2011).

3.3. National Adaptation Plan of Action (NAPA) to Local Adaptation Plan of Action (LAPA) Implementation process

NAPA was the first comprehensive and CC dedicated government document which was released to the public audience in September 2010 (Helvetas Nepal 2012). The NAPA document has identified well defined short-term and long-term priorities for CC action in Nepal. It has created and enhanced awareness of CC adaptation issues at different scales and build long-term capacity through cross-sectoral and multi-stakeholder coordination. Nepal has adopted a multi-stakeholder led NAPA process, which is regarded as highly participatory, inclusive, flexible and responsive. Furthermore, it is a key national document that provides a basis for the government to guide further CC governance and manage financial resources in a coherent and coordinated manner (NAPA/MOE 2010).

The NAPA document was prepared with the objectives of assessing and prioritizing CC vulnerabilities and identifying adaptation measures; developing proposals for priority activities; preparing, reviewing and finalizing NAPA focus areas; developing and maintaining a knowledge management and learning platform; and developing a multi-stakeholder framework of action on CC. It has identified six thematic areas for CC adaptation with six line ministries and thematic working groups including representing government, NGOs, academia

(MOE, 2010). The main thrust of implementation of the NAPA framework is to mainstreaming the CC adaptation into national development agenda. Furthermore, the document assumed that the adaptation program and activities should be implemented through a common coordination, management and monitoring mechanisms. It is also expressed that 80 % of the CC adaptation budget should be reached at the local level adaptation activities.

After the development of NAPA, Nepal has come up with an innovative local planning process called the LAPA. The LAPA process provides opportunities to assess site-specific climate vulnerabilities, identify adaptation options, and implement the urgent and immediate adaptation actions with the participation of local communities and households. Nepal is now ready to implement these local adaptation plans in some areas of the country, the country's priorities lie in facilitating communities to better adapt to climate variability/change and safeguard its development. GoN took a strongly community-centric approach by designing and piloting LAPA. Review of the LAPA document (LAPA/MOE 2011) expressed that LAPA aims to build an integrated framework that is more bottom-up in terms of planning of adaptation needs, options, and priorities. It focuses more on local communities, local needs, and issues. The LAPA framework is now endorsed by the GoN to operationalize NAPA and its CC policy in 2011 (MOE 2011). LAPA framework ensures that the process of integrating climate adaptation and resilience into local and national planning is bottom-up, inclusive, responsive and flexible as the four guiding principles. Furthermore, LAPA framework expressed that bottom-up planning ensures proper consideration of the needs and resources of the climate vulnerable people including knowledge, skill and practices of the local communities and stakeholders in adaptation planning. Vulnerabilities also categorized with in the communities based on climate change impact and adaptation capacity. Similarly, inclusive planning ensures identification and integration of the needs of households and communities at most risk to climate change, economically poor, deprived of public services and socially disadvantaged household and communities into developing planning.

Furthermore, LAPA also clearly expressed different activities for poor and vulnerable groups such as: Identification of the most climate vulnerable village development committee, village, and communities and their adaptation challenges and opportunities, including possible adaptation activities. LAPA implementation framework showed to link national, district, village development committee (VDC) and community levels in vulnerability assessments, adaptation planning and implementation, within the framework of national CC policy (Figure 2). The LAPA framework is a practical approach to analyze local climate adaptation planning issues in a way that encourages people's participation (Watts 2012).

Despite the better climate change policy 2011 of Nepal, the quality of governance, at all levels, is likely to be the biggest challenge to effective initiation, integration and implementation of climate activities including the LAPA. Additionally, there is no any elected government at local level since last 15 years so that there is a question of implementation of the CC adaptation program particularly for the benefit of poor and vulnerable. Consultation with policy level to field practitioner revealed that weak government institutional arrangement at local level, lack of infrastructure, limited financial and human resources, and lack of public awareness on climate related disasters and CC issues as the major barriers for implementation of the CC adaptation program and question of reducing the vulnerabilities to the poor communities. Similarly, NAPA has failed to provide a vertical assessment of how to link the government with the communities. Document stated that 80% of the earmarked budget that will be disbursed to the community for implementation of programs is not adequate. In absence of institutional mechanisms, capacity building of the local communities and implementing field offices, proper fund disbursement mechanism and concrete community level plan and devolution process, the allocated budget will not be effectively utilized to the poor and vulnerable at the local level. According to Bird (2011) financial planning is not as well developed as broader CC planning in Nepal, particularly in terms of costing proposed public sector investments.

