



**ADAPTATION FUND**

AFB/PPRC.2/6  
September 10, 2010

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Adaptation Fund Board  
Project and Programme Review Committee  
Second Meeting  
Bonn, September 15, 2010

## **PROPOSAL FOR GUATEMALA**

## I. Background

1. The Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund, adopted by the Adaptation Fund Board, state in paragraph 41 that regular adaptation project and programme proposals, i.e. those that request funding exceeding US\$ 1 million, would undergo either a one-step, or a two-step approval process. In case of the one-step process, the proponent would directly submit a fully-developed project proposal. In the two-step process, the proponent would first submit a brief project concept, which would be reviewed by the Project and Programme Review Committee (PPRC) and would have to receive the approval by the Board. In the second step, the fully-developed project/programme document would be reviewed by the PPRC, and would finally require Board's approval.

2. The Templates Approved by the Adaptation Fund Board (Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund, Annex 3) do not include a separate template for project and programme concepts but provide that these are to be submitted using the project and programme proposal template. The section on Adaptation Fund Project Review Criteria states:

*For regular projects using the two-step approval process, only the first four criteria will be applied when reviewing the 1st step for regular project concept. In addition, the information provided in the 1st step approval process with respect to the review criteria for the regular project concept could be less detailed than the information in the request for approval template submitted at the 2nd step approval process. Furthermore, a final project document is required for regular projects for the 2nd step approval, in addition to the approval template.*

3. The first four criteria mentioned above are:

1. Country Eligibility,
2. Project Eligibility,
3. Resource Availability, and
4. Eligibility of NIE/MIE.

4. Based on the Adaptation Fund Board Decision B.9/2, the first call for project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Adaptation Fund was sent out on April 8, 2010.

5. According to the paragraph 41 of the operational policies and guidelines, a project or programme proposal needs to be received by the secretariat not less than seven weeks before a Board meeting, in order to be considered by the Board in that meeting.

6. The following project concept titled "Climate change resilient productive landscapes and socio-economic networks advanced in Guatemala" was submitted by the United Nations Development Programme (UNDP), which is a Multilateral Implementing Entity of the Adaptation Fund. This is the first submission of this proposal. It was received by the secretariat in time to be considered in the 11<sup>th</sup> Adaptation Fund Board meeting. The secretariat carried out a technical review of the project concept, assigned to it the diary number AFB/MIE/Rural/2010/1, and filled in a review sheet.

7. In accordance with a request to the secretariat made by the Adaptation Fund Board in its 10th meeting, the secretariat shared this review sheet with the UNDP, and offered it the

opportunity of providing responses before the review sheet was sent to the Project and Programme Committee of the Adaptation Fund.

8. The secretariat is submitting to the Project and Programme Review Committee the summary of the project, prepared by the secretariat, in Annex 1. The secretariat is also submitting to the Committee the technical review sheet and the responses provided by the UNDP, as confidential documents.

## Project Summary

Guatemala – Climate change resilient productive landscapes and socio-economic networks advanced in Guatemala.

Implementing Entity: *UNDP*. Executing Entity: *Ministry of Environment and Natural Resources*

Project execution cost: USD 500,000

Total project cost (execution included): 5,000,000

UNDP management fee: USD 500,000 (10%)

Total amount of financing requested: USD 5,500,000

Project Background and Context: Climate projections and scenarios indicate increases in temperature, decreases in total mean precipitation, increases in frequency of extreme precipitation events and in the frequency and intensity of extreme climatic events. As a result, 10% of Guatemalan territory faces risk of drought. The major threats of climate change are hydro meteorological (floods and landslides). The proposed project aims to increase climate resilience in productive landscapes and socio-economic systems in pilot municipalities, threatened by climate change and climatic variability impacts, in particular hydro-meteorological events that are increasing in frequency and intensity.

Component 1: Capacities and tools developed that enhance national and local capacities for climate change adaptation (USD 300,000)

The expected outcome of this component is the development tools and capacities at the local and national level that would enable decision makers and communities to reduce vulnerabilities and strengthen adaptive responses. The expected concrete outputs include the strengthening of capacities and tools at local and national levels for development of downscaled climate change scenarios, the enhancement of the capability for national, local authorities, and communities in mainstreaming climate change and variability issues into Municipal and Department Development plans, the strengthening of the development of land use plans to mainstream climate change and variability considerations, and the development of new and innovate financial mechanisms to support adaptation processes and initiatives at both national and local levels.

Component 2: Recovery and development of climate change resilient practices reduces vulnerability of communities (USD 2,600,000)

The expected outcome of this component is the increased productive landscape resilience through application of ancestral practices and other productive activities, as well as targeted investments. Expected outputs for this component include the undertaking of a vulnerability analysis of productive practices in pilot municipalities to identify options for enhancing resilience and the recovery, systemization, application and dissemination of ancestral and traditional practices and knowledge for productive systems and hydro-meteorological risk management. Other outputs include the adoption of climate change resilient productive practices in pilot municipalities, targeted investments that increase coping capacity of communities, and the development of manuals on new and ancestral practices for reducing hydro-meteorological vulnerability at the community level

Component 3: Food security and livelihood options are improved in pilot municipalities (USD 1,320,000)

The expected outcome of this component is the improvement of socio-economic adaptive capacity of poor indigenous communities. The expected outputs include the incorporation of climate change aspects and socio-economic vulnerability in marketing of community products, the strengthening of community social networks for building more resilient social environments and the development of micro financing schemes including insurance for most vulnerable populations (indigenous and women).

Component 4: Informed decision-making and advocacy supported by decentralized information systems (USD 280,000)

The expected outcomes for this component include effective knowledge management results in informed decision-making at all levels through an integrated information system and the systemization and dissemination of pilot experiences, lessons learned, and best practices. Expected outputs include the establishment of an information system based upon existing sub-national and national centers of expertise to support more robust science-based decision making, the development of a awareness and advocacy programme on climate change for a range of target audiences, the systemization and documentation of lessons learned and best practices, and the development of technical standards for development and implementation of climate change adaptation proposals.




**PROJECT/PROGRAMME PROPOSAL**


**PART I: PROJECT/PROGRAMME INFORMATION**

PROJECT/PROGRAMME CATEGORY:	<b>Regular</b>
COUNTRY/IES:	<b>Guatemala</b>
TITLE OF PROJECT/PROGRAMME:	<b>Climate change resilient productive landscapes and socio-economic networks advanced in Guatemala</b>
	(UNDP PIMS 4386; Atlas IDs - Proposal 00060326, Project 00075911, GTM10)
TYPE OF IMPLEMENTING ENTITY:	<b>Multilateral Implementing Entity</b>
IMPLEMENTING ENTITY:	<b>United Nations Development Program (UNDP)</b>
EXECUTING ENTITY/IES:	<b>Ministry of Environment and Natural Resources (MARN)</b>
AMOUNT OF FINANCING REQUESTED:	<b>5,500,000</b> (In U.S Dollars Equivalent)



**PROJECT / PROGRAMME BACKGROUND AND CONTEXT:**

 Guatemala faces many hazards related to climate variability and climate change. Projections and scenarios indicate increases in temperature, decreases in total mean precipitation, increases in the frequency of extreme precipitation events<sup>1</sup>, as well as in the frequency and intensity of extreme climatic events<sup>2</sup>. As a result of these hazards 10% of Guatemalan territory faces risk of drought and more than 3000 communities have to contend with flooding risks (see figure 1 Annex 1). According to the 2009 Global assessment report on disaster risk reduction (UNISDR, 2009), Guatemala has been classified as one of the world’s top 10 countries most vulnerable to disasters.

 Hurricane Mitch (1998) resulted in US\$ 748 million in economic losses, 77% of which affected productive sectors. Tropical storm Stan (2005) caused US\$ 910 million in economic losses, over 1,400 deaths and over half a million victims (70% of which were indigenous peoples).<sup>3</sup> Recently, tropical storm Agatha (May 2010), launched the 2010 wet season with intense rainfall that has already resulted in 172 deaths, 101 disappearances, 300,000 affected, 80,000 direct victims and 160,000 evacuations<sup>4</sup>. A few weeks later Tropical Storm Alex (June 2010) affected 1383 people, injured 393 and required the evacuation of 7400 people<sup>5</sup>. The rainy season is just starting up and is projected to be one of the worst in history.

<sup>1</sup> Aguilar, E. et al (2005). Changes in precipitation and temperature extremes in Central America and northern South America, 1961–2003.  
<sup>2</sup> MARN (2009) Informe Ambiental del Estado de Guatemala – GEO 2009.  
<sup>3</sup> SEGEPLAN (2006)  
<sup>4</sup> Boletín informativo No. 812 del 5 de junio de la SE-CONRED.  
<sup>5</sup> Boletín Informativo No. 902 del 29 de junio de 2010 SE- CONRED.

National climate change projections indicate that mean annual temperatures could increase 1 to 3°C by 2050; total precipitation could decrease resulting in an expansion of semiarid areas and an increase in the “canicula”<sup>6</sup>. Guatemala is a country with high levels social inequality, high poverty levels (51% of the population is poor, with 15% in extreme poverty) and infant malnutrition rates of 49%. Most of the poor are women and indigenous people<sup>7</sup>. Most of the indigenous populations are grouped in rural regions with the lowest human development, highest poverty and extreme poverty indexes<sup>8</sup>. Projected climate variability and climate change will produce a regression in human development levels which will impact a range of issues including food security, health, forestry, ecosystems and water resources.

