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Community forestry adaptation roadmap to 2020 for Nepal

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to 2020 for Nepal

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The views expressed in this publication are those of the authors and do not necessarily reflect the views of RECOFTC.

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Introduction

During the course of the twenty-first century, Asia and the Pacific's forest-dependent communities will bear the brunt of climate change impacts – specifically, the 2.2 billion people living in the region's rural areas, and the 450 million people in the Asia-Pacific region who rely on forest resources to some degree. Forestry and climate change policies, laws, projects, financing and capacity building efforts must address these people's interests through climate change adaptation.

Community forestry supports local level climate change adaptation by enhancing resilience in multiple ways: supporting livelihoods and income, increasing food security, leveraging social capital and knowledge, reducing disaster risks and regulating microclimates. However, adaptation planning has, by and large, not included community forestry as a viable climate change adaptation tool. To address this, RECOFTC – The Center for People and Forests has developed a set of roadmaps to help guide the meaningful inclusion of community forestry in climate change adaptation planning through the year 2020.

To develop the roadmaps, RECOFTC – The Center for People and Forests conducted a desk-based literature review on the link between community forestry and climate change adaptation in the region, and in the selected countries. Based on the review, a ten-question interview template was drafted to gather primary data from experts, defined as practitioners, policy-makers and researchers with experience in community forestry and/or adaptation in the included countries. The information provided by these interviews informed the analysis and recommendation of these reports.

Key messages and recommendations

Nepal sets a great regional example for streamlining community forestry into climate change adaptation efforts. However, there is much work to be done to scale-up these approaches and to share and refine best practices. The most immediate and pressing actions Nepal must take to advance community forestry-based adaptation may be broken down into the following five areas:

- **Policies and planning** – Develop specific guidelines on community forestry for adaptation and integrate these into relevant national level strategies (such as the National Forest Sector Strategy currently under development).

- **Legal reform** – Revised forestry laws should ensure full social inclusion in Community Forestry User Group (CFUG) formation, decision-making and equitable benefit sharing. Unnecessary restrictions on non-timber forest product (NTFP) collection should be reduced in the light of the need for climate adaptation.

- **Project development** – Scale up community forestry-based adaptation pilot activities and technologies across Nepal, paying particular attention to the needs of such as women, indigenous peoples, and Dalits. Utilize the Climate Change Network Nepal (CCNN) to better coordinate project development activities across government agencies, programs, non-governmental organizations (NGOs), and donors.

- **Public funding and private investment** – Establish a separate unit within District Development Committees to handle climate change adaptation funding and to ensure full implementation of the National Adaptation Programme of Action (NAPA) requirements, which call for 80% of funds to be spent at the local level.

- **Capacity development** – Scale up the role of local Nepalese NGO's to provide training and disseminate knowledge at the community level, especially for marginalized populations such as women, indigenous peoples, and Dalits. Develop the capacity of academic and research institutions to develop long-term studies on climate change impacts and enhance data collection.

Acronyms

CAF	Community Adaptation Fund
CAPAs	Community Adaptation Programmes of Action
CCNN	Climate Change Network Nepal
CFP	Community Forestry Program
CFUGs	Community Forest User Groups
CLACs	Community Learning and Action Centers,
COP 16	The Sixteenth Conference of the Parties
DDC	District Development Committees
DFID	UK Department for International Development
DFO	District Forest Office
DoE	Department of Environment
EBA	Ecosystem-Based Adaptation
FECOFUN	The Federation of Community Forest Users in Nepal
GEF	Global Environment Facility of the United Nations Development Programme
GLOFs	Glacial Lake Outburst Floods
LAPA	Local Adaptation Programme of Action
LDCF	Least Developed Countries Fund
LFP	Livelihoods and Forestry Programme
MFALD	Ministry of Federal Affairs and Local Development
MLD	Ministry of Local Development
MoE	Ministry of the Environment
MoSTE	Ministry of Science, Technology and Environment
MoFSC	Ministry of Forests and Soil Conservation
MSFP	Multi-Stakeholder Forestry Programme
NAPA	National Adaptation Programme of Action
NGO	Non-Governmental Organization
NTFPs	Non-timber Forest Products
UNDP	United Nations Development Programme
USD	United States Dollar
VDCs	Village Development Committees

Overview and key statistics

Key statistics	
Total population	27.47 million[1]
Total land area (ha)	14,335,000[2]
Total forested area (ha)	3,636,000
Forest under community management (ha)	1,200,000[3]
Forest-dependent population	18,000,000[4]
Rate of deforestation (ha/year)	0[5] (2005 -2010 average); 53,000 (2000-2005 average); 92,000 (1990-2000 average)[6]
Global Adaptation Institute (GAIN) Index[7]	Overall Ranking: 156 out of 179 countries (1 is best) Overall Score: 45.6 (100 is best) *Better than expected given GDP/capita* Vulnerability: 0.489 (0 is best) *Less vulnerable than expected given GDP/capita* Readiness: 0.400 (1 is best) *Less ready than expected given GDP/capita[8]*
Climate Risk Index[9]	Nepal is ranked the 56th country in the world most impacted by extreme weather events between 1991 and 2010.
Major expected climate change impacts	• Increased occurrence of Glacial Lake Outburst Floods (GLOFs) caused by glacial melting and retreat. • Decreased agricultural yield and recurrent flooding due to shifting monsoon patterns. • Increased occurrence of forest fires and low water level in lakes and rivers (impacting freshwater supply and hydropower) due to prolonged droughts. • Changes in species in high altitude ecosystems due to pronounced warming.
Level of national adaptation planning and preparedness (H/M/L)	High
Reference to forestry in national adaptation planning (H/M/L)	Medium
Adaptation practices of relevance to community forestry	Livelihood enhancement and diversification; forest fire control; landslide and erosion prevention; provision of food and water during drought or crop failure.

1. World Bank, (2013). "Data". Available on line at <http://data.worldbank.org/country/nepal> last accessed 19 July 2013).
2. http://data.worldbank.org/country/nepal.
3. Nepal Department of Forests. 2009. *Community forestry database.* Kathmandu, Nepal. (From: Role of Social Forestry in Climate Change Mitigation and Adaptation in the ASEAN Region).
4. Forest Peoples Programme, (2012). *Forest Peoples: Numbers across the world.*
5. A National Forest Inventory (NFI) has not been undertaken in Nepal since 1994. While data was extrapolated for the period 2000-2005, this has not been done for 2005-2010 as it is too far removed from the original data.
6. FAO, (2010). *Global Forest Resources Assessment 2010.*
7. Global Adaptation Institution (GAIN) Index, (2011).Nepal. Available online: http://index.gain.org/country/nepal (last accessed 28 February, 2013).
8. There is a strong correlation between a country's GDP per capita and its overall and readiness scores, and an inverse correlation with vulnerability. To account for this relationship, each of the overall, vulnerability and readiness scores have corresponding "GDP Adjusted" scores as well.
9. Germanwatch, (2012) *Global Climate Risk Index.*

Community forestry in Nepal

Launched in the mid 1970s, the Community Forestry Program (CFP) in Nepal uses a model of participatory forest governance that is widely regarded as innovative and successful.[10] Nepal's CFP encompasses strong policy and legal frameworks, institutions and civil society networks. Accomplishments include improved livelihood opportunities for forest-dependent people, capacity development of local institutions, and development of grassroots democracy and enhanced forest ecosystems. Initially established and driven by international agencies and the Nepalese national government, the CFP is now primarily being lead by non-governmental organizations (NGOs) and community forest networks.[11]

Approximately 1.6 million households (one-third of the country's population) are involved in the CFP, directly managing more than one million hectares (more than one-fourth of the country's forest area). There are nearly 18,000 Community Forest User Groups (CFUGs) across Nepal's 75 districts.[12] In terms of land tenure, all of Nepal's forests (except those on private land) are state-owned national forests which can be divided into five categories: government-managed forests, protected forests, community forests, leasehold forests and religious forests. Forest ecosystems and forest governance regimes also differ significantly across Nepal's three geographical regions, which include the hills (48 percent of forested area), Terai plains (25 percent) and high mountains (27 percent).[13]

Community forests in Nepal are as diverse as they are numerous, ranging from less than 1 ha in size to more than 4,000 ha, with the number of households involved in each CFUG ranging from fewer than ten to more than 10,000. Most community forests are located in the hill region of Nepal. Although there are extensive forest areas at higher elevation, few CFUGs have been established in these areas due to remoteness and inaccessibility. Furthermore, the government is less likely to allow community management in areas with high-value timber and illegal timber trafficking such as forests in the high mountains and the Terai, the latter only having 3 percent of forests under community management.

