



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
THE GEF TRUST FUND

Submission Date: 12/22/2009

Resubmission date:

PART I: PROJECT IDENTIFICATION

GEF PROJECT ID: 4158 PROJECT DURATION: 60 months

GEF AGENCY PROJECT ID:

COUNTRY(IES): Cuba

PROJECT TITLE: Agricultural biodiversity conservation and Man and Biosphere Reserves in Cuba: Bridging managed and natural landscapes

GEF AGENCY(IES): UNEP

OTHER EXECUTING PARTNER(S): Instituto de Investigaciones Fundamentales en Agricultura Tropical (INIFAT), Cuba; Centro Nacional de Areas Protegidas (CNAP), Cuba; Bioversity International

GEF FOCAL AREA (S): Biodiversity

GEF-4 STRATEGIC PROGRAM(S):BD-SO1: SP3; S02: SP5

NAME OF PARENT PROGRAM/UMBRELLA PROJECT (if applicable): BIODIVERSITY

INDICATIVE CALENDAR	
Milestones	Expected Dates mm/dd/yyyy
Work Program (for FSP)	March 2010
CEO Endorsement/Approval	January 2012
Agency Approval Date	March 2012
Implementation Start	March 2012
Mid-term Evaluation (if planned)	September 2015
Project Closing Date	February 2017

A. PROJECT FRAMEWORK

Project Objective: To mainstream agricultural biodiversity into the management of Cuban Man and Biosphere (MAB) Reserve system

Development goal: To conserve the diversity within and around protect areas in ways that improve the livelihoods of rural communities and sustain ecosystem functions in and around the MAB reserves.

Project Components	TA, or STA	Expected Outcomes	Expected Outputs	Indicative GEF Financing ^a		Indicative Co-Financing		Total (\$) c = a + b
				(\$ a)	%	(\$ b)	%	
1. Mainstreaming mechanisms that integrate high levels of crop biodiversity into agriculture buffer zones	STA/TA	Crop biodiversity in agriculture buffer zones increased through sustainable use of wild relatives and local varieties of economically valuable species from within and around Cuban Biosphere Reserves	<ul style="list-style-type: none"> Tools and practices to enhance the use of local varieties identified through partnerships between local communities, PA managers and scientific experts Maintenance of local seed systems through community biodiversity registers and agricultural biodiversity fairs Traditional varieties and wild species characterized and available for MAB farmers to use in their agricultural systems to cope with abiotic stress including adaptation to 	450,000	41	638,273	59	1,088,273

			<p>localized impacts of climate change</p> <ul style="list-style-type: none"> • Nurseries established and outreach programs for the distribution of diversity-rich planting material to farmers outside protected areas • Capacity building workshops and support structures to facilitate farmers' adoption of improved production practices, and local seed systems. • Expansion of agricultural biodiversity corridors that provide refuges and increase population sizes of pollinators and seed dispersers including fruit bats, birds and migratory species that are compatible and beneficial for indigenous crops and fruit trees in home gardens and historical agroforestry systems • Impact assessment of different practices on soil biodiversity, soil runoff, water quality and ecosystem services across cultivated and natural landscapes • Indicators and metrics for adoption and impact of agricultural biodiversity management practices that maintain ecosystems integrity and services 					
2. Improved Protected Area (PA) management system	STA/	Improved management of Cuban Man and Biosphere (MAB) Reserve system through enhanced leadership and decision-making capacity of all stakeholders	<ul style="list-style-type: none"> • Management plans for the national MAB reserve system include agricultural biodiversity • Scaling out of best agricultural biodiversity management practices across MAB reserves facing anthropogenic threats to biodiversity in terrestrial and coastal ecosystems in Cuba. • Supported social networks and institutions that foster participation of local 	430,000	41	611,363	59	1,041,363