The Government of Guatemala selected 5 core priority municipalities (Pochuta, San Miguel Panán, Chicacao, Santa Bárbara y Río Bravo), as a pilot area, in the departments of Suchitepéquez and Chimaltenango. Another 10 municipalities (in the departments of San Marcos, Quetzaltenango, and Sacatepéquez) are under consideration, and their inclusion will be defined during the preparatory phase. The selection was made based on the following criteria: quality of life index, frequency of extreme meteorological events, location of groundwater recharge areas and percentage of indigenous population.

The 5 pilot municipalities cover an area of 702 km<sup>2</sup> (see Annex 2) and the full 15 municipalities would encompass an area of 1827 km<sup>2</sup>. Ecoregions in pilot area are Central American pine-oak forests and Central American montane forests. Natural forest remnants cover 34% of the pilot departments, with broad-leaf, secondary and coniferous and broad-leaf mixed forests<sup>9</sup>.

In pilot municipalities, 60% of the population is indigenous, 50% are women and 47% are children (0-14 years), which are the most vulnerable sector<sup>10</sup>. The human development index is 0.522<sup>11</sup>, poverty levels reach 57% (six points above the national average), and 15% of the population lives in extreme poverty<sup>12</sup>. Child malnutrition affects 47%.

Livelihoods depend on the production of annual crops (maize, beans), which cover 38% of the territory of pilot departments area. In order of importance, other production systems are coffee (15%) pasture for livestock (3%), vegetables (2%) and sugar (1%)<sup>13</sup>. Livelihoods in mountainous areas are based on agricultural exports (fruit, horticulture) and livestock. The southern area, less mountainous areas produce snuff, coffee, rubber, cocoa, sugar cane, cotton and livestock. Both these productive areas and the remnants natural ecosystems are highly vulnerable to changes in climatic conditions, so the vulnerability of populations will increase significantly in the next years. This social vulnerability and food insecurity is generated and exacerbated by the absence of alternative livelihoods and appropriate marketing mechanisms. Climate change risks threaten the very survival of families. When families face acute water and food shortages, a desperate but common family survival strategy is to limit food intake by the most vulnerable members who are least likely to survive (aged people and sickly children).

The major threats of climate change are hydro meteorological (floods and landslides). In these two departments there are 61 villages threatened by flood risk which affects a total of 88,200 inhabitants. A total of 4,540 km<sup>2</sup> face flood risks in the Sis-Icán, Ocosito, Coyolate, Nahualate, Suchiate Samalá, Madre Vieja and Naranjo basins in the pilot area. Estimated erosion rates are equivalent to 208 tons of sediment per hectare per year<sup>14</sup>. Flow rate studies in these basins show an increase in average flow

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<sup>6</sup> Characteristic of the rainy season in Central America, the “canicula” is a spell of hot weather that occurs in the middle of the season. If it is not timely or is prolonged, it threatens crops and can lead to their partial or total loss. MARN (2001) First National Communication on Climate Change– Guatemala.

<sup>7</sup> GEO Guatemala (2009).

<sup>8</sup> National Human Development Index (2005).

<sup>9</sup> Vegetative cover and land use map (MAGA, 2006).

<sup>10</sup> National Statistics Institute, National Poll on Human Development (INE, 2006)

<sup>11</sup> General Secretariat for Planning and Programming of the Presidency (SEGEPLAN, 2005)

<sup>12</sup> National Statistics Institute, National Poll on Human Development (INE, 2006)

<sup>13</sup> Vegetative cover and land use map ((MAGA, 2006).

<sup>14</sup> GEO Guatemala (MARN, 2009).

rates in May (beginning of the rainy season), with increases of 89% to 141% over historical averages<sup>15</sup>.

Climate change scenarios for Guatemalans' south-western region indicates a progressive warming, where maximum and minimum temperatures tend to increase in all scenarios (from 0.8 to 1.5 C °), while precipitation tends to decrease in the beginning of wet season; October tends to be the wettest month<sup>16</sup>. In the mountainous area of the pilot municipalities, the severity index to climate change ranges from "significant changes vary throughout the year" to "outside comfort zone"<sup>17</sup>.

## **PROJECT OBJECTIVES:**

The proposed project aims to increase climate resilience in productive landscapes and socio-economic systems in pilot municipalities, threatened by climate change and climatic variability impacts, in particular hydro-meteorological events that are increasing in frequency and intensity. The project proposes to achieve this through a suite of key outcomes that range from enhancement of institutional capabilities to support for building more resilient local economies, and increasing communities' adaptive capacity. The project will have four components:

1. An enabling environment increases national and local capacities for climate change adaptation, including capacities for analysis of information, mapping of vulnerability, and elaboration and downscaling of climate change scenarios.
2. Productive landscapes are more resilient to climate change and variability through the implementation of a range of practices that includes ancestral and traditional productive practices in pilot municipalities.
3. Development of resilient local economies to ameliorate food security issues in pilot municipalities, while strengthening community-level organizations and social networks, results in increased adaptive capacities.
4. An information system is set up which includes knowledge management, communication, and advocacy at all levels. Tools such as climate change scenarios and best practices will be disseminated through the information system which will also contribute to supporting and strengthening capacity development processes, and to replication of project outcomes at national level.

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<sup>15</sup> Water flow trends in hydrometeorological stations during May 2010 (INSIVUMEH, 2010)

<sup>16</sup> Future Vulnerability and Adaptation Measures and Strategies– MARN (2007)

<sup>17</sup> Potential Impacts of Climate Change on Biodiversity (CATHALAC, 2008).



**PROJECT COMPONENTS AND FINANCING:**

PROJECT COMPONENTS	EXPECTED CONCRETE OUTPUTS	EXPECTED OUTCOMES	AMOUNT
<p>1. Capacities and tools developed that enhance national and local capacities for climate change adaptation</p>	<ul style="list-style-type: none"> <li>• Capacities and tools at local and national level strengthened for development of downscaled climate change scenarios, including through acquisition of equipment, software and hardware</li> <li>• National, local authorities and communities better able to mainstream climate change and variability issues into Municipal and Department Development Plans.</li> <li>• Development of land use plans strengthened to mainstream climate change and variability considerations</li> <li>• New and innovative financial mechanisms developed to support adaptation processes and initiatives at national and local levels</li> </ul>	<ul style="list-style-type: none"> <li>• Local and national capacities and tools enable decision makers and communities to reduce vulnerabilities and strengthen adaptive responses</li> </ul>	300,000
<p>2. Recovery and development of climate change resilient practices reduces vulnerability of communities</p>	<ul style="list-style-type: none"> <li>• Vulnerability analysis of productive practices in pilot municipalities undertaken to identify options for enhancing resilience</li> <li>• Ancestral and traditional practices and knowledge for productive systems and hydro-meteorological risk management, recovered, systematized, applied and disseminated (eg construction of terracing, reservoirs for irrigation of garden and for watering livestock, use of clay jars for watering crops)</li> <li>• Climate-change resilient productive practices adopted in pilot municipalities and advanced through reforms in Municipal and Departmental Development Plans</li> <li>• Targeted investments increase coping capacity of communities including grain storage facilities, systems for collection and diversion of water, retaining walls and drains</li> <li>• Manuals on new and ancestral practices for reducing hydrometeorological vulnerability developed at community level</li> </ul>	<ul style="list-style-type: none"> <li>• Productive landscape resilience increased through application of ancestral practices and other productive activities, as well as targeted investments</li> </ul>	2,600,000
<p>3. Food security and livelihood options are improved in pilot municipalities</p>	<ul style="list-style-type: none"> <li>• Marketing of community products incorporates climate-change aspects and reduces socio-economic vulnerability</li> <li>• Community social networks strengthened for building more resilient social environments</li> <li>• Micro financing schemes, including insurance for most vulnerable populations (indigenous and women), developed</li> </ul>	<ul style="list-style-type: none"> <li>• Socio-economic adaptive capacity of poor indigenous communities improved</li> </ul>	1,320,000

PROJECT COMPONENTS	EXPECTED CONCRETE OUTPUTS	EXPECTED OUTCOMES	AMOUNT
4. Informed decision-making and advocacy supported by decentralized information systems	<ul style="list-style-type: none"> <li>Information system established based upon existing sub-national and national centers of expertise, to support more robust science-based decision-making</li> <li>Awareness and advocacy programme on climate change developed for a range of target audiences</li> <li>Lessons learned and best practices derived from efforts to develop more resilient productive systems – including ancestral and traditional practices - systematized and documented</li> <li>Technical standards for development and implementation of climate change adaptation proposals, developed</li> </ul>	<ul style="list-style-type: none"> <li>Effective knowledge management results in informed decision-making at all levels through an integrated information system</li> <li>Pilot experiences, lessons learned, and best practices systematized and disseminated</li> </ul>	280,000
1. Project Execution cost			500,000
2. Total Project Cost			5,000,000
3. Project Cycle Management Fee charged by the Implementing Entity			500,000
<b>Amount of Financing Requested</b>			<b>5,500,000</b>

**PROJECTED CALENDAR:**

*Indicate the dates of the following milestones for the proposed project/programme*

MILESTONES	EXPECTED DATES
Start of Project Implementation	January 2011
Mid-term Review (if planned)	February 2013
Project Closing	February 2015
Terminal Evaluation	March 2015

## **PART II: PROJECT JUSTIFICATION**

### ***A. Describe the project components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience.***

The proposed project aims to reduce vulnerability to climate change and climate variability through an integrated strategy that addresses specific requirements at all levels. At a systemic level, it will mainstream climate change considerations into key policy frameworks that will in turn be vehicles for incorporating these factors into sectoral planning, programming and investment decisions. Moreover, by working through the new Development Plans and the emerging Land Use regime, the project will influence and strengthen decision making processes at all levels, from national to local and community levels. This will be complemented by targeted work in pilot municipalities that are among the most vulnerable in the country, with a population that is largely poor and indigenous. Project activities will not only focus on enhancing ecosystem integrity and resilience, but also on strengthening the productive practices and socio-economic context of these communities. In the selected pilot municipalities, climate resilient productive practices will be promoted, an effort that will be complemented by the development of more resilient local economies and value chains as well as more robust community organizational structures. It is recognized that merely addressing one aspect of the complex prism that constitutes climate-resilient development is neither cost-effective nor able to set in place the changes that are required to address long-term climate change challenges. A framework for replication and upscaling to national level will be advanced through the establishment of an enabling environment at national level, that will include strengthened capacity to assess climate change impacts and to apply relevant tools, and a dynamic information system structured around a network of sub-national centers of experience..