The community forestry process

In 1978, the Nepalese government gave local government bodies (*panchayats*) limited rights to manage their own forest areas.[14] The Forest Act of 1993 incorporated communities by officially recognizing CFUGs as autonomous institutions with the authority to directly use and manage forestlands (with the state maintaining ownership of the land). It requires CFUGs to submit a constitution and operational plan for registration at the local District Forest Office (DFO). Serving as an agreement between the Forest Department and the CFUG, the operational plan clarifies property rights, forest management methods and rules for forest product use. CFUGs are given the right to determine which forest products can be harvested, set the price of various products, receive and distribute income and use revenue for community development activities.[15]

In practice, however, forest officials often restrict the type and quantity of forest products that CFUGs can gather and enforce payment of taxes to the government when these are sold externally.[16] The Forest Regulations of 1995 further defined the legal right of the DFO to set requirements for community forest management, and in

10. Kumar, N (2010). *Practice of Community Adaptation to Climate Change: A Case of Community Forestry User Groups of Nepal.* Submitted to Livelihoods and Forestry Programme.
11. Ibid.
12. Shaikh, S and Tunio, S (2012). Village management turns around Nepal's forests. Alertnet website (http://www.trust.org/alertnet/news/village-management-turns-around-nepals-forests) (Last accessed 19th December, 2012).
13. Bharat, P and Byrne, S (2009). *Climate Change Mitigation and Adaptation Strategies in Nepal's Forest Sector: How can rural Communities benefit?* NSCFP Discussion Paper No.7.Nepal Swiss Community Forestry Project.
14. Regmi, B and Subedi R (2008). *Addressing the Mismatch in Adaptation Planning in Nepal.* Tiempo Climate Newswatch.
15. Ojha, H, Persha, L and Chhatre, A (2009). *Community Forestry in Nepal: A Policy Innovation for Local Livelihoods.* IFPRI Discussion Paper 00913.
16. Shaikh, S and Tunio, S (2012). *Village management turns around Nepal's forests.* Alertnet website

2000, requirements were added for CFUGs to provide periodic inventories on biomass, timber volume estimates and annual harvesting yields.

The formation of CFUGs is inclusive rather than exclusive, and typically all households of a village become members of a CFUG, representing a range of interests in forest products (e.g. fodder, firewood, medicinal plants and drinking water).[17] However, certain forest user groups may be excluded for historical reasons or due to a low level of information.[18] CFUG structure is flexible and varied, but each has an executive committee for decision-making, which must be accountable to the entire CFUG. CFUGs are required to designate 25 percent of their income for community development activities, such as improving irrigation, education, using forest products for construction or providing microfinance to community members.[19]

Despite the inclusive nature of CFUGs, Nepalese society is highly differentiated, and the distribution of benefits from forest products is often inequitable.[20] Minority groups such as the land-poor Dalits[21], women and indigenous groups are often marginalized in this process. Decision-making should be participatory but is often dominated by those from higher castes, especially men.[22] Women comprise about 25 percent of executive committee positions within CFUGs. However, some CFUGs give preference to poor members or women in local jobs, such as working as nursery laborers.[23]

The Federation of Community Forestry Users Nepal (FECOFUN) is one organization representing the interests of CFUGs and is an important political player at local and national levels. FECOFUN has made significant contributions in extending CFUG rights over forestlands in areas without donor-driven projects or where the DFO has been hesitant about community forestry, in the hills as well as in the Terai region. FECOFUN has instituted a requirement for women to hold 50 percent of executive committee positions as well as mandating pro-poor activities.[24]

17. Regmi, B and Subedi R (2008).*Addressing the Mismatch in Adaptation Planning in Nepal.* Tiempo Climate Newswatch.
18. Suzuki, R (Ed) (2012). *Linking Adaptation and Mitigation through Community Forestry: Case Studies from Asia.* RECOFTC.
19. Ojha, H, Persha, L and Chhatre, A (2009). *Community Forestry in Nepal: A Policy Innovation for Local Livelihoods.* IFPRI Discussion Paper 00913.
20. Carter, J, Pokharel, B and Parajuli, R,R (2011). *Two Decades of Community Forestry in Nepal: What have we learned?* Nepal Swiss Community Forestry Project.
21. The "untouchable" class.
22. Suzuki, R (Ed) (2012). *Linking Adaptation and Mitigation through Community Forestry: Case Studies from Asia.* RECOFTC.
23. Ojha, H, Persha, L and Chhatre, A (2009). *Community Forestry in Nepal: A Policy Innovation for Local Livelihoods.* IFPRI Discussion Paper 00913.
24. Suzuki, R (Ed) (2012). *Linking Adaptation and Mitigation through Community Forestry: Case Studies from Asia.* RECOFTC.

Expected climate change impacts in Nepal

According to the Global Adaptation Institute's Index as of 2013, Nepal is the 32nd most vulnerable country in the world to the impacts of climate change and the 16th country least ready to be able to adapt to them.[25]

The Index attributes the country's vulnerability to a large rural population (over 80 percent), widespread rural poverty, high percentage of its population relying on glacial melt water as a freshwater source, and the country's 100 percent reliance on hydropower or imported energy.[26] Landless and socially marginalized people, including women, are the most vulnerable, especially if they have a low-level of access to land or forest resources.[27] There are almost two million people classified as "highly climate vulnerable" in Nepal, mostly the poor living in the middle and western regions. A lack of basic infrastructure (such as roads), services (such as electricity) and alternative livelihoods, make recovery from adverse climate impacts difficult.

Nepal's low level of readiness is attributed to a relatively low level of tertiary education, high political instability, and low investment freedom.[28] Uncertainties in existing knowledge of climate change and its projected impacts are a major barrier for adaptation in Nepal, which lacks long-term, scientific studies to identify impacts and vulnerabilities. The development of Nepal's National Adaptation Programme of Action (NAPA), for example, relied on patchy historical temperature and precipitation datasets, and mostly anecdotal evidence.

Temperature in Nepal is projected to increase by an average of 1.3°C to 3.8°C by 2060, and 1.8°C to 5.8°C by 2090,[29] with warming more pronounced at higher elevations. The following sections discuss how this temperature change is expected to impact water resources, agriculture, and forests.

Water resources

Water resources (and hydropower) rank as the sector most impacted by climate change.[30] Nepal's freshwater (derived from glaciers, snowmelt, and rainfall) accounts for over 2 percent of the total world supply and its river systems affect the lives of 500 million people living downstream in India and Bangladesh.[31] Winters are projected to be drier and the monsoon season wetter, with estimates of up to a three-fold increase in rainfall.[32] Decreases in precipitation in the hills, along with increasing water consumption are causing water shortages leading to the drying up of lakes and rivers. Himalayan glacial melt and retreat is also causing greater variability in stream flow and an increased risk of Glacial Lake Outburst Floods (GLOFs).[33] GLOFs pose significant risk to hydropower and infrastructure, although at present there is insufficient scientific evidence to identify dangerous lakes.[34] Glacial melt will at first increase water availability, but ultimately reduce it after glaciers disappear. Other expected impacts include serious and recurrent floods (for example during 2002, 2003 and 2004)[35], more frequent landslides and river sedimentation from more intense precipitation events, and prolonged droughts (such as the 2008-9 drought).[36]

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25. http://index.gain.org/country/nepal (Accessed on July 17th 2013).
26. GAIN website.
27. Suzuki, R (Ed) (2012). *Linking Adaptation and Mitigation through Community Forestry: Case Studies from Asia.* RECOFTC.
28. Constraints on the flow of investment capital, including rules for foreign and domestic investment; restrictions on payments, transfers, and capital transactions; labor regulations, corruption, red tape, weak infrastructure, and political and security conditions.
29. World Bank, (2012). Nepal Dashboard: Overview. Available online: http://sdwebx.worldbank.org/climateportalb/home.cfm?page=country_profile&CCode=NPL (Last accessed 19th December 2012).
30. Livelihoods and Forestry Programme (2009). *Impact of Climate Change on Forests and Livelihoods: Issues and Options for Nepal.*
31. Livelihoods and Forestry Programme (2009). *Impact of Climate Change on Forests and Livelihoods: Issues and Options for Nepal.*
32. World Bank, (2012). Nepal Dashboard: Overview. Available online: http://sdwebx.worldbank.org/climateportalb/home.cfm?page=country_profile&CCode=NPL (Last accessed 19th December 2012).
33. Intergovernmental Panel on Climate Change (IPCC) (2007). *IPCC Fourth Assessment Report (AR4).*
34. Ministry of Environment, Government of Nepal, (2010). *National Adaptation Programme of Action (NAPA) to Climate Change.*
35. Intergovernmental Panel on Climate Change (IPCC) (2007).*IPCC Fourth Assessment Report (AR4).*
36. World Resources Report (2009).Climate Change in Nepal: *Impacts and Adaptive Strategies.* Available online: http://www.worldresourcesreport.org/responses/climate-change-nepal-impacts-and-adaptive-strategies (Last accessed 19th December 2012).

