



UNDP Project Document

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CPP Cuba / P1: Capacity Building for Planning, Decision Making and Regulatory Systems & Awareness Building / Sustainable Land Management in Severely Degraded Ecosystems PIMS 3806

Brief description

This five-year project will be an essential first step in Cuba's 10 year programme-level CPP, whose goal is that reduced land degradation will allow Cuba to achieve its goals for sustainable development and increased food security. Specifically, the CPP seeks to develop capacities and conditions in Cuba for sustainably managing land in a manner that contributes to maintaining ecosystem productivity and functions. The two intermediate objectives of the CPP are the establishment of national capacities for integrated SLM, ensuring inter-sectoral coordination and effective implementation of land management plans and activities; and the replication of SLM practices through activities in selected intervention areas throughout the country. The primary focus of this project will be on developing capacities and institutional frameworks for integration and cooperation between stakeholders at institutional and local levels, facilitating the flow of integrated information to decision-makers, preparing outstanding planning instruments and technical regulations in relation to SLM and the training of technicians in key institutions. The project will also work at field level in two intervention areas which are severely affected by land degradation, establishing a series of pilot projects to test practical approaches to SLM, at the same time strengthening the capacities of local level resource managers and technicians to address and promote SLM, and developing and testing local level planning systems, decision making tools, and regulations.

Table of Contents

<u>Section</u>	<u>Page</u>
SECTION I Elaboration of the Narrative	5
PART I Situation Analysis	5
Context and global significance	5
National context	5
Barriers to sustainable land management	15
Stakeholder analysis	18
Baseline initiatives	19
PART II Strategy	20
Project rationale	20
Policy conformity	21
Project goal, objective, outcomes and outputs/activities	21
Project indicators, risks and assumptions	27
Expected global, national and local benefits	29
Sustainability	31
Replicability	32
PART III Management Arrangements	33
Implementation/execution arrangements	33
Consultation, coordination and collaboration	34
PART IV Monitoring and Evaluation Plan and Budget	35
PART V Legal context	41
SECTION II Strategic Results Framework and GEF Increment	41
PART I Incremental Cost Analysis	41
PART II Logical Framework Analysis	44
SECTION III Total Budget and Work plan	51
PART I Indicative work plan	56
SECTION IV Additional Information	57
PART I Other agreements	57
PART II CPP projects	58
PART III Project Sequencing	65
PART IV Links between CPP projects, barriers and outcomes	66
PART V Project 1 Organigram (see also SECTION I, PART III)	68
PART VI Terms of References for key project staff and main sub-contracts	69
PART VII Synergies with other Programmes and Projects	71
PART VIII Distribution of indicative M&E costs for CPP and constituent projects (GEF and co-financed)	73
PART IX Programme of external evaluations for CPP and constituent projects	74
PART X Strategies in Specific Demonstration Sites	75
SIGNATURE PAGE	84

Acronyms

ACPA	Cuban Association for Animal Production
AMA	Environment Agency
ANAP	National Association of Small Farmers
APR	Annual Programme Report
AWP	Annual Work Plan
CCS	Credit and Service Cooperatives
CGB	Forest Guard Corps
CIAL	Centre for Local Research and Learning
CIDA	Canadian International Development Agency
CIGEA	Environmental Education, Management and Information Centre
CITMA	Ministry of Science, Technology and the Environment
CPA	Agricultural and Livestock Production Cooperatives
CPD	Country Programme Document
CPP	Country Pilot Partnership
DNRD	National Directorate of Irrigation and Drainage
FAO	Food and Agriculture Organization
FMA	National Environment Fund
FMC	Cuban Women's Federation
FONADEF	National Fund for Forestry Development
GEF	Global Environment Facility
GoC	Government of Cuba
IA	Implementing Agency
IES	Institute of Ecology and Systematics
IIF	Institute of Forestry Research
IIHLD	Institute of Horticultural Research
IIMA	Institute of Agricultural Mechanization
IIRD	Irrigation and Drainage Research Institute
INICA	National Institute for Sugar Cane Research
INRH	National Institute for Hydraulic Resources
INSMET	National Meteorological Institute
IFAD	International Fund for Agricultural Development
IPF	Institute for Physical Planning
IR	Inception Report
IS	Institute of Soils
IW	Inception Workshop
LAC	Latin America and the Caribbean
LCT	Local Coordination Teams
LD	Land Degradation
M&E	Monitoring and Evaluation
MES	Ministry of Higher Education
MFP	Ministry of Finance and Planning
MINAGRI	Ministry of Agriculture
MINAZ	Ministry of Sugar Industry
MINBAS	Ministry of Basic Industry
MINVEC	Ministry for Foreign Investment and Cooperation
NES	National Environment Strategy
NGCDD	National Group to Combat Desertification and Drought
NPCDD	National Action Programme to Combat Desertification and Drought
NSC	National Steering Committee
PGOTU	General Plan for Territorial Land Use Planning and Urban Development
PIR	Project Implementation Review
PMU	Project Management Unit
RCU	Regional Coordinating Unit
SLM	Sustainable Land Management

TPR	Tripartite Project/Programme Review
TTR	Terminal Tripartite Review
TUDD	Technical Unit for Desertification and Drought
UBPC	Basic Units of Cooperative Production
UNCCD	United Nations Convention to Combat Desertification and Drought
UNDP-CO	United Nations Development Programme Country Office
UNEP	United Nations Environment Programme
UNDAF	United Nations Development Assistance Framework

SECTION I Elaboration of the Narrative

PART I Situation Analysis

Context and global significance

1. This project will work at two levels: *nationally*, contributing as part of the Country Pilot Partnership (CPP) to the development of conditions required for the implementation of sustainable land management throughout the country and *locally*, in two intervention areas (Guantánamo and Pinar del Río). The following description of context therefore begins with an overview of national conditions and continues with an analysis of the conditions in the two intervention areas on which this project will focus.

National context

- ***Geography and climate***

2. The main island of Cuba is the largest island in the West Indies, with a total land area of 104,945 km². The total area of the country as a whole, including the Isla de la Juventud (2,200 km²) and around 4,195 keys and small islands, is 110,860 km². The country lies between latitudes 20° 12' 36" and 23° 17' 09"N and longitudes 80° 53' 55" and 84° 57' 54"W. The topography is mostly flat to rolling, with rugged hills and mountains in the southeast and south-central area. The Cuban mountain range system is formed by four massifs covering 1,959,400 ha, equivalent to 18% of the surface of the Cuban archipelago. The surface cover of Cuba consists of cropland and crop/natural vegetation mosaics (44%), shrub lands, savanna and grasslands (24%), forests (23%) and wetlands (9%) (Source: Earth trends 2003).

3. Mean annual rainfall is 1335 mm (INRH, 2006), with a pronounced seasonal variation between the driest and wettest months. Rainfall levels vary widely across the country, from 300 mm annually in the Guantánamo area of the south to more than 3,000 mm in the north. Mean annual temperature is 25°C. Over the last three decades, significant variations have been detected in the country's climatic patterns (Centella et al 1997). Over the last 50 years, the temperature has increased an average of 0.5°C. Climate models estimate that the temperature increase in Cuba will be between 1.6°C and 2.5°C by 2100 (O'Brien 2000). An overall increase in temperature has been accompanied by a reduction in annual rainfall totals of 10-20% and an increase in inter-annual variation in rainfall of 5-10%, with reduced rainfall in the rainy season and increased rainfall in the dry season (Lapinel et al 1993). At the same time, the frequency of unseasonal droughts has increased. Following a relatively quiet period in the 1970s and 1980s, the incidence of hurricanes in the Caribbean is on the increase, with an estimated frequency of 1.3 hurricanes per year in the northern Caribbean compared to only 0.4 per year that occurred between 1971 and 1994 (Goldenberg et al, 2001).

- ***Socioeconomic and demographic context***

4. The total population of Cuba in 2004 was 11.24 million. The annual growth rate of 0.7% over the 1975-2002 periods is predicted to drop sharply to 0.2% in the period up to 2015, partly due to reduced fertility rates which have dropped from 3.5 births per woman in 1970-75 to 1.6 in 2000-05. Urban population in 2002 made up 75.5% of the total (around 8.5 million, of which 2.2 million live in the capital Havana), compared to 64.2% in 1975; this is predicted to increase to 78.1% by 2015 (INIE 2004, ONE 2004).

5. Human development levels in Cuba are relatively favorable compared to neighboring countries in the Caribbean. The UNDP Human Development Index of Cuba in 2007 was 0.838 (51st position worldwide) compared to 0.826 in 2006. Cuba has favorable conditions with regard to gender equity; women participate strongly in social and productive areas, making up 50% of the labor force and 60% of technical personnel, including in the agricultural sector. In some areas, such as urban agriculture, women predominate.

6. Changes in the social structure of the countryside over recent decades have been strongly linked to changes in the agricultural and agrarian context (see paragraphs 18 and 26 below). Prior to the slump of 1992 and subsequent agrarian reform of 1993, investment in integrated rural development (including processes such as technification, industrialization, urbanization and the introduction of productive and social services) had resulted in a diversification of the social makeup of agricultural areas. The rural population decreased in numbers, while towards the end of the 1980s gaps opened in its social composition as many agricultural workers turned to smallholding activities. The development of market influences and the increasing scarcity of foodstuffs in subsequent years led to increasing socio-economic differentiation. Following earlier periods of decline, cooperative forms of organization have gained strength.

- *Regulatory and policy context*

7. The key legislative instrument in Cuba which forms the basis for the regulation of the management of natural resources is the **Environmental Law** (No. 81 of 1997), which includes provisions for ensuring the compatibility between resource management activities and land conditions and capacities; the sustainable production of agricultural crops destined for human consumption or export; the avoidance of erosion, salinity buildup and other forms of degradation; and the application of soil conservation and rehabilitation activities. **Decree No. 179 of 1993** on the protection, use and conservation of soils provides more specific regulation, including for example additional norms on the quality of water that may be used for irrigation, and the application of fertilizers. The **Mining Law** (No. 76 of 1995) defines the mining policy and the related regulations, including provision for the closing of mines which lead to unacceptable environmental impact and for the restoration and rehabilitation of areas affected by mines. **Decree 138 of 1993 on Terrestrial Waters** regulates the use, control and protection of terrestrial waters. Legislation related to the conservation of hydrological resources and soils brings includes a range of different laws and resolutions on terrestrial waters (1993), the pricing of irrigation water (1999) and the protection and rational use of hydrological resources (1995). Important complementary instruments are Decrees 200 and 201, the first of which provides regulations for the Environmental Law No. 81 and the second of which includes provision for the National System of Protected Areas.

8. The National Environment Strategy 2007/2010 is the guiding document for Cuban environmental policy. It defines the five main environmental issues in Cuba (land degradation, factors affecting forest coverage, pollution, loss of biological diversity and water scarcity) and proposes the policies and instruments for their prevention, solution or minimization in order to improve environmental protection and the rational use of national resources. Additionally Cuba prepared its **National Strategy and National Action Plan** (NAP) for the Combat of Desertification and Drought in 2000. The analyses presented in the National Strategy document (CITMA 2000) identify the principal causes of desertification as the following: deforestation, inappropriate establishment of crops and plantations, inadequate management of agricultural exploitation technologies, incorrect utilization of irrigated lands and changes of land use. The general objective of the National Strategy is “to prevent and control the causes which contribute to the development of processes leading to desertification, through the application of necessary and adequate practical measures which allow these processes to be stopped and reversed, to mitigate the effects of drought and to contribute to the sustainable development of the affected zones, with the aim of improving the way of life of their inhabitants”. The principal elements of the NAP are i) the economic and social development of the zones affected by processes leading to desertification; ii) the perfection and application of juridical and administrative instruments for the application, monitoring and control of the progress of the NAP; iii) the integration and coordination of policies and strategies; iv) information, environmental education and citizen participation; v) scientific research and technological innovation; vi) institutional strengthening and vii) international cooperation.

9. The basis for legislation in the forestry sector is the **Forestry Law** (Law 85(L)) of 1998. This provides for the promotion and provision of incentives for forestry ‘repopulation’ with economic, protective and social objectives; conservation of the biodiversity associated with forest ecosystems; and the protection of forests against clearance, unplanned felling, fires, grazing, pests and diseases and other damaging factors. In accordance with the provisions of this law, the National Fund for Forestry Development (FONADEF) was established in July 2000, which provides finance to individuals and organizations for forestry management activities.

10. Cuba's **National Forestry Action Plan** was issued in September 1992 and addressed the following issues:

- re-establishment of forest cover and reconstruction of degraded natural forests, with a view to protection and production;
- sustainable forest resources management for the production of timber products and the protection of catchments areas and fragile ecosystems;
- an increase and diversification in production, with the development of integrated forest industries;
- intensive use of the forest biomass to produce charcoal and fuel wood;
- rehabilitation of degraded ecosystems;
- application of management techniques to protected and special areas for the benefit of the local population and to protect biodiversity;
- Capacity building for research and training institutions.

11. The **Turquino Manatí Plan** was created in 1995, with the objective of achieving integrated and sustainable development in mountain regions. The Plan covers around 18% of the national territory and around 6% of the national population. From an environmental standpoint, the Plan seeks to promote the expansion of sustainable use practices, forest protection, soil conservation, waste recycling and the application of agricultural, livestock rising and forestry practices aimed at increasing food production and the livelihood sustainability of the local population. Created as part of the National Commission for the Turquino-Manatí Plan, the provincial and municipal Reforestation Commissions implement the National Reforestation Program in their respective areas. Similarly, the Integrated Development Program for the Highlands: Turquino-Manatí Plan assists in the development of economically productive initiatives as well as the protection and conservation of the forests in the four mountainous regions of the island and the Ciénaga de Zapata wetlands.

- *Institutional context*

12. The Environmental Law of 1997 also defines the **Ministry of Agriculture (MINAGRI)** as the lead institution responsible for administering, conserving and improving agricultural and forestry soils and ensuring compliance, in coordination with the **Ministry of Science, Technology and Environment (CITMA)**, the **Ministry of Sugar (MINAZ)** and other competent organizations.

13. The institutions responsible for hydrological resources and irrigation development are the **National Institute of Hydrological Resources (INRH)**, the **Irrigation and Drainage Research Institute (IIRD)** of MINAGRI and the **National Directorate of Irrigation and Drainage (DNRD)** of MINAZ.

14. The Forestry Law of 1998 provided for the establishment of the **National Forestry Directorate**, and **State Forest Services** as at provincial and municipal levels, with responsibilities being decentralized in each territory. The **National Protected Areas System** is led by CITMA. In addition, the **Corps of Forest Guards** of the Ministry of the Interior is responsible for forest protection at local level.

- *Planning mechanisms*

15. Responsibility for land use planning is shared between various institutions. The **Institute of Physical Planning (IPF)** has overall responsibility for defining allowable land uses, evaluating the proposals of different stakeholders and emitting permits accordingly. Agricultural uses are subject to certification by the **Ministry of Agriculture (MINAGRI)**, through the Soils Institute. The **Ministry of Sugar (MINAZ)** evaluates the physical potential of the areas under its control and based on this determines those areas which should be used for sugar cane, those destined for other uses such as ranching, forestry and other crops, and those which should not be cultivated. The **National Institute for Hydrological Resources (INRH)** regulates the use of waters, both superficial and subterranean, and projects, executes and exploits new reserves and reservoirs in response to changes in land use. The **Ministry of Science, Technology and Environment (CITMA)** following the recommendation of the National Council for Protected Areas is responsible for proposing protected area establishment, with the objectives of maintaining and preserving them. The planning of the management and use of coastal zones is the responsibility of CITMA. The **National Council for Hydrological Catchments** was established in

1997 with the objective of supporting the integrated environmental management of the country's main hydrological catchments.

16. At municipal level, the principal instrument for territorial land use planning is the **General Plan for Territorial Land Use Planning and Urban Development (PGOTU)**, the objectives of which in relation to soil use are to maximize the compatibility between the management of the land and its capacities and vocation, and the appropriate location of economic and social activities, taking into account environmental implications and the mitigation of disasters. These plans are developed by a Coordination Group of key institutions and the Municipal Directorates of Physical Planning. The resulting plans are subject to annual approval by the Council for Municipal Administration.

17. Planning of agricultural production is governed by the **National Economy Plan**, which is organized by the Ministry of Economy and Planning and in which MINAGRI and MINAZ define quantitative targets by crop type. These targets focus on those crops which are basic for food supply and export (tobacco, cocoa, coffee, sugar cane, rice, beans, potatoes, milk and others) and which, given their importance, require the guaranteed provision of inputs by the Government. Other minor crops, such as root crops, grains and vegetables, are planned regionally and locally in response to territorial needs. A structure exists, which spans national and local (municipal) levels, for the organization of this production through State enterprises and different forms of private production. Changes in the agrarian structure in Cuba in recent years (see paragraph 26) have been paralleled by a reduction in the emphasis placed on centralized planning and increased incidence of market forces in the decisions of farmers regarding productive activities. Once they have fulfilled their productive obligations to the State, farmers can sow according to their needs and sell surpluses through Farmers' Agricultural Markets.

- *Land use and agrarian context*

18. The total area of productive agricultural land in Cuba is 6,686,749 ha, equivalent to 62.7% of the total land area. Of this 55.4% is currently under production. The agricultural sector in Cuba has historically been dominated by large-scale (*latifundista*) commercial production of sugar cane and has never, either before or after the 1959 Revolution, had a strongly developed smallholder sector. Even today, sugar cane accounts for almost 50% of agricultural land use (see Annex P of the CPP Document). Irrigated agriculture covers around 841,000 ha, or around 12% of the total area of agricultural land. Agricultural production has experienced major fluctuations in recent years, with a negative growth of 35% between 1989-91 and 1996-8, and reductions in the production of cereals and root crops of 17% and 9% over the decade leading up to 1996-8. The most significant downturn followed the withdrawal of trade and other support from former Soviet bloc partners. Production levels of all principal crops fell by between 26.1 and 68.8% between 1990-2 and 1993.4. However within a few years production of most crops rebounded significantly, in some cases exceeding pre-slump levels. In 2004, 24% of the population was employed in agriculture, but the sector accounted for only 6.6% of Gross Domestic Product. Cuba's total renewable water resources are estimated at 38.12 km³; water withdrawal for agriculture in the year 2000 was estimated at 5.64 km³, or 15% of renewable water resources (AMA 2003).

19. Reductions in the availability of imported inputs during the 'special period' following the collapse of the Soviet bloc led the Government to launch a national effort to convert the nation's agricultural sector from high input agriculture to low input, self-reliant farming practices on an unprecedented scale (Rosset 2000). Because of the drastically reduced availability of chemical inputs, the State hurried to replace them with locally produced, and in most cases biological, substitutes. This has meant biopesticides (microbial products) and natural enemies to combat insect pests, resistant plant varieties, crop rotations and microbial antagonists to combat plant pathogens, and better rotations, and cover cropping to suppress weeds. Synthetic fertilizers were replaced by biofertilizers, earthworms, compost, other organic fertilizers, natural rock phosphate, animal and green manures, and the integration of grazing animals. In place of tractors, for which fuel, tires, and spare parts were largely unavailable, there was a sweeping return to animal traction. As a result. By mid-1995 the food shortage had been overcome, and the vast majority of the population no longer faced drastic reductions of their basic food supply. In the 1996-97 growing season Cuba recorded its highest-ever production levels for ten of the thirteen basic food items in the Cuban diet. The production increases came primarily from small farms, and in the case of eggs and pork, from backyard production. To date 5,510 producers have formal organic certification. A proliferation of

urban farmers, who produce fresh produce, has also been extremely important to the Cuban food supply; the numbers of such producers are currently estimated at almost 3,500. At the same time, national consumption of pesticides has declined from 30,000 tons annually in 1990 to 7,000 tons in 2005; of artificial fertilizers from 1,000,000 to 160,000 tons over the same period; of fuel for agriculture uses from 500,000 to 300,000 tons and of animal feed concentrate from 2,000,000 to 770,000 tons; as explained above, at the same time food security has been maintained.

20. Around 10% of the country's productive land is occupied by pasture. The land used for pasture is typically that which is unsuitable for other uses due to its low productivity (for example low fertility, topography, erosion, salinity buildup and acidity). Between the 1970s and the 1980s, Government policy was to substitute existing pastures with improved pastures, with higher productive potential but also higher input requirements in terms of water and nutrients. In common with agriculture, meat production suffered a major downturn between the 1980s and 1990s (production fell by 52% between 1989-91 and 1996-8), as resources such as irrigation water and fertilizer were dedicated to higher priority crops such as tobacco, potatoes and citrus, leading to the degradation of the artificial pastures; in addition, herd nutrition was affected by reduced access to grain which was formerly imported from Soviet bloc countries such as Poland.

21. At the beginning of the colonial era, 90% of Cuba was covered with forests (see Annex Q of the CPP Document). Cutting trees for the construction of houses, buildings, and ships and the introduction of livestock and sugar cane cultivation resulted in the destruction of large areas of forests. At the beginning of the Cuban revolution in 1959, the area under forest cover was only 13.4 per cent of the total land base, a consequence of the deforestation caused by the expansion of sugar cane cultivation. By the year 2006 the area under forest cover had risen to 2,741,262 hectares or 24.9% of the country. Of this total, 2,254,800 hectares are in native forest and 332,400 hectares are in plantations; mostly coniferous species (native *Pinus caribaea*) as well as exotic eucalyptus and casuarinas, and valuable hardwoods. In addition, there are 125,000 hectares of young plantations, less than three years of age. Based on land capability studies, it is estimated that 32% of the country is best suited for forestry purposes. Sixty percent of plantations have been established for environmental purposes, of which 41% were aimed at water and soil resources protection and 50% for watershed and coastal areas protection. Besides environmental purposes, a share of 27% of plantations is expected to produce timber and fuel wood and the remaining 13% were established for security reasons, or in urban areas. Most of plantations are state-owned and are included in medium and long-term plans (Diego Urfé et al 2000, GRC 1999). In addition, there has been a major initiative to establish integrated forest farms, with pilot experiences in Cauto catchment, which received UNDP support. Families participating in this programme receive a loan according to the numbers of trees which they establish, an area of land for food production, family livestock and low cost building materials. It is estimated that plans to reforest the 70,000 ha which have been deforested to date in key catchments, and an additional 850,000 ha in areas currently used for sugar cane, will lead to an additional 142.3 million tons of CO₂ being added to Cuba's existing reserves over the next 13 years, with a value of around US \$426.9 million (assuming a price of \$3 per ton).

22. Forest products are very important to the national economy and play an important role in the production sugar, tobacco, citrus fruits, apiculture, construction, electrical and telephone services; as well as the critical role that forests play in the protection and conservation of natural resources and their contribution to improving the environment. Cuba's standing timber volume is estimated at 126 million cubic meters with an average annual increment of approximately 7.5 million cubic meters. The annual cut is of the order of 1.6 million cubic meters, of which 65 per cent is fuel wood. The state forest industry has 94 sawmills with a combined production capacity of over 230,000 cubic meters per year, the great majority of which have outdated technology. In addition, there is one wood preservation facility in Cuba with an annual capacity of 7,000 cubic meters.

23. In terms of the volumes produced and services currently provided Cuba's forestry sector accounts for only 0.6 percent of the country's gross domestic product and an average of 8.5 percent of agricultural, hunting, forestry and fishery activities in the past two years. These low figures are mainly a result of the fall in forest production since 1990; annual round wood production, for example, fell from a virtually stable level of almost 3 million m³ up until 1998, to less than 1 million m³ by 2001.

24. All forest heritage land, whether or not it has forest cover, is divided into seven established categories of forest: national park forests, recreation forests, wildlife protection and conservation forests, nature reserves, soil and water conservation forests, coastal protection forests, and production forests. Most of the forests in Cuba belong to State enterprises, while a smaller number belong to the cooperative and private sectors, although in the past three years there have been considerable modifications in the landholding system, with the usufruct of land being handed over to workers in State agricultural and livestock companies either in the form of cooperatives or as individuals (Diago Urfé 1992).

25. The nature of land use in different parts of the country is strongly dependent on local conditions of topography and climate. The extensive flat and undulating plains have traditionally been dominated by commercial, mechanized agriculture with irrigation, the principal crop here being sugar cane. Production of annual staple crops, by contrast, has tended to be carried out principally on hillsides towards the interior of the country.

26. The agrarian structure in Cuba has been subject to three major processes of reform over the last 50 years, resulting in three successive **Agrarian Reform Laws**: the first at the time of the 1959 Revolution, the second in 1963 and the third in 1993, following the withdrawal of trade support from the Soviet bloc which, coupled with the ongoing US-led blockade of the country, led to a severe economic and food crisis. The 1993 reform provided for land to be allotted under the following alternative regimes: the cooperative model (the most significant); participatory self-management in non-cooperative farms; individual management by persons or families; and a private business model. The objective of this centrally devised reform was to create conditions which would reactivate agricultural, ranching and agro-industrial production. The scale of this reform was major: in little less than 3 years following 1993, more than 3.3 million hectares of State land were allocated to collectives and individual workers (see Annex G of the CPP Document). Today, the cooperative is by far the dominant tenure type (see Annex P of the CPP Document). A related policy, tried on a number of State farms before the 'special period' of economic crisis, was that of 'linking farmers to the land' (Rosset 2000). This system made small work teams directly responsible for all aspects of production in a given parcel of land, allowing remuneration to be directly linked to productivity, and rapidly led to enormous increases in production. In general, changes from the earlier Soviet-style emphasis on large State farms, where broad-brush recipes for land management were applied across large areas, to a situation with smaller scale holdings and more direct individual linkages to the land, are very favorable for the promotion of sustainable land management.

- ***Organizational frameworks and tenure***

27. The three most prevalent forms of farmer organization in Cuba are Credit and Service Cooperatives (CCS), Agricultural and Livestock Production Cooperatives (CPA) and Basic Units of Cooperative Production (UBPC). Members of **CCS** own the land and farm on an individual basis, and decisions related to the use of the land and production methods are taken by the individual farmers, subject to their contractual obligations to supply agricultural products to the State. Members of **CPAs**, by contrast, farm collectively, with decisions on land use and production methods being taken by the cooperative's governing board. CPAs have secure long-term usufruct rights to their land. Part of the income generated by CPAs is used to pay salaries to their members (salary levels are generally defined based on predicted levels of agricultural production and income), and profits are distributed equitably among cooperative members. In **UBPCs**, independent producers are associated on State lands which are ceded to them for long-term usufruct. In their case, their security of tenure is dependent on their achievement of production levels required by the State. As with the other forms of organization, members of UBPCs receive technical and credit support from the State-owned companies which buy their production.

The global problem to be addressed

28. Despite the existence of the generally supportive environment for sustainable land management in Cuba, described in the previous paragraphs, large areas of the country are subject to severe processes of land degradation. In the provinces of Pinar del Rio and Guantanamo, the dominant forms of land degradation are soil salinity buildup, hydrological soil erosion, soil compaction and loss of vegetation cover, due to the application of land management practices which are inadequately adapted to the conditions of climatic risk (hurricanes and droughts) which affect these areas. These processes are

jeopardizing ecosystem function, resilience and productivity, leading to impacts on the livelihoods of large numbers of local people and exacerbating unsustainable demographic trends. These intervention areas are described in greater detail in the following paragraphs.

Project intervention areas

29. In addition to its actions at national level, the present project will focus specifically on two intervention areas: the *South Lowlands of Pinar del Río Province* in the extreme west of the main island of Cuba, and the *coastal region of the south of Guantánamo Province*, in the extreme east. These areas were selected as presenting particularly severe problems of land degradation, particularly of their soil resources, as well as facing acute climatic challenges. The significance of both of these areas is recognized in the National Programme for the Combat of Desertification and Drought.