#### **Component 1: Capacities and tools developed that enhance national and local capacities for climate change adaptation**

The project will create an enabling environment for climate change adaptation in Guatemala.

Currently, national capacities to manage and analyze information on climate change hazards and slow-onset changes are limited, based largely on extrapolations from regional models. Downscaled information and scenarios, and the capacity to develop and utilize these in formulating robust strategies, policies and responses in the context of uncertainties associated with climate change, is largely non-existent. Therefore, the proposed project seeks to enhance national and local capacities for developing climate change scenarios (including impact scenarios, costing scenarios etc) as a tool for informing decision making at all levels. Capacities will be strengthened to perform socio-economic vulnerability assessments and maps, to develop national and local climate scenarios of economic development under conditions of alternative climate change futures, to identify options for adaptation response measures, and to prioritize these. The process will be led by the Ministry of Environment and Natural Resources (MARN). Other institutions such as the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH), the National Council of Protected Areas (CONAP - CEMEC), the Ministry of Agriculture, Livestock and Food (MAGA), the National Forestry Institute (INAB), the Secretariat for Food Safety (SESAN), the Office for Water, the Ministry for Planning and Programming of the Presidency (SEGEPLAN) and the Municipal Planning Unit in each pilot municipality, will participate actively.

The COCODES, COMUDES and CODEDES<sup>18</sup> are the Development Councils at local, municipal and departmental levels. They include stakeholders from private and public sectors, as well as representatives of all resource user groups, women, and youth. Through the Project both local authorities and COCODES, COMUDES and CODEDES will be trained so that they can understand and apply vulnerability assessments and maps to their decision making and planning processes.

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<sup>18</sup> COCODE: Community Development Councils, COMUNDE: Municipal Development Councils, and CODEDES: Departmental Development Councils

Capacity building will include development of vulnerability maps as well as overall mainstreaming of climate change adaptation considerations, with particular emphasis on Municipal Development Plans and Departmental Development Plans. The proposed project is quite timely given that the recently approved Municipal Code has given municipalities the mandate and obligation to develop these plans<sup>19</sup>. If these local actors are not able to visualize and appreciate the implications of long-term climate change, decisions on investments and resource use allocations could be taken that could increase vulnerabilities or actually result in maladaptation.

A new Land Use Law is currently under formulation, and is not attuned with the dawning likely realities of climate change. This, therefore, provides a key entry point for incorporating climate risk considerations into sectoral planning processes at all levels. The project will support the Ministry of the Environment in updating this norm. By requiring that both national and local stakeholders take into account local scenarios and climate change projections in their planning processes, the bases for a more resilient development pathway will be put in place. This will be linked to the Multi-Annual Sectoral Plan (2011-2013) which will serve to harmonize the strategic planning processes and operational multi-year budget of 40 participating institutions and donors. These normative frameworks will enable the project to advance inter-sectoral programming and planning processes, laying the bases for the difficult decisions and trade-offs that long-term climate change could imply. At sub-national levels, the project will assist the pilot municipalities and departments to local scenarios and climate change projections into their programming and investment planning decisions.

The Government of Guatemala recognizes that the identification of CCA response measures and their prioritization in development planning processes at national, sub-national, and local levels is to no avail if adequate funding cannot be mobilized. Currently, funding mechanisms are insufficient to meet projected needs. Therefore the proposed project will identify possible sources and financial mechanisms to support the wide range of adaptation measures that will be required. These could include actions developed through the Multi – Annual Sectoral Plan, which would include guidance based on defined national priorities for development aid as well as for ensuring Government leadership in advancing institutional initiatives for development.

It should be noted that activities within this component will be underpinned by an information system that will be highly cost-effective and sustainable as it will be built up based on existing centers of experience at sub-national level (see Component 4).

## **Component 2: Recovery and development of climate change resilient practices reduces vulnerability of communities**

Climate change and climate variability in the pilot municipalities will be impacted with an increase in the frequency and severity of meteorological events that result in flooding and landslides during the rainy season and severe droughts during the dry season. Current and future vulnerability maps will be developed through highly participatory processes with community members, taking into account climate change trends including the likelihood of extreme events. This activity will be supported by national authorities trained under Component 1 and will be carried out with the participation of indigenous communities. These communities will be able to incorporate their ancestral knowledge about hazards and risks into frameworks that take into account likely future events.

The landscape in the pilot area is 56% crops (annual crops, coffee, livestock, sugar and vegetables among others), and 34% forest (broad-leaf, coniferous, and mixed forests<sup>20</sup>), which constitutes an ecosystem that is very vulnerable to the hazards described above. A high percentage of indigenous population (60%; approximately 57,243 people) lives in these areas. The proposed project recognizes that native populations have survived in the pilot area for thousands of years, and that the recovery of ancestral and traditional knowledge is important to inform adaptive strategies and ensure continuity for future generations. Currently this knowledge is being lost. One of the project activities will focus on the

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<sup>19</sup> Reforms to the Municipal Code. Decree n° 22-2010.

<sup>20</sup> Vegetative cover and land use map (MAGA, 2006).

recovery and systematization of this ancient and traditional knowledge, which will then be implemented in conjunction with other measures to increase resilience of production systems in pilot municipalities in anticipation of expected climate change. The project will also recover and systematize the ancient knowledge related to flooding management. The recovery and systematization of traditional practices will be conducted in coordination with the Ministry for Culture and Sports and the Defense of Indigenous Women.

Once tested and validated in terms of reducing vulnerability to current and projected climate change trends and events, these practices will be incorporated and promoted through in the Municipal Development Plans and Departmental Development Plans. Thus this component will serve to demonstrate in a practical, hands-on manner requirements and processes for effectively mainstreaming climate change into development processes, as described under Component 1.

Specifically, the project will promote ecosystem approaches to adaptation including enhance landscape connectivity through the implementation of agro forestry, sylvo- pastoral and reforestation activities. In addition, the project will pilot experiences of forest restoration, taking into account species and management systems that are more suited in high risk areas, to increase landscape resilience as a whole under emerging long-term climate conditions. This includes municipal lands designated for reforestation, conservation of existing ecosystems (and their ecosystem services), and promotion of small forest enterprises. Work will be undertaken with communities to analyze agricultural practices in order to reduce vulnerabilities such as through use of drought resistant crops, construction of terracing, reservoirs for irrigation of garden and for watering livestock, use of clay jars for watering crops, agroforestry systems, as well as targeted investments in systems for collection and diversion of water, retaining walls and drains, among others.

In 2007 a study was undertaken that has already identified over 150 ancestral adaptation measures to address flooding. These cover a range of thematic areas including agriculture (4), infrastructure (28), health (28), and early warning systems (32). The proposed project will build upon this work. The project will support the systematization of ancestral practices and new practices used to reduce vulnerability to hydrometeorological events through technical guidance manuals aimed at the community level.

In addition to this, during the preparatory phase, requirements for investment in infrastructure and “hard” adaptation options will be defined. These could include construction of gabions and other protective structures, and water retention and storage facilities. Other key activities will address requirements such as slope stabilization and protection measures in order to guard against flooding and landslides, while others focus on actions such as dredging of river beds. Investments in equipment may be required.

Furthermore, adaptation measures will develop early warning systems (including weather, runoff and flow data), appropriate infrastructure to protect against flooding (including water capture and storage in small dams), systems which improve water infiltration, and measures which increase soil water retention capacity. Investment requirements will be defined in the preparatory phase.

A key activity in this component will be evaluating the costs of each adaptation measure, both hard as soft adaptation measures. This information, together with the results of productive activities that have been implemented, will feed the information system (Component 4) and thus decision making processes at national and local levels.

### **Component 3: Food security and livelihood options are improved in pilot municipalities**

Productive landscapes affected by climate change hazards will increase their resilience from the experiences implemented in Component 2. This will be complemented by increasing the adaptive capacity of local communities to support vital economic and social processes.