			<p>farming communities in protected area governance</p> <ul style="list-style-type: none"> Indigenous agroforestry germplasm and practices provided for restoration of degraded areas and reducing soil runoff into wetland and coastal areas. Information on agricultural biodiversity conservation and mainstreaming in Cuban MAB reserves is made available for dissemination through the global MAB network coordinated by UNESCO 					
3. Benefit flow to communities linked to sustainable financing of the protected area management systems	STA/TA	3. Improved livelihoods of the people living within and around the Biosphere Reserves through benefit sharing mechanisms that support the sustainable use of agricultural biodiversity.	<ul style="list-style-type: none"> Identification and institutionalisation of income generation and marketing options for certified and non-certified products of <i>conuco</i> and ecoagriculture from the targeted Biosphere Reserves add value to community livelihoods and support the sustainability of the Reserve system Methodologies and tools for establishment of licensing schemes for the use of sustainable agricultural biodiversity management practices Policy advice, lessons and options on conservation and sustainable use of agricultural biodiversity communicated to national policymakers to secure the sustainability of the National Protected Area System (SNAP). Policy options that support broadening the crop and genetic base of the Cuban agricultural sector 	270,182	32	580,944	68	851,126
4. Project management				106,800	39	165,102	61	271,902
5. M&E				111,200	37	186,205	63	297,405
Total project costs				1,368,182		2,181,887		3,550,069

B. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE and by NAME (in parenthesis) if available, (\$)

Sources of Co-financing	Type of Co-financing	Project
Project Government Contribution	In-kind	235,950
Multilateral Agency(ies) (UNESCO) Biodiversity International	In-kind	300,000 875,000
Bilateral Agency(ies) UNESCO Biodiversity International and others	Cash	770,937
Total Co-financing		2,181,887

C. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

	Previous Project Preparation Amount (a)	Project (b)	Total c = a + b	Agency Fee
GEF financing	n.a.	1,368,182	1,368,182	136,818
Co-financing	n.a.	2,181,887	2,181,887	
Total	n.a.	3,550,069	3,550,069	136,818

D. GEF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY(IES)

GEF Agency	Focal Area	Country Name/ Global	(in \$)		
			Project (a)	Agency Fee (b)	Total c=a+b
UNEP	Biodiversity	Cuba	1,368,182	136,818	1,505,000
Total GEF Resources			1,368,182	136,818	1,505,000

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

1. Cuba is a refuge for unique components of agricultural biodiversity that are crucial for human well-being in tropical island environments. These components provide a range of ecosystem services from food, decomposition and nutrient cycling, crop pollination and seed dispersal services, to conserving genetic and species diversity and providing recreational and spiritual spaces. Much of this agricultural biodiversity remains only in small pockets of the country within and around Cuban's six Man and the Biosphere Reserves (MAB). These protected areas contain endemic genetic resources of global significance of legumes, neo-tropical fruits, roots and tubers, and spices, including both traditional varieties and their wild relatives of together with a rich diversity of associated organisms that are essential for sustainable agricultural production systems. The unique biocultural heritage found in Cuban Biosphere Reserves is attributable in part to the complex, often age-old interactions between the productive and livelihood activities of local communities within the biosphere and its buffer zones, and the ecosystems and biological resources that comprise their livelihood assets. Diverse sets of wild, semi-wild and domesticated plant species found within and around the protected areas have not only tolerated human activities but have relied on certain agricultural practices for their continued survival and ability to evolve to changing environmental and anthropogenic conditions. Many of these agricultural biodiversity

management practices contributed to the unique ecosystem features already present at the time the biosphere reserves were established. Yet, this system that links the conservation and use of both protected and cultivated areas through the community management of this interface between wild, semi-wild and diverse local crop varieties in and around protected areas has not been mainstreamed into the national agriculture and environmental development and policy institutions.