30. The emphasis of this first field-level project in the CPP on areas with problems with soils will reflect the overall strategy of the CPP, whereby successive projects will address problems of particular relevance to different components of natural resources (the solutions to these problems will however be fully integrated in nature). The fact that the two areas both face serious, albeit contrasting, climatic challenges (in Pinar del Río, vulnerability to extreme climatic events such as hurricanes and in Guantánamo, chronic drought), will allow the project to concentrate on strengthening capacities at a range of levels for monitoring, preparing for and adapting to climatic events.

- ***South Lowlands of Pinar Del Río***

31. This intervention area covers a total of 3,770km². Altitudes range between 0 and 100 m.a.s.l., and the topography is gently undulating, with slopes generally less than 15%. This zone is susceptible to extreme climatic events. On the one hand summer droughts, in the period between January and May, can be intense, limiting agricultural production and hindering the development of natural vegetation. On the other hand the area is highly vulnerable to cold fronts, tropical depressions and hurricanes. Between 1995 and 2005, the province was affected by two tropical storms and 13 hurricanes, resulting in high levels of soil loss through hydrological erosion, wind damage to forests, flooding and rain damage to crops and plantations, and outbreaks of crop pathogens. Tobacco, which is one of the principal crops in the region, is particularly susceptible to such outbreaks, specifically of blue mould, the spores of which are transmitted in large quantities in such storms.

32. The soils of the area have generally low natural fertility (with less than 3% organic matter), very low capacities for water capture and retention, and limited internal drainage due to the existence of compact layers. Over 53% of the area the effective soil depth is limited (less than 25 cm), which limits the normal growth and development of certain crops. The whole area is affected by low levels of available phosphorus. These characteristics, combined with the (albeit gently) undulating topography and the frequency of severe rainfall events, make the soils of the area highly susceptible to degradation. The nature and causes of these degradation processes are explored in more detail in paragraphs 44 - 50.

33. There are significant processes of emigration from the province, principally to Havana: populations in rural areas have remained steady or have shown only slight increases (an annual average of +0.21% between 2002 and 2005, see 0), despite high (though decreasing) rates of fecundity. Data from 2004 show that emigration from the province was 38% higher than immigration. These trends are only partly mitigated by the provision of support by the State to settlement in rural holdings, and the controls which exist on changes of residency.

34. Land tenure in the area is dominated by 'social property'. State Farms are the predominant model in terms of area, making up 43% of the total area of the lowlands, followed by Agricultural Production Cooperatives or CPAs (25%), Cooperatives of Credit and Services or CCS (15%), Basic Units of Cooperative Production or UBPCs (14%) and individual farmers (2%).

35. Around 44% of the cultivable area of the province is currently under production. The dominant crops in the northern and central part of the lowlands are rice, tobacco, citrus, staple grains and root crops, which are almost exclusively produced as monocultures. In the south and west of the lowlands pasture

and forest predominate. Fields are cultivated mechanically, using either tractors or animal traction. Agricultural equipment is owned by farmer cooperatives or else rented from either the cooperatives or State-owned companies. Commonly this equipment is out of date and is only kept functioning due to the resourcefulness and ingenuity of the farmers. Although irrigation is widely used (over 24% of the cultivated area of the intervention area), using water from boreholes or from reservoirs, many farmers are unable to irrigate due to the limited availability of financial resources for acquiring or repairing irrigation equipment such as pumps and pipes. In all of these cases, farmers have production contracts with State-owned companies which guarantee markets for all of their produce, collect produce at the farm gate, and provide technical assistance. These companies are organized based on the crops produced in different regions of the country: examples are the tobacco and vegetable companies of Pinar del Río, which attend to farmers producing those crops in the province. Farmers' opportunities to change crops or cropping systems are limited by their contracts with the State companies and the related technical norms issued by the companies; however with some crops they are able freely to market any production which exceeds their contractual commitments with the State. In common with much of the rest of Cuba, the livestock sector is depressed and of low productivity. Farmers are obliged to sell of their meat and dairy production to the State in an unprocessed form, and have limited incentives for improving production.

36. Around 126,600 ha of the cultivable land of the intervention area is currently unused. Of this, around 76% is natural pasture, which suffers from high levels of infestation with the invasive woody species *Dichrostachys cinerea* (marabú) and *Mimosa asperata* (aroma).

- ***Maisi -Guantánamo Coastal Strip***

37. Guantánamo is both the easternmost province in the country and the one undergoing most intensive desertification and drought. The Guantánamo region can be divided into three widely contrasting zones: a mountainous area inland (to the north) with annual rainfall as high as 3,000 mm, relatively well preserved forests and great importance for the provision of hydrological services; the flat lowlands of the 122,000 ha Guantánamo valley; and the coastal strip which runs from Guantánamo Bay to the eastern tip of the island, which features a narrow coastal plain which gives way to hills inland. These last two zones make up the intervention area of the project. In contrast to the northern mountainous area, they have dry or arid climates as a result of rain shadow effects, with annual rainfall levels on the coast ranging from 200 mm in the west (making this the driest area of the whole country) to 1000 mm in the east, and increasing progressively inland.

38. . Over the last years, the drought phenomena that have historically affected this zone have been much more frequent and intensive, mainly in the 1997-2004 periods, when they have been occurring continuously and have been interrupted only by brief rainy periods resulting from transitory meteorological phenomena. This situation is evidently influencing the agricultural yield in these zones, as well as the quality of pasture for cattle. From 1998 to date, the area has been under a continuous Drought Alert declaration decreed by local and national authorities.

39. There has been a very marked process of urban-rural migration in the Guantánamo area over recent decades: over the 1981-2002 periods, rural population fell by 11% whereas urban population grew by 26.5% (see 0). There was also a major change in the pattern of settlements within rural areas: the number of settlements with less than 200 people, characterized by very weak economic bases and very limited access to basic services, fell by 54% over the period, while the number of settlements with more than 200 people rose by almost 8%.

40. Soils in lower zones (such as the Guantánamo valley), in small intra-mountain valleys and in plain-relief coasts suffer naturally from inadequate surface drainage: groundwater (which typically has salt concentrations of between 40 and 255 g/l) is often found at a depth of less than 1.5 m, and when the water table rises this leads to flooding and salinization of fields. In some parts of the south of the Guantánamo valley, salt concentrations have increased from 700 ppm to 1,500 and in some cases 2,500 ppm over the last 20 years. An estimated 30,000 ha are affected by poor drainage, and around 10,000 ha of the arable land of the Guantánamo valley remain uncultivated due to salinity problems and lack of access to water for irrigation. As the topography rises further inland, both in the Guantánamo valley and along the length of the coast, these poorly drained soils give way to better-drained cambisols. These soils tend to be thin

and suffer from high rates of hydrological erosion, especially in the areas with steeper topography along the length of the coast.

41. Due to its flat topography, the Guantanamo valley other lowland parts of the zone are dominated by agricultural and pasture land. The principal crop in these areas is sugar cane, which accounts for around 30,000 ha, followed by pastures and forage, fruit trees, root crops and vegetables, and legumes. Agriculture is largely mechanized and large areas of the Guantanamo valley (around 15,000 ha in 1991, equivalent to 27% to the total cultivable area) are irrigated. Irrigation systems range in scale, including 2 large systems (>1,000 ha), two medium sized (500-1,000 ha) and 37 smaller systems (<500 ha). The larger systems use superficial water from large reservoirs, which is distributed via a system of lined channels, secondary reservoirs and secondary and tertiary distribution channels. The water efficiency of these distribution channels is low and, in the absence of a hydrometric network, there is little control over water use. It is estimated that superficial supplies only account for around 20% of agricultural and domestic demand. Water availability is a serious limiting factor for agricultural production in this dry area: even in the better irrigated areas, it is only possible to irrigate 3-4 times per year. Drainage is inadequate in low lying parts of the valley: a network of drains exists to collect runoff water, however this covers only 1,847 ha of the 25,000-30,000 ha which suffer from poor internal drainage.

42. The situation in the coastal strip is markedly different, due to its topography: most of this area consists of hills, which are covered with xerophytic shrub and used principally for grazing of sheep, goats and cattle. This is carried out on an extensive basis by cooperatives and their members, whose abilities to rotate their animals' grazing are constrained by limited access to financial resources for fencing. Agriculture is limited to the narrow coastal plain and small inland valleys.

43. As in the case of Pinar del Rio intervention area, production in this area is carried out under a range of models of organization and tenure. These include State Farms, Credit and Service Cooperatives (CCS), Agricultural Production Cooperatives (CPAs) and individual farmers. Farmers and cooperatives enter into production contracts with State owned companies (dependencies of MINAG or, in the case of sugar cane, MINAZ); these companies provide guaranteed markets, transport and technical support. In the case of CCS and especially CPAs, farmers are able to diversify and to market surplus production freely, once they have fulfilled their contractual obligations with the State.

Threats, root causes and barriers analysis

Principal causes of land degradation

44. The *flat plains* and undulating and pre-mountain areas (as found in the Pinar del Rio Lowlands and the Guantánamo valley part of the Guantánamo intervention area), are dominated by mechanized agriculture. These lands present particular challenges, due both to the proportional importance of the agriculture carried out there to the country's economy, and to the range of different land degradation processes which affect them (see paragraphs 45-47).

45. The **use of inappropriate machinery and cultivation practices in mechanized agriculture** on the flat and undulating plains (for example the use of excessively heavy tractors with inappropriate tires and ploughs), leads to soil compaction and associated erosion, while the practice of continuous tillage at a constant depth can lead to the formation of an impenetrable hard pan, which limits rooting depth and impedes natural drainage, exacerbating problems of soil salinity (especially in the lowlands of Guantanamo).

46. Another problem which is most pronounced in, but not confined to, mechanized agriculture on the plains, is **inadequate and inappropriate nutrient management**, which leads to acidification and crop failure. As explained in the CPP document, Cuba has made major advances in organic agriculture in recent years, involving practices such as crop rotation, the use of 'green manure' cover crops and the production and application of massive quantities of organic compost and worm humus, in response to the country's difficulty in obtaining imported artificial fertilizers (see paragraph 19). However, although the

use of artificial inputs has been significantly reduced, artificial fertilizers are still extensively used in some crops in order to ensure that short term production and food supply needs are met. In cases where soil conditions and specific crop nutrient needs are not properly taking into account, this leads to problems of soil salinity buildup, nitrate contamination of aquifers and eutrophication of superficial water bodies. In other cases, the shortage of artificial fertilizers and the difficulty in producing the vast quantities of organic fertilizer which would be needed to substitute them, mean that crops suffer nutrient deficiencies and fail, with the result that large areas of land need to be brought into cultivation in order to meet production targets. Inadequate application of organic fertilizers also leads to reduced levels of soil organic matter, a problem which affects 70% of agricultural land in the country.

47. It is also on the plains that irrigated agriculture is concentrated. Particularly in such areas, the **inappropriate use of irrigation** leads to depletion of aquifers, soil erosion and soil salinity build-up. The use of **gravity irrigation**, with water running through superficial channels, results in damage to soil structure, the loss of nutrients and the erosion of the channels themselves. The use of **aspersión irrigation** (in the absence of measures aimed at conserving natural soil moisture such as mulching) is very inefficient in terms of water use, as a large proportion of the water evaporates either between the spray head and the plant, or from the plant's aerial parts, without reaching the roots. This form of irrigation also produces drop impact on the soil, leading to surface crusting and reduced infiltration; the erosive effects of the resulting surface runoff water are exacerbated when drainage systems are poorly planned, implemented or maintained in relation to the natural topography. In both of the intervention areas, **irrigation by flooding** (involving the redirection of channeled water across the soil surface) is also used, which is highly erosive as well as very wasteful of water resources. The implications of inefficient water use are especially significant when irrigated agriculture is located in areas where aquifers are already depleted. The inappropriate siting of irrigated agriculture, without adequate consideration of the chemical composition of the water used, can also lead to soil salinity build-up when the water used is saline in nature. These processes are particularly pronounced in the Pinar del Río intervention area, where soil salinity buildup is exacerbated by intrusion of saltwater of marine origin. The salinization problems associated with the intensive exploitation of groundwater in this karstic zone began in 1950, related with rice production in the lands of agricultural companies; after the groundwater became salinized, company managers kept watering until salinity build-up led to crop failure. Yield reductions in Guantánamo, as a result of soil salinity build-up, are estimated at between 30 and 70%, resulting in economic losses in areas actively used for production of around \$4 million per year in the 1970s and 1980s (Klimes-Szmik and Nagy, 1975; Ortega 1996b).

48. Problems of salinity buildup are further compounded, especially in the case of Guantanamo valley, by **inadequate provision for drainage** (investment in drainage infrastructure is estimated at only 18% of investment in irrigation), even when the water used for irrigation comes from reservoirs and has lower salt content than borehole water. In Guantanamo, problems of poor drainage are further exacerbated by the inappropriate use of machinery (see paragraph 45) and the disruption of natural drainage patterns by the **construction of roads and housing projects**.

49. **Fire** is commonly used for land clearance, the eradication of pasture pests such as ticks and the rejuvenation of pasture grasses. In the short term, this has the attraction of saving labour in manual clearance and minimizing the requirements of scarce fuel and chemicals for clearance with machinery or herbicides. In the long term, however, it degrades the vegetation which protects the soil against raindrop impact, leading to surface crusting, reduced infiltration and increased erosive cross-surface flow. It also affects soil nutrient status by leading to the loss of soil carbon and nitrogen. Soil degradation as a result of the inappropriate use of fire is a particularly pronounced problem in the Guantánamo intervention area.

50. In the hill areas located along the coastal strip of the Guantanamo intervention area, **extensive grazing of sheep, goats and cattle** is leading to the degradation of xerophytic vegetation and the hydrological erosion of soils which are left exposed to rainfall and subjected to trampling. This grazing is carried out by animals managed by the members of local cooperatives and, due in part to their limited access to the resources required for fencing, does not feature pasture rotation or other practices which might permit pasture recovery.

Barriers to sustainable land management

51. Analyses carried out during CPP preparation identified 6 *barriers* which currently limit the possibilities of achieving the widespread application of sustainable land management throughout Cuba. These will be addressed through the 5 projects which constitute the CPP, each of which will focus on particular barriers, as shown in Annex 1 of the CPP. *The present project will contribute, in varying degrees, to the removal of all of these 6 barriers.*

Barrier 1: Limited inter-sector integration and inter-institutional coordination

52. The problem of limited inter-institutional coordination, between the wide range of institutions related to natural resources in Cuba (see National Stakeholder Analysis in Annex H of the CPP Document) is transversal in nature, affecting all of the other barriers mentioned below, in relation to extension and education, finance and incentives, monitoring and information management, planning and regulation. It acts against the recognition of the complex and multi-sector nature of land degradation and the central importance of combating it through integrated solutions. For example, projects and programmes formulated by individual sector institutions tend to focus on isolated aspects of natural resources rather than addressing the interactions between soil, water and forest resources, leading to the risk of unintended impacts on elements of natural resources other than those directly targeted (examples include the possible impacts of inappropriate fertilizer use on water resources and of inappropriate silviculture on soil resources – see Threats Analysis, paragraphs 30 and 32 of the CPP Document). Monitoring provides isolated information on the condition of individual factors (such as soil erosion rates, forest cover and water quality) but does not permit assessment or interpretation of overall ecosystem health, function and resilience. With the exception of Cooperative Vigilance pilot scheme described in paragraph 60 of the CPP Document, different elements of natural resources are regulated by different institutions, resulting in an inefficient and ineffective use of the limited resources available.

Barrier 2: Inadequate incorporation of SLM considerations into extension and environmental education programmes

53. In general, Cuba has a well-developed system of agricultural extension and environmental education. The incorporation into this of considerations of land degradation and sustainable land management, however, is incipient in some issues like conservation agriculture, the use of biofertilizers, the establishment of crop rotations and others. Key institutions singled out in analyses carried out during the CPP preparation phase as inadequately incorporating SLM considerations into extension include MINAGRI and the National Institute for Hydrological Resources (INRH). During the preparation phase of Project 1, the State-owned companies (dependencies of MINAGRI), with which farmer cooperatives enter into production contracts, were specifically identified in this regard. These companies generally represent the main source of extension support and training for farmers, however this support typically gives little specific attention to SLM considerations, focusing instead on maximizing agronomic productivity. An apparent exception is their promotion of the production and use of earthworm compost as an alternative to inorganic fertilizers; however this has the primary objective of maintaining production in the face of input scarcity, rather than specifically promoting SLM.

54. The curricula of the technical colleges, universities and other educational institutions where the technicians responsible for implementing extension and education programmes are trained have advanced significantly in recent years in relation to the incorporation of issues of sustainable land management; however in general they still tend to address the different components of natural resources (for example soil, water and forests) separately and do not adequately address the essential integration between these elements, which is central to SLM. This problem is directly related to the inadequate levels of awareness and understanding of the complexity and integrated nature of land degradation and SLM issues found among the personnel of a number of institutions; this problem is particularly widespread at an institutional level, affecting institutions such as the MINAGRI (including its dependency the National Soils Institute), the Ministry of Sugar, the Ministry of Physical Planning and the National Institute for Hydrological Resources.

55. This inadequate incorporation of SLM considerations is to a certain extent a result of the lack of exposure of technicians and trainers to demonstrations of the application of integrated SLM approaches in practice. Particular areas where increased emphasis is required in relation to SLM include, among others, the use of low-input, socio-economically appropriate technologies for hillside agriculture; low impact technologies for the cultivation of arable lands; appropriate low cost nutrient management in relation to site characteristics and crop needs; soil humidity management and water-efficient irrigation; intensive, low impact livestock raising practices appropriate to smallholders' needs; crop diversification; intercropping, agro forestry and variations such as 'successional agriculture'; and appropriate extension methods (such as participatory action research) which take into account farmers' conditions and characteristics, and value their existing knowledge.

Barrier 3: Limited development of financing and incentive mechanisms for SLM

56. This barrier will principally be addressed through Project 3; however its significance is such that the present project will also include preliminary measures to address it. The limited ability of producers to meet the short-term costs of applying integrated SLM is largely attributable to the fact that they have little access to financial support or other incentives for applying this approach, from Governmental or other sources, despite the fact that LD results in significant levels of externalities with negative implications for the well-being of the population as a whole and for the effectiveness of Government programmes. The Cuban government does provide large amounts of direct support to producers, for example in the form of market and price guarantees for crops and, to a lesser degree, through direct subsidy programmes such as the National Environment Fund and FONADEF; however with few exceptions this is not specifically tailored to assisting producers to adopt the diverse range of SLM technologies which are available, in a manner that avoids creating dependency and thereby achieves sustained adoption in the long term. Studies during the preparatory phase of this project confirmed that limited access to finance significantly restricts farmers' opportunities to invest in the land and diversify their production. This problem varies, however, between the different organizational models to which farmers belong: members of Credit and Services Cooperatives (CCS) tend to have better access to credit, through their cooperatives, than those belong to other types of organization. Preparatory studies also suggested that one of the reasons for the limited impact of the FONADEF is limited awareness on the part of farmers of how to make use of it.

57. Despite the Government's commitment to SLM, lack of access to financial resources is also a problem for key Government institutions related to the theme. This is partly due to inadequate inter-sector and inter-institutional coordination and planning in order to ensure that resources are appropriately and efficiently targeted and partly due to the limited capacities on the part of the institutions in question to generate proposals for funding, based on access to relevant and accurate information and with an appropriately integrated emphasis. Pilot experiences have been gained in this area, for example the "Cooperative Vigilance" approach whereby collaboration between staff from regulatory bodies responsible for different aspects of natural resources has been shown in practice, over a 3 year trial period to date, to lead to significant cost savings.

Barrier 4: Inadequacy of systems for monitoring of LD and management of related information

58. Farmers' abilities to take appropriate decisions regarding the management of their land, for example the selection of correct machinery for cultivation, the application of the correct types and quantities of nutrients and the definition of sustainable levels of water extraction for irrigation from aquifers, are hampered by the limited degree of development and application of systems for the monitoring of the condition of soil and water resources, and for the efficient feedback of the resulting information into decision making. The same barrier limits planners' abilities to develop territorial land use and agricultural production plans which reflect the sustainable carrying capacity of the land. The need for monitoring and information management is especially critical in relation to parameters such as soil nutrient status, aquifer quality, soil salinity status and early warning of climatic trends. In this last case, the inadequacy of the network of instruments for meteorological monitoring is compounded by the limited knowledge on the part of staff of key institutions (principally the Meteorological Institute of the Ministry of Agriculture and the National Institute for Hydrological Resources) of how to interpret the climatic information that is generated and how to link it to SLM principles. The inadequacy of the monitoring and management of information therefore also affects the effectiveness of institutional actions

as they have limited ability to determine the impacts that these are having on the conditions of natural resources and to adjust them accordingly.

59. The absence of effective systems for providing farmers with forecasts of meteorological conditions is of particular relevance to the two intervention areas, Pinar del Rio and Guantanamo, to be included in this project. Both of these areas suffer from severe seasonal water stress and their agricultural systems depend heavily on irrigation; in the absence of accurate forecasts of rainfall events, farmers may waste resources irrigating unnecessarily, or may fail to make provision to protect their livestock from flooding associated with tropical storms and hurricanes. Of more importance in relation to SLM is the limited availability of information on medium and long term trends, which means that (even if the required flexibility were built into their contracts with the State-owned production companies, see Barrier 5), farmers are unable to adjust their production systems on an annual or multi-annual basis to buffer against increases in the frequency of hurricanes or droughts.

60. Specific limitations of MINAGRI in this area are the failure to interpret or use the abundant scientific information available in an integrated or inter-disciplinary manner, reflecting the complexities of SLM issues; and the limited development and application of indicators related to land degradation and SLM. An additional shortcoming is that alternative, non-academic sources of information are not considered with adequate seriousness, with the result that opportunities are lost for building on the accumulated practical experience and knowledge of farmers; this is of particular concern given that, with the increasing tendencies of rural depopulation in Cuba, such traditional knowledge is under severe threat. The Ministry of Sugar, meanwhile, has limited technical and physical capacities for M&E; as with MINAGRI, the indicators that exist related to land management lack an integrated focus; and they are not routinely applied in guiding productive activities. The M&E capacity of the National Institute for Hydrological Resources is also limited by shortage of instruments, inadequate integration and poorly developed analytical capacities.

Barrier 5: Planners have limited tools and knowledge for incorporating SLM considerations into plans, programmes and policies

61. In order to ensure that the domestic agricultural sector meets the food security requirements of the population, the centrally-devised plans which determine the productive activities of individual farmers and cooperatives often place strong emphasis on the production of high yields of a limited number of food crops, in the short term. By contrast, actions with longer term implications, such as SLM practices, take relatively low priority. There is a limited degree of consideration, in such plans and programmes, of how to make short term food production and long term SLM objectives compatible. This in turn is to some degree a reflection of inadequately developed inter-institutional and inter-sector coordination, between those institutions responsible for food security and for SLM (principally the Institute of Physical Planning and the Ministry of Agriculture); it also results from limited awareness on the part of planners of technical and methodological options for combining these goals (for example through the incorporation of appropriate indicators into planning instruments), and of the range of SLM options applicable to high-yielding food crops. This situation is evident, for example, in the Pinar del Rio Intervention Area, where farmers' contracts with the State-owned regional tobacco company lead them to produce tobacco using high-input practices with little provision for maintaining soil cover or checking erosive cross-surface water flow. Technical norms, meanwhile, have not adapted to changes in climatic patterns; for example the norm on potato production still stipulates that sowing should occur in October despite the fact that the cold fronts on which this depends now occur more commonly in January.

62. Plans determining land uses and production goals also have deficiencies on a number of other levels in relation to SLM. Planners typically have inadequate access to information (see Barrier 4) relating to the baseline conditions of soils and aquifers, and may lack the specialized technical knowledge required to take such information correctly into account in the development of plans, when it is available. They may also lack adequate technical knowledge of the impacts of land management practices in terms of the conditions of soil and water resources, for example the LD implications of irrigation, inappropriate species choice and the use of monocultures, a problem which is exacerbated by deficiencies in the systems for the monitoring and feedback of information on such impacts.

63. A further shortcoming of the existing planning system is that some plans (for example those related to the relative emphasis accorded to different crop types, see paragraph 16 of the CPP Document) have not adapted to changing conditions, for example in relation to tenure and climate. Between 1992 and 1998, for example (following the enactment of the third Agrarian Reform Law in 1993), State land ownership dropped from 75.2 to 33.4%, while cooperative ownership rose from 10.2 to 50.4% (see Annex O of the CPP Document): the private sector and individual producers, meanwhile, remained relatively stable and limited in area (14.6 in 1992 and 16.2% in 1998, and 3.5 and 3.5% respectively). These social and economic changes constitute a 'new agrarian economy' and pose significant challenges for planners in order to avoid contradictions between individual actions, motivated by market forces, and environmental goals, while maintaining market efficiency (conversely, as explained in paragraph 25 of the CPP Document, the move away from largely State-run farms to smaller cooperatives actually provides an improved environment for land stewardship).

64. A further problem is that the degree of implementation of plans is typically limited by financial and physical constraints on the part of the institutions involved. The limited availability of resources is considered under CPP Barrier 3, which will be addressed principally through Project 3.

Barrier 6: Inadequate development of regulatory framework for combating LD

65. Although there is a substantial body of environmental laws in Cuba (see Section 1.b of the CPP Document), regulations for their implementation are inadequately developed, particularly in relation to land degradation and SLM. A further problem is that, in common with planning instruments (see paragraph 62) technical norms governing land management practices are in many cases outdated in relation to recent changes in circumstances such as the evolution of land tenure conditions. Of particular importance in this regard will be the formulation of technical regulations for Decree 179 (see paragraph 7). Finally, the degree of application of laws and other regulatory instruments in practice is limited by the inadequacy of the communication of their contents to the public and the limited resources available for their enforcement. To date only the Forestry Law has been produced and disseminated in a manner which is easily accessible to the public in general. As in the case of planning instruments, regulatory instruments also typically face the problem of inadequate application in practice. This is principally a result of the limited financial resources available to the institutions responsible, as problem which is considered under Barrier 3. Conversely, while important experiences have been gained in achieving cost savings through models of institutional cooperation such as the "Cooperative Vigilance" described in paragraph 60 of the CPP Document, the regulatory adjustments (for example to the regulations to the Soils Law and Environment Law) required to formalize such models still remain to be made.

Stakeholder analysis

66. The principal institutional stakeholders in the project are as follows:

- The **Ministry of Science, Technology and Environment (CITMA)**, which is GEF Focal Point and is responsible for the coordination of the NPCCD and for preparation of the CPP.
- The **Ministry for Foreign Investment and Cooperation (MINVEC)**, which represents the Cuban Government in regard to international collaboration
- The **Ministry of Agriculture (MINAGRI)**, which is the lead institution responsible for administering, conserving and improving agricultural and forestry soils and ensuring compliance, certifying agricultural land uses (through the Soils Institute) and carrying out agricultural extension
- The **Ministry of Sugar Industry (MINAZ)**, which is the lead institution for sugar production, responsible for planning land use on its estates.
- The **National Institute for Hydraulic Resources (INRH)**, which regulates the use of waters, both surface and subterranean; plans, executes and exploits new reserves and reservoirs in response to changes in land use; and carries out agricultural extension
- The **Institute for Physical Planning (IPF)**, which has overall responsibility (through the Physical Planning Institute IPF) for defining allowable land uses, evaluating proposals from different stakeholders and issuing permits accordingly;

- The **Ministry of Higher Education (MES)**, which trains technicians and extension agents through diverse academic and vocational training institutions;
- The **Ministry of the Interior (MININT)**, which includes the Corps of Forest Guards which is responsible for forest protection;
- **Municipal Governments**, which coordinate municipal level land use planning, which at present takes SLM considerations inadequately into account.