The vulnerability of communities is a factor not only of exposure to climatic events and trends, but also

of limited livelihood options and market chains for specific crops that are likely to be successful under long-term climate change conditions. Therefore the project will support local economic diversification, as part of a process of establishing more resilient local economies. The project will improve marketing processes, and undertake activities to reduce short-term and longer-term vulnerability for example by establishing storage infrastructure for agricultural products of high economic value. The project will diversify local economies, especially those most dependent on natural resources sensitive to climate. Initiatives addressing issues related to food security in Guatemala, spearheaded by the Secretariat for Food and Nutritional Security through the Strategic Plan for Food and Nutritional Security -2009-2012 (SESAN) have clearly identified that capacities for marketing need to be strengthened alongside those that aim to strengthen productive processes. Small and poor producers have no capacity to manage their crop surpluses – in infrequent event but one that if well managed could substantially enhance coping ranges – and when partial or total crop losses occur, face losing their entire savings perpetuating a cycle of grinding poverty. Efforts to increase their capacity to process their produce – for example through natural drying; to plan and manage their crops – for example through access to storage facilities; and to shorten the value chain by eliminating or reducing intermediaries, will therefore prove critical components of effectively reducing the exposure of poor and indigenous communities to the variability of climatic conditions and events. Women, who are largely responsible for marketing and processing their produce, will play a critical role in this. The project will therefore have a strong emphasis on gender, working with the Indigenous Women Advocacy Council (DEMI). The proposed project will also improve access to microfinance schemes prioritizing the most vulnerable populations. The project will also promote index insurance schemes and other financial instruments to cover risks associated with climate change and climate variability. During the preparatory phase, investments to support more resilient value chains will be defined. These will include construction of storage facilities for grains.

In the social sphere, the project will enhance the social networks focusing on the development of resilient social environments that enhance the adaptive capacity of local communities. Current capabilities and structures will be diagnosed and the project will propose ways to strengthen social networks, including through the active participation of vulnerable groups. It is known that a closely knit and well-organized community has better options and capacities to successfully cope with climate variability and change, than those available to a fragmented community. This is a critical aspect that unfortunately has not been sufficiently addressed in the field of climate change adaptation. The project will improve associative processes between producers in the poorest and most vulnerable populations. Efforts will also focus on promotion of local processes designed to recover and re-evaluate traditional practices, and incorporate new technologies and innovations in climate change adaptation measures. It will also support mechanisms for social organizations, with guidance, legal advice and training for the formalization of different types of organizations (committees of neighbors, co-operatives, NGOs and social service). As noted above, gender issues will play a key role in these processes as women are often linchpins of both social structures and productive processes in many rural communities. Additionally, the project will seek to support collective traditional organization, to promote joint efforts by implementing adaptation measures.

#### **Component 4: Informed decision-making and advocacy supported by decentralized information systems**

The main activity of this component is to establish a decentralized information system that builds upon existing centers of experience at national and sub-national levels, as a basis for knowledge management and decision-making on climate change in the country.

This information system will be developed by integrating and coordinating existing experience centers that should become centers of excellence in the future. Arrangements and mechanisms for cooperation and coordination between centers with experience in data analysis - such as Universidad del Valle, University Center of the East (CUNORI) and University Center of the West (CUNOC), Institute of Agriculture, Natural Resources and Environment (IARNA), CEMEC in Peten, Geographic Planning Unit and Risk Management (UPGGR) of the Ministry of Agriculture, Livestock and Food (MAGA), and the

National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH) - will be developed, including protocols for sharing, compilation and analysis of information.. The information system will collect and analyze relevant information for downscaled vulnerability assessments, development of climate change scenarios, and other requirements for decision and planning processes at all levels in Guatemala. The capacity to generate and analyze information will be provided through Component 1; this component will ensure that the information is readily available to be integrated by stakeholders at all levels, thus effectively mainstreaming climate change issues to development processes in the country.

INSIVUMEH is in the process of installing 61 new hydrological and meteorological stations that will provide climatic information to geographic information research centers in Guatemala. The project will assist in creating the necessary capacities for incorporating climate change information layers to the thematic maps to be developed. This information will complement efforts undertaken by MAGA, SESAN and MARN to integrate climatic variation into local management, specifically in activities related to agriculture, forestry and water management.

In addition, through activities in this component the lessons learned and best practices generated by the project will be systematized and disseminated. The project proposes to recover ancestral and traditional practices as well as to validate ground-truthed productive approaches that enhance the adaptive capacity and coping range of highly vulnerable rural communities. It also proposes to address critical aspects of vulnerability within social structures. These valuable efforts will be documented by the project in order to facilitate their replication and upscaling. The set of practices evaluated and systematized will be an important tool for achieving adaptive management of landscapes and marketing systems within local economies. The system will also provide data to assess and incorporate the potential costs of adaptation to climate change within municipal, departmental and national budgets.

Finally, the information generated and processed through the project will provide basic inputs for development an awareness and outreach strategy that will serve to enable a broader range of stakeholders in this very vulnerable country to better understand the impacts of climate change – as well as response measures. As such, the Ministry of the Environment is particularly keen to apply the work of the project to developing technical standards and guidelines for mainstreaming climate change into planning and programming processes, as well as for productive processes.

***B. Describe how the project provides economic, social and environmental benefits, with particular reference to the most vulnerable communities.***

Guatemala is a highly vulnerable country to the projected impacts of climate change and variability. One of the expected impacts of climate change is the increased frequency and intensity of tropical storms and hurricanes, which brings an increase in flooding and landslides. Recently tropical storms Agatha (May 2010) and Alex (June 2010) produced landslides and floods in pilot area (see Annex 1). Records indicate that between 2000 and 2004, there were more than 160 flood and 1450 landslides<sup>21</sup>. The southwestern area is one of the most affected by these events.

In the pilot municipalities poverty levels reach 59.4% and child malnutrition exceeds 46% in some municipalities (San Miguel Panán and Chicacao). Social networks are weak with low levels of association, and significant social and cultural diversity that translates into difficulties for agreeing on planning and programming processes, for allocation of scarce resources, and for managing trade-offs. The adaptive capacity of communities is a key factor for the success of adaptation measures. A strong social network with tools to improve economic conditions is critical. The project will strengthen the adaptive capacity of these highly vulnerable communities from both economic and social perspectives. In this sense, the project will benefit over 95,000 people in pilot municipalities, of whom 47,000 are women and more than 14,000 live in extreme poverty.

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<sup>21</sup> Environmental Profile of Guatemala (2006).

To support economic diversification and marketing processes, the proposed project will explore options for micro credit and micro grant schemes for productive activities, as well as index insurance modalities that have served in other regions of the world in reducing the risk exposure of the most vulnerable. In the social arena the project will facilitate associative processes for producers, and increase participation of vulnerable groups – including indigenous groups, women and youth - in the management of productive landscapes. The recovery and application of ancestral and traditional knowledge and practices will be an important tool for this. This is expected to strengthen the social network of impoverished rural communities so that it can more effectively meet the expected climate changes. Thus, the project will benefit more than 57,000 indigenous people, and more than 40,000 children and young people, who live in an area of 702 km<sup>2</sup> in the core pilot municipalities.

The vulnerability of local communities will be further reduced through the resilient productive activities and ecosystem based approaches that the proposed project will promote. Ancestral practices will be recuperated and will be combined or bolstered with new practices and technologies. Other activities will be undertaken in parallel to increase the resilience of the landscape as a whole. These may have an emphasis on productive actions (agro forestry and agro-pastoral activities), or an emphasis on conservation (ecosystem restoration, reforestation, improvement of water infiltration and water retention in the soil). These activities seek a reduction in production losses from flooding. These will also contribute to increasing the sensitivity of local authorities to the benefits of adaptation measures and their impact in reducing vulnerability.

At a more systemic level the importance of enhancing capacities for undertaking vulnerability assessments and developing climate change scenarios should not be underestimated. It is critical that relevant national authorities have the capacity to undertake this in order to provide local authorities and communities with the best available information for decision making including regarding key issues such as long-term investments and even crop varieties. It is often repeated that adaptation measures need to respond to local vulnerabilities, but in order to define the appropriate measures, information is needed. Therefore, the results of project activities will be integrated into the information system which will provide inputs for knowledge management, scenario development and vulnerability assessments. In addition to generating the necessary information for general outreach and awareness strategies targeted to diverse stakeholder groups, this will also enable sharing of experiences with other territories and other countries, and integration of knowledge about adaptation into monitoring and evaluation systems.

### ***C. Describe or provide an analysis of the cost-effectiveness of the proposed project***

To date, considerations of climate change and variability, and associated impacts on landscape production processes have been absent from land management approaches in Guatemala. This is exacerbated given that management decisions at all levels are characterized by a short-term vision. Thus there at best limited understanding of how inter-relationships within an ecosystem will be impacted with climate change. Under a business-as-usual scenario which is the only real alternative to the proposed project, responses to climate change and variability impacts would remain short-term and reactive particularly in the context of poor rural and indigenous communities that have a very limited coping range to start with. At national level, opportunities for very effectively mainstreaming climate change considerations into far-reaching framework legislation would be missed. Moreover, and as noted above, existing national capacities to generate, manage and analyze information on climate change hazards and slow-onset changes are limited. The use of climate change scenarios for informing decision making is inexistent as the capacities for generating them, as well as for applying them, are limited at best. This is also holds for other key tools such as the elaboration of socio-economic vulnerability assessments and maps, and cost-benefit analyses.

Therefore, the proposed project will operate at systemic level, generating requisite capacities and installing the necessary tools and equipment, while also incorporating climate change and variability considerations into the emerging regimes for both water management and land-use planning which are evidently closely interconnected. It will also become a platform for enhanced inter-sectoral cooperation



and dialogue, which is much needed given that long-term climate impacts will demand difficult decisions on investments, settlements and other issues as well as on trade-offs. In the field, projected adaptation measures will be integrated on several levels. Firstly the recovery of ancestral and traditional knowledge related to risk management and productive systems will be adapted to extreme meteorological events. Indigenous communities have successfully survived for millennia in a region characterized by significant climatic variability. Secondly, the implementation of production practices and conservation measures that strengthen the resilience of productive landscapes will enable communities to increase their coping capacities and therefore limit climatic impacts on socio-economic conditions that are already dire. Given existing poverty and malnutrition rates there is frankly not much room for adapting to additional climate drivers. And thirdly, the project will focus on improving the resilience of local communities in terms of both economic and social structures. This complex web of interrelated responses will enable the project to test and validate an integrated approach to climate change adaptation with high replication potential, which will generate practices and management tools to provide for effective long-term responses to climate change impacts.

