



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

PART I: PROJECT INFORMATION

Project Title:	Incorporating multiple environmental considerations and their economic implications into the management of landscapes, forests and production sectors in Cuba		
Country(ies):	Cuba	GEF Project ID:	9429
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5760
Other Executing Partner(s):	Ministry of Science, Technology and Environment (CITMA)/National Centre for Protected Areas (CNAP)	Submission Date:	March 28, 2016
GEF Focal Area(s):	BD, LD, SFM	Project Duration (Months)	72
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of parent program:	Not applicable	Agency Fee (\$)	910,135

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
BD-4 Program 9: Mainstream biodiversity conservation and sustainable use into production landscapes and seascapes and production sectors/ Managing the Human-Biodiversity Interface	GEFTF	3,253,709	12,600,000
BD-4 Program 10: Integration of biodiversity and ecosystem services into development and finance planning	GEFTF	2,169,139	8,400,000
LD-4 Program 5: SLM mainstreaming in development	GEFTF	994,189	6,000,000
SFM-1 Program 1: Integrated land use planning	GEFTF	1,897,997	6,480,000
SFM-1 Program 3: Identifying and monitoring forest loss	GEFTF	1,265,331	4,320,000
Total Project Cost		9,580,365	37,800,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Please see Appendix at the end of Part II for a list of key abbreviations and acronyms

Project Objective: To promote the generation of multiple environmental benefits based on the integrated economic valuation of ecosystem goods and services, as a tool for decision-making at different levels.						
Project Components	Financing Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF	Co-financing
1. Legal, policy and institutional frameworks in key sectors favouring the generation of global environmental benefits (BD, LD and SFM)		<p>1.1 Policies, strategies, plans and regulations concerning national issues (e.g. prices, taxes and investments) and the development of key target sectors with particular implications for global environmental values (fisheries, agriculture, forestry, tourism, mining, hydrocarbons) take into account the results of economic evaluations of their environmental implications of relevance to BD, LD and/or SFM:</p> <ul style="list-style-type: none"> - Policy, planning and strategy documents determining the directions and priorities of the key target sectors - Regulatory instruments (judicial and technical norms, e.g. EIA) determining the nature, locations and environmental implications of the key target sectors <p>1.2 Financial mechanisms support the optimisation of flows of ecosystem goods and services (of relevance to BD, LD and/or SFM) associated with the activities in the target sectors, based on the results of economic valuations, covering (to be confirmed):</p> <ul style="list-style-type: none"> - Forestry development (FONADEF), environment (FNMA), soils, water and forests (PNCMS), tourism, fisheries, petroleum and mines (Abandonment Fund), customs duties, environmental insurance and disaster response and recovery. <p>1.3 Strengthened human and institutional capacities for the incorporation of economic valuation of ecosystem goods and services in institutions covering the target sectors:</p> <ul style="list-style-type: none"> - MEF, MFP, MINAGRI, MINTUR, MES, MINAL, MINEM, CITMA, ONEI, IPF, INRH, BCC (to be confirmed, together with methodologies and baseline/target values) 	<ul style="list-style-type: none"> • Proposals for inclusion of the results of economic valuation of ecosystem goods and services into policies, strategies, plans and regulations taking into consideration factors including distributional equity and risk • Strengthened inter-sector platforms for the negotiation of environmental issues that cross sector divisions, based on the results of valuations of ecosystem goods and services • Strengthened entities for the analysis of policy implications of the results of valuations of ecosystem goods and services (CITMA/IPF/MFP/MEP) • Proposals of methodological protocols and/or legal instruments for the incorporation of ecosystem valuation into: <ul style="list-style-type: none"> - Environmental accounts and their application at national and business levels - National mechanisms for compensating and mitigating impacts and incentives for sustainable forms of production - Land use and sector development plans - Territorial development programmes - Environmental impact assessment - Requirements for environmental insurance • Strategies and programmes for training on how to incorporate economic valuation of environmental goods and services into decision making 	GEFTF	1,824,831	1,372,239

2. Targeted scenario analysis guiding decision-makers on the implications of different courses of action in the target sectors affecting natural resources and global environmental values		<p>2.1 Decision-makers have access to useful and relevant information on the environmental implications of different courses of actions, in the following institutions (to be confirmed), allowing policy formulation and decision-making that optimises the generation of global environmental benefits (in terms of BD, LD and SFM) in the target sectors:</p> <ul style="list-style-type: none"> - MEF, MFP, MINAGRI, MINTUR, MES, MINAL, MINEM, CITMA, ONEI, IPF, INRH, BCC, OLPP 	<ul style="list-style-type: none"> • Mechanisms for the management of and access to information, including: <ul style="list-style-type: none"> - Information compendia, case studies and lessons learned on values of ecosystem goods and services, and valuation methods - Database on results of economic valuation of ecosystem goods and service, accessible to decision-makers at different levels - Existing information systems (e.g. INFOGEO) incorporating information on the economic values of ecosystem goods and services • Methodological tools in support of for targeted scenario analysis, including: <ul style="list-style-type: none"> - Economic valuation of ecosystem goods and services and the implications of different context scenarios (e.g. climate change and macroeconomic factors) and management options, as a guide to decision making in the target sectors. - Cost-effectiveness analysis of alternative strategies (e.g. incentives, fines) for internalizing flows of costs and benefits resulting from environmental management and sector development - Monitoring of the effectiveness of decision-making, planning and management instruments based on the valuation of ecosystem goods and services, in terms of extent of management practices in the target sectors and tendencies in ecosystem conditions • Results of economic valuations to address priority issues and threats in the target sectors, including: <ul style="list-style-type: none"> - Tourism sector development - Hydrocarbon sector development - Agricultural and forestry development - Monitoring of forest degradation and evolution of carbon stocks as inputs into economic valuations • Communication mechanisms and materials for awareness raising on the economic values of ecosystem goods and services and the implications of alternative management decisions in the target sectors • Harmonized indicators for monitoring the effectiveness of management decisions guided by the valuation of ecosystem goods and services 	GEFTF	2,737,247	4,400,631
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3. Pilot experiences generating, validating and demonstrating mechanisms for optimizing and internalizing the values of ecosystem goods and services in the target sectors and associated landscapes		<p>3.1 Decisions with environmental implications are taken in an informed and consensus-based manner in the pilot localities and sectors, taking into account the valuation of ecosystem goods and services and the results of targeted scenario analysis, through improvements to information available for:</p> <ul style="list-style-type: none"> - Environmental Impact Assessment of sector development initiatives - Municipal (and provincial in the case of Matanzas) land use plans covering the entirety of the target localities (1,251,769ha) - Sector-specific and local development programmes - Management programmes for 8 demonstration areas (SLM polygons) covering 1,885ha, where sustainable land management practices are mainstreamed into agroecological production - 14 PA management plans (covering 995,547.44ha) in order to maximize effectiveness in combating sector-related threats <p>3.2 Financial incentive schemes oriented by the results of economic valuations, resulting in the pilot localities in:</p> <ul style="list-style-type: none"> - \$400,000 to resource managers in the target sectors as incentives for resource management and restoration, conditional on the optimisation of flows of ecosystem goods and services <p>3.3 Resource managers, including private sector actors, with knowledge and technical capacities for the scaling up of production practices that optimize flows of ecosystem goods and services, as measured by the extent of application of the production practices:</p> <ul style="list-style-type: none"> - 200,000ha of agricultural practices (25,000ha/año) - Fisheries (measures TBD) - Tourism (measures TBD) - Mining (measures TBD) - Forestry (measures TBD) 	<ul style="list-style-type: none"> • Proposals for inclusion in local level policy and normative frameworks of relevance to the target sectors of considerations of values of ecosystem goods and services • Local level platforms for information exchange and analysis in support of environmental decision-making in relation to the target sectors, based on valuation of ecosystem goods and services • Strengthened local mechanisms for negotiation of environmental issues and conflicts based on ecosystem goods and services, involving local stakeholders and relating to the target sectors, including: <ul style="list-style-type: none"> - Integrated coastal zone management authorities - Watershed commissions - PA coordination boards - Reforestation commissions - Commissions on agrarian affairs • Pilots of tools for incorporation of ecosystem valuation into local decision-making mechanisms of relevance to the target sectors, including: <ul style="list-style-type: none"> - Land use planning - Local sector/development plans • Systems for monitoring trends in the condition of priority ecosystems and the target sectors in relation to selected ecosystem goods and services, as the basis for: <ul style="list-style-type: none"> - Evaluation of the effectiveness of incentives and management strategies - Definition of baselines for predictions of responses of flows of ecosystem goods and services to different future scenarios (of management approaches and context) • Proposals and local pilots of financial mechanisms incorporating the results of economic valuations, providing incentives to actors in the target sectors to mainstream environmental considerations: • Demonstrations of productive and environmental viability of management systems in the target sectors with potential for optimizing flows of ecosystem goods and services, taking into account the results of ecosystem valuations and economic evaluations and the implications of macroeconomic and climatic conditions trends • Programmes for development of technical capacities at local level for application of management and restoration options, among local actors in the target agriculture, livestock, forestry, tourism, fisheries, mining, petroleum and conservation sectors 	GEFTF	4,562,079	30,227,130
Subtotal					9,124,157	36,000,000
Project Management Cost (PMC)				GEFTF	456,208	1,800,000
Total Project Cost					9,580,365	37,800,000