67. There are a number of principal stakeholders among the project's beneficiary population at the local level, with different relations to and dependence on natural resources, as follows:

- **Cooperative members** are present in both of this project's intervention areas. They tend to depend on their own resources but are covered by state benefits such as credits, insurance, social security and (in the case of state farm workers) salaries. The cooperatives fall into three categories:
 - i) **Agricultural Production Cooperatives (CPA)** which have pooled forms of production and in which the production factors are collectively owned;
 - ii) **Credit and Service Cooperatives (CCS)** in which the means of production are cooperative, with the land and other production factors remaining the property of individual members, and in which outside labor may be employed; and
 - iii) **Basic Units of Cooperative Production (UBPCs)** in which the land remains state property but farmers have usufruct rights, and the production factors and their products are the property of individual members.

These three forms of cooperatives all have contractual obligations to supply state-owned companies with products, and also receive technical support from these companies. However, the project's strategies for interacting with members of these three forms of cooperatives will reflect their differences in terms of the levels at which decisions are taken regarding land management, and will also reflect varying degrees of opportunity which farmers have (depending on crops and locations) to grow and market other produce once their obligations to the State have been met.

- **Individual farmers** are present in both of the intervention areas targeted by this project and the project will also apply differentiated strategies in recognition of their characteristics.
- **Leader farmers** will play an important role in promoting the replication of technologies and facilitating local processes of analysis and experimentation.
- **Community leaders** have well-developed capacities to bring other stakeholders together and have political credibility, despite having insufficient training to carry out certain technical roles.
- **Extension agents** (from central and regional government institutions, such as the National Soils Institute, or the state-owned production companies with which farmers have most direct contact) will be important intermediaries between the project and farmers. They will receive training from the project, in aspects such as participatory approaches and integrated land management concepts as well as specific technologies and practices, to enable them to provide more effective support to farmers.

Baseline initiatives

68. The project will build upon significant **baseline activities** on the part of the Government of Cuba aimed at combating land degradation, at national level and in the two intervention areas specifically targeted by this project:

- The National Programme for Soil Improvement and Conservation currently invests around \$2,000,000 per year for the combat of land degradation, forestry protection and management and the management of hydrological resources.
- A substantial body of legislation already exists which provides for environmental protection (see paragraph 7), the most fundamental of which is the Environmental Law (Decree No. 81 of 1997); in addition, Cuba has a well developed centralized structure for planning land use and agricultural production. However policy, legislative and planning instruments tend to lack a fully integrated long term approach to SLM and as a result can at times unintentionally promote land degradation.
- MINAGRI, MINAZ and state-owned production companies currently develop plans which define the nature and scale of farmers' crop production, however these are typically highly focused on

individual crops and fail to take adequately into account the conditions of soil, water and vegetation resources and strategies for ensuring their sustainability.

- Networks of monitoring stations already exist in the country, which monitor parameters such as climate, soil conditions and hydrological resources, however these are in many cases virtually obsolete and the information generated is not managed in ways that best contribute to decision-making regarding land degradation and SLM.
- Farmers are currently provided with technical support by extension agents attached to institutions of central government such as the National Soils Institute and its regional dependencies, and the state-owned companies with which they enter into production contracts. However the support provided by these extension agents tends not to include principles of sustainable land management and inter-sector integration, due to the typically sector-based training of the agents and the limited degree of coordination between the institutions for which they work.
- The Government of Cuba invests heavily in education, with the result that educational and literacy levels are far above those of other countries in the region. However specific awareness and experience in relation to SLM is in many cases lacking, for example regarding the complex and multi-faceted nature of land degradation, its social aspects and recent developments in SLM technologies and approaches elsewhere in the region.
- The National Soils Institute has carried out a wide range of research activities aimed at identifying solutions to the land degradation problems encountered in the two intervention areas targeted by this project, including the introduction and evaluation of different plant species, ecological restoration activities, and the use of bio-fertilizers.

PART II Strategy

Project rationale

69. This will be the first Full Sized Project, with intervention-area specific activities, within the CPP. As such, its main emphasis will be on the development of capacities and awareness in relation to CPP, and the promotion of a model of integration and cooperation between stakeholders at institutional and local levels, as a means of preparing the ground for the subsequent projects. This will be achieved through capacity building at the national, provincial and local levels, which will support national planning and coordination needs and demonstration activities within this project and other projects of the CPP.

70. Key areas of emphasis of the project at national level will be on promoting inter-sector planning, monitoring and evaluation systems (which is also the main focus of CPP Project 2), drought surveillance, land use enforcement systems, and education and awareness building (thereby contributing to Outcome 1.4).

71. At the field level, the project will focus on two intervention areas: *Guantánamo* and *Pinar del Rio*. In both of these areas, the project will work in small scale land units (for example farms, Basic Cooperative Units, Agricultural Production Cooperatives, and Credit and Service Cooperatives); subsequent projects will work in progressively larger units, up to landscape scale.

72. *Guantánamo* has been selected for attention at the beginning of the Programme as it is characterized by particularly severe problems of soil erosion, which is one of the aspects of LD which is of greatest concern in Cuba. The project will focus here on halting land degradation and rehabilitating salinized and eroded areas in dry lands and xeric scrub regions. It will establish a series of pilot project that would implement different suites of actions and technologies to test and validate best approaches for addressing the main forms of LD in this scenario and the most appropriate land uses to prevent the aggravation of existing degradation processes. Using pilots the project will also strengthen capacities of local level resource managers and extension agents in SLM practices, extension work and environmental awareness, and of the experts/agencies with responsibility for soil erosion (e.g. Soils Institute), as well as water resource managers and other agencies. Field level work will also develop and test local level (municipal) planning systems, decision making tools, and regulations, with a focus on landscapes with severe soil erosion problems and of a small scale, thus validating the related actions under taken at the

national level and fine tuning them to the specific conditions of this LD/environmental and production scenario.

73. The *Pinar del Río* area, meanwhile, provides the opportunity to address the barrier to SLM (which is particularly strongly represented there) of inadequate monitoring and information management related to climatic events, with which the soil erosion processes found there are closely linked. The project will focus there on the development and implementation of a monitoring system for severe climatic events, including an early warning system for droughts and a long-term monitoring system for the effects of climate change.

Policy conformity

74. The project will play a key role in setting in motion the Cuba CPP, and in particular will create capacities and awareness regarding SLM across a range of sectors and institutions in Cuba. In common with the CPP as a whole, it will thereby contribute directly to Strategic Objective 1 of the GEF Focal Area Strategy for Land Degradation, namely to foster system-wide change through the removal of policy, institutional, technical, capacity and financial barriers to SLM focusing at the country level. In common with the other Full-Sized Projects within the CPP, it will also contain a field-level element focused on two specific intervention areas, in which lessons learnt to date will be combined with new experiences, resulting in the development, application and dissemination of an integrated model for sustainable land management. The project will thereby also contribute to Strategic Objective 2 of the GEF Focal Area Strategy for Land Degradation, namely demonstration and up-scaling of successful SLM practices for the control and prevention of desertification and deforestation.

Project goal, objective, outcomes and outputs/activities

Project Goal

75. The goal of this project corresponds to the purpose of the CPP as a whole, which is that “*Cuba has the capacities and conditions for sustainably managing land in a manner that contributes to maintaining ecosystem productivity and functions*”.

Project Objective

76. The primary focus of this initial 5-year project will be on the promotion of a model of integration and cooperation between stakeholders at institutional and local levels. Together with Project 5, through which the CPP Coordination Unit will be established, the project will be essential in creating the conditions for the achievement of the overall CPP purpose. The objective of this project is therefore “*to create capacities and awareness for planning, decision making and regulation, necessary for the application of SLM in Cuba*”.

Expected outcomes and activities of full project

Outcome 1: Systems for planning, regulation, decision-making and coordination are functioning effectively in support of SLM at national, provincial and local levels.

77. Through this Outcome, the project will address the following **Barriers** identified in the CPP document:

- 1 - Limited inter-sector integration and inter-institutional coordination
- 4 - The inadequacy of systems for monitoring of LD and management of related information
- 5 - Planners lack tools and awareness to incorporate SLM considerations into plans, programmes and policies
- 6 - Inadequate development of regulatory framework for combating LD.

It will thereby contribute to the following **Outcomes** of the CPP:

- 1.1: Planning structures and processes for land use and regulation take into account SLM principles, and facilitate the implementation of practices compatible with the conservation of ecosystem integrity
- 1.5: Information on land resource conditions and trends throughout Cuba is being applied by planners in decision making (together with Project 2 of the CPP)

78. The Institute for Physical Planning (IPF) within the Ministry for Economy and Planning will be a key actor with respect to this outcome, given that its roles include the development of territorial land use plans. In response to needs expressed by the IPF in consultation meetings held during the programme preparation phase, support will focus on **mainstreaming SLM considerations into territorial land use plans**, and ensuring that they are based on adequate understanding of LD processes and access to information on the condition of soil and water resources, with the full participation of diverse national and local stakeholders (governmental and non-governmental organizations and the local population). An important result of this support will be that plans respond more accurately to local variations in conditions with, where possible, increased participation of local stakeholders and of decentralized authorities in their formulation. Another major planning instrument whose development the CPP will support will be the National Environment Strategy, which will guide Government actions in environmental management and protection. In addition, the project will contribute as required to the **preparation of the pending technical regulations for Decree 179**.

79. Within MINAGRI (specifically, the regional companies with which farmers have production contracts), attention will be paid in particular to **mainstreaming SLM considerations into plans for agricultural production**, in order to ensure that crop selection and production targets are compatible with land productivity potential and that they take into account ongoing processes of investment in developing soil health, nutrient status and resilience (for example the planning of irrigation on the basis of predictions of precipitation, evapotranspiration and crop needs). Attention will also be paid to **mainstreaming SLM into plans for investment in technology development, extension and education**, in order that they adequately prioritize areas, themes and target audiences most strongly linked to land degradation problems, and that adequate human and financial resources are dedicated to promotion of SLM. In addition, MINAGRI will be assisted through the CPP in the **development and/or modification of technical norms and regulations related to land tenure, use and management**, in order to ensure that they adequately take into account SLM considerations. Similarly, with MINAZ attention will be paid to ensuring that sugar production targets do not jeopardize the productive capacity of the soil or cause other forms of degradation of soil or water resources through excessive application of inorganic nutrients or water, and to ensuring the adequate financial provision is made for maintaining irrigation and drainage infrastructure. Programme support to INRH will focus particularly on **mainstreaming SLM considerations into plans and regulations related to the use of superficial and subterranean waters for irrigation**, in order to ensure that water off-take rates do not exceed recharge capacity, that water of suitable quality is used for irrigation and that appropriate equipment and infrastructure is used for irrigation and drainage, in order to avoid problems of aquifer depletion, soil salinization and erosion.

80. In each of the above areas and institutions, the plans in question will also benefit, through the programme, from improved availability of accurate and useful information on the conditions of soil and water resources, land degradation processes and sustainable land management options (see Outcome 3 below). Although the main emphasis on the collection, organization and dissemination of information will be during Project 2, it will commence during this project.

81. The project will also contribute to this Outcome by **promoting improved coordination between different entities** of the Government and civil society, through the support and development of mechanisms which will complement and develop existing mechanisms such as the National Council for Hydrological Catchments. Of particular importance, for example, will be the project's support to integration between MINAGRI, MINAZ and INRH in order to ensure that the production targets set by the former two ministries are in accordance with projections and regulations of water use, and with the National Soils Institute in order to ensure that production targets are compatible with prescriptions for fertilizer application defined by that Institute. In order to ensure that small farmers' needs are adequately taken into account and that possible negative impacts on them are avoided, the National Association of Small Producers (ANAP) will be involved in inter-institutional discussions and plans related to SLM.

Adequate inter-institutional coordination will also be vital in order for the information flows foreseen under this Outcome (see paragraph 82 below) to operate effectively, for example for information on the condition and potential soil and water resources, held by the National Soils Institute and INRH respectively, to be accessible to MINAGRI and MINAZ in their planning. Coordination is also required in order to ensure that the research and development activities undertaken by the National Soils Institute are tailored to the needs of agencies directly involved in the management of soil and water resources, such as MINAGRI and MINAZ. Capacity building investments through this project will therefore focus on the integration of the actions of the following institutions: National and Provincial coordinating authorities, agricultural extension workers (ANAP, MINAGRI, MINAZ), IPF, INSMET and INRH. An example will be the linkage of the development by INSMET of a monitoring system for extreme climatic events in the region of Pinar del Rio, with the application of the results of the system in agricultural areas by ANAP, MINAGRI and MINAZ. This will be achieved through the Environment Agency (AMA), which will develop a programme of research and technological innovation to cover the needs of SLM-related decision-making. The information generated will be organized in databases and documents in order to allow it to be used at an early stage in the project.

82. In order for the systems of planning, decision, regulation and coordination in support of SLM, foreseen under this Outcome, to function effectively, it is necessary for them to be supported by flows of relevant, accurate and timely information. This information must be integrated in nature, covering the diverse parameters which are of relevance to land degradation (e.g. soil, water, vegetation, climate and social aspects) and the relations between them. In parallel with the local level experiences gained in Pinar del Rio intervention area (see Outcome 4), project activities will focus on establishing a **system for delivering the information generated to decision makers**. This will principally be achieved through the establishment and consolidation of an Information Network at national level, which will link the planning departments of MINAGRI, MINAZ, CITMA, MEP and others. The Institute for Tropical Geography will play a key role in integrating data on soils, water and vegetation and making them available through a Geographical Information System (GIS).

Outcome 2: Key actors at all levels reflect increased awareness of SLM issues in programmes, projects and activities

83. Through this Outcome, the project will ensure that key stakeholders fully understand the benefits of SLM, and therefore support and participate in its application, thereby addressing the following **Barriers** identified in the CPP Document:

- 1 - Limited inter-sector integration and inter-institutional coordination
- 2 - Inadequate incorporation of SLM considerations into extension and environmental education programmes
- 3 - Limited development of financing and incentive mechanisms for SLM
- 5 - Planners lack tools and awareness to incorporate SLM considerations into plans, programmes and policies)

84. It will thereby contribute to the following **Outcomes** of the CPP:

- 1.4: Rural populations, resource managers and other stakeholders are aware of the environmental, social and economic benefits of sustainable land management and options for its application
- 1.2: Increased resources are available for effective investments in SLM (this barrier will principally be addressed through Project 3 of the CPP).

85. Increased awareness will be achieved through a range of strategies. The field level demonstrations carried out through the different projects which will make up the programme (see in particular Outcome 3 of this project) will generate important and highly practical lessons on SLM, applicable across a wide range of sites and conditions. Under this Outcome, the project will develop **dissemination materials** for the results of these activities, in formats which take into account the diverse roles and characteristics of different stakeholders. These will be complemented by seminars and other events, which will allow feedback and discussion of results and the development of proposals for their application in practice.

86. **Informative documents** will be produced on policy, legal and regulatory changes and disseminated in accessible language, backed up by ‘slots’ on television and radio programmes, in order to ensure that these changes are fully internalized by the institutional personnel responsible for their application, and that the local stakeholders to whose actions the instruments refer in practice are fully aware of their provisions. Dissemination materials and informative documents will also be directed at higher-level policy makers. One of the effects of this two-pronged strategy will be increases in the amounts of financial incentives used for SLM: on the one hand, farmers will have greater awareness of the range of financial support options open to them, and on the other, policy-makers will be motivated to target incentive schemes more specifically on SLM.

87. The awareness raising that will be carried out during the period of the project itself will be backed up by a **sustainability strategy**, in order to ensure that levels of awareness are maintained in the long term. This will be based on the production of strategies and durable tools for education and awareness raising, to be used by relevant institutions. Tools may include both printed materials, such as pamphlets, posters and books, and audiovisual materials such as videos for use in schools and centres of higher education. The project will also provide **advice on the content of environmental education programmes**, in order that it makes adequate and appropriate reference to SLM.

88. The project will also increase **technical awareness of SLM issues on the part of extension agents** in key institutions, through the provision to them of training in extension methodologies suited to the promotion of SLM. Institutions to be targeted for this support will include the State-owned companies (dependencies of MINAGRI) which represent farmers’ primary source of extension support. Aspects to be covered in this training will include, for example, the concept of sustainable livelihoods, the integrated consideration of biophysical and socioeconomic aspects, and the participatory evaluation of traditional land management practices. As a result of this training, the effectiveness of the extension support provided by these technicians will be increased, in terms of its relevance to SLM and to local people’s livelihood support systems.

89. This process will be made more sustainable by investing in the **training of trainers**, specifically the staff of technical agricultural colleges and agricultural universities (such as the National Institute for Agricultural Sciences, the Animal Science Institute, the José Antonio Echeverría Superior Polytechnic Institute and the Universities of Havana, Bayamo, Pinar del Río and Ciego de Ávila) which produce field technicians and those involved in the formulation of extension programmes. In addition, advice will be provided on the content of environmental education programmes (including syllabi of educational institutions), specifically to promote the incorporation of SLM messages.

Outcome 3: An integrated SLM model, for application at small scale in areas with highly degraded ecosystems and extreme climatic conditions and potential for replication throughout Cuba, has been tested and applied at field level

90. Through this Outcome, the project will generate models for SLM in the two intervention areas of Pinar del Rio and Guantanamo. These models will be integrated in nature, including pilots and demonstrations of land management practices which respect SLM principles, and also ensuring that the producers carrying out these practices receive the necessary support and guidance. While tailored to the specific conditions of the two intervention areas and thereby contributing directly to addressing the threats and barriers which apply in each, these models will have potential for broader replication and up scaling in other intervention areas and throughout Cuba as a whole.

91. Through the integrated pilot activities foreseen under this Outcome, the project will contribute to addressing all of the 6 **Barriers** identified in the CPP document. It will thereby contribute to all of the 4 **Outcomes** foreseen under **Intermediate Objective 2** of the CPP (Field level demonstrations of sustainable land management practices have halted, prevented and remedied land degradation in critical landscapes within Cuba, and produced effective models for replication), namely:

- 2.1: Land use decisions in the project intervention areas are based on updated information
- 2.2: Local stakeholders (resource users, extension workers, decision-makers) in project intervention areas have the knowledge and skills to undertake SLM

- 2.3: SLM solutions (technologies, practices, incentive systems, planning structures and regulations) have been demonstrated and validated at specific pilot sites in 5 intervention areas
- 2.4: Best practices in SLM have been replicated at diverse sites throughout the 5 intervention areas and effective processes are in place for replication elsewhere throughout Cuba.

92. Under this Outcome, the project will meet the incremental costs of **supporting land management activities in a total of 5 pilot sites** in the two intervention areas of Pinar del Rio and Guantanamo. These pilot sites have been selected as covering a range of biophysical, productive and organizational conditions within each pilot area, as including examples of the principal land degradation processes that prevail in each intervention area, and as presenting conditions of commitment on the part of local stakeholders which are favorable for the validation and demonstration of SLM practices. The sites selected include all of the principal models of organization and tenure which prevail in Cuba, ranging from members of Credit and Service Cooperatives (CCS) who farm on an individual basis on land to which they have title, to members of Basic Farmer Production Units (UBPCs) who farm collectively on State-owned land. The sites will range in scale from the 7.5ha farm of an individual member of a CCS in Pinar del Rio, to groupings of the holdings of a number of members of the same cooperative (for example in the case of the Enrique Campos CCS in Guantanamo, where the pilot site will include 7 holdings totaling 109ha) and the entirety of the 617 ha collectively farmed Jesús Suárez Soca Agricultural Production Cooperative in Pinar del Río (see SECTION IV, PART X, Strategies in specific demonstration sites, p74).

93. The focus of the project in these pilot sites will be on **supporting their development into integrated farms**, where SLM practices are applied on the individual land units within the farm and where provision is also made for relations between different land units. This will represent an important change from the prevailing current focus of extension support on specific agronomic issues, on a crop-by-crop and field-by-field basis. Emphasis will also be placed on **diversifying production**, given the susceptibility of crops in both of the intervention areas to extreme climatic events, in order to ensure that farmers have “fallback” crops in the event of the failure of their main crops following hurricanes or droughts. This increased diversity will also contribute to ecosystem function and health, by increasing the range of habitats available on farms and promoting natural cycles and plant-insect interactions. The project will also support the evaluation of crop and livestock varieties with high resistance to drought, and the establishment of germplasm banks with genetic material of these varieties. Given the limited access which most farmers have to finance resources, for investing in land management or associated infrastructure, the project will also emphasize the **identification and promotion of low cost technologies for SLM**.

94. Examples in the Pinar del Rio intervention area may include planning the introduction of increased numbers of trees into farms (taking advantage of the funds for reforestation available under FONADEF) in ways which maximize their potential to provide non-timber services and products. The potential exists for trees to function as effective windbreaks in this hurricane-prone area (building on the experience of an earlier windbreak programme which was eventually marginalized by changes in Government priorities), to strengthen soil conservation barriers and promote nutrient fixation and cycling. They also have the potential to contribute to livelihood security by providing alternative sources of income, both in the short term (through the production of fruit, honey and small diameter material from thinning) and the longer term (in the form of timber). The inclusion of productive trees in soil conservation barriers can also increase the attractiveness of their establishment to farmers. Other options with potential for the conditions of Pinar del Rio include the use of integrated pest management (IPM), green cover crops, the increased use of organic and biological fertilizers, and simple soil conservation methods such as live barriers of vetiver grass (*Vetiveria zizanoides*) and contour ploughing. These technologies have the benefit that they reduce farmers’ needs to purchase inorganic pesticides and fertilizers, or to irrigate their crops.

95. Widely differing solutions will be required for the different parts of the Guantanamo intervention area which are used for intensive commercial agriculture and for extensive livestock production, respectively. In the agricultural areas, similar solutions may be applied as in Pinar del Rio, including the diversification of production, the planned and rational use of organic fertilizer, green manure rotations and IPM practices, and the application of lower impact irrigation measures. In the pasture areas, the solutions will include, for example, the establishment of watering points for livestock (including low-cost

rainfall collection systems), which will be located in ways that minimize the concentration of grazing and trampling effects; the establishment of alternative feed sources for livestock, including native leguminous trees; the promotion of semi-enclosed management of sheep and goats in selected locations; and the introduction of planned pasture rotation in selected locations. These solutions will be backed up by the provision of support to the development and application of regulations on grazing and watering practices.

96. The project will also **strengthen the capacities of local Government officials and extension agents to address locally-relevant land degradation issues and promote SLM practices** in accordance with local conditions. This will constitute a locally-specific application of the more generalized awareness and capacity building foreseen under Outcome 2. Through the provision of training and the facilitation of discussion visits to the pilot sites, the project will ensure that these actors have an adequate awareness of the full nature and implications of land degradation, of the factors to be taken into account in developing effective and integrated solutions to LD (such as ecosystem function and livelihood sustainability) and of practical options for SLM. One result of this will be the provision of more relevant and effective extension support by staff of State-owned companies within MINAGRI with which farmers have production contracts, and by agents of institutions with responsibility for addressing soil erosion problems, such as the Soils Institute, Provincial Soils Departments, the Forestry Directorate and its Provincial Departments.

97. This local level capacity building and awareness raising will also result in the **improved incorporation of SLM considerations into local level (municipal and provincial) planning systems, decision making tools, and regulations**, and their increased relevance to local conditions. These instruments will include, for example, Municipal and Provincial level territorial land use planning schemes, and regulations on water extraction and use applied by local Governments. The experiences in the pilot sites will allow **practical validation of the modifications to these instruments**.

Outcome 4: A system for monitoring extreme climatic events and the degradation of water and soil resources, with potential for replication throughout Cuba is applied at field level

98. The Pinar del Río area provides the opportunity to address the barrier to SLM (which is particularly strongly represented there) of inadequate monitoring and information management related to climatic events, with which the soil erosion processes found there are closely linked. The project will focus there on building capacities for the development and implementation of a monitoring system for severe climatic events, including an early warning system for hurricanes and droughts, and a long-term monitoring system for the effects of climate change. Project 2 will replicate these regional level activities in Guantanamo, and successive projects (3 and 4) will do the same in the remaining intervention areas; while Project 2 will seek to replicate and consolidate these local level experiences at national level.

99. An initial activity will consist of the **definition of key indicators of land degradation**, through an initial joint planning process involving the National Soils Institute, INRH, CITMA and MINAGRI. In the case of Pinar del Río, these indicators will place particular emphasis on climatic and soil parameters. Cross-cutting indicators will also be developed in order to ensure that these aspects of the natural resources are not viewed in isolation and that social and productive considerations are taken into account.

100. The information will be generated through the existing monitoring systems for meteorological, soils and other parameters, which will be strengthened where necessary by the **provision of equipment to fill in geographical or thematic gaps**, or to replace that which has become obsolete. The information used will also include that obtained from other sources, such as satellite imagery and the results of previous research.

101. In parallel with the national level system for the sharing of information, foreseen under Outcome 1, the project will support the **development and consolidation of an information sharing network** at the level of the Pinar del Río intervention area. This will have the same goal as the national level system, of supporting systems of planning, decision, regulation and coordination in support of SLM, by ensuring that they are based on relevant, accurate and timely information on the diverse parameters which are of relevance to land degradation (e.g. soil, water, vegetation, climate and social aspects) and the relations

between them. In Pinar del Rio, this system will involve all key institutions active in SLM, for example the National Soils Institute, INDRHI and INSMET.

102. In the short term, this monitoring system will enable farmers to plan their irrigation regimes and to protect their livestock in a timely manner from the effects of hurricanes and droughts; in the medium and longer term it will allow them to make provision for the appropriate modification and diversification of their cropping systems in order to incorporate more robust crops and to spread risk between a range of crops.

Outcome 5: Monitoring, learning, adaptive feedback & evaluation increased

103. The project's **monitoring and evaluation system** will form part of the overall monitoring and evaluation system of the CPP, to be established and managed through Project 5; the indicators used in this project include a locally specific subset of the CPP indicators. The costs of measuring the indicators specific to this project, and of incorporating the results into the adaptive management of the project, will be met by this project; however their values will also be fed into the monitoring and evaluation of the CPP as a whole.

Project indicators, risks and assumptions

Key Indicators

104. The achievement of the objective of the project ("*to create capacities and awareness for planning, decision making and regulation, necessary for the application of SLM in Cuba*") will be defined by: i) the proportion of the SLM and development programmes implemented by the Government which feature active involvement from more than one sector (as a measure of the effectiveness of the creation of conditions for inter-sector integration); ii) the proportion of the SLM and development projects within Government programmes which base design and ongoing management decisions on up to date and accurate information on other initiatives (as a measure of the effectiveness of the creation of conditions for coordination and integration between initiatives) and iii) the proportion of the SLM and development programmes implemented by the Government which base design and ongoing management decisions on up to date and accurate information on biophysical and socioeconomic conditions (as a measure of the effectiveness of the creation of conditions for ensuring the relevance of Government initiatives and programmes).

105. Concrete indicators of impact at local level will include increases the area of land in the intervention areas managed according to SLM principles, reductions in soil erosion rates, improvements in the efficiency of water use and increases in the yields of staple crops (see logical framework matrix in SECTION II PART II).