Given that women and indigenous peoples are the most vulnerable groups, the project will integrate them into planning processes. From this point of view, the project will not only aim to increase resilience in productive landscapes, but also rescue and integrate traditional practices such as adaptation measures which otherwise would be lost, and employ the participation of women as managers of their own territories. Additionally, these measures aim to manage the landscape as a whole, incorporating ecosystem relationships that will provide not only for addressing integrated management but also promoting the importance of an integrated vision to address climate change risks.

Work at systemic levels with national and local authorities is also cost effective as there will be possibilities for applying principles of subsidiarity and for achieving economies of scale. There are some capacities, in terms of both human capital and investments in equipment that are more sensibly strengthened at national or sub-national levels. However, there is then a need to develop mechanisms for ensuring that these capacities can be applied at appropriate sub-national and local levels, and can respond to decision or planning processes at these levels. In this regard, the proposed information system plays a key role given that it will be structured around existing centers of experience including academic institutions and sub-national government entities. This will enable the project to develop activities that can have a multiplying function, such as the training of trainers.

As an integrated and very comprehensive suite of measures that will generate long-term benefits, install new capacities and orient targeted investments, it is therefore proposed that this project is fully cost-effective.

***D. Describe how the project is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.***

The proposal fully conforms to the strategic priorities defined by the Government of Guatemala MARN's Institutional Strategic Plan<sup>22</sup> which focuses on five areas: 1) climate change adaptation and mitigation, 2) strengthening and expansion of socio-environmental management with environmental legislation to date, 3) strengthening Guatemala's System of Protected Areas (SIGAP), 4) integrated management of watersheds and water resources, and 5) strengthening of a national bioethical approach based on changes in attitudes and behavior for the protection and improvement of environment and natural goods and services, with the participation of the general population.

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<sup>22</sup> Institutional Strategic Plan of the Ministry of Environment and Natural Resources, 2008-2011 (MARN 2008, resolution n° 052-2008)

In addition to this, the mandate of the national Sectoral Platform for Environment and Water<sup>23</sup> includes guidance for development aid, strengthening the role of external cooperation, and ensuring the leadership of the State in institutional initiatives for development. It functions as a forum in which donors and institutions from the environmental and water sectors (40 in total) participate. Under its auspices, a Multi-Annual Sectoral Plan<sup>24</sup> has been developed that will serve to harmonize the strategic planning processes and operational multi-year budget of all participating institutions. This Plan proposes, as one of its strategic objectives, to reduce the Guatemala's vulnerability to extreme meteorological events, by strengthening the capacity of climate change adaptation and by using natural resources.

For its part, the National Climate Change Policy<sup>25</sup> develops the framework for activities that aim to reduce vulnerability to extreme weather events, increase overall resilience and further opportunities for reducing emissions of greenhouse gases. Among its objectives is the development of national capacities to reduce climate change vulnerability and improve mainstreaming of climate change adaptation measures and considerations. In particular, and for the productive sector, the Policy underscores the need for adaptive measures that take into account local scenarios, and including traditional and ancestral knowledge.

Moreover, the project is well within the development action framework of the United Nations for Guatemala (UNDAF) specifically with regards to the following Action Areas: 1 - Environment, Disaster Risk Reduction, Energy and Water which seeks to achieve improved environmental management and sustainable use of natural resources as well as risk management and reduction of vulnerability at national and sub-national levels, with active participation of community-based organizations and the private sector; and 2 - Health, Education and Economic Opportunities with the objective of transcending subsistence economies to achieve productive and commercial development with a human rights and gender focus.

#### ***E. Describe how the project meets relevant national technical standards, where applicable.***

The Government of Guatemala requires environmental impact studies. However considerations regarding the impacts of climate variability and climate change are not adequately reflected in regulatory frameworks or in existing technical standards. Precisely for this reason the project proposes to develop technical standards for climate change adaptation in the thematic areas that the project will cover. This will include production processes, soil management and water resource management among others. In addition to this, given that this is a Government designed and Government-led initiative, relevant authorities will ensure full consistency of project activities and investments with all relevant regulations and guidelines.

All UNDP supported donor funded projects are required to follow the mandatory requirements outlined in the UNDP Programme and Operational Policies and Procedures (UNDP POPP). This includes the requirement that all UNDP development solutions must always reflect local circumstances and aspirations and draw upon national actors and capabilities.

In addition, all UNDP supported donor funded projects are appraised before approval. During appraisal, appropriate UNDP representatives and stakeholders ensure that the project has been designed with a clear focus on agreed results. The appraisal is conducted through the formal meeting of the Project Appraisal Committee (PAC) established by the UNDP Resident Representative. The PAC representatives are independent in that they should not have participated in the formulation of the project and should have no vested interest in the approval of the project. Appraisal is based on a detailed quality programming checklist which ensures, amongst other issues, that necessary safeguards have been addressed and incorporated into the project design.

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<sup>23</sup> Organizational and Procedural Manual for the Sectoral Platform on Environment and Water (2010)

<sup>24</sup> Sectoral Multi-annual Plan for Environment and Water 2011 -2013 (2010)

<sup>25</sup> National Policy for Climate Change. MARN – Guatemala. Government Agreement No. 329-2009.

**F. Describe if there is duplication of project with other funding sources, if any.**

At present Guatemala is not receiving any significant finance for concrete adaptation initiatives from any of the existing sources. The existing interventions lay the basis for integrating climate change and variability considerations into development trajectories. In the pilot area several initiatives are ongoing that are relevant to the proposed project's objectives, of which four are particularly significant:

- 1) The Strategic Plan for Food and Nutritional Security -2009-2012 (SESAN) which aims to improve food security through enhancing availability, access, consumption and biological utilization of food. However, especially in the components of availability and access, barriers have been identified given that the Program has not considered the effects of climate variability on livelihoods. Urgent action is needed ensure that livelihoods are more resistant to climatic variables. The project will work with SESAN as it promotes the participation of women and peasants to improve their marketing skills.
- 2) The World Bank is implementing a *Project Generation of Technical-Scientific Information for Disaster Risk Reduction in Municipal Planning Processes*, on land use planning and disaster risk management in Nahualate, Coyolate, Madre Vieja and Suchiate Basins. It has generated diagnostic studies of these basins and will prepare land use plans. However it has not mainstreamed climate change considerations into the risk analysis. The assessments undertaken to date, however, provide a very solid basis for the project to work with.
- 3) The Government of Guatemala is implementing a \$15 million project "Strengthening, Expanding and upgrading Networks and Geophysical Hydrometeorological Monitoring" (led by INSIVUMEH). Its objective is to contribute to the prevention of natural disasters in the country and will install 30 new hydrological and 31 new meteorological stations. Some of the stations are located in the pilot area (in Nahualate, Coyolate and Madre Vieja basins). The information generated by these stations, and analyzed with the support of the centers for sub-national Geographic Information Systems, will be used by decision-makers at all levels, including communities to plan their crops and infrastructure investments.
- 4) The Government is implementing the Greening Guatemala initiative that aims to plant 60 million trees throughout the country as part of a strategy to lay the basis for the sustainable development of the country's poorest regions. The Project has a strong awareness raising component on the importance of maintaining forest reserves, targeting youths.
- 5) Besides the work of the national communications, Guatemala is also the recipient of under \$400,000 from UNDP/GEF for a community based adaptation initiative in the Suchiate and Naranjo basins in southwest Guatemala, with a priority focus on agriculture and water. Experiences and best practices from this project contribute to the final design of the proposed project in order to be uptaken and replicated.

These projects, plans and initiatives are fully complementary to the proposed project, and constitute the development baseline upon which this project will build.

**G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned**

Under Component 4 the lessons learned and best practices developed or recovered for increasing communities' resilience to climatic trends and events will be documented and systematized through the information system (Component 4). Through this system and activities under this Component, information on adaptation measures will be captured that can be replicated in other areas of the country as well as in other countries in Central America that face very similar climate change threats. The project will publish and disseminate knowledge about ancestral and new adaptation measures, which has been applied in productive landscapes impacted by hydrometeorological events, as well as tools and mechanisms for improving the resilience of social networks and economic processes. The

system will also provide data to assess and incorporate the potential costs of adaptation to climate change within municipal, departmental and national budgets and planning processes such as the Municipal Development plans.

The systematized lessons learned can be shared in the Adaptation Learning Mechanism (ALM) to ensure wide dissemination.

**H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation.**

During the preparatory process consultations with key stakeholder groups in the project area were conducted through an extensive survey. The following is an indicative listing of key counterparts:

- Guatemalan Inter-institutional Indigenous Commission in which a broad range of institutions participate including: National Forestry Institute, National Fund for Peace, PREVDA, Ministry of Agriculture, Livestock and Food (MAGA), Ministry of Public Health and Welfare, Greening Guatemala Program, Council for the Defense of Indigenous Women, and the Development Fund.
- NGOs established in the region of Suchitepéquez and Chimaltenango including:
  - Management Group (Grupo Gestor) of Mazatenango
  - EMASA – Multidisciplinary Studies and Socio-environmental Advisory Group
  - Ecological Volunteer Group of Suchitepequez
  - Association of Friends of the Ixtacapa River
  - AIRES - International Alliance for Reforestation
- Government institutions: Secretariat for Food Safety (SESAN), National Planning Authority (SEGEPLAN), Ministry of Foreign Affairs – Department for Environment and Department for Indigenous Affairs, Ministry of Public Finances – Social, Environmental and Climate Change Unit
- Local government institutions: local delegations from the Ministry for Environment and Natural Resources, Governors of Suchitepéquez and Chimaltenango, mayors of each city in the departments.