Agriculture

Over three-quarters of Nepal's population base their livelihoods on climate-sensitive sectors such as small-scale, rain-fed agriculture, fisheries, and forest resources. Planting and harvesting practices are already changing in response to changes in the pattern of monsoon rains, on which 64 percent of the cultivated area in Nepal depends fully.[37] Crop yields of major cereals in Nepal are projected to decrease substantially,[38] which is of particular concern given that one-quarter of Nepalese are already suffering from chronic food insecurity.[39]

Forests

Himalayan forests are highly vulnerable to climate change because temperatures are expected to increase more at higher altitudes, bringing precipitation changes and the overall drying of forest ecosystems. This will favor drought-tolerant species and bring increased incidence of fire, which has major implications for forest-based adaptation and mitigation.[40] Severe fires may make it more difficult for forests to re-generate and can lead to an increased risk of landslides and erosion.[41]

Increased temperature and rainfall variability have resulted in vertical shifting of forest ecology (making species like Birch highly vulnerable), higher incidence of pests and disease, and emergence of new invasive species (such as Lantana in hill forests).[42] A combination of climate change and increase extraction pressure is also affecting the availability of non-timber forest products (NTFPs) such as medicinal plants, meaning that women and children will have to travel greater distances to gather these resources.

Changing weather patterns, declining agricultural productivity and health impacts have already spurred adaptive responses in communities across Nepal. Local coping strategies currently being employed include: crop diversification, rainwater collection, grass cultivation in forest areas, shifting natural resource based livelihoods to livestock, seasonal migration (to urban areas), storing grain seed fodder and grasses as well as a number of practices specifically related to sustainable forest management.

37. Ojha, H, Persha, L and Chhatre, A (2009). *Community Forestry in Nepal: A Policy Innovation for Local Livelihoods.* IFPRI Discussion Paper 00913.
38. World Bank, (2012). Nepal Dashboard: Overview. Available online: http://sdwebx.worldbank.org/climateportalb/home.cfm?page=country_profile&CCode=NPL (Last accessed 19th December 2012).
39. Livelihoods and Forestry Programme (2009). *Impact of Climate Change on Forests and Livelihoods: Issues and Options for Nepal.*
40. Kumar, N (2010). Practice of Community Adaptation to Climate Change: A Case of Community Forestry User Groups of Nepal.
41. Ministry of Forests and Soil Conservation Nepal (2011). *Role of forest on climate change adaptation.*
42. ibid.

Community forestry and climate change adaptation

Healthy forests are a cornerstone to a resilient community landscapes, and Nepal's CFP has already increased local adaptive, especially through the diversification of forest-based activities.[43] CFUG experience so far has shown the effectiveness of a decentralized and local approach to rural development, which should also be applied to climate change adaptation projects.Whether there is more emphasis on livelihood resilience or on protecting ecosystem services depends on the perspective of the CFUG in its adaptation planning. While difficult to generalize due to the geographic diversity in Nepal, water source management and watershed protection are commonly priority areas for CFUGs.

There are a number of benefits and limitations of using CFUGs to advance climate change adaptation in Nepal, as listed in Table 1.

Table 1. Benefits and limitations of using CFUGs to address climate change adaptation

Benefits	Limitations
• Direct access to indigenous knowledge and existing coping strategies • Inclusion in theory of a broad segment of society, ability to identify and target the most vulnerable households • Forest-based adaptation and mitigation may be addressed simultaneously • User rights and strong monitoring systems are already in place • Donors are ready to support CFUGs • Clear organizational structure and familiarity with planning processes • Existing systems for micro-insurance and micro-savings • Collective action possible; cost effective and ease of knowledge dissemination	• Restrictive forest management plans may impede adaptation • Inclusion is incomplete (certain social groups may be marginalized, and non-forest-dependent people do not have access to CFUGs) • Relatively low access to information and capacity of CFUGs for innovative approaches to adaptation • Need for stronger institutional, policy and legal coherence • Adaptation may be too narrowly focused on forestry and ignore other sectors

Moving forward, there are significant opportunities for the CFP to build climate resilience across Nepal, which may be broken down into the following ways:

43. Ministry of Forests and Soil Conservation Nepal (2011). *Role of forest on climate change adaptation.*

Supporting livelihoods and income

Increased resilience through diversifying a community's livelihood base is a key strategy for adapting to climate change. Nepal's CFP has contributed to improved livelihoods both directly (increased legal access to forest food products) and indirectly (increased employment and entrepreneurial opportunities, livelihood diversification and community development activities).[44] CFUGs are already engaged in plantations of mixed species, which are used for diverse purposes (fuel wood, fodder, timber, medicinal value, live fencing and biofuel).[45] NTFP earnings may account for up to 25 percent of total household annual income in some districts of Nepal. There is a growing focus on increasing the capacity of CFUGs to undertake forestry enterprises; however, there is not yet strong policy support for enterprise-based forest management.[46] Timber and high-value NTFPs can be a substantial source of income, but are often more accessible to wealthier households due to high upfront costs, while poorer households have greater overall dependency on less valuable forest products.

CFUG revenue may come from fees collected from external forest users or from entrepreneurial activities such as nursery management, spice cultivation or resin tapping. Revenues vary among CFUGs depending on the size and quality of their forests, ranging from US$ 50 per year in the high hills to US$ 1200 per year in the Terai.[47] A percentage of CFUG income is used for community development projects that improve market access for remote villages.[48] CFUG micro-credit, savings and insurance schemes make communities more resilient to crop damages, contribute to household livelihoods and are often targeted at the poorest.

Increasing food security

Forest products are an important substitute in times of drought and crop failure. Access to livestock fodder from forests especially in the dry season, cooking fuel and other NTFPs improves resiliency and food security. This is especially true for landless communities who otherwise may not have a reliable source of food and for the 69 percent of households who rely on firewood.

Leveraging social capital and knowledge

Local communities across Nepal have a history of adapting autonomously[49] to environmental change. For example, the incidence of forest fire has been significantly reduced in community-managed forests over the last 20 years.[50] In general these autonomous activities are poorly documented and more research is needed to assess ways in which CFUGs are already addressing current and expected climate impacts.[51] CFUGs and their related networks already serve as key institutions for sharing local and scientific knowledge on forests and may be used to raise awareness on climate change and community forest-based adaptation techniques.

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44. Ojha, H, Persha, L and Chhatre, A (2009). Community Forestry in Nepal: A Policy Innovation for Local Livelihoods. IFPRI Discussion Paper 00913.
45. Bharat, P and Byrne, S (2009). Climate Change Mitigation and Adaptation Strategies in Nepal's Forest Sector: How can rural Communities benefit? NSCFP Discussion Paper No.7.Nepal Swiss Community Forestry Project.
46. Ojha, H, Persha, L and Chhatre, A (2009). *Community Forestry in Nepal: A Policy Innovation for Local Livelihoods.* IFPRI Discussion Paper 00913.
47. Regmi, B and Subedi R (2008). Addressing the Mismatch in Adaptation Planning in Nepal. Tiempo Climate Newswatch.
48. World Resources Report (2009). *Climate Change in Nepal: Impacts and Adaptive Strategies.* Available online: http://www.worldresourcesreport.org/responses/climate-change-nepal-impacts-and-adaptive-strategies (Last accessed 19th December 2012).
49. Autonomous adaptation includes individual or collective responses that populations, communities, businesses and other agencies undertake on their own in response to the opportunities and constraints they face as the climate changes.
50. Personal communication, Peter Branney, (2012).
51. Kumar, N (2010). Practice of Community Adaptation to Climate Change: A Case of Community Forestry User Groups of Nepal.