Another question regarding the ownership and effective implementation arises here. Community based organizations might not fully own or effectively implement the activities outlined in these programs if they are not relevant for the communities. Additionally, it does not provide any information on the roles, rights, and responsibilities of local communities in execution of these activities, how these activities will benefit the local communities particularly poor and vulnerable communities, and the implementation mechanism.

Most notably, the NAPA emphasizes the need for local-level decision-making and local control of adaptation funds, setting a target of 80% of funds to be spent at the grassroots level. The local emphasis is further reinforced by a provision for LAPAs, which will provide an opportunity for stakeholders to identify their communities' specific needs and tailor adaptation measures accordingly, all while following a unified, coordinated approach laid out by the NAPA.

3.4. Nepal Climate Change Policy 2011: Highlights of major activities, issues and gap

Climate Change Policy, 2011 was proclaimed by the GoN to promote climate adaptation and mitigation in response to the international climate regime to which Nepal is also a signatory party (MOE 2012). The policy has explained that it is 'urgently required to formulate and implement a national policy in order to utilize the

opportunities created from the CC phenomenon for reducing poverty and achieving sustainable development. The main goal of this policy is to improve livelihoods by mitigating and adapting to the adverse impacts of CC, adopting a low-carbon emissions socio-economic development path and supporting and collaborating in the spirits of country's commitments to national and international agreements related to CC.

The policy has stressed that local communities whose livelihood is based on natural resources are most vulnerable to CC, they should be benefited from any CC policy or plan made by the government.

One goal of this policy is to make provisions for financial resources to implement the priority activities at the community level as identified in the NAPA. Furthermore, the policy document also mentions the LAPA - which recognizes planning at local government level and roles and responsibilities of the local communities. It is encouraging that the policy recognizes the value of local knowledge, skills, and technologies in adaptation and mitigation measures, especially towards reducing the climate induced disasters and improved livelihood of the local communities. The policy document mentions in several places that the local communities will be entitled up to 80% of the total CC funds. The funds will be channeled through activities at the grass roots level. The policy also set timeline to form and implement a low carbon economic development strategy that supports climate-resilient socio-economic development by 2014, and, assessment of losses and benefits from CC in various geographical areas and development sectors by 2013.

The review of the CC policy 2011 indicates major positive outlooks which include:

- Bottom-up participatory planning
- Integrated approach
- Ensuring the participation of poor people, *Dalits*, marginalized indigenous communities, women, children and youth in the implementation of climate adaptation and CC-related programs
- 80 % fund will be allocated to the local level
- Poverty reduction and livelihood focus
- Mainstreaming CC adaptation to the national development agenda

3.5. Gap analysis in CC Policy towards poverty reduction

National CC Policy fails to identify the main agents of implementation at the district and local level focusing to the poor communities. It is also noticed that at present there is no any institutional mechanisms and institutional capacity for planning and implementation of the CC adaptation program at district and VDC level. Additionally, in the absence of elected government at local level and no any mechanisms for coordination among the line agencies, implementation of the CC program, and ownership, responsibilities for achievable goal is questionable. In the absence of executors, it is highly likely that the policy will have no one taking ownership over the specific objectives and activities. Helvats Nepal (2012) also reported that existing institutional arrangement of having the MoE as the main entity responsible for the result oriented implementation of the CC Policy needs to be revisited. In the absence of decentralized executing units at the district and village level, the implementation of the policy on ground seems extremely difficult. Agwaral (2010) also stressed that local institutions have played important role in planning and implementation of the adaptation program effective for reducing climate risk vulnerability at the local communities. Hence, apart from an amendment in the content, the effective and successful implementation of CC policy also calls for institutional and structural restructuring of the implementing government agencies.

3.6. Institutional arrangement and framework for CC Adaptation practices

Three levels of institutional arrangement have been found in the CC documents to implement policies and programs i.e National, District and VDC level (Figure 2) (LAPA/MOE, 2011).