2. Today, the diversity within these systems is more and more under threat. The main threats being diversity-poor agricultural practices, lack of biodiversity rich options for livelihoods, and the lack of alternatives to extractive practices such as mining and logging contributing to soil runoff and silting of coastal marine areas and wetlands, are combining to increase the likelihood of loss of the unique and globally significant biodiversity in the protected areas. Over 100,000 people living in the MAB reserves depend on agriculture and fishing for their livelihoods. Thirty thousand of these live in the core areas. Yet, their community management practices which have for generations conserved the wild-cultivated crop interface are not taken into account in the current MAB management schemes. Many useful practices promote synergy between wild and cultivated agricultural biodiversity in the MAB reserves, however they have also been ignored and under-valued by sustainable agriculture programs in the formal research and development sectors. In order to conserve agricultural biodiversity in Cuba and to mainstream it for sustainable agriculture and ecosystem services, the role that communities in the MAB reserves play in managing the interface between wild to cultivated landscapes needs to be better understood. Biosphere reserve managers and policy makers require the knowledge and tools to systematically use agricultural biodiversity as an option to improve the conservation of protected areas and to mainstream biodiversity for more sustainable agriculture. The project, therefore, will provide evidence-based strategies, plans and practices that include agricultural biodiversity functions and contributions to maintaining the wild and cultivated interface and buffers.

3. Currently different ministries and departments of agriculture, environment, forestry, and fisheries have had limited opportunities to produce integrated management plans that cut across natural resources, and the conservation and development divide. This project will further the practice and experience of cross-cutting strategies that conserve biodiversity in protected areas by highlighting the sustainable use of agricultural biodiversity. The Project will be also building on the comparative advantage that agricultural biodiversity provides in generating a diversified flow of benefits linked to sustainable financing of the protected area system. Developing more comprehensive and inclusive management plans as well as sustainable flows of benefits that the project will identify and mainstream, should incentivize local communities to be more involved in the conservation and management of the protected areas and buffer zones.

4. The overall **project objective** is, therefore, to mainstream agricultural biodiversity into the management of the Cuban Man and Biosphere Reserve system. The project will take hitherto ignored agricultural biodiversity management practices into account to produce more effective management plans that can be applied to other MAB reserves in Cuba. By securing the conservation of the endemic agricultural biodiversity in a range of ecosystems, the project will provide essential biological resources, and knowledge for more diversified and sustainable agricultural production systems in Cuba. Achievement of the project objective will contribute to the **project's development goal**: to conserve the diversity within and around protected areas in ways that improve the livelihoods of rural communities and sustain ecosystem functions in MAB buffer zones and horticultural and agroforestry systems.

5. The proposed project will focus on two of the six Cuban biosphere reserves, the Sierra del Rosario (RBSR) and the Cuchillos del Toa (RBCT) that have already taken the first important step, recognizing that agricultural biodiversity and associated management practices are important and beginning to identify and gather data on these practices. The Sierra del Rosario MAB Reserve in Cuba's western region covers 25 000 ha with very rich natural and agricultural biodiversity. There are eight rural communities in the RBSR buffer and transition zones consisting of 5000 people, most of whom practice traditional home garden practices known as *conuco*. Baseline inventories document a total of 322 species cultivated by these communities, often in the form

of traditional varieties used as food, fodder, condiments, ornament, insecticide, craft-making, tools, and spiritual purposes. The genetic diversity of those few species that have been studied in depth, such as *Phaseolous*, is very high and unique within the biosphere reserves. In addition, the Reserves are important reservoirs of genetic material and cultivars of many fruit and horticultural species (e.g. *Pouteria sapota*, *Capsicum* spp. *Musa* sp. *Mangifera indica*) that are currently under threat within the larger, more intensive, agricultural systems in Cuba.

6. The second reserve where sustainable agricultural practices are being performed is the Cuchillas del Toa Biosphere Reserve (RBCT), which covers 208 305 ha in Cuba's eastern Nipe-Sagua-Baracoa mountain range. The RBCT has 14 rural communities comprising 22 135 inhabitants in the buffer and transition zones. Forestry and agro forestry are the main economic activities whose compatibility with conservation goals and ecosystem integrity and the 1998 Cuban forest legislation can be further enhanced. The communities also maintain home gardens or *conucos* as well as shade coffee and cacao groves. In total they maintain 258 cultivated species with high levels of cultivar diversity within the crop species. There is important genetic diversity within *Phaseolus* spp, *Dioscorea* spp. and *Zea mays* that comprise the traditional food crops in eastern Cuba. A recent assessment of local maize varieties that were recorded in a study of maize diversity done in 1957 revealed that many are still present and continue to evolve, highlighting the importance of conservation and adaptive management of agricultural biodiversity in the RBCT. There are also important endemic cultivated plants that are used as medicines by the biosphere communities such as *Protium cubense*, *Garcinia aristata* and *Piper aduncum* ssp. *Ossamum* spp.