Reducing disaster risks and regulating microclimates

Sustainable forest management helps reduce soil siltation and melt water and therefore helps mitigate the devastating impacts of floods and GLOFs. In addition, the cooler and wetter microclimate forests create also help to regulate local microclimates, while providing shelter for nearby agricultural and village areas from rising temperatures. Sustainable management of forests can help reduce erosion and landslides by providing stability through root networks and to some extent acting as physical barriers against debris and slips.[52] For instance, forest fire management by CFUGs protects NTFPs, soil stability, watersheds, and biodiversity.It is also recognized by the forest fire management policy of the Ministry of Forests and Soil Conservation (MoFSC). CFUGs may play an equally important role in monitoring forests for pests and disease before they become widespread.

The following sections (policies and planning, legal reform, capacity building, public and private funding and project development) summarize existing approaches and provide recommendations on how to advance the role of community forestry in climate change adaptation. A roadmap diagram at the end of this report visually displays recommended actions for relevant stakeholders to uptake through the year 2020.

52. RECOFTC and FAO, (2011). *Forests and landslides: The role of forests and forestry in the prevention and rehabilitation of landslides in Asia.*

Box 1 – Livelihoods and Forest Programme (LFP)

CASE STUDY: Livelihoods and Forest Programme (LFP)

Project duration: 2001 – 2011

Project implementer: LFP with the Govern-ment of Nepal Ministry of Forest and Soil Con-servation and NGO partners

Donor: DFID

Location: 15 districts across Nepal

Project outcomes and lessons learned:

This large-scale ten-year project applied the sustainable livelihoods approach in reducing vulnerability and improving livelihoods for Nepal's rural poor. LFP worked to secure the rights of landless and near-landless members to earn a living through cash crops or agroforestry.

The project set a strong example of community forestry-based adaptation through streamlining Community Adaptation Programmes of Action (CAPAs), CFUGs, and land management groups. CAPA is a process under the LAPA through which vulnerable and poor households within communities assess their vulnerability and plan for response and preparedness to deal with adverse impacts of climate change. This was done with 2,500 forest user groups in some 300 VDCs in 15 pilot districts. Through this process, a number of key community-forestry based adaptation practices were identified including: farm land conservation, forest management, awareness-raising, watershed management, and capacity building through income generating activities. Adaptation plans were prepared with the help of local NGOs, which are first trained by LFP; expertise beyond forestry is lacking.

The LFP and its partners built capacity of CFUGs to adapt to climate change through trainings and management plan development. Capacity building for district level agencies supported training on the Local Adaptation Plan of Actions. In addition, 'Local resource persons" were trained to provide coaching and support the adaptation plan preparation process on behalf of local CFUGs. These individuals successfully facilitated trainings, sensitively imparting skills and knowledge in the local context. Overall, more than 12,000 people were trained.[53]

These activities led to widespread inclusion of adaptation activities in CFUG annual plans. In addition, Community Adaptation Funds (CAFs) were established at VDC and CFUG levels (including 95% of VDCs (150) in the Koshi hills region). Grants for these funds were provided from DFID and other donors, including VDCs, and at least 10% came from CFUGs themselves. Both regular and emergency funds were allocated to deal with urgent needs such as forest fires, landslides, or drought. While this effort is to be commended, there is some concern that the adaptation plans were prepared too rapidly without sufficient time for community ownership and reflection, leaving some CFUGs unclear about how to use the funding.

Building on achievements the LFP and scaling up activities to 61 districts, the Multi-Stakeholder Forestry Programme (MSFP) started in 2010 with the goal to improve livelihoods of Nepal's forest communities, with an even stronger emphasis on climate change adaptation.[54]

53. Personal communication, MeenaKunwar, (2012).
54. Department for International Development (2012). *Multi-Stakeholder Forestry Programme – Nepal.* Available online: http://projects.dfid.gov.uk/project.aspx?Project=200773 (Last accessed 19th December 2012).

Policies and planning

Incorporating community forestry-based adaptation into national climate change strategies, and incorporating climate change adaptation into forest policy frameworks and practices will help accomplish goals of both areas. The following sections detail the national and local level policies with implications for community-forestry based adaptation.

Key institutions

National level

A high-level Climate Change Council (CCC) was formed under the Prime Minister to support national climate change policy and promote inter-ministerial coordination. The Climate Change Network of Nepal (CCNN), active since 2007, consists of various national and international governmental and civil society organizations. The main role of the CCNN is to provide feedback on climate change policy, conduct field research to identify priority areas, launch public awareness and capacity building programs, and develop a Climate Change Clearing House for easy information sharing, among other responsibilities.

The Ministry of Science, Technology and Environment (MoSTE) deals with climate change policy in Nepal and is the focal point for the United Nations Framework Convention on Climate Change. Meanwhile MoFSC is responsible for the implementation of adaptation and forest-based mitigation REDD+ (Reduced Emissions from Deforestation and Degradation +). This split in responsibilities and a low level of coordination between ministries poses a challenge for streamlined climate change planning.[55] Furthermore, the structure of the Ministry of Environment (MoE) has been changing in recent years, having been housed in several ministries, and recently merged with the Ministry of Science and Technology under the new MoSTE. Due to these shifts and human resource constraints, it has been challenging for the new Department of Environment (DoE) to focus on grassroots climate change adaptation.[56]

Within the former MoE, a Climate Change Program Coordination and Monitoring Unit as established to support Village Development Committees (VDCs) (local political and administrative units consists of 9 smaller units) to incorporate local adaptation into their planning processes. A Multi-Stakeholder Climate Change Initiatives Coordination Committee was formed in April 2010 consisting of ministerial, NGO, civil society and private sector members.[57] It is the key national platform for ensuring regular dialogue on climate change policies, finance and projects, including building on processes established by the NAPA.[58] However, it has no clear mechanism for outreach and information flow to the grassroots level. The MoFSC has also set up a "REDD Forestry and Climate Change Cell" (called REDD Cell in short) to bring ministries and other stakeholders such as FECOFUN together to prepare a REDD+ readiness plan and also discuss climate change issues outside of REDD+ such as adaptation. Currently, the REDD Cell is finalizing the REDD plus strategy for Nepal.

55. FAO, (2011). Workshop Report: Information Sharing and Capacity Building Workshop: Forests and Climate Change in Nepal.
56. Adaptation Knowledge Platform. Institutional Responses and Arrangements for Climate Change Resilience in Mountain communities of Nepal. (unpublished policy brief).
57. Ministry of Environment, Government of Nepal, (2010). National Adaptation Programme of Action (NAPA) to Climate Change.
58. Ministry of Environment, Science and Technology Website (2012). Available online: http://moenv.gov.np/moenvnew/?view=msc (Last accessed 19th December 2012.

Local level

District Development Committees (DDC) are local governing entities at the district level who receive government support through the Ministry of Local Development (MLD), and undertake develop-ment projects including support to VDCs. At present it is not mandatory for DDCs to allocate budget for climate related programs, and there are no guidelines on how they might integrate climate change adaptation into their planning processes. A lack of communication channels and activity coordination at the district level between sectoral line agencies (e.g. forestry, agriculture, livestock and watersheds) will make implementing adaptation activities, even more than mitigation, very challenging. The MLD is challenged to fulfill its mandate to work across sectors due to inadequate staffing and lack of experience working with CFUG. There is a need to revamp its capacity to serve as an umbrella organization that coordinates district-level adaptation activities.[59] Ideally, the MLD could enhance coordination between VDCs for sharing of information on adaptation strategies such as crop diversity and rainwater harvesting, and sharing of natural resources such as water or NTFPs in times of drought.[60]

NGOs involved in climate adaptation in Nepal

The Climate Change Network Nepal (CCNN) was established in 2003 to better coordinate various climate-change related activities among NGOs in Nepal. There are a variety of active international and national NGOs involved in climate change including

- World Wide Fund for Nature (WWF);
- International Centre for Integrated Mountain Development (ICIMOD);
- International Union for Conservation of Nature (IUCN);
- National Trust for Nature Conservation;
- Local Initiatives for Biodiversity, Research and Development (LI-BIRD);
- Care Nepal;
- Practical Action;
- Action Aid;
- Oxfam;
- Institute for Social and Environmental Transition (ISET Nepal); and
- Winrock International.

Key policies

Very few of Nepal's environmental policies mention forest-based climate change adaptation, and even fewer reference community forestry (see Table 2). There is a large gap between national level policy and local level implementation throughout the country, which hinders the possibility of national-level climate adaptation objectives materializing in communities.

59. Personal Communications, JagadishBaral, (2012).
60. Adaptation Knowledge Platform.Institutional Responses and Arrangements for Climate Change Resilience in Mountain communities of Nepal. (unpublished policy brief).