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Recipient Government	CNAP	Grants	4,800,000
Recipient Government	PNCMS	Grants	24,000,000
Recipient Government	FONADEF	Grants	8,000,000
Recipient Government	FONAMA	Grants	1,000,000
Total Co-financing			37,800,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY, COUNTRY AND THE PROGRAMMING OF FUNDS ^{a)}

GEF Agency	Trust Fund	Country	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) ^{b)}	Total (c)=a+b
UNDP	GEFTF	Cuba	Biodiversity		5,422,848	515,171	5,938,019
UNDP	GEFTF	Cuba	Land Degradation		994,189	94,448	1,088,637
UNDP	GEFTF	Cuba	Sustainable Forest Management		3,163,328	300,516	3,463,844
Total GEF Resources					9,580,365	910,135	10,490,500

E. PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested? Yes ☒

PPG AMOUNT REQUESTED BY AGENCY, TRUST FUND, COUNTRY AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: \$100,000 PPG Agency Fee: \$9,500							
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNDP	GEF TF	Cuba	Biodiversity		56,604	5,377	61,981
UNDP	GEF TF	Cuba	Land Degradation		10,377	986	11,363
UNDP	GEF TF	Cuba	Sustainable Forest Management		33,019	3,137	36,156
Total PPG Amount					100,000	9,500	109,500

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	1 million hectares
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	200,000 hectares
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	887,877 tons

PART II: PROJECT JUSTIFICATION.

1. Project Description

1. Planning and decision-making regarding the management of natural resources in Cuba have to balance a number of conflicting priorities, including on the one hand the needs to ensure food and energy security and the generation of hard currency, and on the other the needs to ensure the sustainability of development through protecting natural capital, and to protect global environmental values on the other in accordance with the international conventions to which the country is signatory.

2. The potential conflicts between these priorities, and the consequent difficulty of finding the optimal balance between them through environmental decision-making, will be increased in the future due to the following

factors which are of particular relevance to a number of specific production sectors (the threats associated with each of these are explored in more detail in the following section):

- **Economic transformation**, featuring increased private sector activity: while having the potential to increase efficiency, this has potential implications, which are difficult to predict, for extractive pressures on resources, and for environmental planning and governance conditions. It also gives a new perspective to the respective interests and responsibilities of land managers and the State regarding the management of natural resources and ecosystem services: land managers, especially in the agricultural sector, are likely to have increased motivation to protect the productive potential of the land from which they are now increasingly able to obtain private benefits; however it is less clear how this change may affect their motivations to protect the potential of the land to generate benefits for other stakeholders, such as hydrological services and biodiversity.
- **Increased reliance on tourism** as a source of hard currency and employment opportunities. The country's Economic and Social Policy focuses on accelerated growth in this sector, with increased product diversification, development of non-State activity, municipal involvement, as well as sustainable development. It is estimated that there is potential to increase the sector by a factor of almost seven, from the current resource of 63,700 rooms to 421,800 rooms. This growth is expected to continue to be focused primarily on coastal and marine areas, which are of importance for diverse stakeholders at global, regional, national and local levels (as explained below).
- **Possibility of offshore hydrocarbon exploitation:** Cuba is already exploiting onshore hydrocarbon resources through relatively small-scale drilling operations, which have limited environmental impacts due to the application of strict requirements for environmental management and site recovery; however there is the potential for this activity to be massively increased offshore, if current exploration activities yield positive results, constituting a further source of potential pressure on coastal and marine ecosystems and the goods and services that they provide.
- **Climate change:** this will have a range of effects including increasing the frequency of droughts, which will place increased pressures on available water resources (and give increased importance to the hydrological provisioning services of ecosystems), together with increases in storm frequency, wave impact and saltwater intrusion (associated with sea level rise), which will increase the importance of the ecosystem-based adaption role of coastal and marine ecosystems.

3. In addition, the flows of environmental goods, services and impacts generated by natural resource management and sector development in Cuba have strong spatial dimensions, affecting different stakeholders located across landscapes in different and in many cases conflicting ways. This calls for an integrated landscape-wide approach to decision-making and natural resource management.

1) Global environmental problems, root causes and barriers

Threats, causes and implications

4. The challenges highlighted above, of reconciling at times conflicting priorities and stakeholder interests, are most acute in coastal and marine ecosystems and their adjoining lowland agricultural landscapes, and it is on these that the project will focus especially. The project will however generate models of planning and resource management which will be replicable in other ecosystems and landscapes nationwide, also increasing the effectiveness with which the diverse environmental threats affecting those areas are tackled.

5. Coastal and marine ecosystems and adjoining lowlands are particularly affected by a number of threats, the significance of many of which is likely to increase in the short and medium term. These include the following:

- **The growth of mass “sun and sand” tourism**, driven by the need for economic development and hard currency. Depending on how this sector growth is managed, there is the potential for it to threaten coastal and marine ecosystems (especially mangroves and coral reefs, but also seagrass beds, rocky shores and beaches) through direct displacement by infrastructural development, sediment inputs into reef and seagrass ecosystems due to disturbance during construction, and emissions of liquid and soil wastes into these ecosystems during operation. Such impacts would be of global, regional, national and local concern due to the global conservation importance of these ecosystems; the significance of Cuban coral reefs as a

source of larval dispersion throughout the Caribbean; the importance in particular of mangroves and reefs for ecosystem-based adaptation against the impacts of climate change, and the productive sustainability of the country's fisheries sector; and the sustainability of the tourism sector itself given their aesthetic and recreational value.

- **Offshore hydrocarbon exploitation:** if current exploration activities lead to this becoming a reality, this activity has the potential to generate significant risks for coastal and marine environments such as spills during drilling or transshipment, and ecosystem displacement and the emission and sediment and wastes from the eventual installation and operation of onshore transshipment and processing facilities.
- **Emission of liquid wastes from industrial, extractive and domestic sources** has the potential to degrade water quality and to cause toxicity and mortality of species in marine and aquatic coastal ecosystems, with negative implications for sectors such as tourism and fisheries. These threats are compounded by sediment inputs from watershed management practices and mining upstream, generating sediment which has negative impacts on coral reefs and seagrass beds.
- **The application of unsustainable forms of agricultural production on coastal plains**, that degrade soil and water resources and impact the adjoining remnant natural ecosystems. These impacts and the resulting unsustainability are a function of the inherently damaging nature of these practices (such as inappropriate forms or levels of mechanisation, chemical use and irrigation) and also to the fact that they undermine the resilience of the production systems to the negative implications of climate change, such as drought and saltwater intrusion into aquifers.
- **Marine transport and the installation and operation of port facilities** have the potential to damage and displace coastal and marine ecosystems, and cause contamination due to the emission of liquid wastes.

6. In order for these threats to be addressed effectively and for the needs of the diverse stakeholders involved to be balanced objectively and equitably, it is essential for an integrated landscape-wide management approach to be applied, which recognises the complex spatial dimensions of the processes that drive the threats, while at the same time focusing on mainstreaming environmental considerations into the management practices of production sectors with particular potential to generate threats to global environmental values. It also requires decision-making and planning to be based on sound information regarding the status and functioning of the ecosystems in question and the threats that affect them, as well as the nature and magnitude of the goods and services that these ecosystems generate, and the significance and value and of these goods and services for the diverse stakeholder groups and the sustainable development of production sectors.

7. Since 2013 the Government of Cuba has, in accordance with the provisions of the national Economic and Social Policy (Item 133), promoted studies of ecosystem goods and services as an element of the process of perfecting the country's economic model. However, a number of *barriers* currently exist to the achievement of the desired situation proposed above.

Barrier 1: Policy and legislative instruments are not adequately supportive of an integrated management approach

8. Cuba has well-developed policy and regulatory frameworks in relation to natural resource management and environmental protection. At present, however these remain dominated by single-sector visions, which have not kept pace with the country's overall policies of economic development and transformation, and their direct and indirect implications (see paragraph 2). This is particularly the case in key sectors which are potentially associated with emerging threats and where there is potential for conflicts between different national and local priorities and the interests of diverse stakeholder groups, such as (see above) the tourism, agriculture, fisheries and hydrocarbon sectors. Such single-sector visions risk undermining the sustainability of national development, through eroding the natural capital on which these productive sectors depend.

