



# PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: LDCF

## PART I: PROJECT IDENTIFICATION

<b>Project Title:</b>	Reducing vulnerability and increasing adaptive capacity to respond to impacts of climate change and variability for sustainable livelihoods in agriculture sector in Nepal		
<b>Country(ies):</b>	Nepal	<b>GEF Project ID:</b>	5111
<b>GEF Agency(ies):</b>	FAO	<b>GEF Agency Project ID:</b>	616181
<b>Other Executing Partner(s):</b>	Ministry of Agricultural Development (MOAD), Department of Agriculture (DOA), Department of Livestock Services (DLS) and Nepal Agricultural Research Council (NARC) and Department of Hydrology and Meteorology (DHM)	<b>Submission Date:</b>	February 8, 2012
<b>GEF Focal Area (s):</b>		<b>Project Duration (months):</b>	48
<b>Name of parent program (if applicable):</b> • For SFM <input type="checkbox"/>	NA	<b>Agency Fee:</b>	255,502

## A. FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-Financing (\$)
CCA-1	Outcome 1.1. Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas	Output 1.1.1. Adaptation measures and necessary budget allocations included in relevant frameworks	LDCF	150,000	275,000
	Outcome 1.3. Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	Output 1.3.1. Targeted individual and community livelihood strategies strengthened in relation to climate impacts including variability	LDCF	900,000	3,146,190
CCA-2	Outcome 2.1. Increased knowledge and understanding of climate variability and change-induced threats at country level and in targeted vulnerable areas	Output 2.1.1. Risk and vulnerability assessments conducted and updated  Output 2.1.2. Systems in place to disseminate timely risk information	LDCF	400,000	725,000
	Outcome 2.2. Strengthened adaptive capacity to reduce risks to climate-induced economic losses	Output 2.2.1. Adaptive capacity of national and regional centers and networks strengthened to rapidly respond to extreme weather events	LDCF	411,427	1,500,000
CCA-3	Outcome 3.1: Successful	Output 3.1.1. Relevant	LDCF	700,000	3,160,006

	demonstration, deployment, and transfer of relevant adaptation technology in targeted areas	adaptation technology transferred to targeted groups			
Sub-Total				2,561,427	8,806,196
Project management cost				128,071	440,310
Total project costs				2,689,498	9,246,506

## B. PROJECT FRAMEWORK

### Project Objective:

1. To strengthen institutional and technical capacities for reducing vulnerability and promoting climate-resilient practices, strategies and plans for effectively responding to the impacts of climate change and variability in agriculture sector

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
1. Strengthening of technical and institutional capacities and integrating adaptation into national food and agriculture policies, strategies and plans	TA	1.1 Strengthened technical capacity in Ministry of Agricultural Development (MOAD), Department of Agriculture (DOA), Department of Livestock Services (DLS) and Nepal Agriculture Research Council (NARC) and local stakeholders on climate change adaptation	<p>1.1.1 Technical capacity of climate change focal units in MOAD, DOA, DLS and NARC at the national level strengthened (50 staff trained) for implementation of climate change adaptation priorities identified for food and agriculture sector in NAPA.</p> <p>1.1.2 Technical expertise of district and local level DOA and DLS staff on climate change adaptation improved (Training of Trainers (ToT) provided to 200 staff in 4 selected districts covering two development regions of Nepal).</p> <p>1.1.3 Training manuals on climate risk and vulnerability assessment, climate change adaptation good practices, and mainstreaming climate change adaptation in agriculture sector developed based on training needs assessment, validated and integrated into regular training programmes of MOAD, DOA, DLS and NARC to ensure sustainability.</p>	LDCF	300,000	1,775,000

		<p>1.2 Climate change adaptation mainstreamed into national agriculture and livestock policies, plans and programmes</p>	<p>1.2.1 At least 25 relevant staff trained on mainstreaming climate change adaptation priorities (as identified in NAPA) of food and agriculture in to Government's agriculture plans, programmes etc.,</p> <p>1.2.2 Cross-sectoral Coordination Mechanism strengthened to facilitate the integration of climate change adaptation into agriculture plans and programmes by Ministry of Agriculture and Cooperatives (MOAD), Department of Agriculture (DOA), Department of Livestock Services (DLS) and Nepal Agriculture Research Council.</p> <p>1.2.3 Updated national agriculture strategies and district adaptation/risk reduction plans available with climate change adaptation priorities of NAPA, investment plans and budget (at least 5 strategies/ plans with budget allocation for adaptation actions prepared and endorsed by the Government).</p>			
2. Assessment, monitoring and providing advance early warning information on vulnerabilities, risks of climate change and agrometeorological forecasts to assist better adaptation planning	TA	<p>2.1 Improved vulnerability and risk assessment tools, FAOs crop situation and yield assessment methods introduced and implemented at the local level</p> <p>2.2 Improved</p>	<p>2.1.1 Improved tools and methods for assessment of climate change risks and vulnerability and crop yield assessment models introduced at the national level and core staff trained (&gt;25 staff at MOAD, DOA, DLS and NARC trained) and linked with at least 4 districts.</p> <p>2.1.2 Improved risk and vulnerability assessment methods (from output 2.1.1) used to develop spatial risk and impact information on agriculture for 24 Village Development Committees (VDCs) in 4 districts.</p> <p>2.2.1 Improved</p>	LDCF	350,000	735,000

		agrometeorological forecast disseminated in 4 districts in close coordination with similar initiatives at the national level	agrometeorological forecast products from the Department of Hydrology and Meteorology (DHM) planned under the World Bank's PPCR project disseminated to 120 farmer groups (at least 3000 men and women farmers) and wider rural communities in 24 VDCs of 4 districts and end-users trained using Farmer Field School (FFS) approach (new products introduced at the local level and sustainable mechanisms to interpret the forecasts established in 4 districts).			
3. Improving awareness, knowledge and communication on climate impacts and adaptation	TA	<p>3.1 Awareness raising, knowledge management and communication strategy drawn, agreed and implementation plan prepared.</p> <p>3.2 Knowledge and awareness on climate change increased and improved adaptation practices and livelihood strategies disseminated for location specific context</p>	<p>3.1.1 Comprehensive and multi-stakeholder awareness raising, knowledge management and communication strategy formulated and agreed with the Government and non-governmental organizations at national, district and local levels and applied to fostering implementation of new and currently available adaptation practices outlined in Nepal's NAPA.</p> <p>3.2.1 At least 120 Farmer Field School (FFS) facilitators in 4 districts trained on climate change impacts and adaptation in agriculture as outlined in NAPA.</p> <p>3.2.2 At least 120 farmer groups involving a total of over 3000 farmers aware of climate change impacts, adaptation measures and alternative livelihood strategies by implementing Farmer Field School (FFS) by trained facilitators in 4 districts of Nepal.</p> <p>3.2.3 Project-related good-practices (at least 25) elaborated and lessons-learned disseminated via publications, project</p>	LDCF	311,427	1,500,000

			website and others to facilitate up-scaling and integration into policies and plans by the Government and replication in similar situations by non-government organizations.			
4. Prioritizing and implementing local investment by promoting Community Based Adaptation (CBA) to strengthen livelihood strategies and transfer of adaptation technology in targeted areas.	Inv.	<p>4.1 Livelihood alternatives and climate-resilient physical measures prioritized and implemented by promoting Community Based Adaptation (CBA) to climate change.</p> <p>4.2 Adaptation technology relevant to agriculture implemented and new stress tolerant varieties introduced to reduce climate risks</p>	<p>4.1.1 Investment to strengthen livelihood alternatives and small-scale climate-resilient physical measures prioritized through Local Adaptation Plans of Action (LAPAs) by involving the community and farmer groups (at least 24 LAPAs prepared and endorsed).</p> <p>4.1.2 Diversified livelihood strategies and alternate sources of income (eg. Off-season vegetable cultivation, multi-purpose tree species, tree-crop alley farming, livestock enterprises etc.,) implemented in 24 Village Development Committees (VDCs) of 4 selected districts.</p> <p>4.1.3 Small-scale physical measures implemented to conserve and protect livelihood assets at the community level (eg. water conservation and harvesting, management of degraded community resources, bio-engineering for erosion control etc.,) in 24 VDCs of 4 districts</p> <p>4.2.1 Improved agriculture and livestock management technologies (eg. Improved cropping systems, improved seed storage, sloping land agriculture technology, crop and livestock management practices etc.) implemented to reduce climate risks in at least 24 VDCs of 4 selected districts</p>	LDCF	1,600,000	4,796,196

		4.2.2 New stress tolerant crop varieties of rice, wheat, maize and fodder (at least 10 varieties) introduced by Nepal Agriculture Research Council (NARC) in 4 districts and tested and validated involving farmer groups using FFS approach.			
Sub-Total				2,561,427	8,806,196
Project management Cost				128,071	440,310
Total project costs <sup>4</sup>				2,689,498	9,246,506

### C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
GEF Agency	FAO (TCP, UTF and GCP projects)	Grant	7,146,506
GEF Agency	FAO	In-kind	500,000
National Government	Government IPM programme Component	Unknown at this stage	1,600,000
<b>Total Co-financing</b>			<b>9,246,506</b>

### D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY<sup>1</sup>

GEF Agency	Type of Trust Funds	Focal Area	Country Name/ Global	(in \$)		
				Project amount (a)	Agency Fee (b)	Total c=a+b
FAO	LDCF		Nepal	2,689,498	255,502	2,945,000
<b>Total Grant Resources</b>				<b>2,689,498</b>	<b>255,502</b>	<b>2,945,000</b>

<sup>1</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

#### **A.1.1. THE GEF FOCAL AREA STRATEGIES:**

#### **A.1.2. FOR PROJECTS FUNDED FROM LDCF/SCCF: THE LDCF/SCCF ELIGIBILITY CRITERIA AND PRIORITIES:**

1. Nepal became a signatory to the United Nation Framework Convention on Climate Change (UNFCCC) in June 1992, ratified in May 1994, and to the Kyoto Protocol in September 2005. Nepal is a Least Developed Country (LDC) making it eligible for funding from the Least Developed Countries Fund (LDCF) and for FAO technical assistance. Nepal developed its National Adaptation Programme for Action (NAPA) in September 2010 and submitted it to the Secretariat of the Convention in November 2010.

2. The proposed project is consistent with the LDCF results framework, objectives, expected outcomes, core outputs and relevant indicators. The adaptation benefits and additional cost for which the LDCF resources are requested and specific adaptation activities will increase the climate resilience of the defined baseline activities. The project proposal targets the first two priorities of the NAPA Priority Profile of the Government of Nepal, which are related to agriculture. It will also create an implementation and coordination mechanism in line with

the recently evolved Priority Framework for Action (PFA) on Climate Change Adaptation endorsed by the Government of Nepal.