Table 1. Benefits and limitations of using CFUGs to address climate change adaptation

Policy	Relevance to community forest-based adaptation
National Forest Sector Strategy (under development)	Currently being developed by a national level coordination committee. Will incorporate elements of climate change adaptation and mitigation.
National Climate Change Policy, BS 2067 (2011)	Aimed at undertaking an economic evaluation of the impacts, possible advantages and disadvantages of climate change. Also aims to promote the development of clean energy.[61]
National Adaptation Programme of Action (NAPA, 2010)	The NAPA is intended to prioritize the urgent and immediate adaptation needs for Nepal. (See "NAPA" section below.)
Three Year Plan (2010-2012)	The vision of the "Three Year Plan" is to transform Nepal into a developed country within two decades, with the achievement of the Millennium Development Goals by 2015. The latest Three Year Plan (2010-2012) identifies climate change adaptation and green development as environmental priorities. Objectives of the Plan include implementing projects under the "Forests and biodiversity" NAPA thematic area and preparing and executing a national framework for climate adaptation and strengthening climate resilience.
Community Forestry Guidelines (2008)	The most recent Community Forestry Guidelines (2008; earlier versions date back to 1995) are continuous with a long-standing pro-poor approach to community forestry in Nepal. An illustration of this is the emphasis on social inclusion and gender, with mandates representation of women in one of the two key leadership positions in CFUG executive committees, priority of employment to the poor and 35% of development funds to marginalized households.[62]
Forest Policy (2000)	The MoFSC formulated this revised version of the 1989 Master Plan for the Forestry Sector, which outlines development strategies, programs and funds required to develop the forestry sector. Some rights of CFUGs are restricted.[63]

It is important for the National Forest Strategy to be developed through a transparent, participatory process, to specify key areas of contribution for the forestry sector and mechanisms to achieve those contributions, and to define limits and expectations for community forestry in Nepal. It would be necessary to subsequently amend the Forestry Act of 1993 to align it with this new policy. While what happens at the national level may not always have a strong impact on grassroots implementation, CFUGs need to feel their basic rights are secure in order to focus attention on climate change adaptation.[64] The Community Forestry Guidelines of 2008 mention climate adaptation but need further clarity regarding the distribution of benefits and targeting of poor and marginalized people. Furthermore, these guidelines need to be at the district level, as national level guidelines are hard to adapt to the unique geographies and forest management styles of CFUGs across Nepal. The Community Forestry Guidelines should also include a requirement for climate change adaptation planning to be a component of all CFUG constitutions and operational plans. The MoFSC has recommended this approach but there is not yet a policy in place.

61. Paudel, D, Khanal, D,R and Branney, P (2011). *Transparency in Nepal's Forest Sector: A Baseline Assessment of Legal Indicators, Provisions, and Practices.* Livelihoods and Forestry Programme.
62. Pokharel et al, (2009). Community Forestry in Nepal as a Means of Empowering People Living in Poverty: An Assessment of its Social, Economic and Environmental Sustainability.
63. Arnatya, S.M (2002). *A Review of Forest Policy in Nepal.* Proceedings of the Forest Policy Workshop Kuala Lumpur, 2002.
64. Personal communication, Peter Branney, (2012).

Some national level policies have integrated forest-based adaptation and provide a general framework to address climate change vulnerability. For example, one of the priority areas of the current Three Year Plan is "climate change adaptation and sustainable natural resource management," although there is no mention of the role of CFUGs.[65] The National Climate Change Policy of 2011 broadly highlights the importance of addressing the impacts of climate change through sustainable management of forests. It sets the following targets relevant to adaptation and references community-based adaptation:

- Initiation of community based local adaptation by April 2012;
- Evaluating economic loss (and gain) due to climate change by April 2013; and
- Establishment of an impact forecasting system on livelihoods and the natural resource base by April 2021.[66]

National Adaptation Programme of Action (NAPA)

Nepal's NAPA, approved by the government and submitted to the United Nations Framework Convention on Climate Change in 2010, is the country's major adaptation policy document. The objective of the NAPA is to mainstream climate change into national development through poverty reduction, livelihood improvement and diversification, and resilience building.[67]

The NAPA identified six key thematic areas (Agriculture and food security; Water resources and energy; Climate-induced disaster; Forests and biodiversity; Public health; Urban settlement and infrastructure) and nine 'combined profiles' (combinations of identified priority activities) for adaptation interventions (listed below). Three of the combined profiles are related to forestry and are the responsibility of the MoFSC (Table 3).

Table 1. Benefits and limitations of using CFUGs to address climate change adaptation

NAPA combined profile	Responsibility of MoFSC
Promoting community-based adaptation through integrated management of agriculture, water, forest and biodiversity.	✓
Building and enhancing adaptive capacity of vulnerable communities through improved system and access to service for agricultural development.	
Community-based disaster management for facilitating climate adaptation.	
Glacial Lake Outburst Flood (GLOF) monitoring and disaster risk reduction.	
Forest and ecosystem management in supporting climate-led adaptation innovations.	✓
Adapting to climate challenges in public health.	
Ecosystem management for climate adaptation.	✓
Empowering vulnerable communities through sustainable management of water resource and clean energy supply.	
Promoting climate-smart urban settlements.	

65. National Planning Commission, Government of Nepal (2010). Three Year Plan Approach Paper (2010/11 – 2012/13).
66. Ministry of Environment, Government of Nepal (2011). Climate Change Policy 2011.
67. Ministry of Environment, Government of Nepal, (2010). National Adaptation Programme of Action (NAPA) to Climate Change.

Nepal's NAPA consists of 3 components:

- Preparation and dissemination of the NAPA document;
- Development and maintenance of a Climate Change Knowledge Management and Learning Platform for Nepal, and;
- Development of a Multi-Stakeholder Framework of Action for Climate Change in Nepal.[68]

The NAPA is coordinated by MoSTE, which has identified "Implementing Line Ministries" (such as MoFSC for forestry-related projects) along with partner NGOs to address challenges in each of the thematic areas. Developed with support from United Nations Development Programme - Global Environment Facility (GEF), DFID and the Danish International Development Agency (DANIDA)[69], the estimated total cost to implement the combined profiles of the NAPA is US$ 350 million, over a period of three to six years.[70] Due to the low availability of funding, and a complex and lengthy process for accessing funding through the GEF, these projects have not yet been implemented.

The NAPA recognizes the possible role of CFUGs and other local groups in its implementation, and views forestry as a priority sector, but does not identify the best mechanism to achieve community forest-based adaptation. Despite lack of clear guidance in the NAPA, CFUGs are widely considered an important entry point for NAPA implementation. The NAPA also does not clarify the role of the MLD, a key ministry for providing coordinated intervention at the local level. The role of the forestry sector in climate adaptation is recognized in the NAPA mainly in the areas of rehabilitation of community land, prevention of erosion and landslides, provision of food during drought, soil conservation, watershed management and the protection of biodiversity.[71]

Local Adaptation Programme of Action (LAPA) and Community Adaptation Programme of Action (CAPA)

The Local Adaptation Programme of Action (LAPA) emerged as an innovative mechanism to connect the NAPA to unique situations at the local level and allow communities to engage in developing adaptation priorities.[72] At least 80% of NAPA funding must be spent at the grassroots, although how this will be distributed in practice is unclear. While the sectoral ministries are expected to oversee adaptation activities at a local level, DDCs and VDCs will likely implement these activities. So far, however, there are no guidelines for climate change related budgets and programs in the annual planning of DDC and VDCs.[73] The LAPA framework is intended to help communities prepare local adaptation plans and incorporate them into VDC and DDC planning processes. Community ownership over the adaptation process coupled with leadership by local government officials are key elements to successful LAPA development. So far around 300 LAPAs have been developed at the VDC level across Nepal. DFID has played a major role in the development of LAPAs and CAPAs (Community Adaptation Programmes of Action) through the Livelihoods and Forestry Program (LFP). CAPA pilot projects are explained further in Table 4 under 'Project Development.'

68. Ibid.
69. Kumar, N (2010).Practice of Community Adaptation to Climate Change: A Case of Community Forestry User Groups of Nepal. Report submitted to Livelihoods and Forestry Programme.
70. Ministry of Environment, Government of Nepal, (2010). National Adaptation Programme of Action (NAPA) to Climate Change.
71. ibid
72. Regmi, B and Subedi R (2008). Addressing the Mismatch in Adaptation Planning in Nepal. Tiempo Climate Newswatch.
73. Adaptation Knowledge Platform.Institutional Responses and Arrangements for Climate Change Resilience in Mountain communities of Nepal. (unpublished policy brief).