Risks and Assumptions

106. Achievement of the outcomes and objective of the project is dependent upon a series of assumptions being met. These same assumptions affect that CPP as a whole (see paragraphs 153-158 of the CPP document).

1. Continued interest and willingness on the part of the GoC in applying SLM principles

107. GEF investment in the project will be accompanied by, and dependent upon, significant amounts of co-financing from the Government of Cuba of programmes, projects and other initiatives directed at combating land degradation and promoting SLM. The provision of these resources is dependent upon the commitment of the GoC to this theme; this commitment is expressed in the co-financing letters which accompany the CPP document.

2. The institutional, planning and legal framework continues in favor of the environment

108. The institutional and legal framework in Cuba is currently favorable for the promotion of SLM (see paragraphs 7-11 and 107-111), despite some shortcomings (Barrier 6). The continuation of this favorable environment is essential for the CPP and for the project as a whole, and specifically for the effective extension of SLM and the regulation of land management. Specific actions will be taken under the present project to maintain and improve these favorable conditions, specifically through the raising of awareness among decision makers and policy formulators (see Outcome 2, paragraphs 83-89); the risk that this assumption is not met is therefore considered to be low; the only conditions under which it might conceivably not be met would be significant changes in the national political context as a whole.

3. Stability of staff in key institutions

109. Linked to the above is the assumption that staff in key institutions which enjoy certain levels of permanence. This is important in order for messages and mechanisms related to SLM to be adequately absorbed and validated at institutional level; once these processes of initial absorption and validation have occurred, institutional memory will have been developed (in the form of formalized mechanisms, systems, plans, policies and regulations) which will lend sustainability to the incorporation of SLM issues even if staff do subsequently change. The risk that the assumption of staff stability is not met is considered to be low, given the conditions of institutional stability that are typical in the country and also the strategies that the project will apply in order to ensure that messages and mechanisms are rapidly institutionalized, and the strengthening of social capital on SLM in institutions, by updating key documents and building a culture of work that mainstreams SLM.

4. Social and economic conditions in rural areas remain favorable for SLM

110. The land management decisions of the rural farmers in Cuba, as in any other developing country, are typically strongly dependent on the social and economic conditions which have immediate bearing on rural livelihoods. Even when in principle convinced of its benefits, there is in practice the possibility that changed conditions affecting farmers may oblige them to take land management decisions which are not compatible with SLM. To date, the economic crisis faced by the country following the changes in geopolitical conditions of the 1980s and 1990s has had a number of positive implications for SLM, for example through reducing the levels of chemical inputs applied to the soil and stimulating the development of organic agriculture. On the other hand, economic constraints at family level tend to limit farm families' abilities to invest in labor intensive SLM practices. The steady levels of rural depopulation which have occurred over recent decades (see paragraph 4) have tended to have the same effect, reducing the pool of labor resources available to invest in labor-intensive SLM. These processes, described in the CPP document in relation to Cuba as a whole, have been shown during the PDF B phase to apply also in the two intervention areas to be covered by the present project: limited access to financial resources is a major limitation on farmers' ability to adopt input-intensive production systems in these two areas, such as improved irrigation systems, and in Pinar del Rio the approximately stable overall population levels mask a steady emigration of economically active members of the population to urban centres. The significance of the limited availability of financial resources makes it necessary for the present project to take measures to address this problem, rather than waiting until Project 3 which will have financial mechanisms as its main focus. This will be done in part through the investments of the present project in raising awareness of this problem among decision makers, and partly to an emphasis on the development and promotion of SLM, technologies which require low levels of financial resources (see paragraph 93). As with the CPP as a whole, there is however a continued, albeit low, risk that any abrupt and major change in social and economic conditions at national level (for example due to geopolitical factors) might exceed the adaptive capacity of such systems and lead to increased land degradation.

5. Continued commitment on the part of local stakeholders

111. Even when economic and other incentives are provided, the long-term sustainability of the adoption of SLM technologies is to a large extent dependent on farmers' personal convictions of their benefits and of their suitability to their livelihood systems. The CPP as a whole, and particularly the present project (under Outcome 2) will place heavy emphasis on awareness raising at all levels of the environmental and social benefits of SLM in the long term, and will also invest in training extension workers in the effective

promotion of SLM (see paragraph 96), for example through the adoption of a livelihoods focus and the use of participatory methods for technology development.

Expected global, national and local benefits

112. The project will directly result in reduced land degradation in the two intervention areas of Guantanamo and Pinar del Rio. In particular, the project will address the problems of salinity build-up, hydrological erosion, compaction and loss of vegetation cover which are especially pronounced in these two areas. By the end of the CPP as a whole, as a result of this project and the follow-up activities foreseen in the same intervention areas under Project 2, it is expected that soil erosion rates in Guantanamo and Pinar del Rio will have reduced by 10% and 20% respectively, and water use efficiency will have increased by 13% in Guantanamo.

113. These changes will have very significant **local benefits**, in terms of increased food production, increased access to water supplies and reduced vulnerability to environmental shocks. It is estimated that production of staple crops will increase by 75% and 100% respectively in Guantanamo and Pinar del Rio intervention areas, resulting in *increased incomes* and *food security*. Increases in the extent and improvements in the quality of vegetation cover will also result in *reductions in the vulnerability* of the population to environmental shocks such as hurricanes and droughts. These changes will be accompanied by increased *employment* opportunities (particularly for women), improvements in *human and social capital* (for example strengthened individual capacities and awareness), improved *living conditions* and *reductions in rural-urban migration*.

114. The local benefits of the project will be spread across a wide range of stakeholder groups, but will be of particular importance for the poor. Despite the social safety nets provided by the centrally-planned system in Cuba, the poor tend to be particularly vulnerable to environmental shocks such as hurricanes and droughts, and will therefore benefit most from reductions in such vulnerability expected from the programme. At the same time, the promotion of low-input land management practices will be particularly attractive to the poorer sectors of the population who typically have limited ability to invest in inputs. The project will also have particular benefits for women, given their high levels of participation in agricultural activities.

115. At **national level**, the implications of the above will be increased and more stable availability of food crops for both the rural and urban populations; increased quantities of agricultural products available for export; and reductions in the financial and social costs associated with natural disasters. Increases in food production are of particularly vital importance in the case of Cuba, given its limited access to imports, while increases in the production of commercial crops will increase the country's ability to generate foreign exchange and purchase vital inputs in the overseas markets that are available to it.

116. At the **global level**, the project will result in improved ecosystem function over a large area of agricultural, pasture and forest land in the two intervention areas (targets are currently being calculated). In concrete terms, this will imply that soil loss is not exceeded by rates of soil development (as a result of measures to be taken to protect the soil against rainfall impact and cross-surface runoff, and to promote the buildup of humus); the physical, biological and chemical properties of the soil will be maintained and improved (for example as a result of reduced compaction through improved range management, and more appropriate application of chemical inputs and irrigation); and that the functioning of nutrient and hydrological cycles will be improved (for example as a result of the incorporation of increased numbers of nitrogen-fixing trees in productive systems). As a consequence, the productive capacities of soil and water resources will be maintained in the long term, resulting in turn in increased stability of demographic processes and reductions in indirect pressures on ecosystems and species of global importance elsewhere in the country.

117. In addition to benefits in relation to **land degradation**, the project will generate significant global benefits in other focal areas. Reduction in erosion rates will benefit **international waters** by reducing by the quantity of sediment which currently drains into the 'Greater Antillean Marine' Global 200 priority ecoregion which surrounds the country, which currently has severe impacts on the health of its corals and other marine fauna. In the area of **biodiversity**, the project will lead to reduced pressures on the globally

important Cuban Dry Forest ecosystem. The reduction in the rates of degradation of natural ecosystems, through deforestation and fire, will help to limit the loss of carbon stocks of importance for **climate change**. In addition, reductions in the breakdown of the natural functions of ecosystems will safeguard their ability to adapt to processes of climate change.

Country ownership: Country eligibility and country drivenness

Country eligibility

118. Cuba is eligible for UNDP assistance and signed the UNCCD on 15/10/94 and ratified it on 13/3/97. The GEF Focal Point has played an active role in the preparation of this FSP through the Environmental Education, Management and Education Center (CIGEA) (of the Ministry of Science, Technology and the Environment - CITMA), and closely accompanied the development and negotiation of this project and fully supports its submission to the GEF (see GEF Focal Point Endorsement Letter in Section IV).

Country drivenness

119. The Government of Cuba places particular priority to sustainable land management, motivated by its recognition of the severity of the processes of land degradation occurring in the country, and the practical and economic advantages of practices with SLM potential such as organic agriculture and reforestation, in terms of reduced dependency on imports. Despite the decline of the agricultural sector following the collapse of the Soviet bloc, it remains of crucial importance for the country's food security and is a major focus of Government investment, as is the forestry sector (there is also openness on the Government to promote overseas private sector involvement in this sector). These conditions therefore make it possible for carefully targeted investments such as those proposed through the CPP to make a major impact on SLM, through leveraging significant quantities of resources of the Government and other investors.

120. The commitment by the Government of Cuba to environmental protection, and specifically to countering land degradation, is unequivocally stated in key policy and legal instruments. Most fundamentally, following the Río conference in 1992, the **Constitution of the Republic** was modified to strengthen its reference to the importance of environmental protection and the related responsibilities of the population. The **Environmental Law (Decree No. 81 of 1997)**, **Decree No. 179 of 1993** on the protection, use and conservation of soils, **Decree 138 of 1993 on Terrestrial Waters**, the **Mining Law of 1994** and the **Forestry Law (Law 85(L)) of 1998** are other instruments of fundamental significance which provide the legal basis for the expression of this commitment.

121. In recognition of the gravity of land degradation in the country, and as an expression of the level of priority that the GoC places in addressing the issue, a **National Programme to Combat Desertification and Drought (NPCDD)**; this process began in 1996 with the formulation of a National Group which began working on the issue with the support of the UNCCD Secretariat, FAO, IFAD and the Global Mechanism. In 2000, the document was concluded and approved by the Government. The NPCDD presents the results of different assessments, the national strategy to combat desertification and drought and the **National Action Plan (NAP)**.

122. The NPCDD identifies lines of action as follows: (i) Economical and social development of affected areas; (ii) Perfecting and application of judicial, economic and administrative instruments for the application, monitoring and control of NPCDD progress; (iii) Integration and coordination of policies and strategies; (iv) Environmental education and public participation; (v) Scientific research and technological innovation; (vi) Institutional strengthening and (vii) International cooperation.

123. The NPCDD also identifies a series of priority regions and initiatives, each covering several challenges and lines of action, composing the principal strategies that the NPCDD is built on, integrating existing national, territorial and sectoral programmes and plans. The NPCDD is a comprehensive document that provides guidance for the implementation of the Country Pilot Partnership, which, in turn,

supports the fulfillments of its long term goals and the capture of the global benefits of its implementation.

124. The commitment of Cuba to sustainable land management is shown by the Government-driven initiatives to combat land degradation which have been carried out over the last two decades and most recently under the National Programme for Soil Conservation and Improvement. These include measures to control erosion such as contour planting, live barriers, stone barriers, live ground cover and terraces; measures to correct problems of salinity and poor drainage such as control of irrigation water quality, application of gypsum, improvement of drainage systems and leveling; sub-soiling and minimum tillage; and calcareous amendments to combat soil acidity.

125. The Government has invested heavily in the establishment of forest plantations in recent years, achieving a total area by the end of 2003 of 332,400 ha. The Cuban Forest Service is currently being strengthened through a project funded by CIDA, which receives significant counterpart inputs from the Government.

126. The Government is also highly committed to territorial land use planning. Between the years 1980 and 1984, the Department of Physical Planning carried out investigations of the potential of land resources aimed at defining appropriate levels of utilization, as part of a long-range development strategy up to the year 2000. Under this initiative, maps were produced of relief, soils, hydrological networks, floods, forests and land use and tenure. The Government's commitment to the application of watershed-based planning of natural resource use is shown by the establishment in 1997 of the National Council for Hydrological Catchments, with the objective of supporting the integrated environmental management of the country's main hydrological catchments.

127. There will be a number of important **synergies** between the present project and other programmes and projects of the Government of Cuba, or in which it participates. These are listed in SECTION IV PART VII.

UNDP Programs and Projects

128. The United Nations Development Assistance Framework (UNDAF) is a five-year programmatic framework (2008-2012) for the cooperation between the UN System and Cuba. The UNDAF includes the area "Energy and Environment" as one of its five priorities areas in support to the national strategies established by the Cuban government. The purpose is to contribute to the achievement of the Millennium Development Goals (MDG).

129. The United Nation Development Program (UNDP) mission is to support countries to accelerate progress on human development through policy advices, technical support and advocacy. The UNDP Strategy Plan 2008-2011 sets the overall direction for supporting countries to achieve national development objectives contributing to the MDG.

130. In this context, the GoC and UNDP have reached an agreement on the Country Programme Document (CPD) for the 2008-2012 period. The CPD includes "Environment and Energy for Sustainable Development" as one of the four areas for cooperation. In this way it is expected to contribute to the national priority of "improved environmental protection and the rational use of the national resources in order to achieve the goals of sustainable social and economic development".

131. The five-year Project 1 of the CPP is one of the key interventions foreseen under outcome 1 of the CPD: "Capacity building for sustainable land management". Additionally, the CPD implementation period will cover the first five years of the CPP Project 5 and the first two or three years of CPP Project 2.

Sustainability

132. The core justification for the project will be increases in **environmental sustainability** in Cuba, and particularly in the two project intervention areas. As a result of the project, soil, forest and water

resources will be managed in ways which are in accordance with their long-term productivity and carrying capacity. This will be achieved in the following ways:

- Improvements in access on the part of decision makers to information on the scale, productivity, fragility and other characteristics of the resources in question, as a result of the strengthening of capacities for monitoring and evaluation and the development of mechanisms for the constructive flow and management of information;
- The promotion of technologies which minimize the negative impacts of land management on the condition of natural resources, such as soil conservation, efficient irrigation, integrated pest management and organic agriculture.

133. The **social sustainability** of the results of the project will be ensured by the following strategies:

- Promoting the development of awareness of the integrated nature of land degradation and sustainable land management issues, including social aspects. As a result, policies, plans and other support will better address social issues and be based on solid stakeholder analyses, and will therefore have a greater likelihood of acceptance among the target population and a reduced risk of unintended negative social impacts.
- Emphasizing the promotion of technologies which are tailored to the social and economic realities of the target population, having limited requirements for labor inputs, minimizing environmental risks (such as pesticide poisoning and contamination or exhaustion of water supplies) and providing diverse products and services required in rural livelihoods.

134. The **financial sustainability** of the results of the project will be ensured by:

- Raising awareness on the part of decision makers and policy formulators in central Government regarding the medium and long term benefits of SLM and associated support systems such as mechanisms for monitoring and information flow, in terms of sustained agricultural productivity in the long term and reductions in the social costs associated with environmental vulnerability. As a result, it is hoped that the relatively modest budget required for the continuation of support to SLM and for the operation of monitoring systems will largely be met through a reallocation of central Government budget. This will be the principal focus of project 3, however, given the importance of access to sources of finance as a condition for sustainability, the present project will also address this issue under Outcome 2.
- Raising awareness among farmers regarding existing financial instruments to SLM and how to access them.

135. The **institutional sustainability** of the results of the project will be ensured by:

- The fact that all staff (managerial, technical and administrative) of the project and its constituent projects will be members of existing institutions under temporary secondment.
- The fact that the Programme Management Unit of the CPP as a whole will be constituted by an existing institution (the Technical Unit for Desertification and Drought) which already has legal status; the Directors of each project within the CPP will also be drawn from the same existing Technical Unit for Desertification and Drought.

136. The CPP will therefore, not involve the creation of new institutional entities or the appointment of new staff but will be based on, and thereby strengthen, existing institutions and personnel.

Replicability

137. The conceptual models of SLM, to be developed during this project in the two intervention areas (featuring inter-sector and inter-institutional coordination, vertical integration between different levels of Government and local stakeholders, and the integrated consideration of soil, water and vegetation resources in planning and resource management) will be scaled up through subsequent projects in three other intervention areas (Habana Matanzas plains, Cauto River catchment and premontane region of Villa Clara), with the aim that they will eventually be applied throughout the whole of the country.

138. Projects 1 and 2 will develop and validate inter-sector and inter-institutional systems for monitoring and evaluation of the conditions of natural resources. These systems will subsequently be replicated throughout Cuba.

139. The technical solutions to be developed in the Pinar del Río intervention area to problems affecting low-lying agricultural lands with moderate topography will be replicable in areas with similar characteristics and problems throughout the rest of the country: an example is the Habana Matanzas plains which will be the focus of the CPP during project 2. Although successive projects of the CPP will emphasize different aspects of natural resources (e.g. soils, water and forests in Projects 1, 2 and 3 respectively), this emphasis will not be exclusive: lessons learnt during Project 1 in relation to soil management will be replicated and validated elsewhere during Projects 2, 3 and 4.

140. In common with Projects 2 and 3, Project 1 will include budget for the monitoring and evaluation of its impacts, which will form the basis for the systematization and replication of lessons learnt. Project 4 will concentrate specifically on consolidating the processes of replication of the lessons learnt during Projects 1, 2 and 3. Project 5 will provide the overall coordination of monitoring, evaluation and replication activities of each of the other constituent projects of the CPP.

PART III Management Arrangements

Implementation/execution arrangements

141. In keeping with GEF procedures, UNDP will be the implementing agency (IA) for the CPP Project 1. In this sense, UNDP will be responsible for project oversight, including the achievement of project results, financial execution and the submission of reports according to UNDP and GEF requirements.

142. The Project will be executed under NEX modality, according to the standards and regulations for UNDP cooperation. The Ministry for Foreign Cooperation and Investment (MINVEC) is the national public authority in charge of coordinating international cooperation in Cuba, as mandated under Resolution 15/2006.

143. The Ministry of Science, Technology and the Environment (CITMA) is the Focal Point for GEF and for the UNCCD in Cuba. CITMA is the public institution responsible for implementation of the national environmental policy and strategy. During execution of CPP Project 1, CITMA will have the lead responsibility for overall implementation of the activities and results. The Environment Education, Management and Information Center (CIGEA) represents CITMA as National Coordinator of the CPP in all of its phases and projects.

144. CPP Project 1 implementation will be coordinated through a Project Management Unit (PMU), led by a Project 1 Coordinator. In order to ensure the correctly harmonized insertion of this project into the CPP as a whole, and its compliance with the overall goals of the CPP, the Project Coordinator will answer to the Director of the CPP (see organigram in SECTION IV PART V). He/she will also be a member of the Technical Unit for Desertification and Drought (TUDD) and of the CPP Programme Implementation Unit. The Project Coordinator will be supported by technical staff from outside TUDD, seconded from the relevant national institutions: MINAGRI, INRH, IGT, IPF, CGB and others, as may be required.

145. In common with each of the other projects in the CPP, this project will be guided by a National Steering Committee (NSC) jointly chaired by MINVEC, CITMA and UNDP. It will be also comprised by the main national institutions related to the project (MINAGRI, MINAZ, INRH, ANAP) and FAO. It will meet regularly two times a year and whenever else may be required. Amongst its roles, the NSC would adopt the project strategic decisions, approve reports and annual workplans and control the use of financial resources.

146. The Executive Group is charged with supporting and advising the NSC in relation to the decisions to be adopted in the meetings. It is made up of technical representatives of MINVEC, CITMA, MINAGRI, MINAZ, INRH, CGB, IPF, UNDP, FAO, as well of representatives of ANAP and FMC. Its role is to review periodic financial plans and activities and reports and to present them to the NSC for approval; control and monitor financial and administrative implementation of the Project.

147. In common with Projects 2-4, in each of the two intervention areas attended by this project **Intervention Area Coordination Teams (IACT)** will be established, directed by an **Intervention Area Coordinator** and made up of the principal actors in each area. These will include institutional representatives such as provincial delegations of CITMA, MINAGRI, INRH, IPF and MINAZ, as well as scientific and academic institutions, and entities representing the interests of local stakeholders, namely the National Association of Small Farmers (ANAP), the Cuban Women's Federation (FMC), the Cuban Association of Animal Production (ACPA) Concrete actions at local level to promote SLM in demonstration sites will be carried out by **Demonstration Site Work Teams**, which will include local institutions and stakeholders such as community leaders, leader farmers, extension agents, researchers and local Government representatives.

148. **Intervention Area Coordinators**, together with their work teams, will be responsible for developing annual plans, for carrying out the activities which these specify, for monitoring and informing the operational staff of the project regarding impacts on the environment and for ensuring the efficient use of the material resources of the project in its areas of influence. The close links between the P1 PMU at the national level and the local teams at Intervention Area and Demonstration Site levels will be maintained through periodic visits to the intervention areas, technical and financial audits, scientific and technical activities, and the transmission of information and periodic joint meetings of the project team, which should be held twice a year. The constant interchange and flow of information, including the dissemination of activities carried out and of lessons learnt, will be made effective through a virtual network which will link the Local Coordination Teams, the P1 PMU at the national level and key stakeholders.

Consultation, coordination and collaboration

149. The FAO will function as Technical Cooperation Agency for Project 1. Taking into account the capacities and competitive advantage of FAO, its principal role in this project will be the provision of international technical specialists to advise farmers and national specialists on specific technical issues, including (but not limited to) the following:

- Planning of irrigation systems at farm level, based on analyses of water quality, crop needs and soil and water conditions;
- Planning of crop rotations at farm level, based on analyses of pest life cycles, fertility conditions and crop fertility needs;
- Rehabilitation of drainage systems, based on analyses of drainage conditions, crop types and topography and farm level;
- Design of agro forestry and combined livestock/crop/tree systems.
- Design of "conservation agriculture" systems.
- Development of systems for biophysical monitoring
- Design of animal feeding systems.

150. The required coordination will be established with UNEP, as one of the GEF Agencies involved in the CPP. This will be achieved through UNEP's membership in the CPP National Steering Committee and using the appropriate information mechanisms and tools defined in this context.

Links to other UNDP and GEF programmes and projects

151. GEF investments to date in Cuba have focused principally on biodiversity, climate change and international waters. Investments in the area of biodiversity have included protected areas and integrated coastal zone management (for example in the **Sabana Camaguey** ecosystem and at the level of the national protected areas system). These investments provide an essential complement to the CPP investment in sustainable land management. A new project currently under final process of approval proposes instead to promote biodiversity conservation in productive sectors in **Sabana Camaguey**, and as such represents a significant opportunity for interchanges of lessons learnt on land management in agriculture (one of the productive systems involved in that project, besides tourism and fisheries). Another regional project recently finalized (Capacity Building for Stage II Adaptation to Climate Change) has carried out studies of drought conditions and made policy recommendations for adaptation to climate change, which have potential to feed into the pilot areas of this project. The regional GEF project

IWCAM has a demonstration pilot site in the Cienfuegos Bay, Watershed and Coastal Area, which will be a relevant experience focusing on the integrated watershed management concept.

152. At the beginning of 2005 the **GEF Small Grants Programme (SGP)** was initiated in Cuba, under implementation by UNDP. The SGP Strategy for the period 2007-2010 foresees to develop actions on thematic issues and geographical areas coinciding with those included in the general framework of the CPP and of the Project 1, resulting in a favorable environment for synergy between the two. The nature of the collaboration between the two will be defined during the implementation of the Project 1, taking also into account the specific SGP implementation mechanisms and schedule.

153. Two partnership agreements have already been reached between CPP and UNDP/GEF's Sabana Camaguey project and FAO's "Measures for the improvement and conservation of water and soil to mitigate the risk of food vulnerability in Guantánamo-Guaso watershed project". By the means of continued identification of synergies with relevant initiatives, other such agreements are expected to be reached during Project 1 implementation. Collaborative arrangements between the CPP and GEF/UNEP/FAO "Land Degradation Assessment (LADA) project" have been put in place and will be maintained during Project 1 implementation.

154. The UNDP Local Human Development Program (PDHL) strategy in Cuba is designed to strengthen local capacities of empowerment for the improvement of the least developed territories of the country Cuba. Within this framework, more than 600 project and local actions are under development or have been developed in all the priority areas identified by the Cuban localities. With a view to promoting synergies in the interventions, specific working relations will be established between CPP and its projects, on one side, and UNDP/PDHL at the national and local levels, on the other side.

155. The project, as the first field-level project of CPP, represents GEF's second major investment in OP15 in the Caribbean basin, following the approval in April 2005 of the project entitled "**Demonstrating Sustainable Land Management in the Upper Sabana Yegua Watershed System**" in the Dominican Republic. In common with that project, the CPP has significant replication potential throughout the rest of the insular Caribbean, providing for example a model from which lessons learnt could be applied in the severely degraded conditions of the Republic of Haiti. There are also opportunities for important synergies between the project, as part of the CPP, and the OP15 project "Sustainable Land Management in Drought Prone Areas of Nicaragua".

156. In order to accord proper acknowledgment to GEF for providing funding, the GEF logo should appear on all relevant GEF publications, including among others, project hardware and vehicles purchased with GEF funds. Any citation on publications regarding projects funded by GEF should also accord proper acknowledgment to GEF. The UNDP logo should be more prominent and separated from the GEF logo if possible, as UN visibility is important for security purposes.

PART IV Monitoring and Evaluation Plan and Budget

157. Monitoring and evaluation of the project will be adapted from procedures established by UNDP and GEF for Full Sized Projects and will be provided by the CPP team and the UNDP Country Office (UNDP-CO) with support from UNDP/GEF. The Logical Framework Matrix in SECTION II PART II provides *performance* and *impact* indicators for project implementation along with their corresponding *means of verification*. These will form the basis on which the project's Monitoring and Evaluation system will be built.

158. The following sections outline the principal components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The *Monitoring and Evaluation Plan* of the project and the CPP will be finalized and presented in the *CPP Inception Report* following a collective fine-tuning of indicators, means of verification, and the full definition of CPP staff M&E responsibilities.

Monitoring and reporting

Inception Phase

159. An Inception Workshop (IW) will be carried out for the project, which will involve the full CPP team, relevant government counterparts, co-financing partners, the UNDP-CO and representation from the UNDP-GEF Regional Coordinating Unit, as well as UNDP-GEF (HQs) as appropriate.

160. A fundamental objective of the *Inception Workshop* will be to assist the coordination team to understand and take ownership of the goals and objectives of Project 1, as well as finalize preparation of its first *Annual Work Plan* (AWP), based on its log frame matrix. This will include reviewing the log frame (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise finalize the *Annual Work Plan* with precise and measurable performance indicators, in a manner fully consistent with expected programme and project outcomes and established intermediate and final indicator targets, as depicted in the log frame.

161. Additionally, the purpose and objective of the Inception Workshop will be to: (i) introduce project staff with the UNDP-GEF *expanded team* which will support the project during its implementation, namely the CO and responsible Regional Coordinating Unit (RCU) staff; (ii) detail the roles, support services and complementary responsibilities of UNDP-CO and RCU staff vis à vis the project team; (iii) provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews/Annual Project Report (PIR/APRs), Tripartite Review Meetings, as well as intermediate and final evaluations. Equally, the IW will provide an opportunity to inform the team on UNDP budgetary planning, budget reviews, and mandatory budget re-phrasings.

162. The IW will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and project-based conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed again, as needed in order to clarify for all, each party's responsibilities and expected deliverables during the project's implementation phase.