9. Furthermore, the planning and regulatory instruments through which policies are implemented are not designed in such a way as to permit such an integrated vision to be applied, or the diversity and interrelated nature of environmental goods and services and stakeholder interests to be taken account in an objective and balanced manner. For example, procedures for Environmental Impact Assessment (EIA) are well defined, and supported by strong technical capacities for the analysis of environmental and social impacts; but they lack the methodological instruments required to allow decision-makers to weigh up the net implications of such diverse impacts, to

consider the implications of varying the priorities assigned to different impacts and benefits, and the interests of different stakeholder groups, or to weigh up impacts at a strategic level. Land use planning procedures are also well developed, but do not provide planners with the means of adequately weighing up the net implications for different sectors and stakeholder groups of alternative planning scenarios, such as different spatial configurations and intensities of productive sector development or of environmental restrictions.

10. Environmental incentive mechanisms are also well developed, especially in the forestry and agricultural sectors, including the National Environment Fund (FONAMA), the National Fund for Forestry Development (FONADEF) and the National Programme for Soil Conservation and Improvement (PNCMS). The eligibility criteria for these mechanisms, and the levels of incentive provided, do not however adequately take into account the nature and magnitude of the net environmental benefits generated or their potential cross-sector implications, such as the economic benefits potentially generated for the tourism sector by providing financial incentives for different forms of reforestation.

11. Even if the methods and procedures proposed above in support of balanced environmental decision-making are developed, levels of conceptual understanding and technical capacity among key actors are currently inadequate to allow them to be applied. The principal institutions in which the existence of such shortcomings is particularly likely to be constitute a bottleneck in this regard include the Ministries of Economic and Planning (MEP), Finance and Prices (MFP), Agriculture (MINAGRI), Tourism (MINTUR), Further Education (MES), Foodstuffs (MINAL), Energy and Mines (MINEM) and Environment (CITMA), as well as the National Statistics Office (ONEI), the Institute of Physical Planning (IPF), the National Institute of Hydrological Resources (INRH) and the Central Bank (BCC); however the nature, magnitude and significance of these capacity deficiencies will be confirmed through detailed capacity analyses during the PPG phase.

Barrier 2: Policy makers, planners and other decision makers only have access to qualitative information that does not reflect the economic value of ecosystem goods and services

12. In addition to the methodological and procedural limitations explained above, planners, policy-makers and decision-makers are also hampered by inadequate supply of information on the nature, magnitude, significance and economic values of ecosystems and the goods and services they generate; this limits their overall levels of awareness of the importance of ecosystem goods and services, as well as their abilities to formulate appropriate responses.

13. Significant experience has been gained with economic valuation over recent years, and there is in addition a large amount of dispersed information available which could be used to support decision-making, however this information has yet to be brought together and communicated to decision-makers in a useful manner, and advantage has yet to be taken of existing platforms such as the INFOGEO information system in this regard.

14. Decision-making is further hampered by limited capacities and tools for generating new information on the economic values of ecosystem goods and services, or the implications of different context scenarios (e.g. climate change and macroeconomic factors), policies or management options. Decision-makers' abilities to define appropriate sanctions or incentives for influencing the behaviour of resource managers are also limited by the absence of tools for analyzing their cost-effectiveness in relation to the nature, magnitude and distribution of the environmental benefits that they are likely to generate, relative to their transaction costs. Tools are also inadequate to enable monitoring of the effectiveness of decision-making, planning and management instruments based on the valuation of ecosystem goods and services, in terms of the resulting changes in management practices and ecosystem conditions; or to apply such monitoring in a standardized way across sectors and instruments, as would be required in order to determine overall net inter-sector impacts.

Barrier 3: Local actors have inadequate experience of integrated approaches capable of optimizing flows and ecosystem goods and services

15. Although a very large resource of knowledge and experience has been generated in Cuba over the last 10-20 years in relation to sustainable natural resource management, this has largely been sector- and focal area-specific, and as a consequence has not adequately considered the net and cumulative implications of resource management decisions and the interrelations (both positive and negative) between sectors and focal areas. This mirrors at local level the compartmentalization at national level, described under Barrier 1 above. At this level, the problem lies with the narrowness of vision and experience of technicians belonging to sector ministries (such as MINAGRI,

MINAL, MINEM, MINTUR and CITMA), as well as representatives of local and regional governments (OLPP) and productive entities. As a consequence, productive initiatives in one sector may, for example, undermine the viability and sustainability of other sectors, or may generate unintended negative impacts on actors located in other parts of the landscape. Even when sector development actors are aware of the potential for such impacts, they may lack the technical knowledge and information required to allow them to plan and implement effective mitigation measures.

2) The baseline scenario and associated baseline projects

16. Under the baseline scenario, Cuba will continue to invest strongly in environmental management, through diverse approaches including reforestation, the strengthening of protected areas, the promotion of sustainable land management practices, the application of environmental safeguards on productive and extractive industries, and territorial land use planning. However, without incremental GEF investment through this project, these initiatives will fail to take adequately into account the complex interactions and interdependencies between different landscape elements and environmental concerns, and decision-makers will lack the means to optimise the balance and synergies between the objectives of economic development, food security and the protection of natural capital and ecosystem goods and services.

17. Key baseline investments on which the project will build include the following:

- The **National Programme for Soil Conservation and Improvement (PNCMS)**, established in the year 2000 and coordinated by the Soils Institute. This has achieved major impacts including reductions in levels of soil compaction on the Habana-Matanzas plains as a result of subsoiling, crop rotations and the use of green manures; reductions of soil erosion to allowable levels of around 3-4 t/ha/year, increases of 10-15% in tobacco production due to the application of worm humus and compost, and increases in soil P and K in coffee and cocoa plantations due also to humus and compost applications. Through the PNCMS, demonstrative “polygons” for the conservation and improvement of natural resources (soil, water and forests) have been established throughout the country; in the period 2016-2020, the PNCMS will continue to support soil conservation and improvement measures in 51 such polygons, in 30 municipalities in the north of Pinar del Rio province, Matanzas province and the north/east zone, under a range of different conditions of land tenure, with a budget from national resources of USD 24 million over the 8 year period of the project.
- The **National Fund for Forest Development (FONADEF)**. Created in the year 2000, this provides financial support for the establishment of long rotation productive forest plantations, including inputs such as seeds and plants; short rotation plantations when these are in the interests of the State; and silvicultural treatments and the restoration or enrichment of forests when the costs of management exceed the value of the timber produced. The baseline investments of FONADEF over the 8 year period of the project are estimated at USD 8 million.
- The **National Environment Fund (FONAMA)**: this fund, which was established in 1997, is aimed at wholly or partially financing projects or activities of national interest aimed, at territorial level, aimed at the protection or restoration of the environment. The baseline investment of FONAMA over the 8 years of the project are estimated at USD 1 million.

3) Proposed alternative scenario

Objective

18. The objective of the project will be to promote the generation of multiple environmental benefits based on the integrated economic valuation of ecosystem goods and services, as a tool for decision-making at different levels.

Components, outcomes and outputs

The project’s activities and outputs, required for the achievement of this objective, will be structured within three interrelated and interdependent components.

Component 1: Legal, policy and institutional frameworks in key sectors optimising the generation of global environmental benefits (BD, LD and SFM)

19. Under this component, the project will work at national level to support the application of the results of the economic valuation of ecosystem goods and services and improved multi-stakeholder decision-making processes into policy and planning frameworks, resulting in an increasingly favourable enabling environment for the application of integrated approaches for generating global environmental benefits (GEBs), while at the same time satisfying sector development and food security needs in a sustainable manner. This will result in significant GEBs nationwide, contributing to the reduction of sector-based threats to biodiversity, especially in threatened and important coastal and marine environments such as mangroves and coral reefs (although the enabling environment improvements will eventually have implications across all landscapes), the improved protection of high conservation value forests due to improved spatial planning of sector development and conservation, and improvements to land management in the agricultural and forestry sectors. The GEBs to be generated are discussed in more detail in Section 5 below.

20. To this end, the project will support the generation of **tools for the reflection of the results of economic valuation of ecosystem goods and services in policies, strategies, plans and regulations, including** considerations of distributional equity and uncertainty. The specific instruments and issues to which these proposals will refer will be confirmed through PPG studies, but they are likely to include the following:

- Policies, strategies and plans for the development of, and investment in, key sectors such as tourism and petroleum, where there is a particular need to optimise trade-offs between the priorities of economic development, the generation of hard currency and the provision of employment opportunities on the one hand, and the maintenance of natural capital, ecosystem goods and services and the conservation of global environmental values on the other.
- The adjustment of regulatory instruments covering issues such as methodological and content requirements for processes of environmental impact assessment and land use planning; prohibitions or limitations on productive activities; obligations for the compensation and/or mitigation of environmental impacts by developers (for example through the “Abandonment Fund” which entities carrying out onshore oil extraction are required to establish); and/or requirements for multi-stakeholder consultation.