3. This project will focus on key elements of GEF LDCF objective CCA-1 on reducing vulnerability to adverse impacts of climate change and objective CCA-2 on increasing adaptive capacity to respond to the impacts of climate change and CCA-3 on adaptation technology transfer. The overall goal is to support the Nepal agriculture sector to become climate resilient by promoting urgent and immediate adaptation measures and integration of adaptation priorities outlined in the NAPA into agriculture sectorial policies, plans, programmes and local actions. The project will work in line with GEF strategy to promote sustainable development by supporting climate change adaptation as well as enhancing productivity in agriculture sector.

4. The project framework outlines four components and is aligned with the LDCF objectives and outcomes. Project Component 1: Strengthening of technical and institutional capacities and integrating adaptation into national food and agriculture policies, strategies and plans will contribute to objective CCA-1, outcomes 1.1 and 2.2. Component 2: Assessment, monitoring and providing advance early warning information on vulnerabilities risks and agrometeorological forecasts will contribute to CCA-2 on increasing adaptive capacity, outcome 2.1. Project Component 3: Improving awareness, knowledge and communication on climate impacts and adaptation contribute to CCA-2, outcome 2.1 relevant to strengthening of systems to disseminate timely risk information. Project Component 4 on promoting community based adaptation and strengthening livelihood strategies contributes to objective CCA-3 outcome 3.1.

5. The strategy of the project is to promote adaptation measures at local level to reduce risks to economic losses and diversify and strengthen livelihoods and their sources of income. The practices are aimed to reduce climate change risks and vulnerabilities in a cost-efficient way to deliver adaptation benefits. The project will follow the results based management and programmatic approach of GEF/LDCF in addressing climate change adaptation on the ground, scaling-up of climate resilient measures and mainstreaming them into policy and planning processes. All major ongoing and pipeline initiatives of the Government and development partners are taken into consideration to enhance synergies and to avoid potential duplications.

#### **A.2 NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS, IF APPLICABLE, I.E. NAPAS, NAPS, NBSAPS, NATIONAL COMMUNICATIONS, TNAS, NIPS, PRSPs, NPFE, ETC.:**

6. The proposed project is consistent with Nepal's **Initial National Communication to the UNFCCC (2004)**. Some of the priorities outlined in the document and closely related to the project components are: develop and familiarize drought tolerant varieties of crops, promoting traditional and indigenous practices to reduce the impacts of climate change, assess the impact of climate change on crops and develop forecasting systems, identify agro-ecological zones particularly sensitive to climate change impacts and vulnerable areas, promote efficient utilization and conservation of water and promote adaptive farming systems.

7. The project is in line with the priorities and needs identified under the **National Adaptation Programme of Action (NAPA)** (September 2010), **National Strategy for Disaster Risk Management (NSDRM – March 2008)** and **National Agriculture Sector Development Priority (NASDP)** for the Medium-Term (2010/11 - 2014/15). The project focuses on proposed activities of the NAPA priority project profile 1 (Promoting community based adaptation through integrated management of agriculture, water, forests and biodiversity sector) and the priority project profile 2 (Building and enhancing adaptive capacity of vulnerable communities through improved system and access to services related to agriculture development). FAO, through its technical assistance programme to the Government of Nepal, has supported formulation of NAPA priority project profile on climate change adaptation in agriculture and food security through a broad consultation process. A brief account of the strategies, plans, reports and documents that outlines the immediate and long term needs of Nepal in agriculture is described below:

**8. Priority Framework of Action (2011 – 2020) (PFA)<sup>1</sup>** on Climate Change Adaptation and Disaster Risk Management is a comprehensive priority framework to support and provide strategic direction to the Ministry

<sup>1</sup> Ministry of Agricultural Development (2011). Priority Framework for Action – Climate Change Adaptation and Disaster Risk Management in Agriculture. Government of Nepal, Kathmandu, Nepal.

of Agricultural Development (MOAD), its technical services and agencies for the implementation of Climate Change Adaptation and Disaster Risk Management (DRM) in Agriculture and allied sectors. The framework was prepared and endorsed by the Government in 2011. Experience gained from FAO's assistance through a project (TCP/NEP/3201) on "strengthening capacities for disaster preparedness and climate risk management in the agriculture sector", especially field level activities, provided much information in the identification of priorities. The PFA identifies five major priority areas:

Priority Area I: Strengthening institutions, policy and coordination

Priority Area II: Assessing and monitoring climate risks and vulnerabilities

Priority Area III: Improved knowledge management, database and awareness raising

Priority Area IV: Implementing technical options by integrating community based approaches

Priority Area V: Strengthening capacities for effective risk preparedness, response and rehabilitation

9. Along the same line, the proposed LDCF project explicitly contributes to priority areas I, II, III and IV detailed above. As the PFA will be implemented by concerned line agencies, ministries and departments (e.g. MOAD, NARC, DOA, DLS and DHM), the same implementation arrangement will be considered for implementing this LDCF project.

10. Agricultural growth is a major priority in the **Tenth Plan** and continued in the ensuing **Three Year Interim Plan** (2007/08 – 2009/10) and current **Three Years Plan** (2010/11-2012/13). This three year Plan envisaged agricultural growth to increase by 3.9 % , as well as a reduction in food insecurity and malnutrition. Identified means to enable growth include: diversification and commercialization; enhanced supply and access to resources including irrigation, fertilizers; and improving market linkages. This project will contribute to diversification of livelihood activities and access to livelihood resources with a view to reduce vulnerability to climate risks and enhances adaptive capacity.

11. The plan also distinguishes the importance of disaster risk reduction, emphasizes the need to introduce changes into the prevailing national policies for the required shift of focus from disaster response to prevention, and preparedness, identifies challenges such as the need to foster coordination among the institutions, and seeks to promote better understanding of climate risks. The plan recognizes existing gaps such as the lack of institutional capacities at various levels, and emphasizes the need for systematic risk and vulnerability mapping, enhancing public awareness and technical capacities for climate risk assessment. These needs are taken into account under the project component 2 "Assessment, monitoring and providing advance early warning systems on vulnerabilities and risks to assist better adaptation planning at national, district and local levels".

12. The **National Agriculture Sector Development Priority (NASDP)** (2010/11 - 2014/15) acknowledged the importance of adaptation to climate change effects. The NASDP stresses the limited capacity for adaptation to climate change effects. The problems focused are irregular rainfalls, floods, droughts, cold waves, landslides and new pests and diseases. As these factors directly affect food production, the priority suggests that the country needs to enhance its capacity with adequate attention on vagaries of climate change effects in agriculture.

13. The Government of Nepal had brought into force the **National Agricultural Policy (2004)**, which takes into consideration aspects that are related to Climate Change Adaptation and Disaster Risk Management. One of the relevant priority is to enhance the capacity to assess the impact of heavy rainfall, droughts, diseases, insects and other natural calamities. This project (component 1 and 2) will support to deliver relevant tools and methods for impact assessment and monitoring.

14. Nepal's **National Strategy for Disaster Risk Management (NSDRM)** endorsed in 2008 is closely oriented along the lines of the Hyogo Framework for Action (HFA) and it implies a major shift in government policies away from an emergency response driven way of working toward a disaster risk management perspective, which puts equal emphasis on prevention, and preparedness, highlights the links between disaster management and development, as well as the cross sectoral responsibilities. The agriculture component of the strategy has five pillars similar to one described above under priority framework for action.

## **B. PROJECT OVERVIEW**

### **B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:**



**15. Overall baseline problems of climate:** Nepal is a land-locked country situated in the central part of the Himalayas. This comprises of high mountains, mid-hills, Siwalik (the Churia range), and the Terai (Plains). Each of the physiographic regions has climatic characteristics varying from tropical to alpine conditions within a lateral span of less than 200km. The country ranks 193 out of 210 in terms of Gross National Income per capita adjusted for purchasing power. More than 70% of the population lives in less than USD2 per day.

16. Nepal's climate is influenced by the Himalayan mountain range and the South Asian monsoon. The climate is characterized into four distinct seasons: pre-monsoon (Mar-May), monsoon (Jun-Sep), post-monsoon (Oct-Nov) and winter (Dec-Feb). The monsoon rain is most abundant in the east and gradually declines as it moves westwards; while winter rains are higher in the northwest declining as it moves south-eastwards. Observed climate data from 1960s indicate consistent warming and rise in the maximum temperatures at an annual rate of 0.04 – 0.06° C. Warming is more pronounced in high altitude regions compared to the Terai and Siwalik regions. Annual precipitation data shows general decline in pre-monsoon precipitation in far and mid western Nepal, with a few pockets of declining rainfall in the western, central and eastern regions. In contrast, there is a general trend of increasing pre-monsoon precipitation in the rest of the country. Monsoon precipitation shows general declining trends in the mid-western and southern parts of western Nepal.

17. Climate and its variability is already affecting Nepal's agriculture sector. The climate related hazards like floods, drought, hailstorms, heat and cold waves; and pests and diseases, soil erosion, deforestation, desertification are recurring and pose severe threats to the sector. From 2002 to 2009, 68 235 hectares of crops mostly dominated by important cereals like rice, wheat, maize and millet are damaged by climate related extreme events<sup>2</sup>. Reduced food, feed, fuel and fibre lead to distress, poverty, food insecurity, malnutrition and deficiency syndromes among the vulnerable communities mainly in the hills and mountains of Nepal. Rapid population growth, rainfed agriculture (about 65%), shrinking farm size, land degradation and faulty and marginal agricultural practices are leading to exposure of the vulnerable communities and their livelihoods to climate risks and inflicting substantial physical and economic losses.

18. The LDCF project focuses four districts in two development regions: Eastern Development Region (Udaipur and Siraha) and Western Development Region (Arghakanchi and Kapilbastu). In general, the focus districts represent two eco-regions - mid-hills (Udaipur and Arghakanchi) and tarrai (Siraha, Kapilbastu). The mid-hill districts have a varied ecology, with tropical to subtropical climate in southern churia hills and plains, and mild temperate type of climate in mid-hills. About 15-26 percent of the total land is cultivable in the midhill districts. The forest coverage ranges from 41-72 percent. The total average rainfall is 1,260 mm and the irrigation facilities are very poor. In terrai, the coverage of cultivable land ranges from 56-67% and the forest coverage ranges from 41-48 percent. The total average rainfall is 1,467 mm. The Tarai districts are considered productive, but poor irrigation is also a crucial problem.

#### **19. Baseline problems of the focus region:**

The poverty rate, or the percentage of the population below the poverty line, is the most common indicator for measuring monetary poverty for an area or population group<sup>3</sup>. Rural poverty rates in the above mentioned districts are high and increase the vulnerability of agricultural population to climate risks. In hills, average poverty rate is 34.5%, while in terai ecological zone (in 2 selected districts - Siraha and Kapilvastu) it is 27.6%. Poverty and frequent hazards lead to migration of rural population depending on agriculture to urban areas and to foreign countries. Once the productivity of both monsoon and winter crops decrease, many people from villages are compelled to go outside to engage in off-farm labour work for earning livelihood. In some areas, for example in one of the villages of Kapilvastu district, due to flood, 45-50 families have already migrated to land near the forest area at the bank of Kothi River. This internal population movement due to climate risks is already leading to conflict between existing forest user groups and people moving from outside of the area. Changing climatic conditions might worsen these problems if adequate adaptation measures are not taken up to protect the livelihoods of the most vulnerable population.