Monitoring responsibilities and events

163. A detailed schedule of project review meetings will be developed by project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the *Inception Report for Project 1*. Such a schedule will include: (i) tentative time frames for Tripartite Reviews, Steering Committee Meetings, (or relevant advisory and/or coordination mechanisms) and (ii) project-related Monitoring and Evaluation activities.

164. Day to day monitoring of implementation progress will be the responsibility of the Project Coordinator, based on the project's Annual Work Plan and its indicators. The Project Team will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

165. The Project *Coordinator* will fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the Inception Workshop with support from UNDP-CO and assisted by the UNDP-GEF Regional Coordinating Unit. Specific targets for implementation progress indicators in year one, together with their means of verification, will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the Annual Work Plan. The local implementing agencies will also take part in the Inception Workshop in which a common vision of overall project goals will be established. Targets and indicators for subsequent years are to be defined annually as part of the internal evaluation and planning processes undertaken by the CPP team.

166. Measurement of impact indicators related to Project 1 will occur according to the schedule defined in the Project Inception Workshop and tentatively outlined in the indicative *Impact Measurement Template* of the CPP.

167. *Periodic monitoring of implementation progress* will be undertaken by the UNDP-CO through quarterly meetings with the project proponent, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

168. *Annual Monitoring* will occur through *Tripartite Project Review (TPR) meetings*, which will occur at least once every year. The first such meeting will be held within the first twelve months of the start of full implementation. The project proponent will prepare an Annual Project Report (APR) and submit it to UNDP-CO and the UNDP-GEF regional office at least two weeks prior to the TPR for review and comments.

169. The project level APRs will be used as the basic documents for discussions in the TPR meeting. The project proponents will present the APRs to the TPR, highlighting policy issues and recommendations for the decision of the TPR participants. The proponent will also inform the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Separate reviews of each component of the project may also be conducted if necessary. The TPR has the authority to suspend disbursement of the project if performance benchmarks are not met.

170. *A terminal tripartite review (TTR)* of the project will be held in the last month. The project proponent will prepare a Terminal Report for the project and submit it to UNDP-CO and LAC-GEF's Regional Coordinating Unit (RCU). It shall be prepared in draft at least two months in advance of the TTR in order to allow review, and will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the project as a whole, paying particular attention to whether it has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation or formulation.

Project Monitoring Reporting

171. The Project Coordinator in conjunction with the UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process.

(a) *Inception Report (IR)*

172. An Inception Report for the project will be prepared immediately by the Project team following the Inception Workshop. This will include a detailed First Year/Annual Work Plan divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Annual Work Plan would include the dates of support missions from the UNDP-CO or the Regional Coordinating Unit (RCU) or consultants, as well as time-frames for meetings of the decision making structures of the project. The Report will also include the detailed budget of the project, for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame.

173. The Inception Report (IR) will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners, in complement to those stated in the Project Document, as needed. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

174. When finalized, the IR will be circulated to project partners who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF's Regional Coordinating Unit will review the document.

175. The GEF M&E Unit provides the scope and content of the PIR. In light of the similarities of both APR and PIR, UNDP/GEF has prepared a harmonized format for reference, to avoid duplication of efforts.

(b) Project Implementation Review (PIR)

176. The PIR is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, a PIR will be completed by the project team. The PIR can be prepared any time during the year (July-June) and ideally prior to the TPR. The PIR will then be discussed in the TPR so that the result would be a PIR that has been agreed upon by the project, the executing agency, UNDP CO and the concerned RCU staff member.

177. The PIRs will be collected, reviewed and analyzed by the RCU prior to sending them to the focal area clusters at the UNDP/GEF headquarters. The focal area clusters supported by the UNDP/GEF M&E Unit will analyze the PIRs by focal area, theme and region for common issues/results and lessons. The Technical Advisors and Principal Technical Advisors will play a key role in this consolidating analysis.

178. The focal area PIRs will then be discussed in the GEF Interagency Focal Area Task Forces in or around November each year and consolidated reports by focal area are collated by the GEF Independent M&E Unit based on the Task Force findings.

179. The GEF M&E Unit provides the scope and content of the PIR. In light of the similarities of both APR and PIR, UNDP/GEF has prepared a harmonized format for reference, to avoid duplication of efforts.

(c) Quarterly Progress Reports

180. Short reports (100 words) outlining main updates in project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF regional office by the project team.

(d) Periodic Thematic Reports

181. As and when called for by the Implementing Partner, UNDP or UNDP-GEF, the project team will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered.

(e) Project Terminal Report

182. During the last three months of the project, the project team will prepare a Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the project, lessons learnt, objectives met or not achieved structures and systems implemented, etc. and will be the definitive statement of the project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's activities.

(f) Technical Reports

183. Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the project, and tentative due dates. This will be developed in conformity with programme-level strategies for reporting defined by for the CPP as a whole. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined

areas of research within the framework of the programme/project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

(g) Project Publications (project specific- optional)

184. Project publications will form a key method of crystallizing and disseminating the results and achievements of the project. Publications will be produced within the framework of the dissemination strategy for the CPP as a whole. These publications may be scientific or informational texts on the activities and achievements of the project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

Independent Evaluation

185. The project will be subjected to one independent mid-term evaluation (at the end of year 3 – if possible, this will be combined with the first intermediate reviews of Project 5 and the CPP as a whole) and a final external evaluation at the end of year 5 (if possible, this will be combined with the mid-term review of Project 2 and the second intermediate evaluations of Project 5 and the CPP as a whole). The combination of the external evaluations of this project with those of the CPP as a whole and others of its constituent projects will result in substantial cost savings. In addition, an “ex-post” evaluation of the project, and also of projects 2 and 3, in year 10 as part of the joint final evaluation of projects 4 and 5 and the CPP as a whole. The costs of this ex-post element will be covered by funds from Project 4, given that Project 4 will deal with the replication of the results obtained in each of Projects 1-3. The programme for the external reviews of this and the other projects within the CPP is presented in SECTION IV PART IX.

(i) Mid-term Review

186. The mid-term evaluation will determine progress being made towards the achievement of outcomes and will identify course correction if needed. They will focus on the effectiveness, efficiency and timeliness of project implementation; highlight issues requiring decisions and actions; and present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the remainder of the project term. The organization, terms of reference and precise timing of the evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF and the established standards reflected in UNDP-GEF's Programming Manual.

(ii) Final Evaluation

187. An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the intermediate evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation will also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

(iii) **Audit Clause**

188. The Government will provide the Resident Representative with certified periodic financial statements for the project, and with annual audits of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audits will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

Learning and knowledge sharing

189. Results from the project will be disseminated within and beyond the project intervention zone through the CPP-level mechanisms for systematization and dissemination, to be established and coordinated through Project 5.

Table 1. Indicative Monitoring and Evaluation Work Plan and Corresponding Budget (see SECTION IV PART VIII for distribution of indicative M&E budgets between CPP projects)

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team Staff time</i>	Time frame
Inception Workshop	- CPP Director and Project 1 Coordinator - UNDP CO - UNDP GEF	10,000*	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 will oversee hiring of specific studies and institutions and delegate responsibilities to relevant team members	To be determined in Inception Phase and Workshop. Total indicative cost 12,000	Year 3
Measurement of Means of Verification for Project Progress and Performance (measured annually)	- Oversight by Project Coordinator - CO and RCU - Measurements project team staff, or when so warranted specialized expertise/institutions	To be determined as part of preparation of the Annual Work Plans. Indicative cost 12,000	Annually prior to APR/PIR and to the definition of annual work plans
APR and PIR	- Project Team - UNDP-CO - UNDP-GEF (RCU/HQ)	None	Annually
TPR and TPR report	- Government Counterparts - UNDP CO - Project team - UNDP-GEF RCU	None	Every year, upon receipt of APR
Periodic status reports	- Project team	2,000	To be determined by CPP team and UNDP CO
Technical reports	- Project team - Hired consultants as needed	12,000	To be determined by CPP Team and UNDP-CO
Intermediate Evaluation (combined with the first intermediate evaluations of Project 5 and the CPP as a whole)	- Project team - UNDP- CO - UNDP-GEF RCU - External Consultants (i.e. evaluation team)	24,000*	In year 3.

Final External Evaluation (combined with the mid-term evaluation of Project 2 and the second intermediate evaluations of Project 5 and the CPP as a whole)	- Project team, - UNDP-CO - UNDP-GEF RCU - External Consultants (i.e. evaluation team)	25,000*	At the end of project implementation
Terminal Report	- Project team - UNDP-CO - External Consultant	None	At least one month before the end of the project
Lessons learned (to be integrated with those learnt in the CPP as a whole and in other CPP projects)	- Project team - UNDP-GEF RCU - Specialized partners/institutions	12,000	Yearly
TOTAL INDICATIVE COST - Excluding project team staff time and UNDP staff and travel expenses		US\$ 109,000	
*GEF funded. All other costs in this table will be co-financed by GoC			

PART V Legal context

190. The present Project Document will be the instrument referred to under Article 1 of the Standard Basic Assistance Agreement between the Government of Cuba and the United Nations Development Program (UNDP). The host country implementing agency shall, for the purposes of the Standard Basic Assistance Agreement, refer to the Government cooperating agency described in that Agreement.

191. The following types of revisions of the Project Document may be carried out under authorization by the UNDP Resident Representative only, so long as the said Representative is certain that the other signatories of the Project Document have no objections to the proposed changes:

- a. Revisions of any of the annexes of the Project Document or additions to the same;
- b. Revisions which do not imply significant changes to the immediate objectives, results or activities of the project, and which are due to a redistribution of the inputs already agreed or to increases in costs due to inflation.
- c. Obligatory annual revisions through which the delivery of financial inputs, increases in experts and other costs are adjusted, due to inflation or costs considered by the project executing agency.
- d. Inclusion of additional annexes and attachments only as set out here in this project document.

SECTION II Strategic Results Framework and GEF Increment

PART I Incremental Cost Analysis

192. The project will build upon significant **baseline activities** on the part of the Government of Cuba aimed at combating land degradation. The National Programme for Soil Improvement and Conservation currently invests around \$2,000,000 per year for the combat of land degradation, forestry protection and management and the management of hydrological resources. In relation to **Outcome 1** (*Systems for planning, regulation, decision-making and coordination are functioning effectively in support of SLM at national, provincial and local levels*), a substantial body of legislation already exists which provides for environmental protection (see paragraph 7), the most fundamental of which is the Environmental Law (Decree No. 81 of 1997); in addition, Cuba has a well developed centralized structure for planning land use and agricultural production, with entities in both of the Intervention Areas covered by this project. However policy, legislative and planning instruments however tend to lack a fully integrated long term approach to SLM and as a result can at times unintentionally promote land degradation. In relation to **Outcome 2** (*Key actors at all levels reflect increased awareness of SLM issues in programmes, projects and activities*), the Government of Cuba invests heavily in agricultural extension and education, with the result that educational and literacy levels are far above those of other countries in the region. However specific awareness and experience in relation to SLM is in many cases lacking, for example regarding the complex and multi-faceted nature of land degradation, its social aspects and recent developments in SLM

technologies and approaches elsewhere in the region. This is reflected in the policies and norms which have been developed and applied by the regional authorities and dependencies in the two Intervention Areas covered by the project. In relation to **Outcome 3** (*An integrated SLM model, for application at small scale in areas with highly degraded ecosystems and extreme climatic conditions and potential for replication throughout Cuba, has been tested and applied at field level*), there are high levels of activity in the development and promotion of agricultural and natural resource management practices in the two Intervention Areas covered by this project, on the part of universities, other research institutions and extension agencies, however at present these do not apply a fully integrated approach to SLM, taking into account the interrelations between different aspects of natural resources or the potential for inter-institutional synergies. In relation to **Outcome 4** (*A system for monitoring extreme climatic events and the degradation of water and soil resources, with potential for replication throughout Cuba is applied at field level*), networks of monitoring stations already exist in the Intervention Areas, which monitor parameters such as climate, soil conditions and hydrological resources, however in common with the rest of the country these are in many cases virtually obsolete and the information generated is not managed in ways that best contribute to decision-making regarding land degradation and SLM.

193. In summary, despite a significant level of baseline activities, the effectiveness of these activities will remain limited due to the lack of horizontal and vertical integration between stakeholders, local actions, plans, policies and regulations, and the inadequate level of divulgation and awareness of specific integrated SLM strategies suited to the conditions of the two Intervention Areas.

194. In the Intervention Areas included in this project, as well as at national level, under the **baseline scenario** land degradation processes will continue at current levels, as significant levels of Government investments in promoting and facilitating sustainable land management are likely not to result in corresponding long-term impacts in reverting processes of land degradation. Under conditions of continued limitations on the country's opportunities for international trade, and in the absence of a planning framework which is adequately based on information on the status and characteristics of natural resources and thereby enables the reconciliation of short- and long-term goals, producers will continue to carry out agricultural, livestock and forestry production in ways and at rates which are incompatible with sustainable land management. Another reason for their continued application of practices which lead to land degradation will be that these practices will be economically attractive to them in the short term, compared to the currently available alternatives, as they offer savings in terms of labor inputs and financial investment. This will become increasingly important as processes of rural depopulation proceed, leading to increased scarcity of resources. Access to alternative SLM practices which may be able to compete with more conventional damaging practices will be constrained by limited capacities at institutional levels for research, technology transfer and monitoring.

195. In common with the CPP as a whole, the **global environmental objective (goal)** of this project CPP will be that Cuba has the capacities and conditions for managing land in a sustainable manner that contributes to maintaining ecosystem productivity and functions. The central focus of **GEF incremental support** in this project, as reflected in the project objective (*To create capacities and awareness for planning, decision making and regulation, necessary for the application of SLM in Cuba*) will be on ensuring that programmes in Cuba incorporate integrated, multi-sector approaches to SLM that they are efficiently and effectively coordinated and that they are guided by accurate information. Specifically, incremental support will aim at ensuring that systems for planning, regulation, decision-making and coordination are functioning effectively in support of SLM at national, provincial and local levels; key actors at all levels reflect increased awareness of SLM issues in programmes, projects and activities; integrated SLM models, for application at small scale in areas with highly degraded ecosystems and extreme climatic conditions and potential for replication throughout Cuba, have been tested and applied at field level, and a system for monitoring extreme climatic events and the degradation of water and soil resources, with potential for replication throughout Cuba has been tested and applied at field level.

196. **Global benefits** expected as a consequence of the above will include reductions in the rates of degradation of soil, water and vegetation resources in the Intervention Areas, enabling the land to maintain its productive potential and its capacity to recover from the effects of productive use. Improved soil health will imply improvements in the functioning of natural cycles (for example of water, CO₂ and nitrogen), while ecosystem function in general will be enhanced, for example through increases in the

diversity of tree and other plant species included in productive systems, facilitating processes of regeneration and providing habitat for fauna. Reductions in soil erosion will in turn lead to reductions in the inflow of damaging sediment load into globally important marine ecosystems surrounding the country, while increased amounts of vegetative matter within production systems will correspond to increases in carbon storage. In addition, the actions of this project at policy, programme and institutional levels will lay the groundwork for the delivery of similar global benefits elsewhere in the country during the rest of the implementation period of the CPP and beyond.

PART II Logical Framework Analysis

Vertical Logic	Indicators	Baseline value	Targets	Sources of verification	Risks and assumptions
Goal: Cuba has the capacities and conditions for managing land in a sustainable manner that contributes to maintaining ecosystem productivity and functions					
Objective: To create capacities and awareness for planning, decision making and regulation, necessary for the application of SLM in Cuba.	Number of SLM and development programmes (8 total) with active involvement of institutions from more than one sector (the 8 programmes are: the National Soil Improvement and Conservation Programme, the National Hydraulic Programme, the National Watershed Programme, the National Forestry Programme, the Science and Technological Innovation Programme, the National Programme for the Reconversion of the Sugar Industry, the National Programme for Land Use Planning and Plan Turquino).	2 programmes of the 8 (National Hydraulic Programme the Science and Technological Innovation Programme) involve more than one sector	5 programmes by end of year 3 All 8 programmes by end of year 5 involve more than one sector	Reports of Programs	The GoC continues to show interest and willingness to apply SLM principles in their land use and production systems
	Number of SLM and development projects within Government programmes which base design and ongoing management decisions on up to date and accurate information on other initiatives.	0 projects in 8 programmes	10 projects in 5 programmes by end of year 3 (National Soil Improvement and Conservation Programme, National Hydraulic Programme, Science and Technological Innovation Programme, National Programme for the Reconversion of the Sugar Industry and Plan Turquino) 16 projects in 8	Review of project reports	

			programmes by end of year 5		
	Number of SLM and development programmes which base design and ongoing management decisions on up to date and accurate information on biophysical and socioeconomic conditions	0 programmes	<ul style="list-style-type: none"> - 5 programmes by end of year 3 - All 8 programmes by end of year 5 	Review of programmes	
Outcome 1: Systems for planning, regulation, decision-making and coordination are functioning at national, provincial and local levels.	Principles and operational guidelines for SLM are adopted by key Ministries and approved by through technical and legal norms.	No guidelines	<ul style="list-style-type: none"> - Year 3 for Institute of Soils. Technical regulations of decree 179 - Year 5 for MINAZ and MINAG. 16 technical standards criteria established - 10 hydraulic sector norms - 	Official Bulletin with norms, regulatory amendments, sectoral strategies and plans	Existing planning structures remain the same and continue to show willingness to incorporate SLM
	Regulations and planning instruments have been developed and implemented nationwide, which incorporate considerations of SLM, in the fields of soils, forestry and water management	- Law 85 and regulations, and Decree 268 in forestry sector	By Year 5: - New National Environment Strategy	Official Bulletin with regulatory amendments	The existing legal and regulatory framework continues to provide an enabling environment on which to build
Output 1.1: Territorial land use plans and agricultural production plans incorporating SLM considerations					
Output 1.2: Norms and technical regulations on natural resource use and management incorporating SLM considerations					
Output 1.3: Effective mechanisms for coordination between institutions					
Output 1.4: System for delivering information on natural resources and SLM effectively to decision makers					
Outcome 2: Key actors at all levels reflect increased awareness of SLM issues in programmes, projects and activities	Numbers of personnel assigned to SLM within key line ministries nationwide:	<ul style="list-style-type: none"> - 100 in MINAGRI - 70 in MINAZ - 50 in INRH - 50 in IPF 	From year 3 on: <ul style="list-style-type: none"> - 20% increase in MINAGRI - 20% increase in MINAZ 	Institutional staffing statistics	The GoC continues to show interest and willingness to apply SLM

			- 20% increase in INRH - 20% increase in IPF		principles in their land use and production systems
	Local production entities throughout Cuba having received support from line ministry extension staff to implement sustainable land management practices	- 59 non-state farms (36 MINAG and 23 MINAZ) - 64 individual producers in CCS - 5 state enterprises	By end of year 3: - 236 non-state farms (144 MINAG and 92 MINAZ) - 256 individual producers in CCS - 20 state enterprises	Data of extension agencies	
	Information on policy, legal and regulatory changes related to sustainable land management has been published in accessible language in relation to - Soils - Forests - Water	In process Published In process	By end of year 5: Published Published Published	Publications	
	Local populations throughout Cuba are aware of regulatory and planning processes based on sustainable land management	10 %	By the end of year 5 40% by year 3 70% by year 5	Surveys	
Output 2.1: Dissemination materials for the results of field level demonstrations					
Output 2.2: Informative documents on policy, legal and regulatory changes					
Output 2.3: Elaborated the sustainability strategy for awareness raising activities.					
Output 2.4: Guidelines on the content of environmental education programmes					
Output 2.5: A training programme to raise awareness of extension workers on key issues related to SLM					
Output 2.6: A training programme for the trainers of extension agents on key issues related to SLM					

<p>Outcome 3: An integrated SLM model, for application at small scale in areas with highly degraded ecosystems and extreme climatic conditions and potential for replication throughout Cuba, has been tested and applied at field level</p>	<p>Number of production entities in Pinar del Río and Guantánamo intervention areas receiving technical assistance on practices for SLM</p>	<ul style="list-style-type: none"> - 0 production entities in Pinar del Río - 0 production entities in Guantánamo 	<p>Pinar del Río:</p> <ul style="list-style-type: none"> - 3 demonstration sites by end of year 3 and 3 productive entities by the end of year 5 <p>Guantánamo:</p> <ul style="list-style-type: none"> - 2 demonstration sites by end of year 3 and 2 productive entities by the end of year 5 - 	<p>Farmer surveys</p>	<p>Continued institutional commitment to SLM</p>	
	<p>Numbers of land use plans (e.g. Zone Development Plans) incorporating sustainable land management principles being implemented in Pinar del Río and Guantánamo intervention areas:</p>	<ul style="list-style-type: none"> - 0 provincial level land use plans - 0 municipal level land use plans - 0 community-based organization plans 	<p>Pinar del Río:</p> <ul style="list-style-type: none"> - 1 provincial level land use plans by end of year 5 - 3 municipal level land use plans by end of year 3 - 3 Community-based organization plans by end of year 3 and 6 by end of year 5 <p>Guantánamo</p> <ul style="list-style-type: none"> - 1 provincial level land use plans by end of year 5 - 2 municipal level land use plans by end of year 3 - 2 demonstration sites by end of year 3 	<p>Land use plans</p>		
	<p>Soil, water and/or forest resources are sustainable managed over increased numbers of hectares of the 5 demonstration sites (direct effects) in Pinar del Río and Guantánamo</p>	<p>0 ha of agricultural land 0 ha of grazing lands 0 ha of forest lands</p>	<p>Pinar del Río</p> <ul style="list-style-type: none"> - 200 ha of agricultural land in Demonstration Sites by end of year 3 and 600 ha by end of 	<p>Reports of extension agents and provincial agricultural offices</p>	<p>Continued commitment by farmers to SLM</p>	

	intervention areas		<p>year 5</p> <ul style="list-style-type: none"> - 14 ha (50%) of grazing lands in Demonstration Sites by end of year 3 and 26.8 ha (100%) by end of year 5 - 2 ha of forest lands in Demonstration Sites by end of year 3 and 5 ha by end of year 5 <p>Guantánamo</p> <ul style="list-style-type: none"> - 4 ha (50%) of agricultural land in Demonstration Sites by end of year 3 and 8 ha (100%) by end of year 5 - 7 ha (50%) of grazing lands in Demonstration Sites by end of year 3 and 14 ha (100%) by end of year 5 - 0.2 ha (100%) of forest lands in Demonstration Sites by end of year 3 and 2 ha (100%) by end of year 5 		
	Numbers of land management entities applying sustainable land management practices in Pinar del Río and Guantánamo intervention areas:	0 Individual Farmers 0 Cooperatives 0 State Companies	<p>Pinar del Río</p> <ul style="list-style-type: none"> - 12 Individual Farmers by end of year 3 and 85 by end of year 5 - 2 Cooperatives by end of year 3 and 4 by end of year 5 - 0 State Companies by end of year 3 and 2 by 	Project reports and visits	Continued commitment by farmers to SLM

			end of year 5 Guantánamo – 3 Individual Farmers by end of year 3 and 8 by end of year 5 – 1 Cooperative by end of year 3 and 2 by end of year 5 – 1 State Companies by end of year 3 and 4 by end of year 5		
	Quantities of soil eroded in intervention areas	- 12 tons/ha/yr in Guantánamo - 12 /ha/yr in Pinar del Rio	By end of year 5: - 5 % reduction in Guantánamo - 10 % reduction in Pinar del Rio	Report	
	Improvement in the efficiency of water use in Guantánamo intervention area, as measured by the volume of irrigation water used per ton of agricultural crops produced	- 790m ³ /ton	By end of year 5: - 750m ³ /ton	Records of irrigation and crop yields maintained by cooperatives	
	Increased yield of staple crops in intervention areas	- 4 tons/ha/yr of plantain and root crops in Guantánamo - 2 tons/ha/yr of root crops, tobacco and grains Pinar del Rio	By end of year 5: - 5 tons/ha/yr of plantain and root crops in Guantánamo - 3 tons/ha/yr of root crops, tobacco and grains Pinar del Rio	Records of crop yields maintained by cooperatives	
Output 3.1: Demonstration farms in pilot sites within the two intervention areas					
Output 3.2: Germplasm banks and databases on varieties and systems with high adaptability to climatic events					
Output 3.3: Validated models of SLM-friendly systems and practices					
Output 3.4: A programme of training and interchanges to strengthen the capacities of local Government officials and extension agents to address locally-relevant land degradation issues and promote SLM practices					
Output 3.5: Improved incorporation of SLM considerations into local level (municipal and provincial) planning systems, decision making tools, and regulations					

Outcome 4: A system for monitoring extreme climatic events and the degradation of water and soil resources, with potential for replication throughout Cuba is applied at field level	Systems for monitoring and evaluation for sustainable land management are operational in Pinar del Río intervention area	M&E system in place but not functioning in an integrated manner	1 M&E and early warning system functioning in an integrated manner in Pinar del Río	M&E report	
	A communication network for sharing information on existing conditions, threats/barriers, and management systems for land resources is functioning between all key participating entities in Pinar del Río intervention area	No effective network	1 network functioning in Pinar del Río	Survey of network participants	
	Tools for information on the condition of land resources have been developed and applied in Pinar del Río intervention area.	Information system in place providing around 20% of necessary information to 1 production company (9% of total) in Pinar del Río	Local data base on conditions of soil and water resources and climate providing information to 100% of local production entities in Pinar del Río intervention area	Survey of network participants	
	Information tools and systems are in place for dissemination of lessons learned and best practices from Pinar del Río (demonstration sites and intervention area)	No systems or tools for replication	1 Information system and tools in place in Pinar del Río intervention area	Reports on guidance on best practices	
Output 4.1: A set of key indicators of land degradation and extreme climatic events.					
Output 4.2: Equipment to fill in key gaps in monitoring and evaluation systems					
Output 4.3: Consolidated network for sharing information on natural resources and land degradation in Pinar del Rio intervention area					
Outcome 5: Monitoring, learning, adaptive feedback & evaluation	Numbers of annual work plans and budgets and PIRs which adequately take into account the results of monitoring and evaluation	0	5 AWPBs 5 PIRs	Review of AWPBs and PIRs	
	Numbers of documents on lessons learnt produced and disseminated within the GEF system	0	2 of the end year 3	Review of documents	
Output 5.1: System for monitoring and evaluation of project indicators					

SECTION III Total Budget and Work plan

Award ID: 00049239
Award Title: PIMS 3806 LD FSP: CPP P1 SLM Capacity Building & degraded ecosystems
Business Unit: CUB10
Project Title: CPP Cuba: Capacity Building for Planning, Decision Making and Regulatory Systems & Awareness Building/Sustainable Land Management in Severely Degraded Ecosystems
Project ID: 00059902