21. **Existing inter-sector platforms will be strengthened** in terms of their effectiveness in facilitating the negotiation of environmental issues that cross sector divisions, based on the results of valuations of ecosystem goods and services. These issues may include, for example, potential conflicts between the interests of the tourism, hydrocarbon and fisheries sectors in relation to the management of coastal and marine ecosystems, and conflicts between these production sector goals and the targets and commitments of the environment sector.

22. Institutional and interinstitutional **capacities for analysis of the policy implications of the results of economic valuations of ecosystem goods and services** will also be strengthened, in entities including the Ministry of Science, Technology and Environment (CITMA), the Institute of Physical Planning (IPF), the Ministry of Finance and Prices (MFP) and the Ministry of Economy and Planning (MEP). This will provide a key link between improvements in the access of these institutions to reliable information on ecosystem goods and services and their values, to be achieved under Component 2, and the negotiation of their implications and their reflection in policy, strategies, planning and regulatory instruments as proposed under this component.

23. In addition to the development of regulatory instruments as proposed above, the project will provide target institutions with technical support in the definition of methodological protocols for the incorporation of the results of economic valuation of ecosystem goods and services into key processes and procedures, including the following:

- Environmental accounting and its use at national level and in individual sectors and businesses as a guide to decision making and policy formulation;
- Mechanisms for determining the levels and types of mitigation and/or rehabilitation activities required in response to environmental impacts generated by productive sector activities, in order to ensure that these reflect adequately the severity and implications of the impacts, as determined by the economic valuation of ecosystem goods and services;

- Conversely, incentive mechanisms for promoting environmentally-friendly forms of activity, in order to determine the levels of incentives that are warranted in relation to the levels of benefits likely to be generated (determined through valuation of ecosystem goods and services);
- Land use and sector development plans, in order to facilitate the identification of optimum land use configurations in terms of their net implications for ecosystem goods and services;
- Environmental impact assessment procedures, in order to maximize the objectivity with which impacts are presented to decision makers, and design alternatives and mitigation measures are evaluated;
- Requirements for insurance against the risk of the generation of environmental impacts, in order to ensure that the premia and sums insured reflect the magnitude of the potential impacts on ecosystems and the goods and services that they provided (determined in part through ecosystem valuation).

24. The project will also support the development and implementation of **strategies and programmes for capacity development** regarding the incorporation into decision making of the results of economic valuation of environmental goods and services. The target audiences for this, together with specific capacity development needs and methods, will be confirmed on the basis of capacity analyses to be carried out during the PPG phase, but will include the principal institutions with responsibilities for environmental decision-making, planning and regulation, and for the key sectors in which environmental conflicts are likely to arise, such as the Ministries of Economy and Planning (MEP), Finance and Prices (MFP), Agriculture (MINAGRI), Tourism (MINTUR), Higher Education (MES), Foodstuffs (MINAL), Energy (MINEM), Science, Technology and Environment (CITMA), the National Office of Statistics and Information (ONEI), the Institutes of Physical Planning (IPF) and Hydrological Resources (INRH), and the Central Bank of Cuba. It will be aimed in particular at ensuring that adequate capacities exist in these institutions for understanding the concepts of economic valuation of ecosystem goods and services, for understanding, analysing and contextualising the results of the process, and for incorporating its results into the types of environmental decision-making listed above.

Component 2: Tools including targeted scenario analysis guiding decision-makers on the implications of different courses of action in the target sectors affecting natural resources and global environmental values

25. Activities under this component will help to ensure that actors in key institutions have access to the information on ecosystem goods and services and their values (under alternative macroeconomic and climate change scenarios), and the environmental implications of different courses of actions, that they require for the environmental decision-making processes that fall under their respective responsibilities and that will determine the generation of the expected global environmental benefits (see Section 5). The target audiences for this information will (subject to confirmation through PPG studies) include institutions such as MEF, MFP, MINAGRI, MINTUR, MES, MINAL, MINEM, CITMA, ONEI, IPF, INRH, BCC and local Governments (Local Organisms of Popular Power or OLPP). This information access will be an essential requirement for the improvements to policy and regulatory frameworks proposed under Component 1.

26. The project will support the development and/or strengthening of **mechanisms for the management of and access to information** by decision-makers and planners. These will allow them to take into account and build on the existing baseline of information on ecosystems and their goods and services in Cuba, and so will include accessible compendia and databases of such existing information; case studies bringing together existing information on specific issues and sectors (such as the economic importance of mangroves and their services in terms of ecosystem-based adaptation and maintaining the biological productivity of fisheries); and methodological knowledge and lessons learnt to date with economic valuation (in Cuba, this dates from the 1990s, with around 50 studies carried out between the years 2000 and 2012). The project will take advantage wherever possible of existing mechanisms for information management and dissemination, such as the INFOGEO system managed by CITMA¹.

27. The project will support the development and application of **methodological tools** for the generation, management and dissemination of information, focusing on, for example:

¹ http://www.ecured.cu/Portal_INFOGEO

- The economic valuation of ecosystem goods and services and the implications of different context scenarios (e.g. climate change and macroeconomic factors) and management options, as a guide to decision making.
- Cost-effectiveness analysis of alternative strategies (e.g. incentives, fines) for internalizing flows of costs and benefits resulting from environmental management, balancing the levels of potential income from fines against the economic value of the environmental impacts avoided, and the levels of expenditure on incentives against the economic value of the environmental benefits potentially generated, as well as the administration costs of the mechanisms.
- Determining the effectiveness of valuation-based decision-making, planning and management instruments, based on the the results of monitoring of corresponding uptake of resource management practices and their implications for ecosystem conditions

28. The project will ensure that the information generated and/or managed through the above processes reaches decision-makers and planners through the establishment of **mechanisms and materials for awareness raising and dissemination**, focusing in particular on the economic values of ecosystem goods and services, and the implications for these of alternative management decisions.

29. Attention will also be paid to facilitating the integration of the numerous different mechanisms that exist for environmental planning and decision-making (such as EIA, LUP, sector development planning, the definition of environmental norms, fines and incentives, and project/programme monitoring systems) by supporting the development of **harmonized measures of the values of ecosystems and their goods and services**.

Component 3: Pilot experiences generating, validating and demonstrating mechanisms for optimizing and internalizing the values of ecosystem goods and services

30. Under **Component 3**, the project will operate at field level to generate, validate and demonstrate nationally-replicable models of:

- **Negotiated multi-variable, multi-stakeholder decision making** at local and provincial levels, that incorporates the results of economic valuation, considering the distributional implications of alternative resource management strategies under a range of assumptions and scenarios (including macroeconomic and climate change trends);
- **Mechanisms of incentives and sanctions** for resource management practices with different environmental implications: GEF funds will complement Government cofinancing in the short term in testing the effectiveness and efficiency of such mechanisms in influencing resource management behaviour;
- **Resource management practices with potential to generate multiple environmental benefits**: while a number of these strategies have already been developed and promoted through other GEF projects in the country, this project will focus on demonstrating how to adapt, locate and integrate them so that they address landscape-wide flows of environmental costs and benefits, thereby optimising benefit generation and distribution.

31. This demonstration support will result, during the project lifetime, in decisions with environmental implications being taken in an informed and consensus-based manner in the pilot localities, taking into account the valuation of ecosystem goods and services and alternative context scenarios. This will result in concrete impacts in terms of the generation of GEBs and the sustainability of sector development and food security in the pilot areas,

32. The decision-making instruments in which this will be reflected (to be confirmed and quantified during the PPG phase) will include EIA, municipal (and provincial in the case of Matanzas) land use plans covering the entirety of the target localities, sector and local development programmes, management programmes for SLM polygons, and PA management plans.

33. Pilot support to financial mechanisms will result in resources (the amount of which will be defined during the PPG phase) being channelled to resource managers in the target localities as incentives, conditional on the optimisation of flows of ecosystem goods and services. This support will be in the form of “pump priming”, whereby limited amounts of GEF funds will be used in the short term to demonstrate the responsiveness of

resource managers to financial incentives, the administrative feasibility of the mechanisms, and their environmental, institutional and social (distributional) implications; as a result, it is expected that responsibility for the provision of the incentives will be taken over by Government institutions, for example through FONADEF and FONAMA, and potentially by private sector entities.

34. Furthermore, as a result of the project producers in the target localities will have increased knowledge and technical capacities for the application of production practices that optimize flows of ecosystem goods and services, and as a consequence will increasingly be adopting these practices by the end of the project in sectors including agriculture, fisheries, tourism, mining and forestry.