**I. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.**

**Component 1: Capacities and tools developed that enhance national and local capacities for climate change adaptation**

***Baseline (without AF Resources)***

Over the past years, the Government of Guatemala has endeavored to establish the bases for land use and risk management in the country. The National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH) and the Ministry of Environment and Natural Resources (MARN) have made, between 2005 and 2010, maps of highly vulnerable areas as well as of hydro meteorological events. Similarly, the Ministry of Agriculture, Livestock and Food (MAGA) has been mapping current and projected land use, forest cover and productive capacity throughout Guatemala. However, these studies do not include climate variability or climate change considerations. In the framework of the Second National Communication advances have been made regarding the identification and estimation of GHG at both sectoral and national level; the vulnerability and adaptation issues will focus on coast and marine climate change impacts for the Pacific and Caribbean coasts. Therefore there is a keen need for external support to enable the development of vulnerability assessments and maps, at both national and sub-national levels, as well as for the elaboration of climate change scenarios. These are essential in order to identify options for adaptation response measures, and to prioritize these.

### ***Additionality (with AF Resources)***

Through the project, the Government will acquire the necessary equipment and software, and generate the necessary capacities to apply the tools and methodologies for climate change risk assessments. Government will have the capacities and relevant information to formulate well informed policies. This effort will prove decisive for the development of Municipal and Department Development Plans, which currently comprehend only certain risk reduction aspects. Long-term climate change and variability issues have not been incorporated. The recently approved law obligates municipalities and departments to develop these plans. In the absence of support by the project, a key opportunity will be missed to ensure that these plans are “climate-proofed”. As these will be the basis for long-term planning on land-use, investments, and allocation of resources, the implications are significant both in terms of potential maladaptation<sup>26</sup> as well as simply missed opportunities.

Similarly, the project will enable the integration of climate change scenarios and models into land-use planning legal frameworks. The country is in the process of approving a first Land Use Law, a process led by SEGEPLAN and MARN. Currently, this norm does not contemplate nor include climate change considerations. If approved and enacted without project support, it therefore also could become a vehicle for maladaptation, disregarding climate projections on variables such as precipitation and temperature that will have wide-reaching and long-term impacts on the country’s development pathway. Additionally, this law could become a vehicle for integrating climate change issues into the agendas of key productive sectors and generate a platform for better intersectoral coordination to address inevitable trade-offs. Again the timing of this project is such that in a very cost-effective manner it can ensure that the emerging legal framework supports “climate-proofed” development.

The project will work not only through the new or emerging legal frameworks, but through existing stakeholder fora in the country that will provide cost-effective, multiplying platforms for advancing capacity building and awareness efforts. The COCODES, COMUDES and CODEDES are the Development Councils at local, municipal and departmental levels. They include stakeholders from private and public sectors, as well as representatives of all resource user groups, women, and youth. Through these the project will provide training so that communities and local authorities can understand the implications of climate change scenarios, learn to identify options, and participate in an informed manner in the difficult decision and planning processes that climate change will make the norm over the coming decades.

## **Component 2: Recovery and development of climate change resilient practices reduces vulnerability of communities**

### ***Baseline (without AF Resources)***

In Guatemala, MAGA, MARN and various projects have advanced sustainable development processes related to watershed management, reforestation practices and sustainable land management. These include the government-led initiative, “Greening Guatemala Program”, which aims to create conditions to develop Guatemala’s forestry potential. However, the program only provides support and materials to the communities for nurseries for reforestation, but does not provide any technical assistance for determining those areas that are suitable for forestry projects nor that require reforestation to reduce vulnerability to climate change impacts. (See section F for a description of relevant initiatives). Overall, efforts through these initiatives have been largely ad hoc and fragmented, and have not taken into account the need to address climate change vulnerability issues. In a country as exposed as Guatemala to climatic phenomena and trends, the current situation is leading to increasing vulnerability to climate risks, with crops being lost to either floods or droughts, community structures fragmenting as men folk migrate to find subsistence work elsewhere, and an exacerbation of poverty cycles. There is an urgent need to pilot resilient productive landscapes that integrate traditional and ancestral practices,

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<sup>26</sup> Maladaptation is defined as business-as-usual development which, by overlooking climate change impacts, inadvertently increases exposure and/or vulnerability to climate change. Maladaptation could also include actions undertaken to adapt to climate impacts that do not succeed in reducing vulnerability but increase it instead (OECD, 2009).

while developing, validating or adjusting others, so that rural communities – a large majority of which are indigenous peoples – can increase their coping ranges.

Precisely because of the high proportion of indigenous peoples in Guatemala, efforts have already been undertaken to collect and systematize ancestral and traditional practices<sup>27</sup>. Given that these peoples have been living for millennia in lands with significant exposure to hydrometeorological events, many of their practices have the potential to contribute to reducing climate risks. However, these have not been assessed through a climate change lens, both to identify and therefore replicate those that provide cost-effective response measures, as well as those that could be adjusted to do so. Some practices, however, may promote maladaptation under long-term climatic trends, and these too need to be identified. Overall, the project will link relevant ancestral practices with new practices to improve resilience in productive landscapes. The First National Communication on Climate Change produced maps that evidence loss of productivity of the main crops due to climate change impacts. Through the project, it will finally be possible to develop adequate and appropriate response measures.

#### ***Additionality (with AF Resources)***

The adaptation approach of the project will be community-based and participatory, building on the priorities, ancestral and actual knowledge, and capacities of local people. The project will therefore empower local people to plan for and cope with the impacts of climate change in ways that are relevant and practical. The project will promote ecosystem approaches to adaptation including enhanced landscape connectivity through the implementation of agro forestry, sylvo- pastoral and reforestation activities. Other activities to strengthen landscape resilience as a whole under emerging long-term climate conditions include with communities to improve agricultural practices in order to reduce vulnerabilities such as through use of drought resistant crops, construction of terracing, reservoirs for irrigation of garden and for watering livestock, use of clay jars for watering crops, agroforestry systems, as well as targeted investments in systems for collection and diversion of water, retaining walls and drains, among others.

### **Component 3: Food security and livelihood options are improved in pilot municipalities**

#### ***Baseline (without AF Resources)***

Guatemala implements a Strategic Plan for Food Security and Nutrition (PESAN)<sup>28</sup>. However, the plan has a short-term time frame with no comprehensive appreciation of the need to reduce long-term climate change risks. The Plan does not directly address issues related to developing and building up more sustainable livelihoods. It therefore is unable to set in place investments and activities to enable communities to build up their socio-economic resilience. Communities receive short term assistance but face time and again the devastation that climatic events wreak on their crops and livelihoods, with decreasing social, natural and financial capital to invest in recovery.

#### ***Additionality (with AF Resources)***

The project proposes precisely to address the longer-term investment and capacity building requirements to enable communities to better manage their resources and options in a context of increasingly frequent and intense storm events, more prolonged droughts, and difficult long-term climate scenarios. A key entry point will be to strengthen the necessary infrastructure and capacities for long-term planning and marketing of their crops and other outputs. There is a need for tangible pilot activities such as building storage infrastructure that will enable communities to manage their crop surpluses in good years and to create food buffers; for adding value to their crops through processing (eg drying); and for shortening the value chain to limit the reach of intermediaries. In these efforts, the role of women will be critical, so the project proposes to work with the Indigenous Women Advocacy (DEMI), an institution that seeks to reinforce the role of indigenous women in development activities.

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<sup>27</sup> Capacity Building for Stage II Adaptation to Climate Change in Central America, Mexico and Cuba (CATHALAC, PNUD, GEF, 2008).

<sup>28</sup> Implemented by the Ministry of Food and Nutritional Security (SESAN) and the Vice Ministry of Food and Nutritional Security (VISAN).

The project will strengthen the actions of DEMI as a social coordinating body against the negative effects of climate change, in the pilot municipalities. In addition to targeted work in the proposed municipalities, the Project will also coordinate actions with SESAN y VISAN to include these and other local options in food and nutritional security planning. These new options will be related and will contribute to local adaptive capacity strengthen process, thus contributing to strengthening the ongoing development efforts of the country.

#### **Component 4: Informed decision-making and advocacy supported by decentralized information systems**

##### ***Baseline (without AF Resources)***

There have been various projects and initiatives on vulnerability assessments that have generated general background information. The First National Communication on Climate Change (2001) assessed climate change impacts in key sectors and prioritized these: human health, agriculture (especially production of basic grains), water resources and forestry resources. Subsequently, the regional project *Capacity Building for Stage II Adaptation to Climate Change in Central America, Mexico and Cuba* (2007) studied the Naranjo River Basin analyzed flooding issues. However no concrete measures were proposed nor implemented. Studies on current and future vulnerability, including analysis of agriculture, water and biotic resources were undertaken by this Regional Project. These strongly recommend that the productive landscape as such be factored into climate change response measures. A subsequent diagnostic undertaken then identified and quantified future climate change impacts at national level. Finally, through a project on climate change studies with an emphasis on adaptation supported by NCAP and with technical assistance from the Stockholm Environment Institute, the WEAP model (Water Evaluation and Planning system) was applied to the Rio Naranjo watershed and the Rio San Jose to evaluate, respectively, flooding and drought issues.. These studies however have not resulted in practical implementation of on-the-ground response measures or in changes to the regulatory and legal framework in order to change sectoral practices and behavior. These efforts however, do constitute a very sound basis of information on which the proposed project will build through the decentralized information system.