National level

High level CC Council (CCC) chaired by Honourable Prime Minister has constituted for high level coordination and policy formulation in 2009. Similarly, a high- level committee on CC coordination focusing Pilot Program for Climate Resilience (PPCR) has been formed in 2011 under the chairpersonship of the minister for MOE, involving secretaries of the relevant sectoral ministries, academicians, experts and civil society members. Additionally, the Multi-stakeholder CC Initiatives Coordination Committee (MCCICC), constituted in 2010 including local governments, non-governmental organizations and development partners, ensures functional coordination to avoid duplication (MOE 2011). The GoN also established the CC Management Division with three Sections (CC, CCC Secretariat, and CDM) at the MOE in 2010. In the same year, a REDD Cell was established within the Ministry of Forests and Soil Conservation (MOFSC 2010).

At the national level MOE plays a key role in overall coordination across scales (between adaptation policy and planning and on-the-ground implementation) and across actors (coordinating between different donor support avenues, different CC projects, and activities across ministries under programs of work managed by MOE. MOFSC has taken the lead role in designing and implementing the REDD (REDD+) in Nepal. To prepare Nepal for the REDD mechanism, MOFSC has initiated various programs and activities, including the REDD Preparedness Plan (RPP), which is a groundwork that will feed into the REDD Strategy (MOFSC 2010). Likewise, a national Disaster Rescue Committee has been set up under the chairmanship of the Prime Minister

which includes most Ministers and Departments. Ministry of Home Affairs acts as secretariat to the committee while other ministry and departments are members to overall coordination and implementation of the disaster management program (MOHA 2009). Additionally, Department of Water Induced Disaster Management has its own regular program and activities for river training and flood control. The Department of Soil Conservation and Watershed Management (DSCWM) has also initiated the climate adaptation program through its district offices.

District level

All CC related policies and programs have identified the district level offices to play key roles to implement the CC adaptation and disaster management programs. The NAPA and LAPA framework have identified the DDC as the main institution for coordination, planning, implementation and monitoring the program at the district level. At present there is no any elected government body at the DDC and with limited institutional capacity, it is questionable to implement and coordinate the adaptation program at local and district level. However, some district offices such as District Soil Conservation, District Agriculture Development, District Forest Offices have initiated CC adaptation practices such as:

Water harvesting/ conservation pond (under DSCWM) in some mountain districts (Palpa, Parbat, Magdi); Soil conservation program, community forest management, biodiversity conservation, leasehold forestry, organic farming, crop diversification, and agro-biodiversity, agroforestry awareness program, IGA and training on CC adaptation, degraded land management through reforestation in the leasehold forestry program.

In case of disaster management, District Disaster Risk Reduction Committee has formed under the Chairmanship of the Chief District Officer. The members in the committees involved almost all government agencies in the district as well as representation from civil society organizations. Local Development Officer from the DDC is a member secretary to the committee. It is found that where disaster events are experienced more frequently, district level Disaster Risk Reduction (DRR) management program has been initiated with support from donors and I/NGOs. Some Terai districts have started regular planning and budgetary allocation, disaster reduction preparedness, identification of the flood prone area in the district/ VDC particularly flood hazards districts (Practical Action 2010). It is observed that Disaster management committees (DMCs), meanwhile, have been established as a collaborative venture between local and international NGOs, local and district government, and local residents, in order to reduce vulnerability to the increasingly erratic flows of the Rapti and Narayani river (Tiwari *et al.* 2013).

Village Development Committee (VDC)/ Municipalities

NAPA, LAPA and CC policies have identified that VDC/Municipalities are the main institutions at the grass-root level to plan and implement the CC adaptation and mitigation practices. The policies are recently endorsed from the government and there is no any institutional arrangement at the local level to implement the program. It seems that, no any elected body at the local level resulted low level of the implementation capacity at present context. It is noticed that in some project supported districts such as Livelihood Forestry Project, CARE Nepal project has initiated to prepare LAPA, Community Adaptation Plan of Action (CAPA) and Adaptation practices at VDC and community level in their project areas. Additionally, many micro-finance institutions such as saving /credit institutions, and cooperatives at the local level have provided the credit for income generating activities and soft loan for vulnerable groups as an income diversification in the study area. Osbart *et al.* (2008) also support that reorganization of the local institutions and opportunities for micro-finance reduces the vulnerability of the rural communities.