<sup>2</sup> Bimonthly Bulletin of Crop and Livestock Situation in various years, ABPSD, Ministry of Agricultural Development (MOAD), Government of Nepal.

<sup>3</sup> ISDR (2009). Global Assessment of Risks, Nepal Country Report, ISDR Global Assessment Report on Poverty and Disaster Risks 2009, 193p.

20. Farmers have inadequate knowledge and skills on improved farming like proper use of chemical fertilizer, early variety selection, and application of pesticide (time and amount) based on weather patterns, seed and nursery management and off-season vegetable production, soil fertility management techniques and post harvest technologies. Poor marketing skills and information is another constraint. Farmers of terai are affected by subsidy policy of neighbouring countries on seeds, fertilizers, and irrigational facilities. Hence Nepali farmers are unable to compete with neighbouring farmers while selling the agriculture products. Maize, wheat and paddy are the major crops; the productivity trends are highly variable due to climate related constraints. The declining productivity of oil crops is perceived in all the study villages.

**21. Livelihood profiles in the focus region:** There are major five types of livelihood groups. They are agriculture, labour (inside), labour (outside), village groceries and services. Agriculture is the mainstay of majority (87-90%). Sharecropping and on-farm and off-farm labour work is the main coping strategy for food scarcity. There is a practice of buying livestock and its products to make certain household income and meet the dietary needs. Vegetable farming is one of the important occupations in recent years as an alternative income source. Commercial vegetable is found in terai than in the mid-hills. Horticulture activities are in decreasing order because of lack of irrigation facilities and growing emergence of diseases and pests. The access of people to livelihood assets is the key for improved adaptive capacity to climate risks. Access to natural resources is found more in mid-hills compared to terai. In terms of financial assets, the people of terai are in better position than that of mid-hill because of proximity to financial institutions. But, access to social assets is better in mid-hills because the mid-hill community networks are comparatively well organized and partly due to their remoteness. Contrary to this, the access to various physical assets is in better position in terai. In terms of human assets, terai is comparatively in better position than that of mid-hills.

Table.1. Number of households and population (gender disaggregated) in selected districts

DISTRICT	Household Number	Average H.hold Size	Population			Popn. growth 1991-2001	Area in Sq.Km.
			Total	Male	Female		
Udayapur	51603	5.58	287689	143756	143933	2.63	2063
Siraha	100010	5.72	572399	293933	278466	2.17	1188
Arghakhanchi	40869	5.10	208391	96349	112042	1.42	1193
Kapilbastu	72932	6.61	481976	247875	234101	2.60	1738

22. Small, poor farmers, marginalized and disadvantaged communities and households (mostly socially excluded) are particularly vulnerable to baseline problems. In particular, women, children and aged people are the most vulnerable as they do not possess adequate access to land, property, means and resources to cope with the situation. Poor families can hardly protect themselves against the occasional shocks occurred due to droughts and floods. Owing to various difficulties related to the livelihoods, more than one million prime-age male adults have already migrated abroad for foreign jobs. Though the money remitted by them has provided some cushions for buying food for the family members at home, these migrations have also created shortage of agricultural labour in the villages.

23. In these 4 districts, small-scale farmers take agricultural loans and financial facilities to improve their irrigation systems, buy seeds, seeding materials, and chemical fertilizers. Small-scale farmers also obtain these loans, agricultural inputs and support services from the local markets (haat bazaar), District Agricultural Development Office (DADO), District Livestock Services Office (DLSO), local NGOs, Indian markets, cooperatives, private shops and agro-vet, and the Agriculture Development Banks (Nepal).

24. The DADO and DSLO usually provide technical trainings and inputs to farmer groups, promoting skills and knowledge on agricultural technologies and practices. However, trainings do not directly include climate-related risks. In the last few years, the Saving and Credit Groups and cooperatives have considerably grown, and some farmers prefer taking loans from them due to their lower interest rates. Barriers that are preventing climate change adaptation from being mainstreamed at local level, and undermining adaptive capacity of local farmers: i) the inadequate knowledge on climate impacts, ii) the poor market information, iii) the complicated processes to access loans is some, and iv) the growing trend of taking loans even at high interest rate (>36%) only for sustaining livelihoods.

25. **Risks of climate change threatening the focus region:** In addition to the baseline problems, **climate change** is expected to bring additional threats of greater magnitude. Climate change projections show that the mean annual temperature to increase by an average of 1.2°C by 2030, 1.7°C by 2050 and 3°C by 2100 compared to pre-2000 baseline. The regional circulation models project even greater increase in mean annual temperature (1.4°C by 2030, 2.8°C by 2060 and 4.7°C by 2090). During the summer months, precipitation is projected to increase for the whole country in the range of 15 to 20%. A regional circulation model projects both rise and fall in the mean annual precipitation with no clear trends. IPCC (2007) projects that there will be a general increase in the intensity of heavy rainfall events in the future and an overall decrease by up to 15 days in the annual number of rainy days over the large part of the South Asia.

26. FAO's Situation Assessment and Baseline Study<sup>4</sup> identified the major climatic hazards. In general, 2 mid hills districts selected for the project (Udaipur and Arghakanchi) are frequently affected by floods, landslides, hailstorms, frost, droughts and epidemics of crops and livestock diseases and pests. Epidemics of diseases and pests of crops and livestock are other hazards. Similarly, in selected 2 terai districts (Siraha and Kapilbastu), the major hazards as perceived by the farmers are flood, drought, heat wave, cold wave, and frost, dew / pala (pala = winter fog causing blight in potato). The areas along the riverbank are suffering from sedimentation caused by flood. More irrigation is required in such land due to high percolation and seepage problem. Flood and landslides are mainly responsible for damage of standing crops, erosion of productive land along the riverbank or at the foothill areas. These hazards also cause damage to community's assets like road, schools, market centres, irrigation canals, drinking water systems, and forest resources. Frequent droughts are responsible for crop failure mainly the winter crops like wheat, oilseed, and pulses. Cold wave not only damages the productivity of winter crops but also makes life very tough particularly to elderly and children.

27. The frequency of the occurrence of the climate risks are increasing both in mid-hill and terai districts. In farmers' view, the main reasons are changing climatic conditions, especially rainfall, temperature and extreme climate events such as floods and droughts. High temperature and breaks in rainfall season lead to longer droughts. The severity of these hazards are expected to further increase in future affecting particularly to productive land and community's assets like road, irrigation canal, school, markets, etc. The occurrence of different hazards not only challenged the people's lives and livelihood but also destroyed the land and community assets at local level. The climate risks also affect the social environment. In the recent years, there are more cases of seasonal and permanent migration thus the workloads of elderly, women and children particularly have increased. Due to constant fear and losses of crops and agricultural livelihood assets due to various risks, tendency of shifting occupation from on- farm to off- farm is common in rural areas. With the tendency of continuous crop failure, people usually sell their land even in cheaper price and divert to small-scale business. With the increasing trends of climatic risks, evidences were also observed on conflict of indigenous and migrant population about the resource sharing. The outbreak of many respiratory and vector borne diseases such as Malaria, Dengue, Japanese Encephalitis, Kala-azar and communicable diseases like cough, cold, eye infection, etc were also perceived by the people.

28. Rainwater, surface irrigation, shallow tube well, conservation pond are some of the sources for irrigation. However, the reliability of irrigation facilities is also in decreasing trend. The reasons are frequent flood, longer droughts, depletion of forest resource in Churia area and irregular rainfall patterns. The longer droughts are responsible to lowering the ground water table, which affected the poor performance of deep and shallow tube-wells in terai. With the increasing sedimentation through high soil erosion in upstream, there is a seepage problem of water hence farmers are unable to divert the water from the river into the canal.

29. Erratic rainfall has negative impacts on agriculture sector in both mid-hill and terrain districts. Majority of the people opined that there are changes in rainfall pattern. Change in rainfall month as well as the negative impacts of decrease in rainfall are similar in both mid-hill and terai districts. The change pattern of hailstone is more observed in mid-hills. A household survey as part of FAO's baseline study indicates that about 59.2% respondents of mid-hills (Udaipur and Arghakanchi) and 62.3% of terai (Siraha and Kapilvastu) have reported significant changes in rainfall pattern. Similarly, majority of the respondents (62.2% in mid-hills and 59.8% in terai) opined that they have clearly experienced the changed pattern of temperature. People have experienced

<sup>4</sup> FAO (2010). Situation Assessment and Baseline Study -- Mid Hills and Terai, Strengthening capacity for disaster preparedness and climate risk management in the agriculture sector (TCP/NEP/3201 (D)), Food and Agriculture Organization of the United Nations, Rome.

the impacts of climate change but they have inadequate knowledge about underlying causes and how to manage them.

30. The projections of climate change indicate that the key impacts are likely to include: significant warming, leading to increased frequency of extreme events, including floods and droughts; and overall increase in precipitation during the wet season but reduced number of rainy days. An additional threat derives from climate change in the Himalayan environment, which is likely to further increase the number of hazardous events and their social, economic and environmental impacts. It is likely that new areas and a variety of different climatic-induced threats will further increase the impacts of hazards. Rapid population growth, shrinking farm size in *Terai* region, continued unplanned agriculture in climate risk prone areas is likely to further increase the exposure and loss of livelihoods, if no countermeasures are put in place. This BAU scenario poses a big challenge to the agriculture sector, which is expected to suffer livelihood losses and the reduction of crop and livestock production. Since agriculture is Nepal's principal economic activity (employing over 65% of the population and contributing to 33% of the GDP), country's vulnerability to climate change is extremely high.

31. Climate change is likely to affect the agriculture-dependent livelihoods and ultimately, food security. The per-capita food availability is eroding over the years because of increased population against almost stagnant performance of the agriculture sector. The per-capita holding size of agricultural land is less than 0.8 ha., which contributes farmers to meet about six months' food production from their farms in a low production environment. Around 42 districts (out of 75) in the country encounter food deficit every year. The impacts of climate change on agricultural production as calculated in Cline's models suggests a decrease of 17.3% production above a temperature increase of 2.5° C. These figures do not reflect the most likely negative impacts of extreme climate events on agriculture production. Recent impacts of extreme climate events suggest that production decline is obvious even with slight changes in temperature and rainfall regimes.

32. Nepal's vulnerable farming economy is facing risk due to changes in the reliability of stream flow, a more intense and potentially erratic monsoon rainfall, and the impacts of flooding. Decline in rainfall from November to April adversely affects the winter and spring crops. Rice yields are particularly sensitive to climatic conditions and these may fall in the western region where a larger population of the poor live and this could threaten overall food security. According to assessments for NAPA<sup>5</sup>, climate change is posing a threat to food security due to loss of some local land races and crops.