There is also experience accumulated by local and national stakeholders on issues related to risk management, prevention, response, immediate response, damage mitigation, rehabilitation, among others, upon which the project will build in the process of advancing capacity building for CC adaptation.

##### ***Additionality (with AF Resources)***

As noted above, the project proposes to establish a decentralized information system that will build upon the existing expertise and installed capacities of centers. These various centers, which include specialized government agencies, academic institutions and universities, do not have experience in working with climate change issues. The project therefore proposes that a cost-effective and sustainable modality for creating the necessary information and analysis platforms to assist decision making and advocacy, is to work through these centers. These centers will process the information generated by the new network of hydro-meteorological stations being set up, to assist local decision and planning processes. In the absence of the project, these would not have the capacity to begin to incorporate climate change considerations into their regular programs of work. The Project would improve the integration of climate variability and climate change issues in recompilation, analysis and synthesis of information related to management and development options.

In addition to this, the Government of Guatemala is seeking to further an initiative to establish an integrated inter-sectoral environmental statistics system that would incorporate the dispersed information that exists on resource use, land use, vegetative cover and other basic indicators. The project proposes to build upon this system to incorporate information generated on climate change trends and issues, thus ensuring that the climatic layer is mainstreamed into information management at a national level.

### **PART III: IMPLEMENTATION ARRANGEMENTS**

#### ***A. Describe the arrangements for project implementation.***

The Government of Guatemala will execute this five-year project with the support of UNDP under the Direct National Execution modality (NEX). The Ministry of Environment and Natural Resources (MARN) as executing institution will be responsible for ensuring that the objectives and components of the project are delivered, and resources are allocated and disbursed in an efficient and effective manner as will be detailed in the Project Document. Similarly, MARN will be responsible for ensuring effective coordination between this Project and other relevant projects in Guatemala.

The Project will be coordinated through a Project Coordination Committee (PCC) which will provide support for the operational management of the Project. It will be chaired by a high-level representative from MARN and one from UNDP Guatemala as well as representatives of the main project beneficiaries.

The project structure will be constituted by a National Project Director (NPD) and a Coordinator for each project component. The National Project Director will be responsible for supervising the Project on behalf of MARN, and for the administrative and executive management of activities described in the Project Document; whereas the Component Coordinators will be located in the Project pilot area and will be supported by the rest of technical team.

MARN will follow the norms and procedures detailed in the UNDP NEX manual for project execution. For its part, UNDP will provide support to the Director and the Component Coordinator of the project, in order to maximize its reach and impact as well as the quality of its products. Moreover, it will be responsible for administering resources in accordance with the specific objectives defined in the Project Document, and in keeping with its key principles of transparency, competitiveness, efficiency and economy. The financial management and accountability for the resources allocated, as well as other activities related to the execution of Project activities, will be undertaken under the direct supervision of the UNDP Country Office.

UNDP will support the government by undertaking the internal monitoring of the Project and of evaluation activities, taking into account from the outset local capacities for administering the project, capacity limitations and requirements, as well as the effectiveness and efficiency of communications between ministries and other institutions that are relevant to the project. MARN will prepare an Annual Work Plan that incorporates project activities and results to be delivered through it. The Plan will define the execution time frame for each activity and the responsible parties for its implementation. The first Work Plan will be finalized and incorporated into the Project Document within 30 days of its signature. The participation of project counterparts will be essential for the success of the planning phase, during which the Annual Work Plan will be prepared.

#### ***B. Describe the measures for financial and project risk management.***

Risk		Response Measure
National elections and a change in administration lessen support for the project	L	This risk has been identified early on and response mechanisms will be incorporated into the proposed project design. Specific outreach and information packages will be prepared under Component 4 to inform potential candidates in a timely manner about the project. In addition to this, the project proposes to generate significant levels of ownership by local communities and organizations in the pilot municipalities that will be able to position the project with the new government. Finally, the project also proposes to develop strategic partnerships with key academic and research institutions, such as those that will underpin the



		information system that will also provide for continuity and sustainability of project objectives.
Local authorities and communities in the pilot municipalities will not fully engage with the proposed project activities, in particular those related with social networks	L	Communities in rural areas of Guatemala are already having to contend with the severe impacts of climatic variability and trends,. Their situation is dire given that very high poverty levels compounded by limited livelihood options and significant food insecurity translates into very limited coping ranges. The project will work with local leaders and researchers, to define, though highly participatory consultative processes, the best modalities for strengthening social networks and interactions. In addition to this, the project proposes to strongly focus on women as key linchpins of communities' social network and productive processes, and it is expected that they will be drivers of change. Finally as the project will also focus on recovery of ancestral and traditional knowledge, it is expected that this will serve to further validate the project objective with local communities which include large percentages of indigenous groups.
Resource use groups and other producers do not understand the need to respond to and plan for climate change risks.	L	Producers are already suffering from permanent impacts of climate change and variability. If climatic information is translated so that it becomes understandable, such as the project proposes to do through participatory development of vulnerability assessments, it should result in a high degree of ownership of the process by local communities. As noted above, the fact that the project will emphasize the importance of ancestral practices will also serve to strengthen the sense of ownership, and of the possibility of developing effective, long-term responses that will increase coping ranges.

**C. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.**

Project monitoring and evaluation (M&E) will be in accordance with established UNDP procedures and will be carried out by the Project team and the UNDP Country Office. The Results Framework will define execution indicators for project implementation as well as the respective means of verification. Monitoring and evaluating system for the project will be established based on these indicators and means of verification. It is important to note that the Results Framework, together with the impact indicators and means of verification, will be fine-tuned during project formulation.

Type of M&E activity	Responsible Parties	Budget US\$* (does not include staff time)	Time frame
Inception workshop	Project Coordinator UNDP-CO	\$500	Within first two months of project start up
Inception Report	Project team UNDP-CO	None	Immediately following IW
Measurement of Means of Verification for Project Purpose Indicators	Project Coordinator	None	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	Project Coordinator		Annually prior yearly reports and to the definition of annual work plans
Monthly reports	Project team	None	At the end of each month
Annual reports	Project team MARN UNDP-CO	\$500	At the end of each year
Meetings of the Project Coordination Committee	Project Coordinator UNDP-CO	None	After the inception workshop and thereafter at least once a year

<b>Type of M&amp;E activity</b>	<b>Responsible Parties</b>	<b>Budget US\$*</b> <i>(does not include staff time)</i>	<b>Time frame</b>
Technical reports	Project team External consultants	None	To be determined by Project team & UNDP CO
Mid-term external evaluation	Project team UNDP-CO External consultants	\$ 20,000	At the mid-point of project implementation.
Final external evaluation	Project team UNDP-CO External consultants	\$ 20,000	At the end of project implementation
Final Report	Project team UNDP-CO	None	At least one month before the end of the project
Publication of lessons learned	Project team	\$ 17,500 (average \$ 3,500 per year)	Yearly
Audit	UNDP-CO Project team	\$ 28,000 (average \$ 7,000 per year)	Yearly
Visits to field sites (UNDP staff travel costs to be charged to IA fees)	MARN UNDP-CO	\$2,000	Yearly
<b>TOTAL INDICATIVE COST</b>		<b>\$ 86,500</b>	

***D. Include a results framework for the project proposal, including milestones, targets and indicators.***

This will be outlined in the full project proposal to be submitted to the Adaptation Fund for approval.

**PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY**



**MINISTERIO DE AMBIENTE Y RECURSOS NATURALES  
GUATEMALA, C.A.**

*Ministro*

Guatemala, July 22, 2010  
Oficio No. MI-544-2010/LAFF-fc-prn

**The Adaptation Fund Board  
Adaptation Fund Board Secretariat  
Mail Drop G 6-602  
1818 H Street NW  
Washington, D.C. 20433**

*Subject: Endorsement for Climate Change Resilient Productive Landscapes and Socio-economic Networks advanced in Guatemala.*

In my capacity as designated authority for the Adaptation Fund in Guatemala, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of risks, posed by climate change in Guatemala.

In that sense, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the proposal will be coordinated and implemented by the Ministry of Environment and Natural Resources (MARN), and with the support of United Nations Development Program (UNDP) as MIE.

Sincerely,

  
Luis Alberto Ferral Felice  
MINISTRO DE AMBIENTE  
Y RECURSOS NATURALES



*cc:*  
*Adaptation Fund Board Secretariat,  
Mr. Yannick Glenarec, Director Environmental Finance UNDP  
Mr. Xavier Michon, Country Director, UNDP Guatemala  
Mrs. Paula Caballero, Regional and Technical Advisor UN House Panamá  
Ms. Francisca Cárdenas, Cooperation and Foreign Affairs -MARN-  
Mr. Carlos Mansilla, Climate Change Program -MARN-*

20 Calle 28-58 Zona 10 Edificio MARN  
PBX: 2423-0500  
<http://www.marn.gov.gt>



GOBIERNO DE ALVARO COLON  
GUATEMALA



**A. RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT**

*Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

Minister Luis Alberto Ferraté, Ministry of Environment and Natural Resources of Guatemala  
Date: 22 July 2010

**B. IMPLEMENTING ENTITY CERTIFICATION**

*Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, understands that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.