Recommendations for policy and planning

The Local Adaptation Programme of Action (LAPA) emerged as an innovative mechanism to connect the NAPA to unique

- **Revise the current NAPA** to clarify the role of the CFUGs as an implementing mechanism and the role of the Ministry of Federal Affairs and Local Development (MFALD) at the local level. The NAPA should be responsive to the local context, but also linked at the regional level to enhance collaboration.

- **Develop guidelines on community forestry for adaptation** and integrate into relevant national-level policies (such as the National Forest Strategy currently under development) to enhance coherence and harmonization. MoFSC may take the leas on this, and include a revision of the Community Forestry Guidelines of 2008, requiring CFUGs to incorporate community-based adaptation methods and tools in the creation of their constitutions, operational and capacity-building plans.

- **Further integrate climate change adaptation into national and sector plans, policies and programs** under the coordination of the National Planning Commission (for example, into Sustainable Forest Management (SFM) policies). A national strategy on community-based adaptation – specifying the role of CFUGs – is needed.

- **Develop sector specific sub-policies** within Nepal's National Climate Change Policy to help government agencies focus their efforts.

- **Continue supporting CFUGs in preparation of vulnerability assessments and adaptation plans** for their forest areas, under the guidance of the new MSFP. CFUG adaptation planning should be linked to the NAPA, LAPAs and CAPAs and incorporated into VDC and DDC planning.

- **Establish a Climate Change Centre** (as recommended by the National Climate Change Policy) to undertake appropriate research and integration of sectoral ministries, supporting the MoSTE in NAPA implementation and enhancing the flow of information between the Centre and grassroots level such as with CFUGs. This could also be a channel for grassroots communication for the Multi-Stakeholder Climate Change Initiatives Coordination Committee.

- **Improve communication channels between the MoSTE and MoFSC**, to allow the DoE to better coordinate and oversee sectoral ministries at the grassroots level (this could be achieved through the establishment of an adaptation-specific unit within the DoE, (in addition to its Climate Change Management Division) or the MoFSC. This would require further investment in human resource capacity.

- **Coordinate and support LAPA and CAPA implementation**, using the MFALD to provide direct intervention at the local level and authorizing local ministries to develop adaptation projects. Furthermore, the MFALD should issue guidelines for DDCs and VDCs to incorporate community forest-based adaptation programs into their annual budgets.

Legal reform

Nepal's CFP has a clear legal and regulatory structure and reform process that is widely accepted by CFUGs and other stakeholders.[74] Land tenure and governance rights are clearly defined through the CFUG constitutions and operational plans, yet the interpretation and implementation of these rights is sometimes contested.[75] Legal reform is essential to local communities as it can translate policies into real on-the-ground change. A number of Acts were established over 10 years ago, and have not had subsequent amendments despite ongoing political change in Nepal (Table 3).

Table 3. Laws relevant to community forest-based adaptation

Local Self Governance Act (1999)	Deals with the devolution of roles, responsibility and authority to local government (VDCs in rural areas), including natural resources management. However, these provisions are not well aligned with many of the sectoral acts, including the Forest Act of 1993.[76]
Forest Act (1993)	Specifies all categories of forestland and the various tenure, access and ownership regimes. Defines the rights and responsibilities of forest users organized into legally recognized CFUGs.
National Park and Wildlife Conservation Act (1973)	Legal framework for the establishment of different categories of protected areas, which are owned by the state, with restricted access. For example, Buffer Zones are a form of land adjacent to National Parks, which may be partly managed by the local community, albeit under the ultimate control of state wildlife and conservation wardens.
Land Reform Act (1964)	Provides a ceiling of individual landholdings and guarantees for entitlement to private farmland. Refers mostly to private agricultural land.

Security of land tenure has been critical to the success of community forestry in Nepal. Tenure rights ensure access of local communities to forests and the right to harvest timber and NTFPs, an important means of coping with climate impacts. While CFUGs are allowed access to and use of forests under 5-year legal arrangements, the actual land ownership remains with the government. This may hinder some adaptation activities, as communities may be reluctant to make land management investments without secure ownership. Inclusion of communal ownership of land in Nepal's new constitution (currently being drafted), while politically unlikely, would be an important step toward legal reform to clarify land ownership.[77]

While the Community Forestry Guidelines (2008), the constitutions and operational plans of CFUGs generally emphasize the importance of community forestry to building resilience[78], it is necessary that these documents directly address issues of exclusion, participatory decision-making and equitable access to forest resources, in addition to land tenure, to achieve effective adaptation. Given that women and marginalized groups will be disproportionately impacted by climate change, it is necessary to ensure both full social inclusion in the formation of CFUGs, and equitable distribution of adaptation support through a clear legal framework, which are still lacking.[79]

74. Bharat, P and Byrne, S (2009). Climate Change Mitigation and Adaptation Strategies in Nepal's Forest Sector: How can rural Communities benefit? NSCFP Discussion Paper No.7.Nepal Swiss Community Forestry Project.
75. Ojha, H, Persha, L and Chhatre, A (2009). Community Forestry in Nepal: A Policy Innovation for Local Livelihoods. IFPRI Discussion Paper 00913.
76. International Federation of Red Cross and Red Crescent Societies (2011).Analysis of legislation related to disaster risk reduction in Nepal.
77. Personal communication, HarisharanLuintel, (2012)
78. Suzuki, R (Ed) (2012). Linking Adaptation and Mitigation through Community Forestry: Case Studies from Asia. RECOFTC.
79. Ojha, H, Persha, Land Chhatre, A (2009). Community Forestry in Nepal: A Policy Innovation for Local Livelihoods. IFPRI Discussion Paper 00913.

The 1993 Forest Act provided CFUGs with clear legal identity and a high degree of autonomy to choose their institutional structure based on local context, and function independently from the government. This also meant CFUGs have collaborated with a variety of NGOs and private sector organizations.[80] Legal reform should continue to be flexible to allow diverse institutional modalities to fit the unique situation of each CFUG.

Recommendations for legal reform

- **Ensure full social inclusion in CFUG formation and decision-making processes**, and equitable access to forest resources and distribution of adaptation support. NTFP-collection restrictions on CFUGs that impact household energy and food security should be relaxed in order to strengthen community climate change resilience.

- **Employ strong civil society networks** to safeguard and advocate legal rights and ensure autonomy of community forestry from government or private interests. Engagement with senior government officials and politicians is key to achieving institutional changes necessary for improved forest governance, especially to provide input during the development of a new Nepalese Constitution.

- **Establish rules for allocating CFUG community development funds**, including a requirement for a portion of funding to support marginalized groups and climate change adaptation.[81]

80. Ojha, H, Persha, L and Chhatre, A (2009). *Community Forestry in Nepal: A Policy Innovation for Local Livelihoods*. IFPRI Discussion Paper 00913.
81. Personal communication, Nirmal Kumar, (2012).

Project development

Nepal has a relatively high number of projects linking community forestry and adaptation compared to other countries in the region. Table 4 lists a select number of key forest-based adaptation projects being undertaken in Nepal.

Table 4: Existing Climate Change Adaptation and Community Forestry Projects in Nepal

Project and partner(s) (if any)	Geographic scope	Description
Communities of Charikot (Dolakha district) and Harkapur-Mahedevsthan and Kuntadevi (Okhaldhunga district)	Sub-National	Communities are employing autonomous adaptation measures such as: rainfall collection in small ponds, drought-tolerant crop selection and protecting forests around natural springs to maintain supply of water.[82]
Ecosystem Services and Livelihoods Adaptation Project in Langtang National Park Buffer Zone (WWF)	Sub-National	This project has the goal of increasing resilience to climate change impacts for marginalized communities and ecosystems in the Langtang National Park Buffer Zone through piloting adaptation methodologies from the bottom up and top down.[83]
Bishnupur and Sibeswor CFUGs in Sarlahi district (CARE)	Sub-National	CFUGs are supported in developing climate change adaptation plans, which involve mapping climate change hazards and building capacity among committee members to facilitate processes of community-based adaptation. Activities include: • A switch to drought-resistant sugarcane production • Reforestation activities to reduce landslides, narrowing and shifting river flows away from homes and livelihood assets and adjusting land-use management strategies. • Knowledge sharing of natural fertilizers made from forest-based tree species.[84]
Multi-Stakeholder Forest Program (MSFP) – building on achievements of the Livelihoods and Forest Program (LFP) (DFID)	National	(See Box 1)
Pathibhara CFUG of Telia VDC (Dhankuta district)	Sub-National	Pathibhara CFUG prepared an inclusive and broad community based adaptation plan at the VDC level. First the most vulnerable groups were identified (women and Dalits) and subcommittees of those groups were formed to identify possible risks and coping strategies. Visits to climate hot spots in the area were undertaken. An adaptation preparation workshop was also held to create a VDC level adaptation plan.[85]

82. Personal communication, Ngamindra Dahal, (2012).
83. WWF, (2012). Implementing climate change adaption in Nepal. Available online: http://www.wwfnepal.org/our_solutions/projects/index.cfm?uProjectID=NP0909 (Last accessed 19th December 2012).
84. Suzuki, R (Ed) (2012). *Linking Adaptation and Mitigation through Community Forestry: Case Studies from Asia.* RECOFTC.
85. Kumar, N (2010). Practice of Community Adaptation to Climate Change: A Case of Community Forestry User Groups of Nepal.