35. To this end, the project will deliver a number of outputs in the target localities, which will have the joint aims of generating demonstrations with the potential for scaling up to national level, and of achieving concrete and significant social, economic and global environmental benefits. These benefits will include the reduction of pressures on globally important biodiversity at ecosystem and species levels, through modifications to productive practices; the reduction in pressures on high conservation value forests; protection of the productive, hydrological and resilience services of ecosystems for local communities; and increase climate resilience of production systems.

36. The project will support the creation of an enabling environment at local level, through the generation of proposals for the inclusion in local policy and normative frameworks of considerations of values of ecosystem goods and services. This will mirror the policy support to be delivered under Component 1, but will focus specifically on policies and normative frameworks developed and implemented at local levels in the target localities, by regional and local Governments (Local Organisms of Popular Power or OLPP). These proposals are likely (subject to PPG studies and consultations) to cover issues such as sector development priorities and/or normative restrictions on the levels or types of productive and extractive activities permissible in the OLPP's areas of jurisdiction.

37. **Local level platforms for information exchange and analysis** will be established and/or strengthened, in support of environmental decision-making based on valuation of ecosystem goods and services. These again will mirror the types of platforms which it is proposed to establish or strengthen under Component 1 at national level, but will be specific to local institutions or local dependencies of national institutions such as CITMA, IPF, MPF and MEP.

38. **Local mechanisms for negotiation of environmental issues and conflicts** related to ecosystem goods and services will also be strengthened. This support will focus in particular on using the results of ecosystem valuation to help the diverse stakeholders potentially affected by environmental decisions to balance their respective interests. In the case of proposals to establish tourism infrastructure in coastal environments, for example, these actors might include the tourism developers (MINTUR and possibly private sector investors), who may have to balance alternative options of design, location and compensation/mitigation strategies; representatives of local State-owned fisheries enterprises, whose interests might be affected by possible impacts on the fisheries provisioning role of coastal ecosystems; representatives of local communities who may be dependent on the role of the coastal ecosystems in buffering against the effects of climate change, yet may at the same time be potential beneficiaries of the employment and services opportunities generated by the proposal; and local Governments, responsible for balancing local interests within the context of local and national development plans.

39. There is already a well-established baseline of mechanisms for multi-stakeholder negotiations regarding environmental issues, and the project will focus wherever possible on supporting these. These include, for example, integrated coastal zone management authorities, watershed commissions, PA coordination boards, reforestation commissions and commissions on agrarian affairs.

40. The project will support pilots of **methodological tools for the incorporation of ecosystem valuation into local decision-making mechanisms**, including land use planning and local sector and development plans. Key institutional actors in this regard will include Provincial and Municipal Departments of Physical Planning (DPPF and DMPF), within the frameworks of Provincial and Municipal Land Use Planning Strategies and Plans (EPOT/PPOT and PGOT/PGOU). This methodological support will focus on the modelling of the net and distributional implications of alternative scenarios of land use and spatial organization, in terms of the economic values of ecosystems and the goods and services that they generate for different stakeholders.

41. The project will support **capacities and systems for environmental monitoring** in the target localities, focusing in particular in monitoring trends in the condition of priority ecosystems in relation to the selected ecosystem goods and services. This will constitute an essential complement to the other forms of support, as it will permit the evaluation of the effectiveness of incentive and management strategies aimed at optimising ecosystem goods and services, and the identification of corresponding needs for adjustments; and the definition of baselines values of ecosystem conditions and responses, enabling the generation of predictions of the responses of flows of ecosystem goods and services to different management strategies and context scenarios.

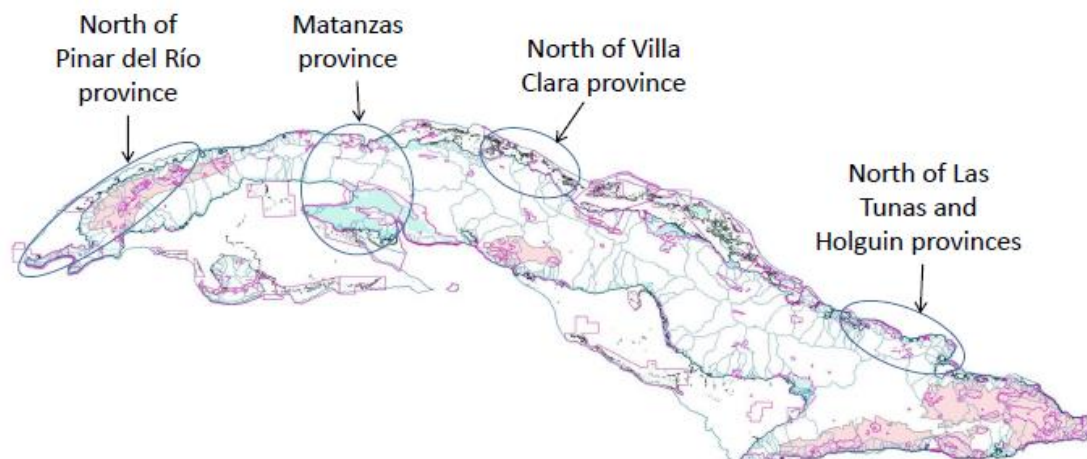
42. **Proposals of financial mechanisms** will be formulated and piloted in the target areas, based on the results of economic valuations. Subject to recommendations to be developed on the basis of PPG studies, these may include for example direct monetary payments for the implementation of environmentally-friendly forms of production, subsidies or duty exemptions on equipment and materials, or fiscal incentives.

43. The project will support **demonstrations of the productive and environmental viability of management practices** with potential for optimizing the flows of ecosystem goods and services, taking into account the results of ecosystem valuations and economic evaluations and the potential implications of changes in macroeconomic and climatic conditions. Subject again to the results of PPG studies, these may include, for example:

- Agroforestry and silvopastoral systems, aimed at reducing the impacts of grazing and fire on ecosystems such as the forests of the Ciénaga de Zapata del Ciénaga del Majaguillar wetlands, and building as appropriate on lessons learned through UNDP-GEF project “A Landscape Approach to the Conservation of Threatened Mountain Ecosystems” (GEF ID 4846).
- Mangrove restoration in order to offset, mitigate and/or reverse the impacts of development activities affecting coastal ecosystems, such as tourism or the extraction or transshipment of hydrocarbons; such restoration would learn from the experiences of the Adaptation Fund Project “Reduction of vulnerability to coastal flooding through ecosystem-based adaptation in the south of Artemisa and Mayabeque provinces”.
- Low-impact, ecosystem-focused approaches to tourism including measures for avoiding and mitigating environmental impacts; such as controls on the composition, volumes and locations of liquid waste emissions, avoidance of physical damage to coral reefs during construction and operation, and the management of natural ecosystems (such as mangroves and other coastal forests) as attractions for sustainable ecotourism. This approach will draw lessons from the sustainable tourism elements of the UNDP-GEF project “Mainstreaming and Sustaining Biodiversity Conservation in three Productive Sectors of the Sabana Camaguey Ecosystem” (GEF ID 2633).
- Sustainable fishing practices including the use of appropriate fishing gear and the respect of temporal and spatial limitations on fishing activities, building on models developed and applied in Sabana Camaguey and in the UNDP-GEF project “Application of a Regional Approach to the Management of Marine and Coastal Protected Areas in Cuba's Southern Archipelagos” (GEF ID 3607).
- Management of invasive alien species such as *Melaleuca* and *Dichrostachys cinerea*, building on lessons learned through UNDP-GEF project “Enhancing the Prevention, Control and Management of Invasive Alien Species in Vulnerable Ecosystems” (GEF ID 3955).
- Sustainable agriculture, building as appropriate on lessons learned through UNEP-GEF project “Capacity building for information coordination and monitoring systems/SLM in Areas with Water Resource Management Problems” (under “CPP Cuba: Coordination, Monitoring and Evaluation of Cuba Country Pilot Partnership on Sustainable Land Management”, GEF ID 3587).

44. A strong emphasis will be placed on the development of **technical capacities at local level for the application of management options into which environmental considerations will be mainstreamed**, among local actors in the agriculture, livestock, forestry, tourism, fisheries, mining, petroleum and conservation sectors. This will be achieved through a range of approaches including demonstrations, training and horizontal exchanges of knowledge and experience between practitioners.