Additionally, government policy and program at local level also stated to the poverty reduction and reducing vulnerability to the poor communities in all sectors such as agriculture, forestry, rural development program (NPC 2011b).

3.7. Targeting poor and vulnerable households

Mainstreaming the Poverty Reduction Programs are the latest in development approaches and priorities in all sectors of the country (NPC 2012). The CC policy 2011 also expressed poverty reduction and livelihood improvement of the vulnerable communities through planning and budgeting climate change adaptation program (MOSTE 2012). The bottom-up planning process in the LAPA framework has provided space for vulnerable communities, household, women and other disadvantage groups to identify their real adaptation needs. The policy including NAPA and LAPA also expressed the adaptive capacity and empowering the poor and vulnerable communities. It was found that LAPA piloting has shed light on the debate about the need to recognize the potential role of communities in adaptation design and delivery. One of the major issues around local level adaptation is identifying and targeting the most vulnerable households. Study such as community forestry, local development program found that power structures and dynamics, party politics at local level often dominate resource management and undermine the role of poor and disadvantaged groups including women in decision making.

3.8. No regrets approach of pro-poor program and CC adaptation

Different livelihood improvement and poverty reduction programs have been popularized found in the rural area of Nepal. Different researcher reported that programs such as community forestry program, leasehold forestry

programs are not only improving forest conditions but also increased the livelihood assets to enhance livelihood of the poor communities (Gurung *et al.* 2013; Pokharel 2009; Pokharel and Carter 2007). In this context, mainstreaming the poverty reduction program is the main development agenda in Nepal. Pro-poor and rural livelihood support programs enhancing the livelihood of the rural HH increases adaptive capacity on CC could be termed as an no regrets approach. No-regrets approach refers to seeking social/economic/environmental policies and investments that promote growth and broad-based poverty reducing sustainable development whether or not climate change is manifested (Siegel and Jorgensen 2011). To adopt a —no-regrets approach- that is, take actions that are justifiable from economic, social, and environmental perspectives whether climate change takes place or not - that can help increase human resilience to multiple hazards whether caused by weather, economic imbalances, food shortages etc. Asset-based and livelihoods approaches state that household well-being is multi-dimensional and directly linked to command over assets and livelihood strategies (Moser 2006). Household livelihoods, livelihood resilience, and well-being depend on the interface between risks; assets; and the policy, institutional, and structural context (Heltberg *et al.* 2009).

Community based natural resource management approaches to adaptation create synergies between climate action and poverty alleviation (NPC 2012b). Access to assets and employment is vital for building resilience of the poor. This study found that, livelihood support programs such as micro finance, Community Forestry, REDD+ piloting, IGA in rural development, improved the livelihood of the poor communities and enhanced adaptation capacity to CC impacts. Social funds can support pro-poor adaptation by scaling up their work in sectors relevant for creating resilience such as ecosystem management and restoration, water supply and sanitation, community forestry, coastal zone management, and disaster risk management (Heltberg *et al.* 2009). Additionally, Munasinghe and Swart (2005) point out that sustainable development and adaptation are interlinked. The great majority of sustainable development strategies are not related to climate change, but they could make adaptation more successful. Literature express that no-regrets actions increase resilience, which is the ability of a system to deal with different types of hazards in a timely, efficient, and equitable manner. Increasing resilience is the basis for sustainable growth in a world of multiple hazards (Heltberg *et al.* 2009; UNDP 2010; Siegel 2010). Similarly, many climate change adaptation policies will help to make development more sustainable. Although the crafting of adaptation policies is complicated by uncertainty, many adaptation policies will help promote sustainable development. Thus, an important objective of poverty alleviation is to provide poor people with assets (e.g., enhanced physical, human, and financial resources) that will reduce their vulnerability.