33. Improvements are demanded in the delivery of livelihood diversification strategies, localized resource conservation practices, protection of livelihood assets and provision of quality agriculture support services and integration of climate change considerations into policy. Similarly, importance has to be given for improving technical and institutional capacity of institutions with a view to address the impacts of climate change in addition to baseline development programmes. In response to the **baseline problems** described above, the Government of Nepal with support of development partners including FAO have responded with several initiatives which constitute baseline (co-financing projects) for the proposed LDCF project.

#### **34. Baseline initiatives that will provide co-financing for the proposed project**

**Support to the national Integrated Pest Management (IPM) Programme – consolidation, up-scaling and institutionalization. Phase II** (UTF/NEP/059/NEP: Oct 2008 - Oct 2013); Co-financing of USD 3,400,006 from the IPM project – Phase II and USD 1,600,000 from the Government IPM component. The main aim of this project is to contribute to broad-based poverty reduction and food security in a sustainable manner while contributing to environmental protection. Currently the project is at a consolidation and up-scaling phase of IPM dissemination, building on the institutional strengths acquired in previous phases through government and non-government sector actions. Attention is placed during this stage on scaling up the IPM training programme and promoting market-oriented farming among smallholders. The project covers 12 districts (Jhapa, Bara, Kapilvastu, Bankhe, Kailali, Ilam, Kavre, Syangiaa, Surkhet, Dadeldhura, Mustang and Jumla) and in one of them LDCF activities will also be aligned.

35. The IPM project Phase II was originally designed to include a Farmer Field School (FFS) approach for IPM technology dissemination, food safety and environmental sustainability, and also provides greater attention

<sup>5</sup> Ministry of Environment (2010). National Adaptation Programme of Action (NAPA), Government of Nepal, Kathmandu, Nepal.  
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to the production of high value organic products. More specifically, emphasis is placed on testing and spreading successful IPM technologies, reinforcing participatory institutional arrangements, fostering gender and socially-sensitive development strategies, and empowering farmers to organize themselves in groups, associations and/or cooperatives. It also engages research institutions and universities in developing participatory production and processing technologies and strengthening in-service training in IPM and FFS methodologies as well training in post-harvest handling, marketing and value addition.

36. The IPM Project – Phase II project targets 12000 direct beneficiaries and planned to conduct 500 Farmer Field Schools (FFS). FAO provides technical assistance to implement the project with a budget of USD 3.4 million as per the agreement between Government of Nepal and FAO, which includes technical assistance services to support National Integrated Pest Management Programme. This includes testing of innovative agricultural practices for organized production and marketing and also includes activities for enhancing technical and human capacity and up-scaling of the successfully tested models. This baseline project has not explicitly considered impacts of climate variability and change. Thus the proposed LDCF will screen the adaptation practices and integrate climate concerns into the community level activities. The training programmes focusing on climate impacts, vulnerability and adaptation as part of LDCF will complement the capacity development efforts of this baseline project. The Farmer Field Schools (FFS) targeted under the baseline project will be strengthened with sessions related to climate change by using LDCF funds.

37. **Support for Leasehold Forest and Livestock Development Programme** (GCP /NEP/062/FIN Aug 2009 – Aug 2013): The GEF agency (FAO) co-financing is USD 3,546,500. The project is financed by the Government of Finland, and it aims to support the Government in strengthening institutional and technical capacities and planning tools at grassroots, district and central levels to support the implementation, institutionalization and scaling-up of the poverty reducing leasehold forestry and livestock programme. This project is being implemented in 26 districts. The proposed LDCF project will complement this baseline project, by considering climate change impacts and supporting further livestock development through: i) the promotion of fodder cultivation; and ii) the restoration of degraded community resources into good agro-forestry systems, enabling communities to produce forages and fodders for stall-fed livestock, and non-timber forest products for domestic use, while sustaining income generation activities.

38. **Land degradation assessment and monitoring for sustainable land management and climate change adaptation** (15 Nov 2011 - 14 Nov 2013). This is a regional FAO Technical Cooperation (TCP/RAS/3312) project, with a budget of \$ 488,000 out of which \$122,000 is allotted for Nepal. It will serve as co-financing to the proposed LDCF project. This TCP project supports to establish a knowledge base on land degradation, including understanding the causes and impacts, to establish priorities for intervention, participatory and sustainable management of resources and improvement of specific investments. It enables tracking / monitoring of impacts of climate change on ecosystem services and livelihoods. Its co-financing component is focused on the strengthening of national capacities for addressing climate change and natural resources management by screening good agricultural practices for adaptation. Building on this baseline project, the LDCF resources will be used to develop improved vulnerability and risk assessment, and monitoring tools to identify hot spots of climate risks. This will also be combined with agro-meteorological monitoring infrastructure, up-gradation and strengthening data on climate and crops for impact analysis.

39. **Combating citrus decline problem in Nepal** is a FAO TCP project (TCP/NEP/3302) with a budget of USD 303,000 that largely covers technical aspects of citrus improvement work. The expected outputs are (a) strengthening of capacity building of government technicians and farmers groups to upgrade the orchard management system (b) refinement of citrus decline management and rejuvenation technologies suited for local conditions and (c) group extension by organizing small-marginal citrus producers' groups/associations aiming knowledge and skill up gradation for enabling small farmers to adopt improved production practices for commercial citriculture, including combating citrus decline problems. In the project proposal, five districts in three Development Regions (Eastern, Central and Western) have been identified as project pilot districts, covering 3000 citrus growers as direct beneficiaries. This project is a co-financing baseline project to the proposed LDCF project. The LDCF funds will be used to identify the impacts of climate change on high-value fruit crops and implement appropriate improved practices for stabilization and enhancement of production under changing climatic conditions.

40. FAO is assisting the Government of Nepal to prepare **Agriculture Development Strategy and Food and Nutritional Security Strategy** through TCP Facility (TCP/NEP/3301). The long-term strategy (20 years) will be prepared in 2012 with GEF agency (FAO) funding of USD 275,000 and the amount is considered co-financing. This baseline project provides a perfect opportunity to integrate climate change adaptation priorities. The LDCF resources will be used to facilitate expert committee to draft/update current agriculture and food security policies and strategies. The use of LDCF funding will ensure integration of climate change adaptation priorities into long-term agriculture development strategy and food and nutritional strategy. The indicators for these outputs are at least 4 development frameworks and sectoral strategies with specific budgets for adaptation actions.

41. In addition to a number of baseline co-financing projects described above, there are ongoing efforts by the Government. For examples, the **Commercial Agriculture Development Project (CADP)** funded by the Asian Development Bank (ADB) is being implemented in 11 districts of Eastern Nepal and supports the cultivation of high-value crops such as cardamom, tea, off-season vegetables, fruits and some cereals. The related activities are community group mobilization, and demonstration of cultivation practices. Similarly, the **Project for Agriculture Commercialization and Trade (PACT)** funded by the World Bank promotes the development of local entrepreneurs, mobilizing community groups and provision of competitive grant system for production enhancement and marketing. PACT is not listed under co-financing project, but it may be considered for co-financing during full project preparation. It is described in Section B.6 below.

42. **Strengthening Capacity for disaster preparedness and climate risk management (FAO/TCP/3201 (D) and Climate change adaptation (CCA) and disaster risk management (DRM) for sustainable livelihoods in agriculture sector (FAO-UNDP joint programme; UNJP/NEP/005/UNJ):** The two interlinked technical assistance project funded by FAO and UNDP has been completed in December 2011 with a total budget of USD 722 000. This project is not a co-financing project as it was already completed, but worth mentioning. The proposed LDCF builds on this FAO's technical assistance to the Government and upscale the experiences in the three development regions. The FAO-UNDP joint programme supported the preparation of district disaster risk management plans (DDRMP) and hazard and vulnerability maps in six pilot project districts (Siraha, Udaipur, Kapilvastu, Arghakanci, Benke and Surkhet). It tested and identified many good adaptation practices: drought tolerant crop varieties and technologies, soil and water conservation practices, water harvesting techniques, management of waste and degraded land and community resources, resource conservation, risk-related seed storage and processing, bioengineering for river bank embankments and action-oriented extension approach. It also supported the documentation of introduced good adaptation practices. This programme has assisted the Ministry of Agricultural Development (MOAD) to prepare a Priority Framework for Action (PFA) (2011 – 2020).

**B. 2. INCREMENTAL / ADDITIONAL COST REASONING: DESCRIBE THE INCREMENTAL (GEF TRUST FUND) OR ADDITIONAL (LDCF/SCCF) ACTIVITIES REQUESTED FOR GEF/LDCF/SCCF FINANCING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS (GEF TRUST FUND) OR ASSOCIATED ADAPTATION BENEFITS (LDCF/SCCF) TO BE DELIVERED BY THE PROJECT:**

43. The additional activities requested for LDCF financing include implementing the Priority Framework for Action (PFA) and up-scaling of tested and new adaptation practices in agriculture. This is in-line with first two priority project profiles of NAPA. Emphasis will be given to address issues at the local level aiming to reduce the vulnerabilities and enhance adaptive capacity. The project will be implemented in four districts (Udaipur, Siraha, Arghakanchi and Kapilbastu) in 2 development regions (Eastern and Western). The project will be implemented by the Ministry of Agricultural Development (MOAD) along with district agricultural and livestock development offices (DADO/DLSO) under concerned departments (DOA, DLS). The additional activities will be complementary to the baseline project activities as they will be aimed at integrating climate related concerns and priorities. The additional cost reasoning is detailed below:

**Component 1: Strengthening of technical and institutional capacities and integrating adaptation into national food and agriculture policies, strategies and plans**

44. **Baseline:** The National Integrated Pest Management (IPM) project promotes technical capacity on IPM and market-oriented farming among smallholders. The project uses Farmer Field School (FFS) approach for dissemination of agricultural practices reinforcing participatory institutional arrangements, fostering gender and

socially-sensitive development strategies, and empowering farmers to organize themselves in groups, associations and/or cooperatives. The national level training mainly targets the Plant Protection Directorate (PPD). There are some activities focused on research institutions and universities to develop participatory production and strengthen in-service training on IPM and FFS methodologies. Similarly, the leasehold forest and livestock development project (GCP/NEP/062) focuses strengthening institutional and technical capacities and planning tools, at grassroots, district and central levels, to support the implementation, institutionalization and scaling-up of the poverty reduction leasehold forestry and livestock programme.

45. The FAO Technical Cooperation Project (TCP) on combating citrus decline in Nepal (TCP/NEP/3302) addresses the capacity strengthening of government technicians and farmers groups to upgrade the orchard management system. In general, most of the baseline projects have a component on capacity building but does not consider impacts of climate change and suitable adaptation requirements. According to NAPA, the specific risks associated with increasing climate variability and climate change include: projected increased mean annual temperature (1.2 °C by 2030; 1.7° C by 2050; and 3°C by 2100), high rates of increase in temperature during winter and monsoon seasons, frequent hot days and warm nights, reduced precipitation in winter months and increased precipitation and extremes during monsoon season. As part of the FAO-UNDP joint programme (UNJP/NEP/005/UNJ) some technical capacity development activities to create awareness were undertaken, but very limited due to limited financial resources.