Project and partner(s) (if any)	Geographic scope	Description
Mountains Ecosystem-Based Adaptation (EBA) Programme (UNEP, UNDP, IUCN)	National	This 4-year pilot project was announced at the sixteenth Conference of the Parties (COP 16) in December 2010, to reduce vulnerability to climate change impacts by promoting EBA options with the following key components: development of methodologies and tools for EBA decision-making; application of methodologies and tools at the national level; implementation of EBA activities at the mountain ecosystem level; and formulation of national policies including building the economic case for EBA scale up.
Catalyzing ecosystem based adaptation for resilient ecosystems and rural livelihoods in degraded forests and rangelands of Nepal (UNEP)	National	Funded by the Least Developed Countries Fund (LDCF); UNEP implemented (GEF review now complete). Main objective is to increase the resilience of Nepalese communities to climate change through restoration of degraded ecosystems. Project components include: local and national institutional EBA capacity development; policy, strategy and legislative strengthening; and demonstration measures that reduce vulnerability and restore natural capital.
Hariyo Ban Program (USAID)	National	This five-year program, whose name translates to "Green Forests" in Nepali, was created to address the low capacity and general knowledge gap on how climate change impacts Nepal's people and biodiversity.[86] Ambitious objectives of this USD $30 million project include:[87] 1) Over 1 million metric tons of carbon sequestered/reduced,2) 50,000ha of degraded forest put under improved natural resource management, 3) Capacity built for 180,000 Nepalese to adapt to climate change, and 4) Improved revenue streams for vulnerable communities through improved payments for environmental services systems such as REDD+. With regards to climate adaptation project design, this serves as a model for cross-sector and community-based approaches, working towards policy development, project development, funding and capacity building. Hariyo Ban plans to increase adaptive capacity to climate change in the following ways[88]: • Increase government and private sector understanding of climate change vulnerabilities and adaptation options • Establish participatory systems for vulnerability monitoring • Pilot and expand actions for climate change vulnerability reduction • Provide support for climate change adaptation policies, strategies, and guidelines In so doing, the Hariyo Ban program will develop community led adaptation processes, and attempt to link bottom-up and top-down adaptation approaches in line with the NAPA and Local Adaptation Programme of Action (LAPA). FECOFUN and CARE Nepal, consortium partners of the Hariyo Ban Program, are bringing community based natural resource management to the forefront of adaptation.[89]

86. http://wwfnepal.org/hariyobanprogram/where_we_work/.
87. http://climatechange-asiapac.com/projects/nepal-hariyo-ban-green-forests-program.
88. http://climatechange-asiapac.com/projects/nepal-hariyo-ban-green-forests-program.
89. USAID, (2012). Where We Work: Nepal. Available online: http://www.usaid.gov/where-we-work/asia/nepal (Last accessed 19th December 2012).

Learning from these projects, there is great opportunity for scale up community forest-based adaptation approaches, identifying and refining best practices. Future community forestry projects are needed to address the following priorities for forest-based adaptation in Nepal, as identified in a recent MoFSC study (2011)[90]:

- Community-based forest fire control in mid-hills;
- Management of high altitude non timber forest products/herbs;
- Wetland biodiversity conservation in Terai;
- Integrated watershed management in Churia;
- Integrated forest management with focus on water; and
- Range land conservation at high altitude.

Recommendations for project development

- **Scale-up piloting of local level adaptation practices and technologies in community forests**, integrating local knowledge with current climate science. Pilot activities, such as those being undertaken by the MSFP, are essential for demonstration and learning, and review of existing pilots is needed to build future strategy.

- **Enhance focus on gender and marginalized groups** in vulnerability assessments, stakeholder participation and project implementation.[91]

- **Incorporate expertise beyond the forestry sector, to ensure a broad scope of adaptation**. Incorporation of local health, veterinary, agriculture and land management authorities are all necessary. Local-level coordination by the MLD, the formation of the Climate Change Clearing House by the Climate Change Council, and use of the existing Nepal Climate Change Knowledge Management Center, could help facilitate this kind of grassroots information sharing.

- **Improve coordination of project development activities** across government agencies, programs, NGOs and donors. Leadership to achieve this should come from the national government or from the CCNN.

90. Ministry of Forests and Soil Conservation Nepal (2011). *Role of forest on climate change adaptation.*
91. Personal communication, Harisharan Luintel, (2012).

Public funding and private investment

Investment in CFUGs has an indirect impact on building adaptive capacity through poverty alleviation. A study of seven districts showed that for every US $50 invested in community forestry over a 10 year-period, one person was lifted out of poverty. With US $70 million of anticipated investment in the next decade, this impact would extend to 1 million Nepalese people.[92] In LFP project areas, for instance, in Nepal, about 70 percent of CFUG income was spent on activities to enhance local livelihoods. In addition to promoting income diversification options, CFUGs should continue to support local micro-credit by linking with international development banks. There are also opportunities for combining multiple CFUGs to realize economies of scale in forest products marketing.

Nepal has strong donor readiness to support community forestry and climate change adaptation. Historically, the CFP has been donor-funded, though CFUGs are increasingly willing to fund operations themselves. Out of a total estimated average cost of USD $1,345 per year to run a CFUG, 71 percent is borne by the CFUG itself, 16 percent from donors and 13 percent from the government. The CFUG contribution is primarily in labor costs with a small proportion of cash.[93] If CFUGs further expand forest-based enterprises they could likely meet an even greater percentage of their costs. However, networking organizations like FECOFUN that enhance the agenda of CFUGs at the national and international level remain heavily donor dependent.

Presently, climate change funding for Nepal is coming from a range of international donors including UNEP, UNDP, IUCN, LDCF, Special Climate Change Fund, the World Bank, USAID, DFID, WWF and Asian Development Bank (ADB), among others. Nepal was selected as a pilot country under the Pilot Programme for Climate Resilience (part of the World Bank's Strategic Climate Fund), which aims to transform investment programs and integrate climate risks and vulnerabilities into development planning, building upon the NAPA. In 2008, donor harmonization for climate change activities in Nepal was initiated by DFID, with a Donor Compact on Climate Change signed between the Government of Nepal and 14 development partners in 2009.[94] While there are concerns around the effectiveness of channeling funds through government agencies rather than directly to projects, it is important to integrate government into this process for long-term sustainability, rather than relying on external organizations for fund management.

Financial resources are vital to increasing the adaptive capacity of vulnerable communities. The NAPA is an important source of adaptation finance in Nepal, with a total of US $350 million requested through the LDCF of the GEF and the Special Climate Change Fund for project implementation.[95] Nepal's NAPA states that 80 percent of financial resources should fund on-the-ground adaptation activities. However, due to a lack of institutional and financial structure for adaptation financing and governance at the national level, there is concern that local benefits may not fully be achieved. Furthermore, clear guidelines are needed for how NAPA funding may be accessed, how this should be integrated into local level climate change plans, and local-level institutional arrangements and capacity building for delivering funding to priority sectors and projects.[96] This is made more difficult by the lack of district offices or local focal points of the MoSTE (which is responsible for the administration of NAPA finance). NAPA projects have been slow to be implemented due to the complex and long process for accessing funding through the GEF. LAPAs and CAPAs have moved forward more efficiently due to their acquiring funding from bilateral donors, primarily DFID.[97]

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92. Livelihoods and Forestry Programme (2009). *Community forestry for poverty alleviation: How UK aid has increased household income in Nepal's middle hills: Household economic impact study.*
93. Ojha, H, Persha, L and Chhatre, A (2009). *Community Forestry in Nepal: A Policy Innovation for Local Livelihoods.* IFPRI Discussion Paper 00913.
94. Ministry of Environment, Government of Nepal, (2010). *National Adaptation Programme of Action (NAPA) to Climate Change.*
95. Bharat, P and Byrne, S (2009). *Climate Change Mitigation and Adaptation Strategies in Nepal's Forest Sector: How can rural Communities benefit?* NSCFP Discussion Paper No.7.Nepal Swiss Community Forestry Project.
96. Personal communication, Hiromi Inagaki, (2012).
97. Personal communication, Hiromi Inagaki, (2012).