45. The target localities on which activities under Component 3 will be focused will be confirmed during the PPG phase, as will the precise locations of the pilot sites within them where production practices will be piloted and demonstrated. The localities that have been provisionally identified are shown below; the justifications for their selection in terms of the opportunities that they present to generate global environmental benefits and to contribute to the different GEF focal areas and objectives covered by the project are explained in section 5 below (Global Environmental Benefits):



- 1) **The north and west of Pinar del Río province**, includes the Guanahacabibes peninsula in the extreme west of Cuba, as well as the lower slopes and plains on the northern side of the Guaniguanico range, and the coastal and marine ecosystems (mangroves, sea grass beds and coral reefs) into which these slopes drain.
- 2) **The province of Matanzas**, extends across the whole width of the island; this will include the tourism centre of Varadero, the Ciénega de Zapata and Ciénega de Majaguillar wetlands on the south and north coast respectively, and the intervening coastal plains.
- 3) **The north of Villa Clara province**, includes the coastal plains and adjoining fringing reefs, cays and mangroves.
- 4) **The north of Las Tunas and Holguin Provinces**, includes Manati, Malagueta, Puerto Padre and Nipe Bays, and the adjoining lowlands.

46. Between them, these areas provide the project with the opportunity to generate major environmental benefits of global significance across the three focal areas on which the project will focus, while functioning as “laboratories”, generating lessons and experiences of integrated approaches to natural resource management that will have potential for nationwide replication.

47. Each area was selected on the basis of the potential that existed there to optimize the generation of environmental benefits of global importance as a result of decision-making that is guided by improved access to information on the economic values of the ecosystems in question, the goods and services that they generate, and the implications of alternative management scenarios. The specific justifications for the selection of the areas in these terms are as follows:

Justifications for the selection of the target localities:

1) North and west of Pinar del Río	2) Province of Matanzas	3) North of Villa Clara	4) North of Las Tunas and Holguín
BD: Existence of BD of global importance, and opportunities to generate benefits through management strategies guided by results of economic valuation studies			
Reefs of importance for larva dispersal, mangroves and seagrass beds: – regulation of fishing, appropriate tourism, control of pollution from settlements and marine traffic, mitigation measures for the oil sector, watershed management sustainable fisheries,	Wetlands (including endemic Cuban crocodile): – sustainable fisheries, appropriate management of water and irrigation infrastructure, control of pollution from domestic, tourism and agricultural sources; improved livestock management; control of invasive forestry species. (Melaleuca) Reefs of importance for larva dispersal, mangroves and seagrass beds: – regulation of fishing, appropriate tourism, control of pollution from settlements and marine traffic, mitigation measures for the oil sector, watershed management Biological connectivity between wetlands on the north and south coasts:– connectivity-friendly agroforestry systems	Reefs of importance for larva dispersal, mangroves and seagrass beds (including manatees, turtles and hutias): – regulation of fishing, appropriate tourism, control of pollution from settlements and marine traffic, mitigation measures for the oil sector, watershed management Connectivity along the length of the coast: – rationalization of fisheries, sustainable and responsible tourism; spatial planning and environmental mitigation/management measures of infrastructure development	Reefs of importance for larva dispersal, mangroves and seagrass beds (including manatees, turtles and hutias): – regulation of fishing, appropriate tourism, control of pollution from settlements and marine traffic, mitigation measures for the oil sector, watershed management Connectivity along the length of the coast: – rationalization of fisheries, sustainable and responsible tourism; spatial planning and environmental mitigation/management measures of infrastructure development
LD: opportunities to generate benefits through improved decision-making based on economic valuation			
<ul style="list-style-type: none"> - Integrated management of crop fertility - Integrated management of soil, water and biodiversity - Regulations, incentives, sanctions, sustainable economic alternatives, sector-based planning and spatial land use planning 			
SFM: opportunities to benefit forests of high value for conservation, guided by ecosystem valuation			
Appropriate forest management and control of grazing in Guanahacabibe pine forests (of importance due to endemism and as a genetic reserve and Key Biodiversity Area). Combating impacts on high value forests of Guaniguanico from crops and grazing by goats and pigs Monitoring of cover and condition of forests to inform management, restoration and reforestation, and instruments of incentives and sanctions	Investment in control of fires, illicit extraction, invasive species and livestock in the forests of Ciénaga de Zapata (the largest wetland in the Caribbean islands, Ramsar site and Biosphere Reserve) Wildfires, salinity, exotic species, landscape fragmentation through oil extraction and salt production, pig farming in the forests of Ciénaga Majaguillar (proposed Ramsar site)	Control of impacts on mangroves from fires, extraction of forest products and expansion of agriculture	Control of impacts on mangroves from fires, extraction of forest products and expansion of agriculture

4) Incremental cost reasoning

48. The main areas in which GEF support will be incremental in nature are those set out in paragraph 55 below, namely:

- The development of tools and capacities for the objective and transparent economic valuation of ecosystem goods and services, leading to increased motivations for their conservation, and to environmental decision-making that will optimise the balance between the interests of diverse stakeholder groups and thereby lead

to improved social acceptance and sustainability of conservation strategies. The resulting GEF scenario will therefore contrast with a baseline scenario in which decision-makers are influenced primarily by narrow sector-based considerations focused on financial and productivity-related measures, with the corresponding risk of the sustainability of these sectors being undermined by the degradation of the natural capital on which they depend.

- The application of integrated approaches to environmental management, that take into account the multiplicity and interrelatedness of the environmental goods and services provided by the country's natural ecosystems and production landscapes, and address the spatial flows of environmental impacts and benefits in the most effective and cost-efficient manner possible. The resulting GEF scenario will contrast with a baseline scenario where different types of environmental concerns are addressed in an isolated manner.

49. Achievement of the project's objective will be supported through significant and concrete co-financing from State institutions, which will contribute both to the administrative and operational aspects of the project in general, and to specific technical aspects. In particular,

- **The National Centre for Protected Areas (CNAP)** will provide salary for technical staff and specialists, service contracts for technical studies, monitoring, publications and local rentals, as well as contributions to the Procurement of equipment, goods and services;
- **The National Programme for the Conservation and Improvement of Soils (PNCMS)** will finance activities to promote SLM in demonstration polygons (under Outcome 3.1) and its scaling up in other farms and cooperatives in the project's target localities through agricultural investments and training (under Outcome 3.3);
- **The National Fund for Forestry Development (FONADEF)** will provide finance to **SFM** activities in the form of staff salaries, investments and studies, as well as the generation of proposals for financial mechanisms (under Outcome 1.2), and the formulation of methodologies for the evaluation of forest degradation and carbon storage in forests and protected areas (in support of Outcome 2.1).
- **National Environment Fund (FONAMA)** will finance pilot projects related to BD in the tourism and fishing sectors (under Outcome 3.1) and studies/proposals of financial mechanisms (under Outcomes 1.2 and 3.2).

5) Global environmental benefits

50. All of the areas contain globally- and nationally-important coastal and marine ecosystems, including coral reefs, mangroves and seagrass beds. The coral reefs of Cuba are of regional importance as sources of larval dispersion across the rest of the Caribbean; those on the north coast (on which the project will concentrate) run for around 400km from the Archipiélago de Sábana to the Archipiélago de Camaguey; the majority lie offshore in long tracts which resemble barrier reefs; unlike true barrier reefs, the lagoons separating them from the mainland are typically very shallow, but have to a large extent served to protect them land-based threats². The extensive areas of mangroves in the target localities form part of the WWF "Critical/Endangered" Greater Antilles Mangroves ecoregion, and are home for example to the endemic IUCN Critically Endangered Cuban crocodile *Crocodylus rhombifer*, the IUCN "Vulnerable" Cuban Rock Iguana *Cyclura nubila* and the endemic Desmarest's hutia (*Capromys pilorides*).

51. The project has the opportunity to generate environmental benefits in the **Biodiversity** focal area, in terms of the conservation status of these ecosystems and species through a mainstreaming approach (consistent with BD4 Programme 9), for example through: the support of fisheries regulations and governance; the promotion of environmentally-sensitive approaches to tourism; the control of pollution from settlements, production sectors and marine traffic; the appropriate siting and design of hydrocarbon exploration, drilling and transshipment facilities and associated site restoration practices; the improvement of agricultural practices upstream in order to reduce sediment inputs into aquatic ecosystems; and the promotion of agroforestry practices with potential to promote cross-landscape biological connectivity, for example for birds migrating between the two wetlands in the north and south respectively of Matanzas Province; and the control of invasive species such as *Melaleuca* and *Dichrostachys cinerea*). It is estimated that 777,603.98ha of coastal and marine ecosystems will be subject to improved protection as a result of the project.

² UNEP/WCMC (2001): World Atlas of Coral Reefs

52. The selection of these sites, which include large areas of agricultural lowlands affected by land degradation, also presents the project with opportunities to develop and demonstrate approaches to **Sustainable Land Management**, in line with LD4 Programme 5, given the nature of the land degradation processes affecting them, including aquifer degradation and poor watershed management. It is estimated that 400,000ha in the target localities will be subject to improved management as a result of the project. These processes affect flows of environmental goods and services on which stakeholders throughout the target areas depend, as well as the status of the areas' biodiversity and forest resources. The project will thereby contribute to Sustainable Development Goal 15.3 of land degradation neutrality, through supporting the integrated and complementary application of a combination of measures which will, on the one hand, serve to reduce land degradation threats such as soil erosion and aquifer degradation, with, on the other, measures such as the establishment of agroforestry and appropriate forms of plantation with potential actively to revert land degradation processes.