46. The above baseline projects fail to systematically integrate climate change considerations into capacity development initiatives. In-service training programmes focused only IPM and FFS methodologies, but not on climate risks described above. Further, to enhance the sustainability of the project outcomes, coordination of climate change related capacity development activities with related projects in the country is needed. Institutionalization of technical capacity development activities on climate change adaptation within the Government system is necessary to contribute to sustainability and also for wider implementation of adaptive farming systems, and livestock development programmes beyond the life of the project.

**47. Additional activities and cost reasoning:** The specific weakness of the baseline projects are that climate risks are not addressed. Without considering the underlying vulnerabilities and climate risks, the performance of the baseline interventions will not be effective. The additional financing from LDCF will be used to strengthen the technical capacity in the Ministry of Agricultural Development (MOAD) and its departments (DOA, DLS and NARC) at national and district level on climate change adaptation. This will be achieved by assessing training needs and conducting need-based training programmes. Capacity building efforts will also target the Illaka (sub-districts) field offices and Village Development Committees (VDC), and other community-based organizations. To sustain the training programmes beyond the project cycle, the training curriculum will be integrated into the DOA and DLS regular/annual training activities within their respective training divisions.

48. The project will coordinate with similar activities of other projects in the country so that outcomes of the proposed project can be enhanced and made more sustainable. For example, the Global Agriculture and Food Security Fund, the Government of Nepal, with supervisory support from the World Bank, is formulating the Nepal Agriculture and Food Security Project (NAFSP) (see description in section B6). Some of the activities under the proposed LDCF funded project, particularly agriculture based livelihood enhancement, is having similar objectives as the NAFSP which will also be supporting local communities, farmer groups, producer groups in initiating activities (on and off-farm) that will directly impact their livelihood. The NAFSP project will be implemented in 19 districts of Mid and Far-Western regions, among which none is selected for this LDCF project and thus potential overlaps will be avoided. The national level capacity development activities will be carefully coordinated to enhance complementarity and synergies.

49. To ensure sustainability of the project outcomes, the capacity development activities on climate change adaptation will be systematically designed by applying Training of Trainers (ToT) approach at the district level and Farmers Field School (FFS) approach at the local level. This activity will build on the already established Farmer Field Schools (FFS) under the baseline projects (e.g. IPM), but incorporate climate change aspects. Systematic training needs assessment will be conducted at national, district and local level to design the curriculum for training programmes. The information necessary for preparation of training resources will be drawn from the documents such as National Communications, NAPA, research reports from NARC, and project reports of FAO and other development partners. Climate data collected from DHM as part of FAO



project was already analysed and handed over to the Ministry of Agricultural Development (MOAD), and the data and results of the analysis will be used for preparation of training manuals. The training curriculum and necessary resources will be integrated into ongoing and regular training programme of MOAD, DOA, DLS and NARC to ensure sustainability.

50. This LDCF project will strengthen the Gender Equity and Environment Division (Climate Change) of the Ministry of Agricultural Development (MOAD) with logistic and technical support, enabling the supervision of climate change adaptation activities. It will also seek to establish a mechanism for information exchange, collaboration, coordination between Ministry of Agricultural Development (MOAD), Ministry of Environment (MOE) and Ministry of Finance (GEF focal ministry) with regard to climate change.

**51. Adaptation Benefits:** Enhanced technical and institutional capacity, improved coordination between Ministry of Agricultural Development and other ministries on climate change matters, and readiness to respond to climate change impacts and mainstreaming of adaptation priorities into national agricultural policies, plans and programmes are the expected adaptation benefits from the LDCF resources. The indicators to quantify the results of the Component 1 are number of staff trained in prioritization and implementation of adaptation priorities (50), mainstreaming adaptation into sectoral policies and plans (25), number of Training of Trainers (TOT) with improved technical expertise at the district level (200), training manuals (3) and curriculum integrated into the Government's regular activities, number of updated national agricultural strategies integrating adaptation priorities (at least 3) and district level climate risk reduction plans (4) with budget allocation prepared and endorsed by the Government. The exact indicators with gender disaggregation (including AMAT indicators will be defined during full proposal preparation.

## **Component 2: Assessment, monitoring and providing advance early warning information on vulnerabilities and risks to assist better adaptation planning**

**52. Baseline:** The baseline project on "Land degradation assessment and monitoring for sustainable land management and climate change adaptation" (TCP/RAS/3312) is expected to provide information only on land degradation. Information about vulnerabilities, risks and impacts on agriculture systems needs to be completed for better adaptation planning. Assessment of vulnerabilities and impacts and provision of need-based climate information (including early warning systems to agriculture institutions, farmer groups and local communities) are crucial for adaptation planning. Currently, agrometeorological monitoring infrastructure as well as weather and climate forecasting for agriculture applications, are very weak in Nepal. Some efforts were undertaken in the past, but mostly focused on small-scale research projects. FAO-TCP project on "Strengthening capacity for disaster preparedness and climate risk management" (FAO/TCP/3201 (D) and FAO-UNDP joint programme on "climate change adaptation (CCA) and disaster risk management (DRM) for sustainable livelihoods in agriculture sector" supported up-gradation of some of the selected agro-meteorological observatories between 2008 and 2011 on pilot scale.

53. Without LDCF resources, the future baseline scenario shows that the data base on climate and crop would not be systematically developed and made available for adaptation planning in agriculture especially at the local level. The baseline projects are not focusing on use of improved tools and methods for risk and vulnerability assessment and methods of crop monitoring. The data and information developed through the baseline project focuses only on land resources and not on risks and vulnerabilities, risks and early warning information for planning of location specific adaptation practices.

**54. Additional activities and cost reasoning:** The LDCF resources will be used to improve databases, tools and methods for vulnerability and risk assessment and to define the hotspots of vulnerability (current and future) in agriculture sector. The LDCF project will improve the capacities of more than 20 governmental staff at the national level, training them on assessment tools and methods under the Training of Trainer's (ToT) model, to ensure sustainability. The LDCF project will be built on previous FAO's field experiences and will improve the quality of agro-meteorological advisories to farmers. At present, the Department of Hydrology and Meteorology is providing 24 hours forecast to 17 stations in the country; and it is expected that the PPCR project would aim to improve the lead time, timeliness and accuracy of the forecasts. This LDCF project will make use of the existing forecasts and also the new information products planned to be developed under the PPCR project for application at local level focusing specifically on agriculture sector. The LDCF resources will contribute to strengthening agro-climate monitoring infrastructure in selected 4 districts in close coordination



with World Bank's PPCR and strengthen the expertise of district agricultural extension officers to interpret and use the climate data and information for decision making.

55. This LDCF project will strengthen the technical capacity of the Government agricultural and livestock services at district level (4 districts) to interpret weather and climate information and agrometeorological information to be developed under the Component D: Agriculture Management Information System (AMIS) of the World Bank's PPCR project. This additional activity of the LDCF is relevant even with dissemination of currently available weather information (24 hrs) as this is not being applied for securing agricultural livelihoods at the local level. The LDCF will focus on strengthening of the current crop monitoring work of the Agribusiness Promotion and Statistics Division (ABPSD) of the Ministry of Agriculture and Development and focus on application of information products at local level with farmers by employing Farmer Field Schools (FFS). This training activities under the component 2 focuses only on specific aspects of risk and vulnerability assessment and application of weather, climate and agro-meteorological information and decision making, while the trainings under component 1 focuses on broader climate change adaptation.

56. The weather and climate information will be disseminated at the VDC level through the Farmer Field Schools (FFS) already implemented by the baseline projects to ensure sustainability. The FAO project concluded in December 2011 on climate change adaptation (CCA) and disaster risk management (DRM) for sustainable livelihoods in agriculture sector" supported up-gradation of 5 selected agro-meteorological observatories between 2008 and 2011 on pilot scale, but requires additional instruments. This LDCF project will focus on further up-gradation of 5 agro-meteorological observatories one each in Siraha, Udaipur, Kapilvastu, Arghakanchi. This activity will be coordinated with the component B (Modernization of the Observation Networks and Forecasting) of the PPCR project.

57. **Adaptation benefits:** The expected adaptation benefits of Component 2 financed by the LDCF resources will be: i) new climate and crop databases specific to the 4 districts; ii) introduction of new tools and methods of risk and vulnerability assessment at the national level; iii) improved methods of crop monitoring based on FAO methodology; and iv) dissemination of forecast products developed at the Department of Hydrology and Meteorology (DHM) through PPCR project to farmers in 4 districts and at least 40 village development committees (VDCs) through already established Farmer Field Schools (FFS). This will contribute to increase the adaptive capacity of government institutions and local farmer groups.

58. The indicators for these adaptation benefits will be: i) availability of updated risk and vulnerability assessments in 4 districts; ii) number of upgraded agrometeorological monitoring systems (at least 4); iii) a new system in place at the Department of Agriculture (DOA) and Department of Livestock Services (DLS), to interpret and disseminate timely risk information; iv) at least 3 new agrometeorological information products are available and (v) at least 4 districts and 12 VDCs and 120 farmers groups are receiving climate information products for pro-active decision making. These new developments will be integrated into the Government plans and programmes with budget provision for sustained operation and maintenance beyond the duration of the project.

### **Component 3: Improving awareness, knowledge and communication on climate impacts and adaptation**

59. **Baseline:** The baseline project "*Support to the national IPM Programme: consolidation, up-scaling and institutionalization - Phase II*" targets 500 Farmer Field Schools (FFS), but it is mostly linked to production enhancement. This baseline (IPM-Phase II) project lacks awareness-raising, knowledge management strategy and does not consider climate change impacts while promoting . The FAO project on "Climate change adaptation (CCA) and disaster risk management (DRM) for sustainable livelihoods in agriculture sector" piloted only in few selected Village Development Committees (VDCs) of four districts (Udaipur, Siraha, Kapilvastu and Arghakanchi) initiated a local awareness and social mobilization process with farmer groups/associations, taking due consideration of gender issues, in order to inform about and raise awareness on the topic and the project. However, to catalyze a discussion process, defining role and responsibilities of farmers' association in the context of climate change adaptation and risk management has not been carried out in a systematic manner.

60. **Without LDCF resources,** communities in the selected districts will remain weak in their knowledge and awareness on climate change challenges in the agriculture sector. In this scenario, institutional skills are not

expected to be developed with greater community participation to implement climate change adaptation actions. The Department of Agriculture (DOA) and the Department of Livestock Services (DLS) would keep their low-level of knowledge and awareness about climate change related losses and impacts, and alternative adaptation measures. Without LDCF resources, it is anticipated that social mobilization process might be weak, and women farmer groups and other vulnerable stakeholders might not be included in selection of adaptation practices. Without LDCF resources, systematic documentation and packaging of tested good adaptation practices in to knowledge products would not be possible for future awareness raising and up-scaling.