Project Outcomes / Atlas Activity	Responsible Party	Fund	Donor	Atlas Budget Code	Atlas Budget Description	Year 1 US \$	Year 2 US \$	Year 3 US \$	Year 4 US \$	Year 5 US \$	Total Amount
Outcome 1 Systems for planning, regulation, decision-making and coordination are functioning	MINVEC CITMA	62000	GEF	71600	Travel	39,592	22,194	17,194	19,592	6,296	104,868
				72100	Contractual Services	75,000	30,000	25,000	18,000	5,000	153,000
				72200	Equipment and Furniture	98,000	90,000	80,000	10,000	3,500	281,500
				72300	Material and Goods	95,000	110,000	20,000	10,107	1,449	236,556
				72400	Communic and Audio Visual Equip	105,000	76,000	25,000	10,000	1,000	217,000
				72500	Supplies	15,000	12,000	10,000	5,000	1,000	43,000
				72800	Information Technology Equipment	119,000	47,913	35,000	10,000	2,200	214,113
				73100	Rental and Maintenance Premises	15,000	15,000	15,000	5,000	1,000	51,000
				73300	Rental and Mainten Info Tech Equip.	10,000	10,000	15,000	2,000	1,000	38,000
				73400	Rental and Mainten Other Equip	15,421	15,000	15,000	5,000	1,300	51,721
				74100	Professional Services	15,000	15,000	12,000	5,000	2,000	49,000
				74200	Audio Visual And Print Costs	60,000	50,000	35,624	4,000	3,000	152,624
				74500	Miscellaneous	10,000	10,000	10,000	3,000	2,000	35,000
					Sub - Total GEF	672,013	503,107	314,818	106,699	30,745	1,627,382
	Total Outcome 1	672,013	503,107	314,818	106,699	30,745	1,627,382				
Outcome 2 Key actors at all levels reflect awareness of SLM and of the CPP	MINVEC CITMA	62000	GEF	71600	Travel	14,729	14,000	12,000	5,000	800	46,529
				72100	Contractual Services	25,000	18,000	14,000	5,000	1,000	63,000
				72200	Equipment and Furniture	9,000	10,000	5,000	1,300	900	26,200
				72300	Material and Goods	8,000	6,000	5,000	1,000	500	20,500
				72400	Communic and Audio Visual Equip	16,000	10,000	5,000	1,000	300	32,300
				72500	Supplies	8,000	6,610	2,200	2,854	805	20,469
				72800	Information Technology Equipment	17,000	10,000	5,804	2,000	800	35,604

				73300	Rental and Mainten Info Tech Equip.	3,000	3,000	1,500	1,000	500	9,000
				73400	Rental and Mainten Other Equip	3,000	3,000	1,500	1,000	500	9,000
				74100	Professional Services	10,000	7,000	3,000	1,000	400	21,400
				74200	Audio Visual And Print Costs	45,000	30,000	15,000	5,000	2,100	97,100
				74500	Miscellaneous	5,000	5,000	5,000	3,000	500	18,500
					Sub - Total GEF	163,729	122,610	75,004	29,154	9,105	399,602
					Total Outcome 2	163,729	122,610	75,004	29,154	9,105	399,602
Outcome 3 An integrated SLM model has been tested and applied at field level	MINVEC CITMA	62000	GEF	71200	International Consultants	19,780	17,630	15,480	17,630	11,180	81,700
				71600	Travel	36,990	20,990	19,592	17,592	9,194	104,358
				72100	Contractual Services	35,000	27,000	23,000	16,000	3,000	104,000
				72200	Equipment and Furniture	110,000	90,000	20,000	12,000	2,000	234,000
				72300	Material and Goods	95,000	85,000	15,000	8,000	2,000	205,000
				72400	Communic and Audio Visual Equip	35,000	14,389	16,000	5,000	1,000	71,389
				72500	Supplies	20,000	12,000	6,000	3,000	1,000	42,000
				72800	Information Technology Equipment	38,192	25,000	10,000	9,544	2,000	84,736
				73100	Rental and Maintenance Premises	10,000	10,000	10,000	2,000	1,200	33,200
				73300	Rental and Mainten Info Tech Equip.	10,000	5,000	3,000	1,000	1,200	20,200
				73400	Rental and Mainten Other Equip	10,000	10,000	10,000	10,000	1,436	41,436
				74200	Audio Visual And Print Costs	20,000	10,000	9,480	1,200	1,000	41,680
				74500	Miscellaneous	10,000	10,000	10,000	10,000	5,000	45,000
					Sub - Total GEF	449,962	337,009	167,552	112,966	41,210	1,108,699
	Total Outcome 3	449,962	337,009	167,552	112,966	41,210	1,108,699				
Outcome 4 A system for monitoring extreme climatic events and soil and water degradation has been tested and applied	MINVEC CITMA	62000	GEF	71200	International Consultants	6,020	3,870	3,870	6,020	1,720	21,500
				71600	Travel	12,622	6,796	5,996	7,194	3,898	36,506
				72100	Contractual Services	14,000	12,000	6,000	2,000	500	34,500
				72200	Equipment and Furniture	10,000	8,000	5,000	1,691	400	25,091
				72300	Material and Goods	12,000	13,557	3,973	1,200	390	31,120
				72400	Communic and Audio Visual Equip	11,000	7,200	3,200	1,000	200	22,600
				72500	Supplies	5,000	3,000	1,000	800	200	10,000
				72800	Information Technology Equipment	10,000	7,000	2,000	1,100	400	20,500
				73300	Rental and Mainten Info Tech Equip.	3,000	2,000	1,000	800	150	6,950
				73400	Rental and Mainten Other Equip	6,000	2,300	1,000	700	150	10,150
				74100	Professional Services	3,000	1,000	1,000	500	0	5,500
				74200	Audio Visual And Print Costs	6,000	6,000	1,000	1,000	300	14,300
				74500	Miscellaneous	4,000	4,000	1,000	500	100	9,600

					Sub - Total GEF	102,642	76,723	36,039	24,505	8,408	248,317
					Total Outcome 4	102,642	76,723	36,039	24,505	8,408	248,317
Outcome 5 Adaptative management monitoring and evaluation	MINVEC CITMA	62000	GEF	71200	International Consultants	860	0	14,182	0	15,466	30,508
				71600	Travel	1,154	0	9,818	0	9,534	20,506
				72100	Contractual Services	3,186	0	0	0	0	3,186
				72500	Supplies	1,300	0	0	0	0	1,300
				74200	Audio Visual And Print Costs	3,500	0	0	0	0	3,500
					Sub - Total GEF	10,000	0	24,000	0	25,000	59,000
	Total Outcome 5	10,000	0	24,000	0	25,000	59,000				
Project Management Unit	MINVEC CITMA	62000	GEF	71600	Travel	2,700	1,200	1,200	1,200	1,200	7,500
				72100	Contractual Services	2,500	800	800	800	800	5,700
				72200	Equipment and Furniture	5,000	1,000	1,000	1,000	1,000	9,000
				72300	Material and Goods	2,000	1,000	1,000	1,000	1,000	6,000
				72400	Communic and Audio Visual Equip	2,000	500	500	500	500	4,000
				72500	Supplies	1,600	300	300	300	300	2,800
				72800	Information Technology Equipment	3,000	500	500	500	500	5,000
				73300	Rental and Mainten Info Tech Equip.	1,200	150	150	150	150	1,800
				73400	Rental and Mainten Other Equip	2,000	150	150	150	150	2,600
				74200	Audio Visual And Print Costs	3,500	400	400	400	400	5,100
				74500	Miscellaneous	2,700	1,200	1,200	1,200	1,200	7,500
					Sub - Total GEF	28,200	7,200	7,200	7,200	7,200	57,000
					Total Outcome 6	28,200	7,200	7,200	7,200	7,200	57,000
	Grand Total	1,426,546	1,046,649	624,613	280,524	121,668	3,500,000				

Note:

Years 1 to 5 in the above table correspond to the following schedule: Year 1 → Nov. 2008 - Jul. 2009; Year 2 → Ago. 2009 - Jul. 2010; Year 3 → Ago. 2010 - Jul. 2011; Year 4 → Ago. 2011 - Jul. 2012 and Year 5 → Ago. 2012 - Jul. 2013. In Atlas there will be 6 sequences: 2008, 2009, 2010, 2011, 2012 and 2013.

<i>Total by Sources of Fund / Donor</i>	Year 1	Year 2	Year 3	Year 4	Year 5	Total
GEF	1,426,546	1,046,649	624,613	280,524	121,668	3,500,000
Total GEF	1,426,546	1,046,649	624,613	280,524	121,668	3,500,000
GoC						
CITMA						8,588,726
MINAZ						858,813
IPF						1,431,300
MINAGRI						14,313,544
Total GoC	6,688,300	6,518,300	4,428,003	4,348,751	3,209,029	25,192,383
ONGs						
ANAP	146,050	132,221	113,966	100,108	80,197	572,542
ACPA	14,982	14,620	9,939	9,727	7,338	56,606
Total ONGs	161,032	146,841	123,905	109,835	87,535	629,148
Total Co financing	6,849,332	6,665,141	4,551,908	4,458,586	3,296,564	25,821,531
Grand Total Project	8,275,878	7,711,790	5,176,521	4,739,110	3,418,232	29,321,531

Note: the figures given in the co-financing letters are in Cuban pesos which are of equal value to the US dollar.

Budget notes:

International consultants will be contracted to provide specialist inputs on specific themes in support of Outcomes 1-4, as listed in paragraph 149. The international consultants budgeted under Outcome 5 will participate in the inception workshop and the external evaluations of this project (as shown in SECTION IV PART VIII, Project 1 will bear a proportional share of the costs of these external evaluations, each of which will cover two or more projects).

Local Consultants: According to national regulations for international cooperation in Cuba, no external funding is utilized for local consultancies remuneration. Expenditures related to local consultancies are covered by co financing of the Government of Cuba.

The budget for travel will principally be for technical staff and experts carrying out specific technical tasks and interchanges in the project's two widely separated intervention areas. That budgeted under Outcome 5 is for the international consultants' participation in the inception workshop

and external evaluations. That budgeted under Outcome 6 is for national travel by members of the Project Management Unit to provide essential supervision in the intervention areas.

Contractual services will be required for diverse tasks, including technical services in support of information technology, training, the editing of publications, and technical services for agriculture (such as evaluation of erosion processes, and drainage and fertilization works in pilot sites), workshops and technical meetings, food and accommodation expenses during the visits to the intervention areas

Equipment and furniture will be purchased to fit out regional and central offices of the project (economies of scale will be achieved by combining the central office with that of the Project Management Unit of the CPP as a whole and of the other projects in the CPP). Given the economic conditions of Cuba, it will also be necessary to purchase vehicles, without which the project teams would be unable to operate in the field. These will be kept to the minimum necessary. Specialist agricultural equipment will also be purchased for use in the pilot sites. Cuban technicians have an excellent track record of maintaining to a high standard the limited equipment and vehicles to which they have access, and these will therefore constitute a significant and lasting contribution to the capacities of the institutions involved. In support of Outcome 4, equipment will also be purchased to permit the establishment of a network for the exchange of information resulting from M&E of land degradation.

Information Technology Equipment will be purchased in order to permit connectivity between the diverse institutions involved in the project, in reflection of the innovative multi-institutional nature of the CPP.

Communication and audiovisual equipment will be required to support the processes of awareness rising and dissemination which will be essential to the achievement of the replication sought through the project.

The materials and goods to be purchased include inputs for pilot agricultural activities and for laboratory analysis. GEF funds will be used to support these purchases given their pilot nature: during the course of the project strategies will be developed to ensure the sustainability of their supply in the long term.

Miscellaneous costs to be funded through the project will include diverse items such as insurance, utility charges for offices, and bank charges.

Rental and Maintenance Premises: Field equipment maintenance, labs and capacity building maintenance and renting of premises for workshops and technical meetings.



Annual Work Plan

Cuba - Havana

Award Id: 00049239

Report Date: 17/11/2008

Award Title: PIMS 3806 LD FSP: CUBA CPP P1 CAP. BUILD. & SLM

Year: 2008

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00059902	PIMS 3806 LD FSP: CUBA CPP P1	INTEGRATED SLM MODEL	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	10,000.00
		KEY ACTORS AWARENES	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	1,500.00
		M & E	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	860.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	1,154.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	1,458.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	1,300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	3,500.00
		SYS. FOR PLAN. REGUL. &	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	1,615.68
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	4,467.96
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	9,061.00
TOTAL									34,916.64	
GRAND TOTAL									34,916.64	



Annual Work Plan

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Year: 2009

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00059902	PIMS 3806 LD FSP: CUBA CPP P1	INTEGRATED SLM MODEL	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	10,750.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	20,990.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	27,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	90,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	85,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	14,389.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	12,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	25,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	10,000.00
		CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	10,000.00			
		KEY ACTORS AWARENES	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	14,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	18,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	6,610.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	7,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	30,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	5,000.00
		MONITOR. SYS. FOR CLIM	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	4,300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	6,796.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	12,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	13,557.00



Annual Work Plan

Cuba - Havana

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Year: 2009

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
	MONITOR. SYS. FOR CLIM		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	7,200.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	7,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	2,300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	4,000.00
	PROG. MANAGEMENT UN		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	3,900.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	3,300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	2,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	1,900.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	3,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	1,350.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	2,150.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	3,900.00
	SYS. FOR PLAN. REGUL. &		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	6,450.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	22,194.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	30,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	120,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	120,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	76,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	12,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	64,113.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	15,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	10,000.00
CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	15,000.00					



Annual Work Plan

Cuba - Havana

Award Id: 00049239

Report Date: 17/11/2008

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Year: 2009

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
		SYS. FOR PLAN. REGUL. &	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	15,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	50,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	10,000.00
TOTAL										1,131,049.00
GRAND TOTAL										1,131,049.00



Annual Work Plan

Cuba - Havana

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Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00059902	PIMS 3806 LD FSP: CUBA CPP P1	INTEGRATED SLM MODEL	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	21,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	25,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	50,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	50,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	16,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	20,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	10,000.00
		CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	10,000.00			
		KEY ACTORS AWARENES	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	14,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	15,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	7,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	10,000.00
CUB-Ministerio Inversión Extra	62000				GEFTrustee	73300	Rental & Maint of Info Tech Eq	2,000.00		
CUB-Ministerio Inversión Extra	62000				GEFTrustee	73400	Rental & Maint of Other Equip	1,500.00		
CUB-Ministerio Inversión Extra	62000				GEFTrustee	74100	Professional Services	6,000.00		
M & E	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	14,182.00		
			CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	9,818.00		
			CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	1,728.00		
MONITOR. SYS. FOR CLIM	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	5,000.00		
			CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	8,000.00		



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Year: 2010

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
		MONITOR. SYS. FOR CLIM	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	4,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	1,950.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	1,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	3,000.00
		PROG. MANAGEMENT UN	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	1,200.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	800.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	150.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	150.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	400.00
		SYS. FOR PLAN. REGUL. &	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	9,450.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	28,194.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	44,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	90,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	60,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	60,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	50,000.00



Annual Work Plan

Cuba - Havana

Award Id: 00049239

Report Date: 17/11/2008

Award Title: PIMS 3806 LD FSP: CUBA CPP P1 CAP. BUILD. & SLM

Year: 2010

Project ID Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
		Start	End		Fund	Donor	Budget Descr	Amount US\$	
	SYS. FOR PLAN. REGUL. &	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	15,000.00
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	15,000.00
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	15,000.00
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	12,000.00
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	50,000.00
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	10,000.00
TOTAL									907,022.00
GRAND TOTAL									907,022.00



Annual Work Plan

Cuba - Havana

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Report Date: 17/11/2008

Award Title: PIMS 3806 LD FSP: CUBA CPP P1 CAP. BUILD. & SLM

Year: 2011

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00059902	PIMS 3806 LD FSP: CUBA CPP P1	INTEGRATED SLM MODEL	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	21,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companies	20,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	44,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	35,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equipm	15,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	16,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	4,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	10,000.00
		CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	10,000.00			
		KEY ACTORS AWARENES	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companies	12,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	4,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equipm	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	4,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	1,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	4,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	25,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	4,500.00
		MONITOR. SYS. FOR CLIM	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companies	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	4,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	5,000.00



Annual Work Plan

Cuba - Havana

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Report Date: 17/11/2008

Award Title: PIMS 3806 LD FSP: CUBA CPP P1 CAP. BUILD. & SLM

Year: 2011

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
	MONITOR. SYS. FOR CLIM		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	4,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	2,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	1,600.00
	PROG. MANAGEMENT UN		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	1,200.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	800.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	150.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	150.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	400.00
	CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	1,200.00				
	SYS. FOR PLAN. REGUL. &		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	10,600.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	24,592.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	36,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	20,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	25,107.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	40,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	45,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	10,000.00
CUB-Ministerio Inversión Extra					62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	6,000.00	
CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	6,360.00					



Annual Work Plan

Cuba - Havana

Award Id: 00049239

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Year: 2011

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
		SYS. FOR PLAN. REGUL. &	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	9,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	25,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	5,000.00
TOTAL										611,959.00
GRAND TOTAL										611,959.00



Annual Work Plan

Cuba - Havana

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Year: 2012

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00059902	PIMS 3806 LD FSP: CUBA CPP P1	INTEGRATED SLM MODEL	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	21,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companies	20,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	25,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	25,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equipm	15,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	14,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	3,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	6,000.00
		CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	9,000.00			
		KEY ACTORS AWARENES	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companies	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	2,200.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equipm	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	4,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	1,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	3,400.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	15,000.00
		CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	2,000.00			
		M & E	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	15,466.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	9,534.00
		MONITOR. SYS. FOR CLIM	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companies	6,500.00



Annual Work Plan

Cuba - Havana

Award Id: 00049239

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Year: 2012

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
	MONITOR. SYS. FOR CLIM		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	4,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	4,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	3,500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	1,800.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	1,000.00
	PROG. MANAGEMENT UN		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	1,200.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	800.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	500.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	150.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	150.00
CUB-Ministerio Inversión Extra					62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	400.00	
SYS. FOR PLAN. REGUL. &		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	5,735.00	
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	12,296.00	
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	13,000.00	
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	13,500.00	
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	16,449.00	
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	23,000.00	
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	7,000.00	
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	40,000.00	
				CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	6,000.00	



Annual Work Plan

Cuba - Havana

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Year: 2012

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
		SYS. FOR PLAN. REGUL. &	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	3,300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	7,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	15,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	5,000.00
TOTAL										465,380.00
GRAND TOTAL										465,380.00



Annual Work Plan

Cuba - Havana

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Year: 2013

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00059902	PIMS 3806 LD FSP: CUBA CPP P1	INTEGRATED SLM MODEL	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	4,400.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	20,368.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	12,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	25,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	10,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	11,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	9,736.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	3,200.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	2,700.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	2,436.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	5,680.00
		CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	6,000.00			
		KEY ACTORS AWARENES	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	3,529.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	8,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	3,300.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	1,859.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	3,104.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	2,100.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	2,000.00
		MONITOR. SYS. FOR CLIM	1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	4,350.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	5,710.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companie	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	3,091.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	2,563.00



Annual Work Plan

Cuba - Havana

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Report Date: 17/11/2008

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Year: 2013

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
	MONITOR. SYS. FOR CLIM		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	2,400.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	1,850.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	1,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	1,000.00
	SYS. FOR PLAN. REGUL. &		1/8/08	31/12/13	CUB-Ministerio Inversión Extra	62000	GEFTrustee	71200	International Consultants	2,165.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	71600	Travel	15,976.32
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72100	Contractual Services-Companies	25,532.04
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72200	Equipment and Furniture	38,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72300	Materials & Goods	15,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72400	Communic & Audio Visual Equip	18,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72500	Supplies	6,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	72800	Information Technology Equipm	15,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73100	Rental & Maintenance-Premises	5,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73300	Rental & Maint of Info Tech Eq	2,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	73400	Rental & Maint of Other Equip	3,000.00
					CUB-Ministerio Inversión Extra	62000	GEFTrustee	74100	Professional Services	6,000.00
CUB-Ministerio Inversión Extra	62000	GEFTrustee	74200	Audio Visual&Print Prod Costs	12,624.00					
CUB-Ministerio Inversión Extra	62000	GEFTrustee	74500	Miscellaneous Expenses	5,000.00					
TOTAL									349,673.36	
GRAND TOTAL									349,673.36	

PART I Indicative work plan

Activity	Year				
	1	2	3	4	5
Outcome 1 (<i>Systems for planning, regulation, decision-making and coordination are functioning effectively in support of SLM at national, provincial and local levels</i>)					
Support to the development of regulations	X	X			
Definition of agreements and systems for inter-institutional coordination	X	X	X		
Development of planning structures	X	X	X	X	X
Development of principles and institutional guidelines	X	X	X	X	X
Outcome 2 (<i>Key actors at all levels reflect increased awareness of SLM issues in programmes, projects and activities</i>)					
Support to the publication of information on regulations and laws	X	X	X		
Awareness building at institutional level	X	X	X	X	X
Awareness building among rural populations and resource managers	X	X	X	X	X
Outcome 3 (<i>An integrated SLM model, for application at small scale in areas with highly degraded ecosystems and extreme climatic conditions and potential for replication throughout Cuba, has been tested and applied at field level</i>)					
Formation and induction of intervention area work teams	X				
Participatory planning of farm level interventions with local stakeholders	X				
Development and testing of modifications to production systems	x	X	X	X	x
Development and testing of local planning systems, decision making tools and regulations	X	X	X	X	X
Systematization and dissemination of results			X	X	X
Outcome 4 (<i>A system for monitoring extreme climatic events and the degradation of water and soil resources, with potential for replication throughout Cuba is applied at field level</i>)					
Definition of key indicators of land degradation	X	X			
Provision of equipment to fill in gaps	X	X	X		
Development and consolidation of information sharing network in Pinar del Río	X	X	X	X	X
Outcome 5 (<i>Monitoring, learning, adaptive feedback & evaluation</i>)					
Mid term review			X		
Final review					X

SECTION IV Additional Information

PART I Other agreements

Letters of financial commitment are provided in a separate file as Annex E.

PART II CPP projects

Project 1. (Years 1-5): Capacity Building for Planning, Decision Making and Regulatory Systems & Awareness Building/Sustainable Land Management in Severely Degraded Ecosystems

GEF implementing agency: UNDP

Technical cooperation agency: FAO

Funding for implementation: GEF \$3,500,000¹,

The primary focus of this initial 5-year project will be on the promotion of a model of integration and cooperation between stakeholders at institutional and local levels. This will be achieved through **capacity building** at the national, provincial and local levels, which will support national planning and coordination needs and demonstration activities within this project and other projects of the CPP. This project will thereby contribute directly to *Outcome 1.4* of the CPP, which relates to the development of institutional capacities, and support *Outcome 1.1*, which relates to the development of planning frameworks. Key areas of emphasis of the project at national level will be on promoting inter-sector planning, monitoring and evaluation systems (which is also the main focus of Project 2), drought surveillance, land use enforcement systems, and education and awareness building (thereby contributing to *Outcome 1.4*).

197. The project will support the development and implementation of frameworks for institutional coordination in order to ensure the integration of planning processes, at national, regional and local levels. This will address the problem of limited inter-sector and inter-institutional planning which currently results in, for example, incompatibilities between short-term goals of agricultural production in order to meet food security needs and longer-term goals of sustainable land management (CPP Barrier 5). This support will also facilitate the flow of integrated information, from ground level, on diverse parameters of soil and water quality, to decision-makers, thereby contributing to addressing CPP Barrier 4 and supporting Project 2. Support will be provided for the preparation of outstanding planning instruments and technical regulations, to ensure that they adequately incorporate SLM considerations, thereby addressing CPP Barrier 6. Technicians in key institutions will be trained in extension methodologies suited to the promotion of SLM, which for example include livelihood aspects, integrated consideration of biophysical and socioeconomic aspects and participatory evaluation of traditional land management practices, thereby addressing CPP Barrier 1. This process will be made more sustainable by investing in the training of trainers, specifically the staff of technical agricultural colleges and agricultural universities (such as the National Institute for Agricultural Sciences, the Animal Science Institute, the José Antonio Echeverría Superior Polytechnic Institute and the Universities of Havana, Bayamo, Pinar del Río and Ciego de Ávila) which produce field technicians and those involved in the formulation of extension programmes. In addition, advice will be provided on the content of environmental education programmes (including syllabi of educational institutions), specifically to promote the incorporation of SLM messages.

198. At the **field level**, the project will focus on two intervention areas: *Guantánamo* and *Pinar del Río*. In both of these areas, the project will work in small-scale landscapes.

199. *Guantánamo* has been selected for attention at the beginning of the Programme as it is characterized by particularly severe problems of soil erosion, which is one of the aspects of LD which is of greatest concern in Cuba. The project will focus here on halt land degradation and rehabilitating salinized and eroded areas in dry lands and xeric scrub regions. It will establish a series of pilot project that would implement different suites of actions and technologies to test and

¹ Project preparation was funded by a GEF PDF-B grant of \$347,500 which also covered the preparation of the CPP Document as a whole and of Project 5.

validate best approaches for addressing the main forms of LD in this scenario and the most appropriate land uses to prevent the aggravation of existing degradation processes. Using pilots the project will also strengthen capacities of local level resource managers and extension agents in SLM practices, extension work and environmental awareness, and of the experts/agencies with responsibility for soil erosion (e.g. Soils Institute), as well as water resource managers and other agencies. Field level work will also develop and test local level (municipal) planning systems, decision making tools, and regulations, with a focus on landscapes with severe soil erosion problems and of a small scale, thus validating the related actions under taken at the national level and fine tuning them to the specific conditions of this LD/environmental and production scenario.

200. The *Pinar del Río* area, meanwhile, provides the opportunity to address the barrier to SLM (which is particularly strongly represented there) of inadequate monitoring and information management related to climatic events, with which the soil erosion processes found there are closely linked. The project will focus there on the development and implementation of a monitoring system for severe climatic events, including an early warning system for droughts and a long-term monitoring system for the effects of climate change.

Key partner agencies

201. The principal institutional partner with which this project will work will be the Institute of Soils of MINAGRI, particularly in relation to the monitoring of soil conditions. However there will be a high degree of collaboration and integrated actions in between different institutions. For example in the region of Pinar del Rio, the Institute of Meteorology (INSMET) is responsible for the developing of a monitoring system for extreme climatic events, but the responses to this will be applied in the agricultural land by the other institutions (ANAP, MINAGRI, MINAZ). Other important institutional partners will include national and provincial coordinating authorities, in relation to inter-institutional coordination; the National Association of Small Farmers (ANAP), the Ministry of Agriculture (MINAGRI) and the Ministry of Sugar (MINAZ), in relation to agricultural extension messages and methods; the Institute of Physical Planning (IPF) in relation to the incorporation of SLM into plans and programmes; as mentioned above the INSMET in relation to monitoring of meteorological phenomena and the National Institute of Hydrological Resources (INRH) in relation to the monitoring and management of water resources.

Timing of Activities:

- During **years 1-5**, this project will undertake capacity building at the systemic (inter-institutional) level, with particular initial focus on developing receptivity for the introduction of information management systems during Project 2;
- During **years 1-2**, the institutional and individual capacity building will focus primarily on capacity for sustainable management of severely degraded ecosystems, so as to support the demonstration activities in Guantánamo and the monitoring system for early alert to extreme climatic events in Pinar del Río.
- During **years 3-5**, the institutional and individual capacity building will extend its focus to include other resource areas (water, forests etc.), so as to support the demonstration activities of the other projects

End Results

202. This project will be of fundamental importance in establishing the conditions for the success and sustainability of the CPP as a whole. At its end (year 5):

- **systems for planning, decision making and coordination** will be operational at national, provincial and local level;
- **education and awareness activities** will have been developed, implemented, and tested/validated at national and local levels;

- an **integrated model for sustainable land management** of severely degraded dry land ecosystems, for application in small scale landscapes, will have been tested and implemented, with potential replication at many other sites within Cuba, and
- A **model for monitoring of severe climatic change and land degradation** will have been implemented and tested, with potential replication at many other sites within Cuba.

Project 2. (Years 3-7): Capacity Building for Information Coordination and Monitoring Systems/SLM in Areas with Water Resource Management Problems

GEF implementing agency: UNEP

Technical cooperation Agency: FAO

Funding for implementation: GEF \$2,375,000, GoC \$18,538,000

Funding for preparation: GEF \$125,000

203. This 5-year project will build upon the advances achieved in Project 1 in satisfying fundamental capacity needs, focusing more specifically on the development of the capacities required to ensure that decision-makers have adequate access to useful information on the conditions of soil and water resources. It will thereby address CPP Barrier 4.