53. The sites will also provide the opportunity to deliver benefits under the **Sustainable Forest Management** focal area, specifically SFM1 Programmes 1 and 3, through the reduction of pressures affecting the high conservation value forests that occur there. It is estimated that 452,841.8ha of high conservation value forests will be subject to improved protection as a result of the project. These include the swamp forests of the Ciénaga de Zapata wetland, which form part of the Critically Endangered Neotropical Flooded Grasslands and Savannas ecoregion, and include halo-hydrotrophic deciduous arboreal elements and epiphytes, and possibly some mangrove elements, with species including *Tabebuia angustata*, *Fraxinus cubensis*, *Annona glabra*, *Gueltarda combiri*, *Sabal parviflora*, *Bucida palustris*, *Hibiscus elatus*, *H. tiliaceus*, *Jatropha integerrima*, *Copernicia* spp., *Ilex cassine*, *Salix longipes* and *Chrysobalanus icaco*. The pine forests of Guanahacabibes Peninsula are also of high conservation value, containing an estimated 172 species of birds belonging to 42 families, 11 of which are endemic and 84 are migratory; these include the IUCN Endangered Blue-Headed Quail Dove (*Starnoenas cyanocephala*). Regionally important mangrove forests are also found in all of the target localities.

54. In the target localities, the types of decisions that will be improved as a result of project support (in relation to SFM1 Programme 1) will include, for example:

- The definition of appropriate management and grazing regimes for high conservation value forests such as the pines of the Guanahacabibe peninsula;
- The definition of restoration and reforestation strategies for high conservation value forests, reflecting the economic value of the goods and services they provide, and the monitoring of their condition;
- The definition of appropriate levels of investment in the control of wildfires, illegal extraction of forest products, invasive species and grazing in the swamp forests of the Ciénaga de Zapata and Ciénaga Majaguillar wetlands.

6) Innovation, sustainability and potential for scaling up

55. The project will be particularly innovative for Cuba by virtue of the fact that it will achieve its objective by combining the following approaches:

- Improving the effectiveness of environmental management strategies in satisfying conflicting priorities and stakeholder interests, by developing capacities for improved decision-making based on objective and transparent economic valuation of ecosystems and evaluation of the implications of alternative management scenarios.
- Applying (for the first time in Cuba in the context of GEF projects) a multi-focal approach that recognises the multiplicity and interrelatedness of the environmental goods and services provided by the country's natural ecosystems and production landscapes.
- Applying an integrated landscape approach to the planning of environmental management, in order to address the spatial flows of environmental impacts and benefits in the most effective and cost-efficient manner possible, and to optimize overall benefits (previous GEF projects have applied a landscape approach but focusing principally on single focal-area benefits such as environmental connectivity, without considering the existence of diverse types of benefit/impact flows and the relations between them).

56. The sustainability of the project's impacts will be ensured through its focus on capacity development, particularly in relation to capacities for the generation, management and use of information by well-established State institutions, and for the development and application of resource management practices by State

enterprises, private investors and individual producers. This capacity development will be backed up and institutionalised through the development of regulatory instruments and methodological tools, in order to limit effects on sustainability of possible staff changes.

2. Stakeholders

Stakeholders	Project Implementation Role
Central Government	
Ministry of Science, Technology and the Environment (CITMA)	GEF focal point and environmental sector head. Responsible for directing, executing and controlling environmental policy, furthering its contribution to sustainable development.
National Centre for Protected Areas (CNAP)	Project proponent and proposed executing agency: lead entity regarding the planning of Protected Areas in Cuba, with a strong track record and in-house capacity for the implementation of complex projects with large geographical areas of intervention
Ministry of Agriculture (MINAG) and its provincial delegations.	Organism responsible for directing, executing and controlling State and Government policy in relation to the use, conservation and improvement of soils, the conservation, management, rational use of the forest estate and the conservation of wild fauna and flora.
Environment Agency (AMA) – dependency of CITMA	Responsible for developing the scientific and technological bases for environmental management and generating integrated solutions that guarantee the sustainable management of natural resources. Responsible for the development and application of environmental land use planning” (<i>ordenamiento ambiental</i>).
National Forestry Directorate and offices of Forestry Services at provincial and municipal levels (MINAG)	Responsible for ensuring compliance with the Forestry Law (#85) and its regulations, ensure the appropriate use of FONADEF, approve projects submitted to FONADEF for the forestry estate and wildlife and carry out certifications of resource holders in forests and protected areas.
State Forest Service (MINAG)	Promotion of the sustainable use of forest resources and the conservation of ecosystems and biodiversity, and for overall oversight and administration of FONADEF.
Environment Units. Provincial Delegations of CITMA.	Control and supervision of environmental management in the provinces. Methodological control, coordination and supervision of provincial protected area systems.
Ministry of Economy and Planning (MEP)	Responsible for directing, executing and controlling the application of policies related to economy, planning, statistics, normalization, quality control of communal services, physical planning and industrial design; therefore a key actor in the application of the results of economic valuation in planning and decision making.
Ministry of Finance and Prices (MFP)	Responsible for defining budgetary assignments and financial instruments with implications for sector development and natural resource management, and therefore a key target institution for the results of economic valuation of ecosystem goods and services.
Ministry of Tourism (MINTUR)	Responsible for overseeing and promoting tourism development, and therefore a key actor for the mainstreaming of considerations of environmental sustainability, inter-sector impacts, and the results of economic valuation of ecosystem goods and services into sector development.
Ministry of Higher Education (MES)	Will be responsible for delivering awareness-raising and technical training programmes regarding economic valuation of ecosystem goods and services, and the incorporation of the results into planning and decision-making.
Ministry of the Food Industry (MINAL)	Responsible for overseeing food production, including fisheries, and therefore a key actor for the mainstreaming of considerations of environmental sustainability, inter-sector impacts, and the results of economic valuation of ecosystem goods and services into food production activities.
Ministry of Energy and Mines (MINEM)	Responsible for overseeing and promoting hydrocarbon exploitation, and therefore a key actor for the mainstreaming of considerations of environmental sustainability, inter-sector impacts, and the results of economic valuation of ecosystem goods and services into sector development.
National Office of Statistics and Information (ONEI)	Will play a key role in managing the results of information on economic valuation of ecosystem goods and services, and for ensuring access to this information among decision-makers and planners in other institutions.

Stakeholders	Project Implementation Role
Institute of Physical Planning (IPF)	Responsible for methodological and procedural orientation and oversight of territorial land use planning (<i>ordenamiento territorial</i>), and therefore a key actor in supporting the incorporation of the results of economic valuation into planning procedures.
National Institute of Hydrological Resources (INRH)	Responsible, in coordination with other entities, for the protection of water resources watersheds, waterways and water infrastructure against the risks of pollution and degradation, as well as the systematic control of water quality. Its decision-making and planning regarding the management of water resources and watersheds will take into account the results of economic valuation of ecosystem goods and services.
Ministry of Transport MITRANS	Responsible for the control of pollution in bays and ports, and the inspection and security of navigation and maritime transport.
Central Bank of Cuba	Responsible for the oversight of financial and economic management and therefore a target for information on the economic value of ecosystem goods and services.
Local government	
Representatives of local government (Local Organisms of Popular Power: Councils of Municipal Administration; Popular Councils)	Control and administer resources at local level: will play a vital role in the definition of priorities for local development and the validation of proposals of natural resource management strategies within their areas of jurisdiction.
Civil Society Organizations	
National Association of Small Farmers (ANAP)	Represents small farmers: will participate in the definition of the productive options to be promoted and will act as a channel for extension messages to small farmers.
ACTAF (Association of Agricultural and Forestry Technicians)	Will serve as a channel for raising awareness and knowledge among agricultural and forestry technicians regarding the valuation of ecosystem goods and services, and for the formulation of strategies for incorporating these issues into extension messages.
ANEC (National Association of Economists of Cuba)	Will serve as a think-tank/platform for the generation and discussion of methodological issues related to economic valuation.
Federation of Cuban Women	Active at all levels; will be consulted regarding strategies for maximizing women's participation in the project and its benefits, and will serve as a channel for the representation of the needs and interests of women.

3. Gender equality and women's empowerment.

57. Cuba has already made very significant advances in promoting women's equitable participation in decision-making, the control of factors of production and the enjoyment of benefits from production processes. This project will generate further benefits for women, by helping to stabilize ecological and social processes at landscape level, and promoting the generation of economic benefits through sustainable production systems, which will in turn help to consolidate and stabilize the structures and internal dynamics of natural resource-dependent farm families, as well as generating specific income and employment opportunities for women. The project will also take advantage of and contribute to the well-established provisions for women's participation in decision-making structures at the levels of community and local government.