**61. Additional activities and cost reasoning:** The main objective of this component is to build a culture of innovation, and resilience, and to institutionalize awareness-raising on climate change adaptation. The expected outputs of Component 3 financed by the LDCF resources will include: i) Farmer Field School (FFS) approach implemented with at least 120 Farmer Groups in 4 districts and have sessions relevant to climate change adaptation; ii) packaging of at least 25 successfully tested and replicable adaptation practices; and iv) packaging of information on at least 5-6 new varieties of fruit trees or multi-purpose tree species suitable for reducing the climate related risks under changing conditions. The project will facilitate the formulation of awareness-raising, knowledge management and communication strategies, and their implementation through campaigns, field days and farmer exchange visits. The good practice examples will be screened based on the indicators: environment friendliness, potential to reduce the impacts of climate risks, economic viability, sustainability, social acceptability, gender sensitivity, income generation, enterprise diversification, seasonal relevance and community's need.

**62. Adaptation benefits:** This include development of a comprehensive multi-stakeholder awareness raising and communication strategy, conduct of 120 farmer field schools in 4 districts, creating awareness to 120 farmer groups (3000 farmers, including women groups) on climate change adaptation, documentation and dissemination of good practices to facilitate up-scaling and a dedicated website for the Ministry of Agricultural Development (MOAD) on climate change and conduct of field days and farmer exchange visits for mutual learning in four districts.

#### **Component 4: Prioritizing and implementing local investment by promoting Community Based Adaptation (CBA) to strengthen livelihood strategies and transfer of adaptation technology in targeted areas**

**63. Baseline:** The baseline projects on “support to the national Integrated Pest Management (IPM) programme – consolidation, up-scaling and institutionalization. Phase II (UTF /NEP/059/NEP)” and “support to leasehold forest and livestock development (GCP /NEP/062/FIN)” have community level engagement in the districts identified for this LDCF project, but clearly lack of climate change perspective. Technical options to assist farmers in reducing vulnerability and increasing adaptive capacity and resilience against climate change impacts are not adequately tested at local level. These options are often neither known nor easily accessible at community level. The major weakness is that these practices are not tested, documented/implemented by involving the local communities. It is necessary to facilitate participation of communities and farmer groups in prioritizing and implementing local investments to strengthen livelihood assets and sources of income and to promote relevant technology transfer for minimizing impacts of climate risks in selected 4 districts.

64. Without LDCF resources, it is anticipated that the participatory approach in prioritizing and implementing alternate livelihood strategies and adaptation practices would not happen and the top-down conventional approach in adaptation planning may continue to dominate. The baseline project on “support to the National Integrated Pest Management (IPM) provides adequate baseline to strengthen production of high value crops and cropping systems. More specifically, emphasis will be placed on implementing successful adaptation technologies, reinforcing participatory engagement of the community, promoting gender-sensitive adaptation measures, and empowering farmers to organize themselves in groups, and/or cooperatives. The baseline project on “support to leasehold forest and livestock development” will provide adequate baseline to introduce suitable income generation activities and adaptation practices in livestock sector and also agro-forestry practices having adaptation benefits.

**65. Additional activities and cost reasoning:** The LDCF project will mobilize the local communities at village development committees (VDCs) to formulate **Local Adaptation Plans of Action (LAPA)** with an aim to prioritize local small-scale investments for strengthening livelihood assets, sources of income and for

transfer of relevant adaptation technology for reducing climate risks. Prioritization of local/small scale investments and adaptation activities and subsequent implementation will be achieved by following Community Based Adaptation (CBA) and participatory tools and methods such as transect, risk and vulnerability mapping, hazard calendar, cropping calendar, matrix ranking, venn diagram and problem tree. The LDCF funding for these activities will be highly appropriate and provide alternate livelihoods and income sources to vulnerable communities. The approach will be highly cost-effective and efficient as adaptation investments will be streamlined through the existing community networks, and will mobilize existing functional farmers' groups/CBOs (Community-based Organizations). The LDCF project will promote sustainable, climate-resilient adaptation practices against climate change impacts in crop-agriculture and livestock sub-sectors to prepare and implement LAPAs in at least 24 VDCs covering 4 districts in 2 development regions. This proposed project will also include over 120 large-scale field demonstrations of new crop and fodder varieties in 5 agriculture seasons.

66. The LAPA's investment priorities will incorporate climate risk management and adaptation practices in farming (soil and water conservation practices, water harvesting techniques, management of degraded land and community resources, sloping agricultural land technologies (SALT), off-season vegetable production, alternative livelihood options, risk-related seed storage and processing), agro-forestry (bioengineering for river bank protection, multi-purpose tree species, tree-crop alley farming systems) and livestock (improved livestock management, drought tolerant fodder species, vaccination, etc.,) sectors. Field implementation of livelihood alternatives, climate resilient physical measures to improve livelihood assets and sources of income, transfer of adaptation technology relevant to agriculture and new stress tolerant varieties are expected to produce at least 25 innovative case studies to be integrated into national sectoral strategies (linked to component 1 and 3 of this project) and plans for up-scaling to similar areas in the country.

**67. Adaptation benefits:** The indicators of adaptation benefits of this component are: i) number of LAPAs with investment priorities prepared and endorsed (~24), (ii) type and number of climate resilient income sources for households implemented; ii) type and number of adaptation technologies transferred to targeted groups through field demonstrations (120 in four districts in 4 years); and (iii) number of measures for climate-resilient natural resources management (at least 5) demonstrated to withstand and prevent economic losses. In addition, this component will facilitate research and development linkage by engaging research institutes (e.g. NARC) in demonstration of high temperature and drought tolerant varieties of rice, wheat, maize and fodder (10 varieties) at farmers' field level. Detailed gender disaggregation will be done for AMAT indicators during the project preparation.

**B.3. DESCRIBE THE SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT AT THE NATIONAL AND LOCAL LEVELS, INCLUDING CONSIDERATION OF GENDER DIMENSIONS, AND HOW THESE WILL SUPPORT THE ACHIEVEMENT OF GLOBAL ENVIRONMENT BENEFITS (GEF TRUST FUND) OR ADAPTATION BENEFITS (LDCF/SCCF). AS A BACKGROUND INFORMATION, READ "MAINSTREAMING GENDER AT THE GEF".:**

68. At the village development committee (VDC) level, community-based participatory approaches employed through this LDCF project will improve the gender equality, social inclusion, equity and empowerment through increased participation of women and socially disadvantaged groups such as poor, marginal, indigenous and tribal communities (men and women) towards adoption of climate-resilient adaptation practices. The over-burdening and drudgery of works for women with respect to fetching of water for household needs and fodder for livestock will be improved by the project interventions. LDCF funds will reduce the vulnerability of communities in 4 districts and at least 30 VDCs by improving alternative income generation opportunities. The project will have awareness raising activities on climate impacts and adaptation with the farmers by leveraging existing extension methods. Over 120 Farmer Field Schools (FFS) will directly benefit 3600 farmers and 50% of the farmer groups will be women groups. The large scale field demonstration of adaptation practices and implementation of alternate livelihood strategies will directly engage at least 4800 farmers.

69. The LDCF project will lead to socio-economic empowerment of women and socially disadvantaged and excluded local communities on climate change adaptation. It will increase ownership of men and women in the project activities through their equal participation in social forums, workshops, Farmer Field Schools (FFS), training and exchange visits. The expected socio-economic and environmental benefits from the project will be the reduction of huge recurrent economic damages or losses in disaster-prone areas, and changes in the socio-

economic status of vulnerable communities. Enhanced farm productivity will improve farmers' economic conditions while reducing their vulnerability and generating adaptation benefits. Climate-risk information will also become accessible to farmer groups including women groups.

70. Gender sensitivity analysis carried for NAPA preparation through a consultative process, including the transect appraisal and gender differentiated impacts of climate change revealed that men and women differ with respect to climate vulnerability. Since women are largely engaged in climate sensitive sectors, any degree of adverse climate change effect increases their vulnerability. Household dependent on natural resources base become more vulnerable than those whose livelihoods come from sectors that are less climate sensitive. For example, any degree of changes in the availability of water, firewood, and agricultural production directly affects their quality of life.

71. The adaptation interventions that will engage specifically women and vulnerable communities are small scale vegetable cultivation on the reclaimed lands along the river banks, homestead vegetable cultivation with drought tolerant and short duration crops, roof rain-water harvesting, diffused light storage of potato, women's participation in community seed banks, small-scale tunnel farming for off-season vegetable cultivation and conservation of traditional crop species. Sloping Agricultural land technology (SALT) such as hedge row contour planting, alley cropping, terrace improvement and uniform soil fertility management have been identified as suitable technologies for slope and terrace stabilization and also to benefit the women and most vulnerable communities especially in inner and mid-hills districts (Udaipur and Arghakanchi).

72. At national and district levels, the project funding will enable the Ministry of Agricultural Development (MOAD) to implement the 10 -year Priority Framework for Action (PFA), and to channelize its efforts on climate change adaptation through its departments (DOA and DLS), and Nepal Agriculture Research Council (NARC). It is expected that at least 300 staff from different departments will benefit from capacity development programmes.

#### **B.4 INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND IF POSSIBLE, PROPOSE MEASURES THAT ADDRESS THESE RISKS TO BE FURTHER DEVELOPED DURING THE PROJECT DESIGN:**

73. Within the context of baseline situation and project components, a number of risks are identified and will be further elaborated during project development stage. The risks, their impacts, probability and mitigation are presented in the following table:

	<b>Risk</b>	<b>Impact</b>	<b>Level of Risk</b>	<b>Mitigation Measures</b>
1.	Civil unrest in the pilot districts, particularly in the <i>Terrai</i> region	Delay or blocking of project operations at village level	L	Broader stakeholder consultations to agree on the selection of village development committees; flexibility will be applied in the final selection of pilot villages considering vulnerability and risks. Local field monitors will be employed to oversee and assist the District Agriculture Development Office (DADO) and facilitate field work at the local level. The risk is low now compared to the past and FAO has the experience to manage this risk by employing local staff. The risk could be substantially reduced by strengthening the inter-ministerial steering committee and also multi-sectoral task team at the district level. FAO has facilitated creation of the above institutional mechanisms in the four selected districts of this LDCF project.
2.	Low level of	Limitations in	M	A guided learning-by-doing strategy will be

	participation of local communities and farmer groups in the project	quality of project delivery and lack of ownership		built into the project to strengthen community mobilization and participation.
3.	Delay in procurement and delivery of inputs for demonstration of improved adaptation practices.	Delayed project implementation & loss of trust in project among farmers	L	An effective mechanism for procurement of inputs is agreed upon before project inception; identification of sources of inputs and efficient planning with suppliers.
4.	Area is again affected by climate extremes during project implementation	Immediate recovery needs do not allow to focus on longer term adaptation measures	L/M	Project activities will be planned taking into consideration anticipated needs of the rainy season; crop calendars inform the planning and implementation of adaptation measures
5.	Risk of policy recommendations not adopted by policy makers	Limited improvements achieved in the institutional framework for adaptation and mainstreaming	L	Engaging stakeholders including policy makers in update of policies and strategies. Providing the project steering committee with suitable information about the importance of policy integration.
6.	Non-synchronization of co-financing projects with this LDCF project	LDCF project tends to support business-as-usual interventions	L	In-depth analysis of co-financing projects and its baseline interventions will be done during full project preparation. In addition, strong commitment will be ensured from development partners and government agencies.