There are potential synergies for forest-based adaptation projects with mitigation finance, for example the use of a percentage of PES or REDD+ income for adaptation. Added incentives from carbon markets may reinforce forest conservation with co-benefits for adaptation. But there are also fears that REDD+ may reverse decentralized forest management, potentially undermining the rights of local communities. Equitable distribution of benefits and sound governance arrangements are essential to the success of both REDD+ and adaptation. VDCs may play a key role in ensuring that the funds go directly to communities in priority areas.

Recommendations for public funding and private investment

- **Ensure allocation 80% of NAPA funding at the local level**, as stated in the NAPA requirements. DDCs may address this by establishing a separate unit to handle climate change adaptation issues and funding. There is currently low fund management capacity, particularly funding governance, monitoring and evaluation. Fund management and accounting systems should be as close to the project level as possible (district rather than national level).[98]

- **Direct portion of project revenue from REDD+ and other PES schemes to adaptation**. Clear mechanisms and guidelines are needed for distributing funds to priority vulnerable areas, which may not necessarily fall directly within REDD+ project boundaries.

- **Allocate more adaptation finance to CAFs, microfinance and micro-insurance schemes** in CFUGs to support forest-based livelihood activities, with the goal of supporting CFUGs moving towards financial independence.

- **Establish national guidelines for CAFs, specifying the inputs and uses of the CAFs**, through a consultative, multi-stakeholder process.

98. Personal communication, Hiromi Inagaki, (2012).

Capacity development

Capacity development efforts are needed at all levels, including national and district government officials, NGO staff, and community members, to understand climate change impacts and appropriate responses. There remains a gap between the needs of communities and the government's ability to respond, in part due to community remoteness and a low level of understanding of local contexts. Outside of MoFSC and MoSTE, officials from other ministries and local level staff are not aware of the NAPA and other policy documents on climate change.[99]

There is also a lack of a national capacity to scientifically analyze the effects of climate change in Nepal, make projections of what potential impacts will be and develop viable solutions. However, some organizations are beginning to address this problem. For example, Nepal Agricultural Research Council (NARC) has identified drought-tolerant crop varieties and cropping practices, and the Department of Hydrology and Meteorology is conducting research on climate change projections through downscaling of Global and Regional Circulation Models. While community forestry has strong monitoring systems in place (all CFUGs have forestry monitoring sub-committees which oversee auditing and ensure transparency[100]), there is a lack of capacity for comprehensive monitoring at district and national levels. The Community Forestry Division of the Department of Forests has a National Community Forestry Database, but it is not updated frequently. Furthermore, data generated by donor projects are specific to project areas, making them difficult to compare at a higher level. As mandated by the NAPA, a Nepal Climate Change Knowledge Management Center was established, hosted by the Nepal Academy of Science and Technology, partially to facilitate knowledge sharing through the United Nations Environment Programme's (UNEP) Adaptation Knowledge Platform.[101]]

Recommendations for capacity devlopment

- **Enhance research capacity of Nepalese academic institutions** for long-term climate change, monitoring and analysis.

- **Integrate adaptation into national REDD+ trainings**, with emphasis on how REDD+ may finance adaptation activities.

- **Train relevant NGO staff (who support CFUGs) in diverse, multi-sector adaptation practices**, so that they may support grassroots stakeholders in developing innovative adaptation solutions beyond conventional sustainable forest management practices.

99. Adaptation Knowledge Platform. *Institutional Responses and Arrangements for Climate Change Resilience in Mountain communities of Nepal.* (unpublished policy brief).
100. Suzuki, R (Ed) (2012). *Linking Adaptation and Mitigation through Community Forestry: Case Studies from Asia.* RECOFTC.
101. Adaptation Knowledge Platform. *Institutional Responses and Arrangements for Climate Change Resilience in Mountain communities of Nepal.* (unpublished policy brief).

Nepal's community forest and adaptation roadmap to 2020

This roadmap provides time-bound recommendations for policies and planning, legal frameworks, project development, financing and capacity building in the immediate present, 2015 and 2020 for Nepal.

Nepal	Immediately	2015	2020
Policies and planning	• Revise the current NAPA to clarify the role of CFUGs as an implementing mechanism for adaptation. • Establish an adaptation-specific unit within the Department of Environment to facilitate coordination of sectoral ministries at the grassroots level. • The MLD issues guidelines for District Development Committees (DDC) and Village Development Committees to incorporate community forest-based adaptation programs into their annual budgets.	• By 2015, a Climate Change Centre (as recommended by the National Climate Change Policy) is established to assist the DoE in NAPA implementation and enhance flow of information to the grassroots level. • The Ministry of Forest and Soil Conservation (MoFSC) develops guidelines on community forest-based adaptation (including requirement for adaptation planning by all CFUGs) and is integrated into the National Forest Strategy and other relevant policies.	• By 2020, climate change adaptation is integrated into all national and sector plans, policies and programs, including a national strategy on community-based adaptation and sector-specific sub-policies within the National Climate Change Policy. • All CFUGs across Nepal have completed vulnerability assessments and adaptation plans, linked to NAPA, LAPAs and CAPAs, and incorporated into VDC and DDC planning and budgets.
Legal reform	• Start development of a new legal framework that: ▪ Ensures full social inclusion in CFUG formation, decision-making and equitable benefit sharing; ▪ Reduces unnecessary restrictions on NTFP collection; and ▪ Provides guidance on allocation of CFUG community development funds for adaptation.	• Based on relevant provisions for community forest-based adaptation in the new constitution, a revised legal framework is developed (especially if community land ownership has been addressed).	• Next steps in 2020 are dependent on previous outcomes of a revised legal framework.

Nepal	Immediately	2015	2020
Project development	• Scale-up of community forest-based adaptation pilot activities and technologies across Nepal, paying special attention to the needs of marginalized groups. • Direct increased support to the Climate Change Network Nepal (CCNN) so that it may better coordinate project development activities across government agencies, programs, NGOs and donors.	• By 2015, a nationwide review of existing pilots is underway, with existing institutions identified to incorporate model adaptation practices and lessons learned into future planning.	• Once CFUGs vulnerability assessments and adaptation plans are complete, the MoFSC assists CFUGs to carry out adaptation activities.
Public funding and private investment	• The DDCs establish a separate unit to handle climate change adaptation issues and funding, and to ensure full implementation of the NAPA requirement to spend 80% of funding at the local level. • MoFSC begins directing portion of revenue from REDD+ or other PES schemes towards adaptation projects, and develops associated mechanism for distributing funding to priority areas.	• By 2015, the creation of Community Adaptation Funds (CAFs) becomes a required component of CFUG constitutions and operational plans. Associated guidelines are developed, specifying the inputs and uses of the CAFs. • A national mechanism is established to ensure appropriate prioritization of adaptation activities for funding across Nepal (based on NAPA framework).	• By 2020, the majority of CFUGs and their networks are financially sustainable, through the support of appropriate policies and scaling-up of forest-based enterprises.

Nepal	Immediately	2015	2020
Capacity development	• Scale up the Federation of Community Forest Users in Nepal (FECOFUN)'s role in providing training and knowledge dissemination on adaptation at the community level, targeting marginalized groups. • Create capacity development programs for academic and research institutions to develop long-term studies on climate change impacts and improve data collection methodologies. • Revise REDD+ training programs to include strong adaptation components. • Mandate DFOs (working with FECOFUN) to lead the coordination of local partners in providing broad expertise (beyond forestry) in the development of CFUG adaptation plans.	• By 2015, a Masters program is created on climate change adaptation, with course-work available on forest-based adaptation.	• By 2020, there are government resource persons available for every CFUG in Nepal that are fully trained in climate change adaptation.

RECOFTC's mission is to enhance capacities for stronger rights, improved governance and fairer benefits for local people in sustainable forested landscapes in the Asia and the Pacific region.

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