58. A detailed gender strategy will be developed during the first year of the project, to ensure that a gender focus is applied in a cross-cutting manner in all project activities and indicators; this will be linked to and harmonized with the existing gender strategies of the ANAP and each of the target economic sectors. The gender focus will be applied in a cross-cutting manner, but will be specifically reflected in the following elements of the project:

- Development of personnel capacities: while there is already a very high level of female representation in technical and strategic posts, the project will ensure that women are specifically targeted by capacity development activities.
- In selecting the management systems to be promoted under Component 3, aimed at generating and safeguarding ecosystem goods and services, attention will be paid in particular in participatory analyses of their gender implications (avoiding the marginalization of women, and where possible actively favouring their economic and social status through opening up opportunities for them to control the management of natural resources and to generate and control income). Appropriate tourism has particular potential in this regard.
- The measures used for the economic valuation of ecosystem goods and services will be gender sensitive.

- The awareness-raising, environmental education and communication to be supported through the project will include recognition of the differentiated roles of men and women in relation to natural resource management, and the differentiated implications of natural resource degradation for them.
- The mechanisms for planning, negotiation and local participation through which the project will work in order to ensure that the interests of different stakeholders are taken into account in an informed manner (using the results of ecosystem valuation) will consider the differentiated interests and conditions of men and women, in order to optimize gender equity in the resulting decisions.

4. Risks.

Risk	Level	Mitigation measures
Motivations for expansion of economic sectors (especially tourism and hydrocarbons) outweigh considerations of sustainability and inter-sector impacts	Medium	Provision to decision makers of tools and capacities to weigh up the net implications of different sector development scenarios will mitigate this risk relative to the baseline scenario; technical capacity development by the project will provide actors in the economic sectors with technical options for reducing or offsetting their impacts.
Budget constraints reduce the availability of incentives for management practices that generate or safeguard environmental goods and services	Medium	The project will promote increased levels of private sector incentives (such as corporate responsibility programmes of tourism developers) to complement State-funded incentive programmes.
Climate change results in degradation of ecosystems and their ability to generate goods and services	Medium	Valuation of ecosystem goods and services and awareness raising will result in increased investment in the restoration of ecosystems and the recovery of their resilience and their capacities to generate goods and services.

5. Coordination.

59. The project will be highly complementary and closely coordinated with two major ongoing GEF initiatives in Cuba:

- 1) ***A Landscape Approach to the Conservation of Threatened Mountain Ecosystems*** (GEF ID 4846). This project will run until 2022 and therefore will coincide with the project proposed here by around 5 years. Given that project 4846 applies a landscape approach, with a major focus on mainstreaming BD conservation into the management of production landscapes, it will be an important source of technical experiences that will feed into this project. This process will be facilitated by the fact that the CNAP, which will execute this project, will also participate directly in the Project Implementation Unit of project 4846, providing one of its National Coordinators. Coordination and complementarity will be made particularly important by the fact that two of the mountain massif landscapes targeted by project 4846 are adjacent to the coastal and marine landscapes targeted by this project (Guaniguanico massif drains to the north into target locality 1, the north coast of Pinar del Río Province, and Bamburanao massif is adjacent to target locality 2, the north coast of Villa Clara province): this will enable the two projects between them to apply a fully “ridge to reef” perspective to the management of the landscapes in question, with this project providing a more integrated multi-focal area perspective, relative to the focus of project 4846 on BD.
- 2) ***Capacity Building for Sustainable Financing Mechanisms/Sustainable Land Management in Dry land Forest Ecosystems and Cattle Ranching Areas***. This project is currently under design, and will be the third of the 5 projects that constitute Cuba’s Country Pilot Partnership (CPP) on SLM “Supporting Implementation of the Cuban National Programme to Combat Desertification and drought (NPCDD)” (GEF ID 3427). It will work in Villa Clara province (coinciding with locality 2 of this project) promoting improved SLM techniques in a pre-mountainous ecosystem (dry forest & livestock), and in Cauto River Basin, promoting sustainable management of dry forest resources; it is expected to run until 2020, and will therefore coincide with the present project by around 3 years. The generation through the project proposed here of capacities and information regarding the economic valuation of ecosystem goods and services will feed directly into development of sustainable financing mechanisms through the CPP project; while the technical knowledge generated through the CPP project on SLM in dry land areas will feed into the

promotion by this project of an integrated landscape-wide approach linking these SLM aspects with BD and SFM.

60. “In addition to the large portfolio of UNDP projects in the country, the project will learn lessons from projects of other agencies, such as the UNEP/GEF project “Capacity Building for Information Coordination and Monitoring Systems/SLM in Areas with Water Resource Management Problems” (GEF ID 3008) within the context of the UNDP-led Country Pilot Partnership (CPP) on Land Degradation. In addition to direct inter-agency links, lessons will be learned and activities coordinated with these and other (current and future) agency projects through the national institutions involved in the projects. Conditions in Cuba are particularly favourable in this regard, given the high levels of inter-institutional participation and interchanges during the formulation, implementation and evaluation phases of all projects, and the role of the Ministry of External Trade and Foreign Investment (MINCEX) in coordinating cooperation projects.

6. Consistency with National Priorities.

Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes ☒/no). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc. UNCCD

61. The project will directly contribute to the following Aichi targets for biodiversity:

- **Strategic Goal A, Target 1:** By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably (*project Outcome 2.1*)
- **Strategic Goal A, Target 2:** By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems (*project Outcome 1.1*)
- **Strategic Goal A, Target 3:** By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions (*project Outcomes 1.2 and 3.2*).
- **Strategic Goal A, Target 4:** By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits (*project Outcomes 1.1 and 3.1*).
- **Strategic Goal B, Target 5:** By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced (*through project Outcome 3.3*).
- **Strategic Goal B, Target 7:** By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity (*through project Outcome 3.3*).
- **Strategic Goal B, Target 10:** By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning (*through project Outcome 3.3*).
- **Strategic Goal D, Target 14:** By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable (*through project Outcome 3.3*).

62. The new NBSAP (titled the National Programme for Biodiversity 2016-2020) is currently under review by national institutions prior to final approval. This project is in accordance with the following goals of the document:

- **Goal 2:** Integration of the values of biological diversity in sector-based and territorial programmes, harmonizing the objectives of conservation and sustainable use in the country’s development policies and strategies, and in the processes of decision-making at all levels.

- **Goal 3:** Economic instruments and incentives are available, which contribute to slowing the loss of biological diversity.

7. **Knowledge Management.**

63. Effective knowledge management will be especially critical for the success of this project, given its strategic role in building on and integrating the results of the country's extensive past and ongoing GEF portfolio. In common with other GEF projects to date, the project will feature multi-institutional implementation arrangements (to be defined in detail during the PPG phase), which will facilitate "cross-pollination" of knowledge and lessons between the projects and institutions. Specific emphasis will be placed on knowledge management under Component 2 of this project, which will deliver mechanisms for the management of and access to information, including:

- Information compendia, case studies and lessons learned on values of ecosystem goods and services, and valuation methods
- Database on results of economic valuation of ecosystem goods and service, accessible to decision-makers at different levels
- Existing information systems (e.g. INFOGEO) incorporating information on the economic values of ecosystem goods and services.

64. The project will also invest in knowledge dissemination under Component 2, through the delivery of communication mechanisms and materials for awareness raising on the economic values of ecosystem goods and services and the implications of alternative management decisions.

List of key abbreviations and acronyms

BCC	Central Bank of Cuba
CITMA	Ministry of Science, Technology and the Environment
DMPF	Municipal Departments of Physical Planning
DPPF	Provincial Department of Physical Planning
EPOT/PPOT	Provincial Land Use Planning Strategies and Plans
FONADEF	National Fund for Forestry Development
INRH	National Institute of Hydrological Resources
IPF	Institute of Physical Planning
KBA	Key Biodiversity Area
MEP	Ministry of Economic and Planning
MES	Ministry of Further Education
MFP	Ministry of Finance and Prices
MINAGRI	Ministry of Agriculture
MINAL	Ministry of Foodstuffs
MINEM	Ministry of Energy and Mines
MINTUR	Ministry of Tourism
ONEI	National Office of Statistics and Information
OLPP	Local Organisms of Popular Power
PGOT/PGOU	Municipal Land Use Planning Strategies and Plans

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT AND GEF AGENCY


A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT:

(Please attach the [Operational Focal Point endorsement letter](#) with this template.

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Enrique Moret Hernández	Director, GEF Political and Operational Focal Point	MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT, DEPARTMENT OF INTERNATIONAL AFFAIRS	FEBRUARY 29, 2016

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
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