John Hough  
Officer-In-Charge  
Environmental Finance  
UNDP  
Implementing Entity Coordinator

Date: 26 July 2010

Tel. and email: +1-212-906-5560, [john.hough@undp.org](mailto:john.hough@undp.org)

Project Contact Person: Paula Caballero, Regional Technical Advisor, UNDP

Tel. And Email: +507-302-4571 [paula.caballero@undp.org](mailto:paula.caballero@undp.org)

1. Each Party shall designate and communicate to the Secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

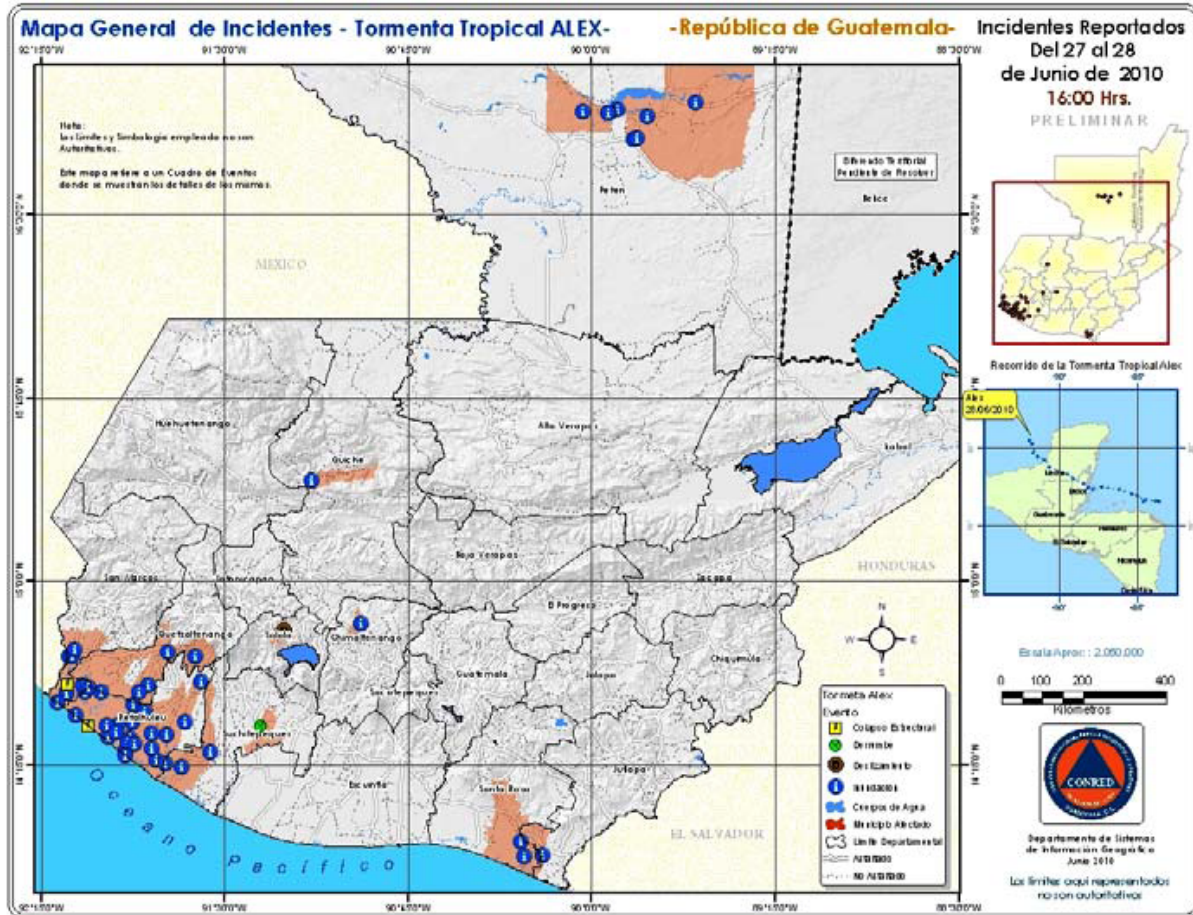
# Annex 1.

Figure 1 Flood risk areas of Guatemala

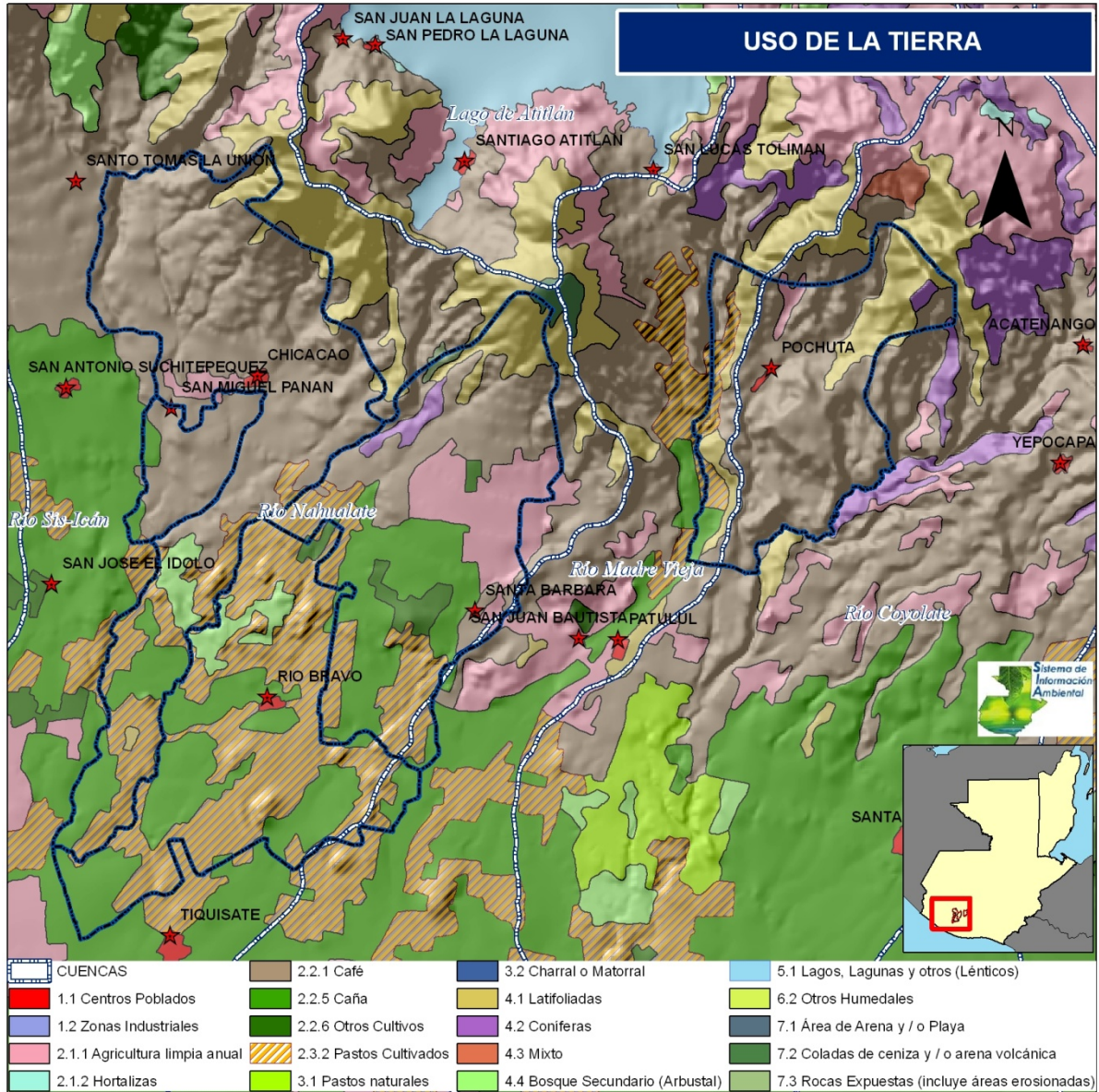




Figure 2. General Map of Impacts generated by Tropical Storm Alex (June 2010)



## Land use map in the pilot municipalities



## Annex 2

**Core Pilot municipalities**  
(another 10 municipalities will be considered during the preparatory phase for inclusion on the project)

Department	Municipality	Area (km <sup>2</sup> ) <sup>a</sup>	Total population <sup>b</sup>	Indigenous population <sup>b</sup>	Women population <sup>b</sup>	Children population <sup>c</sup>	HDI <sup>c</sup>	Poverty percentage <sup>c</sup>	Extreme poverty percentage <sup>d</sup>	Children malnutrition percentage <sup>d</sup>
Chimaltenango	Pochuta	128.97	9842	5463	4808	4535	0.488	47.5	4.11	0.45
Suchitepéquez	San Miguel Panán	28.69	7163	5819	3600	3498	0.532	59.4	45.64	0.548
	Chicacao	210.24	42943	34817	21580	20421	0.545	59.4	18.17	0.468
	Santa Bárbara	176.38	18365	6632	9111	8257	0.558	59.4	2.66	0.482
	Río Bravo	157.66	17304	4512	8653	7766	0.486	59.4	2.65	0.416
<b>Total</b>		<b>701.94</b>	<b>95,617</b>	<b>57,243</b>	<b>47,752</b>	<b>44,477</b>				

### Sources

- (a) Instituto Nacional de Estadística, INE
- (b) Instituto Nacional de Estadística, INE, Censo Poblacional 2002
- (c) Secretaria General de Planificación y Programación de la Presidencia, SEGEPLAN
- (d) Instituto Nacional de Estadística, INE, Encuesta Nacional de Condiciones de Vida 2006