**B.5 IDENTIFY KEY STAKEHOLDERS INVOLVED IN THE PROJECT INCLUDING THE PRIVATE SECTOR, NGOS, CIVIL SOCIETY ORGANIZATIONS, LOCAL AND INDIGENOUS COMMUNITIES, AND THEIR RESPECTIVE ROLES, AS APPLICABLE:**

74. FAO and the MOAD will be the main co-partners for project execution. The implementation will be supported by NARC, DOA, and DLS at central level and at their field offices - located in the regions and districts where the LDCF project will be implemented. At local level, key stakeholders and beneficiaries will be the DDC (District Development Committee), VDCs (Village Development Committees), local governance bodies and community-based organizations (CBOs).

75. Project beneficiaries will be the poor and marginalized communities, and small-scale farmers, who are the most vulnerable to climate risks. The project will be executed in most vulnerable areas of Nepal, exposed to climate impacts, with no-access or low-access to information, knowledge and education; lack of resources, assets and income sources; and that rely on marginal and disaster-prone and degraded lands. Areas which possess less access to community and governmental services to cope with climate change risks.

76. FAO will provide supervision and oversight, as well as technical assistance in strengthening technical and institutional capacity for climate change adaptation, assessment, monitoring and provision of advance early warning information on vulnerabilities, risks and agrometeorological forecasts to assist better adaptation planning and promoting community based adaptation to strengthen livelihood strategies and sustainable climate resilient agricultural practices.

77. Risk and vulnerability assessment and mapping, the District Disaster Risk Management (DDRM) plan, and LAPAs will be designed in collaboration with local actors: DDCs, local government agencies, local and indigenous communities, civil society, private sector organizations, and locally based NGO/INGOs and CBOs. Local communities will actively participate in awareness-raising activities and demonstrations, to better

understand CC impacts and risks. Thus, they will be able to evaluate by themselves the sustainable adaptation options.

78. The Project Steering Committee established under the FAO-TCP project, which includes MoAD, FAO, MoHA, MoE, DHM, NARC, UNDP and others will be responsible for major decisions on project coordination and administration. The Government will provide logistic and administrative support to missions and meetings and will make arrangements for the clearance of experts, custom clearance of equipment and local purchase of project equipment. The National Project Directorate (NPD) in the MoAD will facilitates work in districts. The project office will be located in the MoAD or in the Department of Agriculture (DoA). In addition to a National Project Director, the Government will provide at least two administrative staff for the lifetime of the project. The government will also provide services of the district and sub-district level officers/technicians for implementation of the project in all 4 districts.

79. The Project Steering Committee will meet twice a year and will be chaired by the MoAD. The members of this group will be authorized and released to assist the project on a flexible part time basis. The Project Steering Committee will assist establishment of technical implementation task group in the districts. The government will initiate and support local level authorities in launching and registering a farmer association in each of the pilot areas. The MoAD will identify potential participants for the training courses, and will release the selected staff from the various departments involved in project implementation from their normal duties to ensure their full time participation at the training workshops and demonstration activities at village level, and to fulfill other commitments related to the project's training activities at the pilot sites. The district agricultural office will provide training facilities and training logistics necessary for the training course, fieldwork and workshops.

80. The LDCF project will include **additional activities** that will apply a multi-criteria M&E framework tested by FAO. The impact of field demonstrations on the improvement of adaptive capacities and livelihoods, will be assessed through surveys (farmer groups and households) and comparison studies against the initial baseline scenario. Best CCA practices will be screened based on the indicators: environment friendliness, potential to reduce the impacts of climate risks, economic viability, sustainability, social acceptability, gender sensitivity, income generation, enterprise diversification, seasonal relevance and community's need. The LDCF funds will be used to carry out a mid-term and a final evaluation, and to disseminate good practices and lessons-learned.

81. Implementation arrangements will be further detailed and agreed during full project preparation, as well as the list of stakeholders showed below, which is preliminary:

Key Stakeholders	Roles and Responsibilities
Ministry of Agricultural Development (MOAD)	Lead national implementing partner. MOAD has a mandate to work on agriculture and food security issues and also climate change related issues in the sector. The MOAD will be the chair of the Project Steering Committee and draw members from other ministries and its departments and institutions. The existing Steering Committee formed as part of the previous FAO initiatives will be strengthened. The Steering Committee will ensure coordination of activities under different projects (e.g. Nepal Agriculture and Food Security Project – NAFSP) in agriculture sector so that outcomes of the proposed LDCF project can be enhanced and made more sustainable.
Department of Agriculture (DOA) and its district offices	Implementing partner. Responsible to provide office/unit and chair technical committees and provide technical staff for the implementation of project activities in collaboration with their district level offices and other project partners
Department of Livestock Services (DLS) and its district offices	Implementing partner. Responsible to provide office/unit and chair technical committees and provide technical staff for the implementation of project activities in collaboration with their district level offices and other project partners
Ministry of Environment (MOE)	It ensures alignment of the proposed project with Nepal's NAPA. MOE hosts climate change management division and is the Secretariat to the climate change council chaired by the Hon. Prime Minister of Nepal. Ministry of Environment has a coordinating role for NAPA follow-up programming.
Department of Hydrology and	Implementing partner. It will collaborate to apply weather and climate information and early warning systems to be developed by Pilot Programme for Climate

Meteorology (DHM)	Resilience (PPCR) project supported by the World Bank. The department will provide technical support to strengthen agrometeorological observatories in four districts that has been already assessed as part of the FAO's Technical Cooperation Programme (TCP).
Department of Soil and Water Conservation	It will collaborate on activities related to soil, land, water, agro/leasehold forestry and integrated landscape and watershed management.
Local communities, farm households and farmers	Direct project beneficiaries. Participants in field activities, awareness-raising programmes to reduce vulnerability, and adaptive capacity trainings. The communities will participate in preparation of Local Adaptation Plans of Action (LAPAs) in selected VDCs of the 4 project districts.
Community-based Organizations and local leaders	Direct beneficiaries of the project. Local leaders to conduct field level demonstrations, and awareness-raising programmes. The CBOs and local leaders will facilitate community involvement and ownership, as well as responsibility to sustain field level actions.
DDCs and VDCs	Participants in the preparation of district risk reduction plans and Local Adaptation Plans of Action (LAPAs)
Nepal Agriculture Research Council (NARC)	Responsible for research activities. Participant in the identification of improved CCA practices, adaptation options and in the demonstration of stress-tolerant crop varieties at field level. NARC will align the project activities to its out reach programme so as to make the project interventions more sustainable.
FAO	GEF Agency. FAO will provide technical support and be responsible for project supervision and oversight and will provide assistance in strengthening the technical and institutional capacity to manage climate change adaptation, assessment, monitoring and provision of technical advice on development of relevant early warning information on vulnerabilities, risks and agrometeorological forecasts to assist better adaptation planning in agriculture. FAO will also provide technical support to promote community based adaptation to strengthen livelihood strategies and sustainable climate resilient agricultural practices.
UNDP	UNDP, as part of the Project Steering Committee, will provide advise on project implementation and ensure complementarities between this project and related UNDP initiatives.
World Bank	Close coordination will be established with the PPCR project aiming to improving the accuracy and timeliness of weather and flood forecasts and warnings for vulnerable communities, as well as by developing Agricultural Management Information System (AMIS) to help farmers mitigate climate-related production risks. The component 2, output 2.1.3 will focus only on dissemination of improved weather and climate forecast products developed by the Department of Hydrology and Metheorology (DHM) and AMIS through World Bank's PPCR project for specific application in agriculture sector.
INGOs and NGOs	The INGOs/NGOs will be involved in the project steering committee. Based on the need, the organizations will be engaged as partners to support selected components. Practical Action (PA) Nepal, Practical Action Consulting (PAC), Nepal Development Research Institute (NDRI) are partnered with FAO to assist Government of Nepal on climate change adaptation in the recent past.

#### **B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:**

82. The proposed project will work in cooperation with other initiatives taken by the Ministry of Home Affairs (MOHA), Ministry of Local Department, Ministry of Environment (MOE), Ministry of Forestry and Soil Conservation (MOFSC) and Ministry of Irrigation (MOI), to improve synergies and cost-effectiveness, such as:

83. Irrigation and Water Resources Management Project (IWRMP) funded by the World Bank aims to improve irrigated agriculture productivity and management of selected irrigation schemes, and enhance institutional capacity for integrated water resources management. The project is implemented by Department of Irrigation, Department of Agriculture (DOA) and Water and Energy Commission, This project was started in 2007 with a

budget of USD 60,000,000 and will be completed in 2013. This project covers: Taplejung, Sankhuwasabha, Terathum, Bhojpur, Okhlahunga, Khotang, Solu, Ramechhap, Mustang, Gorkha, Myagdi, Manag, Dailekh, Jajarkot, Salyan, Rolpa, Rukum, Mugu, Humla, Achham, Darchula, Bajhang, Bajura. Though the LDCF districts are not part of the list, the good practices and lessons learned from this intervention will be used as part of the LDCF project.

84 Commercial Agriculture Development Project (CADP),(2007 – 2013) initiated with the objective of reducing poverty and aims to accelerate the process of agricultural commercialization, and responding to the needs of stakeholders by strengthening linkages and ensuring fair benefits to poor disadvantaged communities and women. The project is being implemented by the Ministry of Agricultural Development and funded by ADB in 11 districts covering Hill and Terai with a budget of USD 18,000,000. The project covers 11 districts in the Eastern Development Region (EDR) of Nepal. The LDCF project also covers two districts in the eastern development region (Udaipur and Siraha). Thus, careful consideration would be given to replicate some of the relevant good practice examples from the CADP project in the two districts selected for this LDCF project in this region.

85. Project for Agriculture Commercialization and Trade (PACT), financed by the World Bank (2009 – 2015). This is a national level project, which promotes the development of local entrepreneurs, mobilizing community groups and provision of competitive grant system for production enhancement and marketing. It aims to improve the competitiveness of smallholder farmers and the agribusiness sector in selected commodity value chains in 25 districts.

86. High Value Agriculture Project in Hill and Mountain Areas; (HVAP) (Jul 2010 – Sep 2017) is funded (USD 18,900,000) by IFAD with the goal of reduction of poverty and vulnerability of women and men in hill and mountain areas of the Mid-Western Development Region. The project targets the rural poor, especially women and marginal groups and ensure to integrate in high value agriculture and value chains in 10 districts (Surkhet, Dailekh, Achham, Kalikot, Jumla, Jajarkot, Salyan, Mugu, Dolpa and Humla) and non of the districts are covered by this LDCF project.