204. At the **national level**, capacity building activities will focus on supporting the definition of information requirements for decision-making related to SLM in Cuba; the provision of equipment and materials (hardware, software, images, databases, monitoring stations etc.) and training necessary to ensure the availability of the information needed by decision makers; and the provision of support to the establishment of a system for the management of the information generated, in order for it to be used by the diverse institutions involved in activities related to SLM in a way that permits integrated (inter-sector) decision-making.

205. This project will include significant activities at both the national and local levels, including pilot activities on M&E in the pilot sites. It would benefit as well from the M&E activities for the CPP as a whole that constitute Project 5, as well as the initial testing of site level M&E for severe climatic events that constitute a part of Project 1 (Pinar del Rio province).

206. At the **local level**, the project will continue and complement the work initiated under Project 1 in *Guantánamo* and *Pinar del Río*. In both of these sites, the project will work at medium scale, in contrast to the small scale of Project 1. In *Guantánamo*, the project will replicate activities demonstrated during Project 1, with additional integration of sustainable water management practices, and will test and implement newly developed M&E and information management activities in degraded landscapes. In *Pinar del Río*, it will build on the monitoring and evaluation system for severe climatic events established in Project 1 to establish an overall land degradation monitoring system that incorporates national and local level information systems, on agricultural lands of small scale; and will implement sustainable land management practices that integrate soil and water management practices.

207. In addition, two new intervention areas will be incorporated into this project: *Matanzas* and *Cauto River Basin*. The southern part of *Matanzas* is of vital importance for the production of food to supply the capital, Havana. Its selection provides the opportunity to demonstrate how to address problems of soil compaction and the use of low efficiency irrigation with associated soil impacts. *Cauto* was also selected for inclusion in this project due to the importance there of water management issues; its inclusion also allows the project to address additional factors including the excessive use of monocultures and the use of crops and livestock which are inappropriate for local conditions, that include slopes of more than 15 % (not recommended for livestock); high levels for salinity that are unsuitable for low saline resistant crops; and water quality not suitable for

irrigation. In Matanzas, operations will focus on medium scale landscapes whereas in Cauto they will commence at the small scale.

208. In *Matanzas*, the project will implement sustainable land management practices that integrate soil and water management practices, with emphasis on conserving subterranean water reserves, and developing models for their sustainable management. It will also test and implement M&E and information management practices newly developed during Project 1. Likewise, actions in the Cauto river basin will focus on sustainable management of water resources and limitation of the consequences of drought.

Key partner agencies

209. Given the focus of this project on the sustainable management of water resources, the principal institutional partner will be the National Institute of Hydraulic Resources (INRH). Other institutions involved will include MINAGRI (specifically in relation to its role in the areas of irrigation and drainage), MINAZ and the Ministry of Higher Education (MES).

Timing of Activities

- During **years 3-7** of the CPP, the project will undertake activities to develop systemic (inter-institutional) capacity for monitoring and information management and dissemination at the national and local levels;
- During **years 3-5**, institutional and individual capacity building in monitoring and information management will focus on capacity for soils and water management, to support demonstration projects in Guantanamo, Pinar del Rio, Havana Matanzas and Cauto;
- During **years 6-7**, institutional and individual capacity building in monitoring and information management will extend its focus to include forests and other areas, so as to support demonstration activities in other projects.

End Results

210. By the end of this project (**year 7** of the CPP):

- **systems for information coordination and monitoring** at national and local levels will be operational, and tested and validated at the local level
- **integrated models for sustainable management of water resources in agricultural zones at the small and medium scale** will have been tested and implemented, with potential replication at many other sites within Cuba
- **an integrated model for monitoring of land degradation processes** will have been implemented and tested at four sites (with the most advanced in Pinar del Rio) with potential replication at many other sites within Cuba.

Project 3. (Years 5-8): Capacity Building for Sustainable Financing Mechanisms / Sustainable Land Management in Dry land Forest Ecosystems and Cattle Ranching Areas

GEF implementing agency: UNDP

Technical cooperation agency: FAO

Funding for implementation: GEF \$1,425,000, GoC \$18,000,000

Funding for preparation: GEF \$75,000.

211. At the **national level**, this four-year project will strengthen national capacity to develop and apply sustainable financing mechanisms for SLM, thereby addressing CPP Barrier 3. The project will also emphasize field level activities: at the **local level**, it will introduce into the CPP the theme

of forest ecosystems, specifically those in dry land areas which are at particular risk from degradation processes. The project will work in two intervention areas, namely Cauto and Villa Clara. In demonstration sites within both of these intervention areas, the project will develop and test sustainable land management practices (including reforestation) in dry forest regions of medium scale, and test and implement the sustainable financing mechanisms and incentives developed through the project's actions at national level. In *Cauto*, where operations commenced under Project 2, seeking to build on the SLM experiences in water management by increasing the forest cover of the watershed and demonstrating the viability of integrated forest farms for preventing LD and for supporting the reforestation of catchments, providing energy and non-timber products. The forests of Villa Clara are under particular pressure through conversion to pasture, and the areas affected are subsequently subject to further degradation by soil erosion, particularly on slopes, poor pasture management and fire. *Villa Clara*, demonstrations would include pilots of mixed forest exploitation alongside cultivation of shade coffee. They will also address ranching issues, specifically the application of livestock production technologies compatible with SLM, taking into account the sustainable financing mechanisms developed and validated through this project.

Key partner agencies

212. Given its emphasis at local level on addressing the problem of land degradation in forest ecosystems, a key partner agency will be the Forest and Livestock Department of MINAGRI. Key partners in relation to the development and validation of finance mechanisms in support of SLM will be the Ministry of Finance and Prices (MFP) and the Planning Ministry (MEP).

Timing of activities

- During **years 5-8** of the CPP, the project will undertake activities to develop systemic (inter-institutional) capacity for long-term sustainable financing mechanisms at the national and local levels
- During **years 5-8**, institutional and individual capacity building in monitoring and information management will focus on capacity for forest management, to support demonstration projects in Villa Clara and the Cauto River Basin.

End results

213. By the end of the project (year 8 of the CPP):

- **National and local level sustainable financing mechanisms and incentives** will have been developed and validated, to ensure long-term funding for sustainable land management activities
- **Integrated models for sustainable management of dry land forest ecosystems and cattle ranching areas** at the medium scale will have been tested and implemented, with potential replication at many other sites within Cuba.

Project 4. (Years 7-10): Validation of SLM Models at Landscape Scale

GEF implementing agency: UNDP

Secondary implementing agency: UNEP

Technical Cooperation Agency: FAO²

Funding for implementation: GEF \$1,290,500, GoC \$19,063,000.

Funding for preparation: GEF \$62,000

² The position of UNEP as a GEF implementing agency and FAO as a Technical Cooperation Agency does not necessarily reflect the relative importance of the two agencies in the implementation of this project.

214. This project will focus overwhelmingly on up scaling and validating at landscape level the models of integrated SLM demonstrated at local level in the previous three projects. As needed, the project may also further strengthen landscape level planning processes and mechanisms established in Project 1.

215. In the *Cauto River Basin* intervention area, the project will focus on replicating (and scaling-up to landscape level) best practices from Project 3 for sustainable land management in dry forest regions. It will combine actions directed at agricultural ecosystems and dry forests, and will also the sustainable management of micro- or sub-catchments combining hydrological and forest resources.

216. In the *Guantánamo* intervention area, the project will develop, test and validate sustainable land management practices from Projects 1-2, including soil management and irrigation management, on agricultural lands at landscape level. The project will place strong emphasis on social factors, relating landscape level up scaling to the important social considerations in this catchment, namely the expansion of important urban areas.

Key partner agencies

217. Given its emphasis on scaling-up the activities demonstrated in the other projects, this project will continue to work with many of the same institutional stakeholders, including MINAGRI, MINAZ, INRH, provincial, local and/or watershed level management agencies and coordinating authorities.

Timing of activities

During **years 7-10** of the CPP, the project will focus on replicating and scaling-up demonstrations of sustainable land management.

End result

218. At the end of the project (year 10 of the CPP):
- sustainable land management practices from Projects 1-3 will have been replicated successfully within a landscape level management framework;
 - Integrated models for sustainable management of various ecosystem types at the landscape scale have been tested and implemented, with potential replication at many other sites within Cuba.

Project 5. (Years 1-10): Coordination, Monitoring and Evaluation of Cuba CPP

GEF implementing agency: UNDP

Funding for implementation: GEF \$800,000³, GoC \$2,648,000.

219. This medium-sized project, which will last for the whole duration of the CPP, will focus on the coordination of the CPP as a whole, including the establishment of a monitoring and evaluation system for the Cuba CPP. Under this project, structural, technical and material capacities will be established for the internal direction of the CPP, its orientation, development and monitoring, the supervision of its actions, the harmonization and integration of the results of the different stages of the programme and its projects, the coordination of national and international partners and the interlinking of the actions promoted in the individual projects. The other individual projects within the CPP will also have their respective management mechanisms, which will fit into this overall

³ Project preparation was funded by a GEF PDF-B grant of \$347,500 which also covered the preparation of the CPP Document as a whole and of Project 1.

CPP-level system. Rather than being solely an internal management tool for the CPP, this project will also aim to support long-term monitoring and evaluation capacity for sustainable land management within Cuba, including the national level systems established in Project 1, and field level systems established at each demonstration site (in particular, in Pinar del Rio during Project 1). It will thereby permit the compatibility and integration between the results of each stage of the programme. Another objective of particular importance will be the coordination of the actions of all of the national and international partners and their linkages with the actions promoted in the projects.

End result

220. By the end of the project (**Year 10** of the CPP):

- an overall coordination unit will have successfully guided the implementation of the CPP as a whole;
- conditions will have been created which will have allowed the effective and efficient management of the individual projects within the CPP;
- mechanisms for management and participation will have allowed the CPP as a whole to function effectively and to respond to stakeholders' needs;
- M&E mechanisms will have been established which will have guided decision-making in the CPP as a whole and which will remain in place to guide ongoing SLM initiatives in Cuba.

PART III Project Sequencing

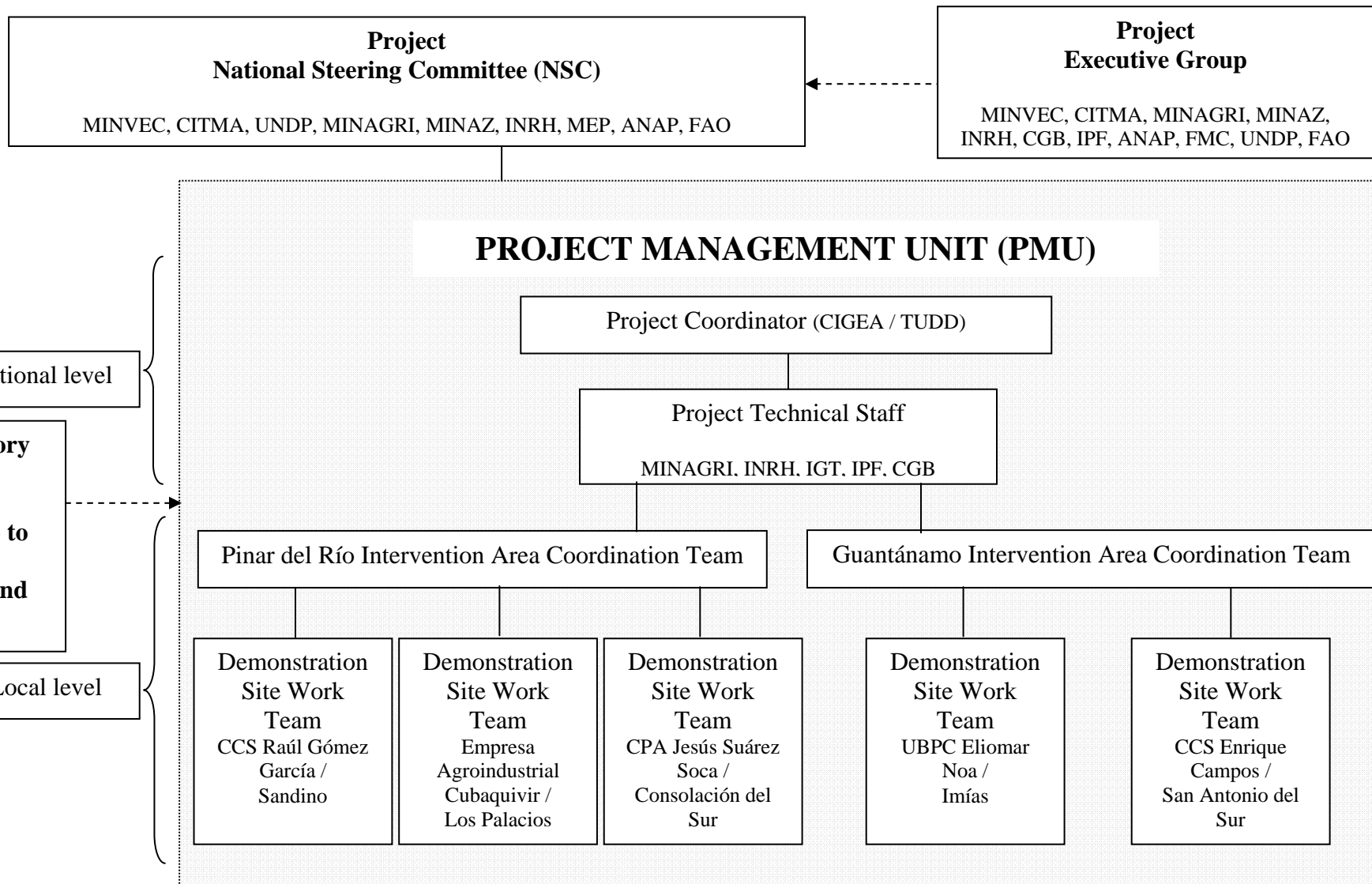
1	2	3	4	5	6	7	8	9	10
Project 1: Capacity building for planning, decision making & regulatory systems & awareness building / SLM in severely degraded ecosystems (UNDP-FAO: GEF US\$3,500,000)									
National Level: Inter-Sectoral planning; M&E systems; drought surveillance; land use enforcement systems; education and awareness building									
Key Partners: Institute of Soils, National and Provincial coordinating authorities; agricultural extension workers (ANAP, MINAGRI, MINAZ), IPF, INSMET, INRH,									
Guantanamo (small scale): Halt land degradation and rehabilitate salinized and eroded areas in dry lands and xeric scrub regions.									
Pinar del Rio (small scale): Monitoring of extreme climatic events (droughts, hurricanes).									
		Project 2: Capacity building for information coordination and monitoring systems/SLM in Areas with Water Resource Management Problems (UNEP-FAO: GEF US\$ 2,375,000)							
		National Level: Information management systems, awareness and education activities							
		Key Partners: Water management agencies INRH, (MINAGRI irrigation and drainage services), MINAZ, MES (CIH)							
		Havana - Matanzas (medium scale): Sustainable use of ground water							
		Pinar del Rio (medium scale): Strengthen resistance to drought and other extreme climatic events in agricultural lands.							
		Guantanamo (medium scale): Replication of demonstration activities, conservation of rainwater and testing of high efficient irrigation systems							
		Cauto River Basin (small scale): Sustainable management of water resources – Drought prevention and management of water reserves for SLM							
			Project 3: Sustainable financing mechanisms/SLM in dry land forest and cattle ranching areas (UNDP-FAO: GEF US\$ 1,425,000)						
			National Level: Sustainable financing mechanisms and incentives						
			Key Partners: Mins Finance (MFP & Planning (MEP), MINAGRI (Forest & Livestock Dept.); local foresters; Forest guards etc						
			Villa Clara (medium scale): Improved SLM techniques in a premountainous ecosystem (dry forest & livestock).						
			Cauto River Basin (medium scale): Sustainable management of dry forest resources. Integrated forest farms, water regulations forest.						
					Project 4: Validation of SLM Models at Landscape Scale (UNDP-UNEP-FAO: GEF US\$1,290,500)				
					National Level: Further strengthening and fine-tuning of landscape level planning processes and capacities				
					Key Partners: MINAGRI, MINAZ, INRH, Provincial, local and/or watershed level management agencies and coordinating authorities.				
					Cauto River Basin (landscape scale): Replication (up scaling) of demonstration activities in micro watersheds				
					Guantanamo Guaso Basin (landscape scale): Soil mngmt., irrigation in agricultural land				
Project 5: Coordination, Monitoring and Evaluation for CPP, which will establish the structural, technical and material capacities for the direction, development and monitoring of the CPP (UNDP - GEF US\$0.8 million): Key Partner: CITMA									

PART IV Links between CPP projects, barriers and outcomes

	Projects				
Outcomes	Project 1: Capacity Building for Planning, Decision Making & Regulatory Systems & Awareness Building / SLM in Severely Degraded Ecosystems	Project 2: Capacity Building for Information Coordination and Monitoring Systems / SLM in Areas with Water Resource Management Problems	Project 3: Sustainable Financing Mechanisms / SLM of Dry land forest and livestock ecosystems	Project 4: Validation of SLM Models at Landscape Scale	Project 5: Coordination, Monitoring and Evaluation for CPP
INTERMEDIATE OBJECTIVE 1: National capacity for integrated SLM is established, ensuring inter-sectoral coordination and effective implementation of land management plans and activities					
Outcome 1.1: Planning structures and processes for land use and regulation take into account SLM principles, and facilitate the implementation of practices compatible with the conservation of ecosystem integrity	Barrier 5. Planners have limited tools and knowledge for incorporating SLM considerations into plans, programmes and policies			Barrier 5. Planners have limited tools and knowledge for incorporating SLM considerations into plans, programmes and policies	Barrier 1. Limited inter-sector integration and inter-institutional coordination
Outcome 1.2: Increased resources are available for effective investments in SLM	Barrier 2. Inadequate incorporation of SLM considerations into extension and environmental education programmes		Barrier 3. Limited development of financing and incentive mechanisms for SLM		
Outcome 1.3: Individuals and institutions have the capacities (human and material) to undertake sustainable land management	Barrier 6. Inadequate development of regulatory framework for combating LD	Barrier 5. Planners have limited tools and knowledge for incorporating SLM considerations into plans, programmes and policies			
Outcome 1.4: Rural populations, resource managers and other stakeholders are aware of the environmental, social and economic benefits of sustainable land management and options for its application	Barrier 2. Inadequate incorporation of SLM considerations into extension and environmental education programmes				
Outcome 1.5: Information on land resource conditions and trends		Barrier 4. Inadequacy of systems for monitoring of			Barrier 4. Inadequacy of

throughout Cuba is being applied by planners in decision making		LD and management of related information			systems for monitoring of LD and management of related information
INTERMEDIATE OBJECTIVE 2: Field level demonstrations of sustainable land management practices have halted, prevented and remedied land degradation in critical landscapes within Cuba, and produced effective models for replication					
Outcome 2.1: Land use decisions in the project intervention areas are based on updated information	Barrier 4. Inadequacy of systems for monitoring of LD and management of related information	Barrier 4. Inadequacy of systems for monitoring of LD and management of related information			
Outcome 2.2: Local stakeholders (resource users, extension workers, decision-makers) in project intervention areas have the knowledge and skills to undertake SLM			Barrier 2. Inadequate incorporation of SLM considerations into extension and environmental education programmes		
Outcome 2.3: SLM solutions (technologies, practices, incentive systems, planning structures and regulations) have been demonstrated and validated at specific pilot <u>sites</u> in 5 intervention areas	Barrier 6. Inadequate development of regulatory framework for combating LD		Barrier 3. Limited development of financing and incentive mechanisms for SLM		
Outcome 2.4: Best practices in SLM have been replicated at diverse <u>sites</u> throughout the 5 intervention <u>areas</u> and effective processes are in place for replication elsewhere throughout Cuba				Barrier 2. Inadequate incorporation of SLM considerations into extension and environmental education programmes	

PART V Project 1 Organigram (see also SECTION I, PART III)



PART VI Terms of References for key project staff and main sub-contracts

The Ministry of Science, Technology and Environment (CITMA), through the Centre for Environmental Information, Management and Education (CIGEA), is designated by the government as the lead institution of the Country Program Partnership (CPP) for sustainable land management (SLM) and, in conjunction with the Ministry of Overseas Investment, will represent the government of Cuba for the adoption of any decisions required, in its name. This lead institution will be represented by the CPP Director, who will be named by CITMA. The other elements of the direction will be: national project coordinators (5), and local coordinators for intervention areas (6) for the capacity development components of the project as required.

National Project Coordinator

- To elaborate, control and be responsible for the integrated development of the Project, including the establishment and functioning of work groups, and coordination with the participation of all key stakeholders;
- To ensure that previously defined local interests are incorporated into the project, and that counterparts at this level participate in an effective and opportune matter;
- To report on and be accountable for technical and financial execution according to defined timeframes, and to evaluate progress, extracting from each stage corresponding lessons learnt;
- To produce work plans and reports of progress and to be responsible for the information which is generated;
- To select, direct and control the activities of personnel linked to the execution of the projects.
- To establish a mechanism for monitoring and evaluation, which will include the development and implementation of an automatic system, training of personnel in its use, and the establishment, development and maintenance of its databases;
- To define parameters, indicators and points of reference to measure the impact of the project, which will be validated and complemented by more specific indicators at the level of the Project and between the other projects of the CPP;
- To produce training plans and propose documents to be promoted and disseminated in relation to the expected products;
- To organise and participate in periodic field trips to the intervention areas of the project.
- To oversee the result evaluation teams;
- To be responsible for the technical resources made available for the development of Project activities and to give account periodically for their condition.

Local coordinators

- To coordinate the integrated planning and execution of the Project at local level and to link the national and local teams;
- To guide and supervise the actions of the project in each of the demonstration sites of the intervention areas;
- To convene local entities and actors for their participation and the opportune and efficient management of the project, in both vertical and horizontal dimensions;
- To monitor, evaluate and periodically validate the implementation of the project at this level
- To organise, control and emit information generated by the Project at local level and to be accountable to authorised entities.
- To participate with the central team of the Project, in the definition of objectives, goals, stakeholders, beneficiaries, synergies and antagonisms out to evaluate local barriers;
- To register, control, oversee, administer and guarantee the appropriate use and conservation of the material resources of the project;
- To arrange the divulgation and creation of capacities, within the context of local integrated development;

- To identify and proposed actions for scaling up at the different levels foreseen;
- To produce documents for divulgation and promotion
- To propose actions for the training and awareness raising of local stakeholders
- To facilitate audits and project control procedures at this level;
- To control Project expenditures and local contributions to the activities of the Project, and to mobilize additional local funds
- To generate initiatives to stimulate local stakeholders in the implementation of SLM activities.

Administrative personnel

- To participate in the elaboration of budgets and corresponding co-financing
- To develop plans for financial execution, closely linked to financing and co-financing entities, as well as mandatory budget reviews
- To coordinate the acquisition of resources and services for the project;
- To control the location and use of resources and equipment, as well as there conservation, maintenance and protection;
- To control the financial execution of the project, based on the models established for this purpose by the GEF execution agencies;
- To admit periodic information on the state of execution of the project, for the corresponding entities.

Qualifications

For posts at direction level, the following conditions should be applied:

- Experience in international projects, preferably GEF;
- Familiarity with the topic of sustainable land management within the context of current agricultural policy
- Proven managerial abilities;
- Proven capacities for the coordination and planning of the CPP and its projects;
- Proven technical capacities and knowledge of the important local sites selected for the execution of the Projects, as well as experience in sustainable land management.
- Proven general knowledge of sustainable land management in the country, its trends, weaknesses and threats to its application and institutional mainstreaming, and policies related to economic trends in Cuba.