4. Conclusion and Recommendation

Impacts of CC are inevitable and the most vulnerable mountainous countries like Nepal are more affected due to low adaptation capacities of the rural communities. CC is the crosscutting issue and its impacts have been reported in all the sectors and particularly more on rural farmers whose livelihood depends on agriculture farming. Although, government has just initiated planned CC adaptation as a pilot program, but communities in this region have been responding autonomously to CC stresses. These may involve changes in cropping practices and technologies, diversification of livelihood systems, accessing financial resources such as micro-insurance and micro-credit, migration, off farm activities, and water conservation practices.

The CC related policies in Nepal are new and recently initiated as a legislative framework. The policies seem to be people centric, participatory, inclusive, bottom-up planning and implementation. It has provision to allocate 80% of total budget in the local level adaptation program and activities to address the poor and vulnerable communities. But existing mechanisms, intuitional arrangement, and capacity of the service provider government institutions have been found poor and questionable to achieve goals and objectives of CC policy. Climate change adaptation requires an integrated strategy and coordinated policy from ministry to local level, the policy analyses found a significant need for greater sectoral integration and coordination. Laws, rules and regulations also need to be reviewed to ensure they are consistent. The Nepal review also identifies a “major communication gap” between national and local-level government agencies, especially on climate change issues. Public awareness may have increased; the government has changed repeatedly, and local-level government has become weaker. Therefore, it is suggested that CC adaptation program be mainstreamed in the national development agenda and enhance the local institutional capacity to implement the program for improving livelihood of the vulnerable communities.

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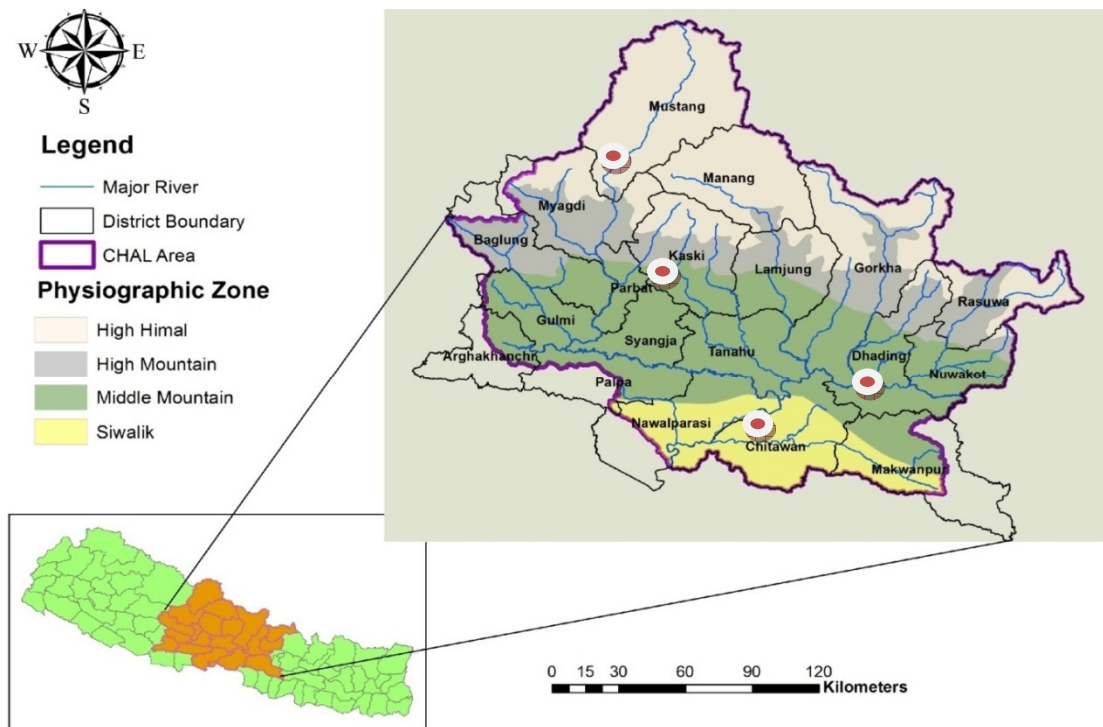