87. High Mountain Agribusiness and Livelihood Improvement (HIMALI) (2011 – 2017) Project, assisted by the ADB (USD 30,000,000) and seek to reduce poverty in highland areas, by improving income, employment opportunities and the nutritional status of poor farm families and women in particular; and by increasing the productivity of the livestock subsector. This project covers 10 districts (Jumla, Humla, Mugu, Dolpa, Mustang, Manang, Rasuwa, Dolakha, Solukhumbu, Sankhuwasabha) and there is no overlap with the LDCF districts.

88. Nepal Agriculture and Food Security Project (NAFSP) (2012 – 2017): With support from the Global Agriculture and Food Security Fund (USD 58.0 million), the Government of Nepal, with technical support from the World Bank, is formulating the Nepal Agriculture and Food Security Project (NAFSP), covering nine districts in West and Far West Nepal. The project covers 19 districts of Mid and Far western Regions (Dailekh, Jajarkot, Surkhet, Dolpa, Humla, Jumla, Kalikot, Mugu, Pyuthan, Rolpa, Rukum, Salyan, Baitadi, Dadeldhura, Darchula, Achham, Bajhang, Bajura and Doti). The project does not cover the districts identified for this LDCF project. However, further consultations will be planned through the existing steering committee mechanisms from the beginning to avoid potential duplication.

89. PPCR - Pilot Programme for Climate Resilience (PPCR) (2015 – 2018), now under preparation, will be supported by the World Bank with a budget of USD 31.3 million. This project aims to increase resilience to climate-related hazards by improving the accuracy and timeliness of weather and flood forecasts and warnings for vulnerable communities, as well as by developing Agricultural Management Information System (AMIS) to help farmers mitigate climate-related production risks. This is planned to be achieved by establishing multi-hazard information and early warning systems, upgrading the existing hydro-meteorological system and agricultural management information system, and enhancing institutional and technical capacity. The proposed LDCF component 2 is related to this initiative and hence the synergies and complementarities will be considered to enhance effectiveness.



90. The LDCF project resources will not duplicate the planned activities of PPCR, but will complement and establish synergy and make use of the early warning products and information for agricultural applications at local level in selected VDCs of 4 districts by engaging existing Farmer Field Schools (FFS) which is not part of the PPCR project. Further, the PPCR component D on creation of an Agricultural Management Information System (AMIS), development of agrometeorological information products and capacity building covers only broader agricultural stakeholders within the Ministry of Agricultural Development (MOAD). But this LDCF will focus strengthening of current crop assessment role of Agribusiness Promotion and Statistics Division (ABPSD) by providing hands-on training on FAO's standard agro-meteorological tools and methods.

91. The existing Steering Committee for climate change adaptation and disaster risk management will provide necessary coordination mechanism and bring in services of other ministries. The Department of Hydrology and Meteorology (DHM) is also a member of the Steering Committee led by the Ministry of Agriculture and Development (MOAD) and thus potential overlaps with respect to component 2 of the project will be avoided. There is already a mechanism in place to coordinate research and extension (DOA/DLS/NARC) within the Ministry of Agriculture and Development. NARC has been involved in assessment of climate change impacts using model based analysis and the results will be better delivered on the ground applications especially to select adaptation strategies.

92. Coordination with initiatives of development partners will be enhanced by sharing information through climate change and development portal and Nepal Climate Change Knowledge Management Centre. Particular emphasis will be given to coordinate with other similar initiatives: UNDP's initiatives include - LDCF on Community Based Flood and Glacial Lake Outburst Risk Reduction, Comprehensive Disaster Risk Management Programme (CDRMP), Regional Climate Risk Reduction Project in the Himalayas (RCRRP) and Climate Risk Management Technical Assistance Support Project (CRM-TASP).

93. The proposed LDCF project will coordinate with a number of other initiatives by USAID on Sacred Himalayas Landscape, Hariyo Ban, SERVIR (which deal with biodiversity) and International Centre of Integrated Mountain Development's (ICIMOD) initiatives related to GLOF risk monitoring, UNEP's proposed GEF LDCF project focusing on NAPA combined profile on ecosystem management for climate change adaptation and Emergency Flood damage and Rehabilitation Project of ADB.

#### **C. DESCRIBE YOUR AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

94. FAO has been implementing several projects in Nepal in the field of agriculture, food security, climate risk management, disaster preparedness and emergency response. FAO's comparative advantage for the proposed project lies in its long-standing experiences working with Government agencies and more specifically with the Ministry of Agricultural Development (MOAD) on issues related to climate variability and climate change. Several FAO's programmes are complementary to the proposed project and will build on already established institutional systems.

95. The project draws on lessons learned from two projects technically assisted by FAO: (i) FAO assisted the Government of Nepal between 2008 and 2010 for strengthening capacity for climate risk management and disaster preparedness (TCP/3201 (D)) in agriculture sector through its Technical Cooperation Programme (TCP). Through this project, FAO has supported identification of agriculture and food security related priorities for NAPA by the Thematic Working Group (TWG) on Agriculture and Food Security. The project included development of technical and institutional capacity, preparation of national priority framework for action on climate change and disaster risk management; preparation of district level risk management plans, and demonstration of risk reduction and adaptation practices in four districts covering 12 village development committees (VDCs); (ii) FAO had implemented FAO-UNDP Joint Programme on climate change adaptation and sustainable livelihoods for two years (2010-2011). This programme is closely linked to FAO TCP project, but covered additional district cluster covering one district in *Terai* and another in mid-hills.

96. FAO's activities are guided by a clear targeting policy which ensures that they reach poor rural women and men, who are usually the most vulnerable to climate change. FAO's operations are consistent with the national priorities especially on sustainable agriculture and food security. The proposed project matches with the FAO's comparative advantage in capacity development in agriculture sector. FAO has been supporting Nepal's efforts to develop more resilient agriculture systems and national food security strategies. Technical support will be

provided locally from the national level expertise and also from the the FAO Regional Office for Asia and the Pacific (FAORAP) in Bangkok and from the climate impact and adaptation team of the Climate, Energy and Tenure Division (NRC) in FAO headquarters.

**C.1 INDICATE THE CO-FINANCING AMOUNT THE AGENCY IS BRINGING TO THE PROJECT:**

97. FAO aims to bring significant amount of grant and in kind co-financing (USD 7 646 506) through a number of on-going and planned projects, such as the Leasehold Forestry and Livestock Development (USD 3 546 501), Support to the National IPM Programme (USD 3 400 006) and several TCP projects.

**C.2 HOW DOES THE PROJECT FIT INTO THE GEF AGENCY'S PROGRAM (REFLECTED IN DOCUMENTS SUCH AS UNDAF, CAS, ETC.) AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:**

98. The project is directly related to FAO's **Result Based Management Framework** and the **strategic objective F** (sustainable management of land, water and genetic resources and improved response to global environmental challenges affecting food and agriculture) and organizational result F5 (countries have strengthened capacities to address emerging environmental challenges such as climate change and bio-energy). The related Organizational Outputs (OOs) are climate impacts and adaptation and specific activities relate to assisting member countries in climate change adaptation and delivery of tools and methods. The project integrates FAO's core functions encompassing elements such as monitoring, assessments, knowledge and information, policy advice, capacity building, communication, interdisciplinary approach and partnerships.

99. From the FAO perspective, food security is considered as a necessary pillar of climate change adaptation. FAO is the best placed to provide the relevant multidisciplinary approach and divergent technical guidance necessary to analyze different vulnerable food systems to impacts of climate variability and change that enables designing adaptation practices. FAO is able to provide normative and field level support to this project through technical staff in headquarters and decentralized offices.

100. The project fit into **FAO-Adapt**, an organization-wide framework programme launched in 2011. It provides general guidance and introduces principles as well as priority themes, actions and implementation support to FAO's multi-disciplinary activities for climate change adaptation. FAO-Adapt provide an umbrella to FAO's adaptation activities, including short-term and long-term adaptation measures. FAO-Adapt aim to enhance coordination, efficiency and visibility of FAO's adaptation work. FAO's Interdepartmental Working Group (IDWG) on Climate Change and its subgroup on adaptation facilitate the implementation process of FAO-Adapt. Technical units in FAO Headquarters and decentralized offices lead the delivery of outputs and actions consolidated under the priority themes defined in the FAO-Adapt Framework Programme.

101. The National Medium-Term Priority Framework (NMTPF)/**Country Programming Framework (CPF)** (2010/11 - 2014/15) prepared for FAO's assistance to the Government of Nepal identified "Sustaining natural resource conservation and utilization including adaptation to climate change effects" as one of the priority outcomes. Within the United Nations Development Assistance Framework (UNDAF 2008 – 2012), the LDCF will contribute to the priority area C on "Sustainable Livelihoods". The priority area outlines the need to support the government departments on preparedness to natural disasters that includes climate related hazards and support to gender responsive sustainable livelihood strategies to increase the adaptive capacity against the impacts of climate variability and change.

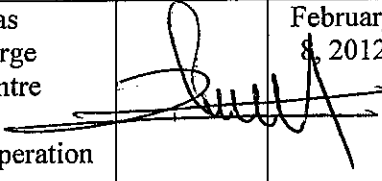
102. FAO possesses demonstrated experience and capability to provide technical assistance to the Government especially in agriculture sector focusing on climate change adaptation. This includes technical assistance, data analysis, and demonstration of adaptation practices, community mobilization, project management, monitoring, evaluation and follow-up of the project. The FAO Nepal Office is staffed with 38 technical staff working on various programmes linked to the proposed project, 5 technical officers, 20 consultants and 5 programme officers and three administrative and about 5 accounting personnel. The country office can mobilize complementary national and international technical expertise and provide in-country support for the execution/supervision of the proposed LDCF project.

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

- A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the country endorsement letter(s) or regional endorsement letter(s) with this template).

NAME	POSITION	MINISTRY	DATE (Month, day, year)
Mr. Lal Shanker GHIMIRE	Joint Secretary	Ministry of Finance Foreign Aid Coordination Division, Singhdurbar, Kathmandu, Nepal Tel: + 977 1 42 11 371 Fax: + 977 1 42 111 65 Email: lghimire@mof.gov.np	APRIL 5, 2012

**B. GEF AGENCY(IES) CERTIFICATION**

<b>This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.</b>					
Agency Coordinator, Agency name	Signature	Date (Month, day, year)	Project Contact Person	Telephon e	Email Address
Laurent Thomas Officer-in-Charge Investment Centre Division Technical Cooperation Department FAO Viale delle Terme di Caracalla 00153 Rome, Italy <a href="mailto:TCI-Director@fao.org">TCI-Director@fao.org</a>		February 8, 2012	Selvaraju Ramasamy Climate Impact, Adaptation and Environment Unit Climate, Energy and Tenure Division (NRC), FAO, Rome	+3906 57056832	<a href="mailto:Selvaraju.Ramasamy@fao.org">Selvaraju.Ramasamy@fao.org</a>
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