PART VII Synergies with other Programmes and Projects

Programmes and Projects

National Biodiversity Strategy:

- Phase 3 of the Sabana Camaguey Ecosystem Development Project
- Biological Diversity Scientific/Technical Branch Project
- Exotic and Invasive Species Project
- National Protected Areas Programme

LADA Project

Climate change

Small Grants Program (SGP)

Forms of synergy

- Study of biological diversity in dry lands
 - Identification of indicators of biological diversity for intervention zones of Project 1
 - Evaluation and proposals of actions for the mitigation of the impacts of desertification and drought on biological diversity
 - Identification of good practice for the use of biological diversity, applicable to dry ecosystems, as well as their adaptation to economic incentives which allow positive results to be obtained in the areas of intervention of the CPP
 - Promotion and application of the use of traditional and local knowledge related to the conservation and sustainable use of biodiversity try ecosystems
 - Use of the CHM and DESELAC information networks for disseminating and raising awareness of processes of land degradation and loss of biodiversity
 - The use of mechanisms for capacity building
 - Conservation and sustainable use of biodiversity identified as important for agriculture
 - Make use of intervention sites with facilities for monitoring and evaluation
 - Share the information produced by both projects in support of lessons learnt
 - Use mechanisms for developing capacities related to the understanding of the causes of land degradation phenomena in dry environments in the country
 - Introduction of information systems on climatic tendencies, especially related to early warning and predictions of climatic disasters in the project's intervention areas
 - Application of measures for adaptation and mitigation of climate change in the intervention areas
 - Training on how to deal with the effects of climate change in different project scenarios
- Apply SLM principles to SGP projects, allowing:
- The introduction and development of local practices of sustainable agriculture
 - The introduction of crop varieties with high yield and resistance to drought
 - Systems for water collection and conservation
 - Activities for the extension of the results of innovation for the protection and improvement of soils
 - Improvements in irrigation and drainage systems
 - Cleaner production systems in agriculture
 - Management of pasture, forest and woodland
 - Increased understanding of land degradation processes in local contexts
 - Support to the improvement and adoption of innovative practices and technologies for SLM included in early warning systems
 - Demonstration of agronomic practices which are effective for improving soil fertility, soil and water conservation and livestock production

- Conservation agriculture project
 - Recovery and valuation of traditional technologies and local knowledge.
 - Replication of the lessons learnt regarding conservation, from the project
 - Awareness raising and dissemination among the stakeholders of the conservation agriculture project of conservation measures recommended through the project
 - Sharing of information produced by both projects
 - Use of mechanisms for the development of capacities regarding the understanding of the causes of land degradation phenomena in dry zones of the country
- National Program for Science and Technological Innovation
 - Development of a Program for Science and Technological Innovation to cover the scientific and technical gaps faced by the CPP
 - Application of extension of the results of the Program of Science and Technological Innovation in order to develop technological packages to be applied in the intervention areas of the CPP
 - Development of capacities for extension and scaling up of the results of the Scientific and Technical Innovation Program in the intervention zones of the project
 - Dissemination of awareness of actions of the National Program for Science and Technological Innovation, which slowed land degradation processes and favour the recovery of degraded areas in a sustainable manner
- Regional Environmental Program with youth participation in the Caribbean
 - Development of a training centre for sustainable land management in the Caribbean sub-region
 - Application of the lessons learnt through the CPP and use of CPP intervention areas as demonstration areas for the regional centre
 - Participation of farmers from the CPP intervention areas in training courses programmed for the training centre
 - Dissemination and regional awareness raising of knowledge of the actions of the CPP project which counter land degradation and favour the recovery of degraded lands in a sustainable manner

PART VIII Distribution of indicative M&E costs for CPP and constituent projects (GEF and co-financed)

	Indicative total budget in CPP document	Budget by project					Revised total budget
		P1	P2	P3	P4	P5	
Inception workshop	10,000	10,000	10,000	10,000	10,000	5,000	45,000
Measurement of purpose indicators	50,000	12,000	12,000	12,000	12,000	2,000	50,000
Measurement of progress indicators	50,000	12,000	12,000	12,000	12,000	2,000	50,000
Periodic status reports	10,000	2,000	2,000	2,000	2,000	2,000	10,000
Technical reports	50,000	12,000	12,000	12,000	12,000	2,000	50,000
External evaluations:							
<i>Year 3</i>	27,000	24,000				3,000	27,000
<i>Year 5</i>	52,000	25,000	24,000			3,000	52,000
<i>Year 7</i>	49,000		25,000	24,000			49,000
<i>Year 8</i>	52,000			25,000	24,000	3,000	52,000
Total	180,000	49,000	49,000	49,000	24,000	9,000	180,000
Final external CPP evaluation	60,000				50,000	10,000	60,000
Lessons learned	50,000	12,000	12,000	12,000	12,000	2,000	50,000
Total	460,000	109,000	109,000	109,000	134,000	34,000	495,000

PART IX Programme of external evaluations for CPP and constituent projects

	Project 1	Project 2	Project 3	Project 4	Project 5	CPP
Mid year 3	Mid-term review				1 st intermediate review	1 st intermediate review
End year 5	Final review	Mid-term review			2 nd intermediate review	2 nd intermediate review
Mid year 7		Final review	Mid-term review			
End year 8			Final review	Mid-term review	3 rd intermediate review	3 rd intermediate review
End year 10				Final review	Final review	Final review

PART X Strategies in Specific Demonstration Sites

1. The main rationale for project investment in the demonstration sites in Guantánamo and Pinar del Rio will be the strengthening of the capacities of local level resource managers and extension agents, through the demonstration of SLM-compatible farming systems and approaches for the provision of institutional support to such systems. This will focus specifically on developing capacities for SLM practices, extension work and environmental awareness, and developing and testing local level (municipal) planning systems, decision making tools, and regulations.
2. The focus of the project in these pilot sites will be on:
 - i) **Supporting their development into integrated farms**, where SLM practices are applied on the individual land units within the farm and where provision is also made for relations between different land units. This will represent an important change from the prevailing current focus of extension support on specific agronomic issues, on a crop-by-crop and field-by-field basis.
 - ii) **Diversifying production**, given the susceptibility of crops in both of the intervention areas to extreme climatic events, in order to ensure that farmers have “fallback” crops in the event of the failure of their main crops following hurricanes or droughts. This increased diversity will also contribute to ecosystem function and health, by increasing the range of habitats available on farms and promoting natural cycles and plant-insect interactions. The project will also support the evaluation of crop and livestock varieties with high resistance to drought, and the establishment of germplasm banks with genetic material of these varieties.
 - iii) **Identifying and promoting low cost technologies for SLM**, given the limited access which most farmers have to financial resources, for investing in land management or associated infrastructure.
3. The 6 pilot sites which have been selected present diverse conditions and problems. The specific technical approaches and systems to be promoted in each are as follows:

PINAR DEL RÍO INTERVENTION ÁREA

1) Manolo’s Farm Demonstration Site / CCS Raúl Gómez García, Las Martinas, Sandino Municipality

This farm is located in the extreme west of Cuba, in an area called Las Martinas, on a gently rolling karstic plain at around 1-1.5km from the coast, and with elevations of only 5-10m.a.s.l. The average annual rainfall is around 1,400mm and the annual evaporation is between 2,000 and 2,200mm. This is one of the parts of Cuba which is mostly regularly affected by hurricanes. The soils are very permeable, shallow and rather stony, with limited water retention capacity: most of the rainfall passes rapidly through the soil and enters the water table. The area is characterized by a large number of caverns, where sediment accumulates during periods of intense rainfall. The water table is very close to the surface (2-5m) and in some parts comes to the surface, resulting in lagoons and swamps.

4. The source for drinking and irrigation water is the subterranean aquifer. Its principal characteristic is its high degree of connectivity with the sea, via tunnels in the karst bedrock. This makes it highly vulnerable to seawater infiltration in the case of prolonged droughts and when overexploited.

5. 25 years ago, more than 1,200ha of excellent quality tobacco were produced in the Las Martinas area, together with a wide variety of root crops and vegetables. Today, the area under tobacco has fallen by 70%, paralleled by a drop in tobacco quality, due largely to salinity buildup as a result of indiscriminate irrigation with poor quality water. Most of the producers in the area irrigate with pumps which yield 5-10l/s: the waters are highly mineralized, with Cl and Na concentrations of around 9-12mg/l, around three times the normally tolerable limit for most crops. The soils around the karstic caves are also highly mineralized and eroded.

6. The farm itself covers 13.42ha, of which 50% are very stony: of the 9.24ha of agricultural land, 5.2ha are planted with tobacco, 3.3ha with vegetables and the rest is dedicated to papayas and pastures. Slopes are only around 2-4% and the farm is almost completely deforested.

7. The farmers mentioned the following problems and weaknesses:

- Limited capacity to respond to frequent extreme climatic events
- Inadequate capacities in relation to soil and water management, which, in association with natural factors, set off processes of degradation (salinity buildup and erosion)

- Poor vegetation management.
8. They also mentioned the following positive aspects:
- Excellent replication potential
 - Willingness to apply and transmit SLM practices
 - Willingness among local entities (ANAP, Popular Council and Government) to support the project
 - Existence of a System of Agro-Ecological Promoters and Facilitators with interest in establishing synergies with the project.
9. The main biophysical and agronomic challenges in this site are the **limited availability of water** (associated with inefficient irrigation systems, high risk of soil salinity build-up and limited levels of knowledge of water management), the use of **inappropriate cultivation practices** (for example ploughing across contours) and the **failure to rotate crops** adequately.

Problem 1: Inadequate capacities for responding to frequent extreme climatic events.

10. The project will demonstrate and promote the involvement of diverse stakeholders in early warning and monitoring of agricultural and climatic risks, through the formation of a local network of information managers and the establishment of an automated agroclimatic monitoring station, which will generate data which will be fed into the network.

Problem 2: Inadequate capacities for the management of soils and water

11. The technical solutions to be included and demonstrated as part of an integrated farm model in this demonstration site will include:

- i) **“Conservation agriculture”**: this concept includes a wide range of practices aimed at protecting both soil and water resources, including the use of mulch based on crop residues, zero tillage and sowing through a mulch cover, and more specific soil conservation practices such as vetiver grass contour barriers and drains for capturing and controlling runoff.
- ii) Localized demonstrations of **irrigation practices**, including drip irrigation and micro-aspersion which maximize water use efficiency and reduce problems of erosion.
- iii) The use of **sensors for monitoring water quality**, in order to reduce the risk of salinity build-up due to the use of saline water.
- iv) The rational planning of **crop rotations** based on accurate biophysical and agronomic considerations, including strategies such as the alternation of grass and legume crops, and the alternation and/or association of crops with different water and nutrient requirements and rooting depths.
- v) **Incorporation of trees into farming systems**, for example in hedgerows and windbreaks (these are of particular importance in this intervention area due to the frequency of tropical storms and hurricanes).
- vi) **Establishment of woodlots**, for example in water catchment areas, and forest protection through the application of fire prevention and control practices developed by the Forest Guard Corps.
- vii) Collection and processing of organic residues for the production of **organic fertilizer**, and soil supplements.

2) Fidel Flores’ Farm Demonstration Site / Empresa Agroindustrial Cubaquivir, Los Palacios Municipality

12. This demonstration site is located in the centre of the south-western plain of Pinar del Rio, in an area highly affected by human activity. The soils are principally ferralitic gleys.

13. The farm itself occupies an area of 40ha. Over the last 40 years, the area has been modified for the development of a state enterprise dedicated to rice production, and was completely deforested for this purpose. For many years its soils have been subjected to intense processes of compaction and structural degradation. Later, due to the reduction in its productive potential, the zone was transformed into a cotton production enterprise, again using heavy mechanized equipment over a period of more than 10 years. The reduction in agricultural production continued until extensive areas were left with limited or null agricultural use, occupied by grasses and thorny plants.

14. Now, this land has come to form part of a new enterprise involved in the production of root crops, vegetables, fruits and livestock. The abandoned areas, with low productivity, have been divided into farms which have been distributed to individual producers with the aim of repopulating the territory. The

enterprise has a programme for the development and strengthening of the infrastructural network (roads, canals, housing, electricity etc.); it also guarantees the farmers markets for their products and gives them training and advice. In the more fertile areas, results have been promising, but due to lack of experience with SLM this has not been the case in the degraded areas.

15. The farmers mentioned the following problems and weaknesses:

- Poor drainage: the large network of drainage channels has fallen into disrepair, and there is no network of drains at field level.
- Depopulation and limited availability of labour at farm level
- Limited knowledge of SLM concepts and practices
- Limited access in rainy periods
- Compacted and structurally degraded soils, with low fertility and high acidity
- Degradation of vegetation and invasion of undesirable species.

16. They also mentioned the following positive aspects:

- Prioritization of economic and social development by the Government
- High replication potential throughout the extensive largely unproductive plains
- Willingness to support the project in the enterprise and neighboring communities
- Availability of a technical advisory council with willingness to provide training and accompaniment to local stakeholders, as well as a training centre.
- An entrepreneurial centre for the construction of houses
- Existence of a drainage network
- Abundant water of good quality
- Willingness among the cooperative leadership to guarantee the availability of labour to participate in the activities foreseen.

Problem 1: Lack of locally adapted and environmentally appropriate housing

17. The lack of appropriate housing, within easy reach of fields, is accelerating processes of rural depopulation and shortages of labour, which in turn constitute an obstacle to the application of sustainable land management practices. The project will support the Ministry of Construction in designing and building an **appropriate technology model dwelling**, which will incorporate features such as a **rainwater capture system** to provide drinking water, **biological filters for “grey wastes”** allowing them to be used for irrigation of home gardens, **composting toilets** which will minimize water use and provide fully broken-down compost for agriculture, and **solar panels** (made in country) to provide electricity.

Problem 2: Impeded agricultural drainage

18. The project will support the design of drainage and land profiling works aimed at improving the flow of water from the site, in order to reduce problems of water logging, salinity build-up and erosion. These problems are widespread throughout the Pinar del Rio Intervention Area, so the actions carried out in this demonstration site will have wide replication potential.

19. These works will include the **maintenance of a network of secondary canals**, which are currently blocked; **land leveling** based on detailed topographical and hydrological studies; and the **construction of land drains** in agricultural fields, based on their specific edaphic, hydrological and agronomic characteristics and potential. All of these works will be planned within the context of the overall integrated farm unit, according to the provisions of a detailed farm development plan to be drawn up with support from the project. The actual realization of these works will be partly co-financed by the project.

Problem 3: Soil compaction, structural degradation, limited infiltration capacity and limited effective depth

20. The project will support the farmer in demonstrating alternative cultivation practices, including sub-soiling and alternative low impact (horizontal) ploughing practices, including animal traction. Animal traction has particular potential in the Pinar del Rio intervention area, where soils have been affected by compaction as the result of the excessive use of heavy machinery. Draught animals also fit well into integrated farming systems, as they can be fed with crop residues and also produce manure; under the difficult trade conditions faced by Cuba, they also provide a practical low-input alternative to machinery.

Problem 4: Degraded soils with high acidity and low fertility

21. The project will support the following practices, to be applied within the context of a detailed integrated farm development plan based on accurate field-by-field analyses of edaphic and agronomic conditions:

- i) **Worm compost**, taking advantage of the extensive experience with this practice in Cuba and following the recommendations of the Soils Institute's Worm Compost Manual: given the limited availability of labour on the part of the farmer himself, the compost will be produced in a unit managed by the cooperative to which he belongs..
- ii) Superficial applications of **organic and alkaline amendments**
- iii) The use of **biofertilizers** (such as rhizobium and phosporina), following the recommendations of the Soils Institute.
- iv) Design and application of a **crop rotation** programme involving the alternation of grass and legume crops, using nationally-developed software.

Problem 5: Forest cover degradation

22. The project will support the establishment of:

- A **forest nursery** (following standard methods recommended by the State Forest Service) which will be managed by Cooperative members;
- The planting of **protection belts** on either side of the drainage canals in order to minimize erosion;
- The planting of **trees in hedgerows and shelter belts**;
- The planting of **fruit trees around farmers' houses**; and
- The creation of capacities for **fire protection and control**.

Problem 6: Poor management of livestock herds

23. The project will focus on increasing the quality of livestock in parallel with improvements in their management, with the aim of increasing their productivity per unit area and shifting from extensive to intensive systems, with associated reductions in impacts on vegetation and soil resources. Specifically (based on inputs from the University of Pinar del Rio and the Livestock Directorate of Pinar del Rio), the project will support:

- i) The development of a strategy for the **development of livestock herds**, including the introduction of breeding material
- ii) The **introduction and management of pastures** with increased nutritional content, and the rotation of pastures
- iii) Training in **animal health care**.

Problem 7: Lack of early warning of extreme climatic events

24. As in Demonstration Site 1, the project will support the integration of local stakeholders into the system for agro-climatic warning and prevention, using technology provided by the National Meteorological Institute.

3) CPA Jesús Suárez Soca Cooperative Demonstration Site, Consolación del Sur Municipality

25. This site is located in the southern plains of Pinar del Rio. The farm has a total area of 623ha, including 134ha of diverse crops, 27ha dedicated to livestock, 70ha of tobacco and 250ha of rough land and manigua.

26. The production of the area faces a number of limiting factors, as described by the farmers:

- Erosion, affecting 42% of the farm
- Acidity: acid and very acid soils make up 34% of the area
- Low cation exchange capacity, affecting 63% of the farm
- Low levels of assimilable phosphorus (8mg/100g of soil), affecting the whole farm
- Low levels of organic matter in the productive horizon: <1.5% in 34% of the area and 1.5-2.5% over 51% of the area.
- Limited effective rooting depth: less than 25cm over 34% of the area.
- Distance of water source for irrigation: the Santa Clara river is 1.5km away.
- Inefficient irrigation systems
- Inadequate vegetation management: 90% of the rough land is infested by undesirable species
- Limited capacity to respond to extreme climatic events
- Low agricultural productivity
- Lack of a strategy for crop rotation
- Failure to use crop residues
- Limited awareness among personnel of the issue of SLM.

27. Positive aspects of the site, described by the farmers, include:
- Favorable location, accessibility and replication potential
 - Willingness to participate among cooperative members
 - Availability of unproductive areas for experimentation with new technologies
 - Abundant and stable labour force, willing to adopt new practices.
 - Productive diversification
 - Existence of erosion control technologies
 - Support from local organizations
 - Prioritization of social development by the Government.

Problem 1: Hydrological soil erosion

28. Based on the results of research carried out by the Soils Institute, the project will support demonstrations of measures aimed at limiting run-off and its impacts, including:

- i) Management of vegetation cover, associated crops and green manures: for example, multi-layered cropping systems such as maize and beans/squash, and fallowing with cover crops such as *Dolichos* and *Mucuna*.
- ii) Crop rotation
- iii) Cut-off ditches to intercept run-off water, live barriers and other soil conservation measures depending on local variations in topography.

Problem 2: Soil acidity

29. The project will support demonstrations of how to apply calcium carbonate to counter soil acidity, based on detailed analyses of soil characteristics and the technical recommendations of the Soils Institute.

Problem 3: Loss of soil fertility

30. The project will support demonstrations of the production and application of organic additives including humus (worm compost) and animal manure, following the technical recommendations of the Soils Institute. Fertilizer applications will be defined field-by-field, on the basis of analyses of edaphic and agronomic needs and conditions, and within the context of farm-level productive and financial planning.

Problem 4: Inadequate tree cover

31. The project will support the demonstration of a number of strategies aimed at increasing forest cover and maximizing the realization of the potential role of trees in protecting against extreme climatic events and in regulating hydrological cycles, including:

- The establishment of a **tree nursery**, following the technical norms established by the State Forest Service
- Establishment of a **protection belt** around the reservoir that serves the farm, and improvement of the protection belt along the edges of watercourses
- Design and establishment of “**cattle under trees**” systems, using tree species and spacings which optimize pasture growth and shade for animals, and at the same time provide forage supplements to the animals’ diets (for example through the use of trees with edible pods such as *Samanea saman*).
- Establishment of **plantations of timber and fruit trees** in order to provide products for use on the farm (with the aim of contributing to and demonstrating the self-sufficiency and integrated nature of the farm) and sale, and at the same time providing environmental benefits such as microclimate stabilization and protection against extreme climatic events. In some cases the establishment of forests will be preceded by the mechanical clearance of thickets of invasive exotic tree species which currently render areas of land unusable.
- **Fire prevention**, including the clearance of firebreaks, the organization of a voluntary fire brigade equipped with manual instruments and the implementation of a system for fire detection and response.

Problem 5: Limited accessibility of water for irrigation

32. The project will support:

- The rehabilitation of the micro-reservoir that serves the farm, through raising the level of its dam and removal of sediment, which is currently limiting its capacity and which would be taken to crop fields.

- Installation of a pressurized system for conducting irrigation water to fields, with the objective of reducing water losses.
- Installation of a high efficiency irrigation system (based on drip and/or aspersion irrigation) on a selected area
- Detailed planning of irrigation on the basis of reliable information on edaphic, hydrological and agronomic conditions.

Problem 6: Problems with the biological quality of drinking water supplied to the community

33. As part of a fully integrated approach to the management of the farm, the project will also support the improvement of the quality of the water which the Cooperative members for domestic purposes, through strategies such as the raising of the water storage tank and the installation of a small chlorination plant and simple distribution system. The project will also support participatory trials of alternative technologies for water purification, such as the use of seeds of the tree *Moringa oleifera*, and the use of alternative sources of water such as rooftop capture.

GUANTÁNAMO INTERVENTION ÁREA

1) Matabajo Demonstration Site / CCS Enrique Campos, San Antonio del Sur Municipality

34. The landscape in this region is characterized principally by dry outwash plains, with dry hills, sparse forest cover and thorny xerophytic vegetation. The landscape around Guantánamo Bay, in the western part, is a humid coastal belt, including swamps, mangroves and forestry plantations. In general the soils of the valley are susceptible to salinity buildup. The Guantánamo valley is dry: annual evaporation rates are in excess of 2,400mm, while annual rainfall is around 400mm.

35. In the site itself, the water table is found at less than 2m, and the soil is almost completely lacking in structure due to excessive cultivation, and salt buildup is clearly visible in the edges of fields and the crests of cultivation furrows. The area is also highly susceptible to swampiness, with very bad internal drainage and highly obstructed secondary drainage.

36. The following problems and weaknesses affect the area:

- Highly fragile ecosystem, with a tendency to salinity buildup.
- Inadequate soil and water management, leading to structural degradation
- Inadequate vegetation management
- Compaction due to excessive cultivation
- Drainage network in poor or very poor condition
- High levels of salt in the water table
- Inadequate water management, without proper attention to soil characteristics
- Low rainfall and high evaporation rates

37. The farmers identified the following positive aspects:

- Good location, access routes and replication potential
- Capacity and willingness to adopt and transmit new SLM practices
- Stable labour force
- Support from local entities
- Good economic performance in the cooperative
- High level of land use
- Availability of good quality water for irrigation in reservoirs.

Problem 1: Inefficient irrigation

38. The project will support the installation and demonstration of water-efficient irrigation, using drip or aspersion systems, and with irrigation applications planned rationally on the basis of crop needs, soil and aquifer characteristics and climatic conditions. Regular analyses will be carried out of the quality of irrigation water in order to avoid exacerbating problems of salinity build up.

Problem 2: Inappropriate cultivation methods

39. In association with farmers, the project will support demonstrations of agricultural practices which maximize soil coverage and minimize soil disturbance, in order to reduce the risk of erosion from runoff and raindrop impact. These will include, for example, direct sowing into mulch.

Problem 3: Decline in crop productivity and pest build-up

40. Based on detailed studies of pest lifecycles, soil fertility status and crop fertility requirements, and within the context of integrated farm-level production planning and spatial zoning, a plan will be drawn

up and implemented for the **rotation of crops** within and between fields on the farm, and where appropriate for the production and use of **crops with low fertility requirements** and high resistance to pests.

Problem 4: Obstructed drainage network

41. Based on studies of hydrological conditions, micro-level topography, field-level moisture status and crop moisture requirements and tolerance levels, a plan will be drawn up and implemented for the rehabilitation of the farm's drainage network. This will establish priorities for the clearance of drainage channels, which will be carried out using specialized equipment.

Problem 5: Soil fertility decline

42. The project will promote sustained improvements in soil fertility status through supporting farmers in the application of:

- Conservation agriculture, for example the combination or rotation of crops with nitrogen fixing "green manure" cover crops
- The production and application of worm compost, following the recommendations of the Soils Institute's Worm Compost Manual
- Production of other organic supplements, using wastes from domestic activities and the processing and agricultural and food products, and animal manure.

2) UBPC Eliomar Noa Demonstration Site / Cajobabo, Imías Municipality

43. This site is located on the belt of land between the Purial mountain range and the south coast, in a zone known as Los Cerezos. This zone is characterized by its aridity and its high level of topographical dissection as a result of fluvial erosion. The altitude ranges from 230 to 280m. The median temperature is in excess of 26°C on the coastal strip, climbing to more than 34°C in August. The area's vegetation is xerophytic (spiny shrubs, herbs and cacti), and the watercourses are seasonal, with occasional extreme flows during storms. The hills surrounding the farm are strongly affected by erosion due to overgrazing and poor herd management.

44. The farm itself occupies an area of 1,772ha, of which 30% are flat and 70% hilly. The Cooperative is formed by families from the local area and is principally involved in agricultural and livestock production. The labour force is composed of 28 men and 1 woman (the rest of the women do not participate in agricultural productive activities). The Cooperative has a livestock herd made up of 89 equines (donkeys, mules and horses, including 30 reproductive mares), 86 bovines (41 of which are reproductive) and 293 sheep. 13 ha are used for the production of root crops and vegetables (irrigated with water from the river which crosses the farm) and 10 ha are used for forage production. Around 97% of the area is composed of natural pastures, with scarce vegetation.

45. The main problems identified by the Cooperative members are:

- Low rainfall (<600mm/year)
- Poor management: overgrazing on the pre-montane zone and deforestation, leading to strong processes of erosion
- Stony soils on the flat land
- Limited technical knowledge to find solutions to these problems
- Poor access during the rainy season
- Limited participation of women in productive processes.

46. The main strengths identified are:

- Good location for replication
- Stable community and labour force
- Support from local entities and authorities (ANAP and Popular Council)
- Capacity, willingness and leadership among local stakeholders to assimilate, implant and transmit SLM practices

47. This demonstration site covers a range of topographical conditions. The problems which affect the site, and their corresponding solutions which are to be addressed by the project, vary between different parts of the site.

Situation 1: Premontane zone and river catchment area: Problems: severe water erosion, vegetation degradation through overgrazing, deforestation, gully formation.

48. The focus of the project in this area will be to demonstrate strategies for the restoration of vegetation cover, in order to recover the productive potential of this zone, its ecosystem functioning and its provision of water services for the rest of the farm. Strategies to be applied will include:

- Reforestation with native species (such as *Andira jamaicensis* or Yaba, *Calophyllum antillanum* or Ocuje, *Cordia gerascanthus* or Baría and *Guaiacum officinale* or Guayacán) in mixed-species and diverse-structure plantations on slopes, using material produced on-farm in a tree nursery.
- Planting of timber and fruit trees in protection belts along the edges of watercourses.
- Design and application of cattle-under-trees systems in the restored forests and plantations.
- Design and implementation of a fire protection plan, including the construction and maintenance of firebreaks.
- Correction of gullies, using a combination of physical and vegetative techniques.

Situation 2: Agricultural zone of the plains

49. **Problem 1: Runoff erosion and gully formation.** Although it has shallow topography, this zone is affected by runoff originating in the higher parts of the farm. The main strategies to be applied here will be the construction of contour barriers to slow runoff and trap sediment. These will include a combination of physical and vegetative components; the plants included in the barriers will include vetiver grass and also productive crops (such as sugar cane and fruit trees) in order to increase the economic attractiveness of soil conservation for farmers. As in the premontane zone, gully correction will also be carried out using a combination of physical and vegetative techniques.

50. **Problem 2: Low fertility.** The project will demonstrate the production and application of organic additives tailored to the respective needs of different crop types, for example worm compost for vegetables and manure for root crops and basic grains.

51. **Problem 3: Reduced effective soil depth.** The project will support the use of minimal tillage techniques and of alternative, low impact ploughs.

52. **Problem 4: Decline in crop productivity and pest build-up.** Based on detailed studies of pest lifecycles, soil fertility status and crop fertility requirements, and within the context of integrated farm-level production planning and spatial zoning, a plan will be drawn up and implemented for the **rotation of crops** within and between fields on the farm.

Situation 3: Livestock raising zone of the plains: Problem: nutritional deficiencies.

53. The project will support:

- The establishment of a 1 ha sheep/goat feeding system
- The establishment of a 9 ha irrigated forage bank, including sugar cane, king grass and buffalo grass
- The establishment of a 14 ha grazing area combining livestock and trees, separated into enclosures allowing the periodic rotation of animals depending on the pasture conditions in each, and taking into account proven experiences on stocking levels.
- The design and application of a planned irrigation system, taking into account hydrological conditions and the water needs of different pasture species.
- The planning and construction of watering points, located in such a way as to minimize trampling damage caused by animal concentrations.

UNDP-GEF PEER REVIEW

A) CONVENTION SECRETARIAT COMMENTS AND IA/EXA RESPONSE

B) RESPONSE TO STAP REVIEW

C) GEF Secretariat and other Agencies' comments and IA/ExA response

Please refer to Annex B of the attached CEO Endorsement Request document for responses to comments.

SIGNATURE PAGE

Country: Cuba

UNDAF Outcome/Indicators: 3.1 Capacity building for the application of SLM principles in Cuba that contributes to maintaining ecosystems productivity and functions / Indicators: Number of farmers, livestock herders, forest resource users throughout Cuba applying practices that reduce/eliminate land degradation; number of ha throughout Cuba covered by land use plans which adequately incorporate SLM considerations

CPD Expected Outcome: 1. Capacity building for the sustainable land management at the national level.

CPD Expected Outputs: 1.1 Regulatory frameworks updated with SLM approaches and applied to soil, water and forestry resources; 1.3 CPP demonstration sites with SLM approaches established; 1.4 Community level initiatives to reduce land degradation under execution

Government: Ministry for Foreign Investment and Economic Collaboration (MINVEC)

National Executing institution/
Implementing partner: Ministry of Science, Technology and Environment (CITMA)

Programme Period: 2008 - 2012
 Programme Component: Goal 3: Environment and sustainable development
 Project Title: Capacity Building for Planning, Decision Making and Regulatory Systems & Awareness Building/Sustainable Land Management in Severely Degraded Ecosystems
 ATLAS Project ID: 00059902
PIMS 3806
 Project Duration: 5 years
 Management Arrangement: NEX

Budget:
 GEF \$ 3,500,000
 Allocated resources:
 • Other:
 Government: \$ 25,192,383
 ANAP: \$ 572,542
 ACPA: \$ 56,606

Agreed by
 Government / MINVEC: *Orlando Regueira* 7/10/08

Agreed by
 Implementing partner / CITMA: *José A. Díaz Duque* 08.11.13

Agreed by
 UNDP: *Armando M. Nadeu* 17-11-08