Figure 1. Map of the Study area and districts

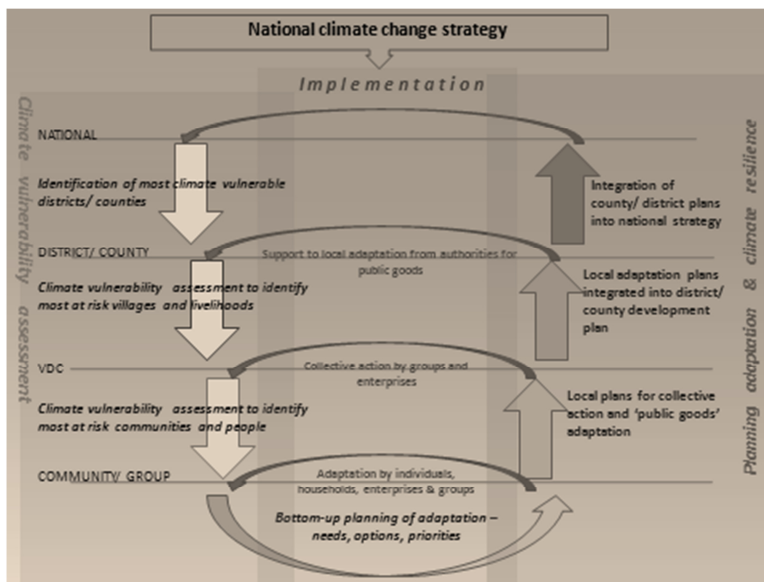


Figure 2. LAPA Planning and Implementation Framework (Source LAPAMOE, 2012).

Table1. Climate Change Policy Initiatives in Nepal

Date	Policy highlight	Key features
1992 June	Participated CC business	Signed the United Nations Framework Convention on CC (UNFCCC) UN Conference on <i>Environment and Development</i> at Rio de Janeiro, Brazil.
1994	Instrument of ratification on CC	UNFCCC has entered into force in Nepal as per the Convention provision
1998	National Conservation Strategy 1998	Milestone in the field of CC, which has three objectives: (a) Sustainable use of water, land, forest and other renewable resources, (b) Conservation and promotion of bio-diversity (forest and agricultural) and (c) Protection of eco-system
2003	Sustainable Development Agenda for Nepal (SDAN)	Identified CC as the Future Agenda for Action.
2005	Nepal submitted the instrument of accession to the Kyoto Protocol to its depository	The Protocol has entered into force in Nepal. In order to expedite CDM projects, and get benefits from them, the GoN has made the MOE responsible to function as the Designated National Authority
2007	CC issues addressed in the Interim Constitution of Nepal	Provision of the constitution includes: Right of every citizen to live in clean environment Right of every citizen to food security
2009	National Strategy for Risk Management,	Integrate the disaster risk reduction management from national to local level and mainstreaming into development agenda
2009	CC Council	Highest body under the Chairmanship of the Pri-minister for high level coordination and policy formulation in Nepal
2010	National Planning agenda	National Planning Commission has Initiated climate resilience planning that is expected to make development efforts climate-resilient and environment-friendly
2010	Readiness Preparation Proposal (RPP) for REDD+ plus	To prepare vision for REDD+ strategy after 2012. Submitted by Ministry of Forest and Soil Conservation (MoFSC) to the Forest Carbon Partnership Facility (FCPF) of the World Bank
2010	GoN endorsed NAPA documents	Assessing and prioritizing cc vulnerabilities and identifying adaptation measures
2010	Mountain Initiative (MI)	Nepal supports the importance of initiating the MI for implementing Article 4.8 of the Convention to address the effects of CC on mountain people and the mountains.
2011	Climate Change Policy	Provides multiple avenues for addressing the adverse impacts of a changing climate.
November 2011,	GoN endorsed the Local Adaptation Plan for Action (LAPA) framework	LAPA provides opportunities to implement NAPA priorities with the participation of the local communities. LAPA framework ensures that the process of integrating CC resilience into local to national planning is bottom up, inclusive, responsive and flexible
2012	Government highlighted CC policies in Rio+20	Nepal's recent policies and programs focus on integrating climate adaptation, which is also reflected in the Rio+20 submissions.

(Source MOE, 2011, NAPA\MOE, 2010, NPC, 2012, Uprety, 2009)