7. Significant agricultural biodiversity is present in all Cuban MAB reserves. The focus on two MAB reserves where agricultural biodiversity and "conucos" are a major component of the total biodiversity and landscape makes it possible to speed the development of tools and indicators to assess and include agricultural biodiversity in the management and sustainability of all Cuban MAB Reserves. A clear call based on initial surveys showing that agricultural biodiversity exists, but is not covered in reserve management plans has been made. It further states that sustainable use of agricultural biodiversity provides an opportunity to support conservation of ecosystems in Cuban MAB reserves. The project will build on the existing initiatives in the RBSR and the RBCT reserves to develop full panoply of methodologies for integrating biodiversity conservation with agricultural management practices. These practices will be mainstreamed by the Centro Nacional de Areas Protogoras CNAP into the management plans of other Reserves in the Cuban Protected Area System, where extractive mining and logging are a serious problem. One method to be tested, and then extended to other four reserves will be to give recognition to the current sustainable agricultural practices in the Sierra del Rosario and the Churchill's del Toa through the development of licensing schemes for households and communities that agree to practice sustainable agricultural practices. These schemes would establish a sustainable number of user agricultural household, and a set of practices that are consistent with the conservation and ecosystem integrity of the reserves and better support other revenue streams such as ecotourism and alternative markets for traditional agricultural products.

The overall project objective will be achieved through the following three components:

1. Mainstreaming mechanisms that integrate high levels of crop biodiversity into agriculture buffer zones

8. The key to mainstreaming the use of crop biodiversity within agricultural systems will be the characterization and strengthening of the linkages and connectivity across cultivated and natural landscapes. This requires the identification and development of mechanisms that enhance the ways in which wild and rural species and populations, and domesticated local varieties are sustainably used by communities within their agricultural landscapes. These mechanisms will be identified through building representative partnerships between local communities, protected area managers and researchers within the CNAP system, agricultural extension personnel, and scientific experts in the Instituto de Investigaciones Fundamentales en Agricultura Tropical (INIFAT) to identify, test, improve and disseminate farmers' and users' knowledge and practices in *in situ* conservation and on-farm management of plant genetic resources. Such mechanisms will include the adoption of on-farm

management practices for indigenous crops and crop varieties which include maintenance of local seed systems (seed stores and supply) supported through Community Biodiversity Registers and Agricultural Biodiversity Fairs.

9. Wild and cultivated materials will be identified that currently are being used or have the potential to be used by local communities to managing pests and diseases and to cope with biotic stress including adaptation to localized impacts of climate change, e.g. longer dry spells, increased volatility and severity of weather events. Once identified and tested, these materials will be mainstreamed into the Cuban agricultural outreach programme to farmer's *conucos* outside protected areas by INIFAT. Capacity will be built through workshops and practical support structures to facilitate farmers' adoption of improved production practices and a monitoring system assessing how the impact of changed practices will improve the adaptive management of the Biosphere Reserves.

10. Biodiversity and productivity within the agricultural landscape will also be enhanced through the agricultural and environmental sectors working together with local communities to expand biodiversity rich corridors within the agricultural production systems that provide refuges and increase population size of pollinators and seed dispersers including fruit bats, birds and migratory species that are also compatible with, and beneficial for, indigenous tropical crops and fruit trees in home gardens and ecoagriculture. In addition, indicators and metrics for adoption and impact of agricultural biodiversity management practices that maintain ecosystems integrity and services, including an assessment of the impacts of different practices on soil biodiversity, soil runoff, water quality and ecosystem services through soil studies across cultivated and natural landscapes, will also be used to design sustainable agricultural biodiversity management practices within and around the reserves. This is particularly critical for the biodiversity of the Cuchillos del Toa (RBCT) reserve which has over 6.000 hectares along coastal areas and wetlands considering that soil runoff and water quality from non-sustainable extractive agricultural practices are a main constraint to the conservation of key aquatic species

2. Improved Protected Area (PA) management systems

11. Among the current objectives in the management plan for the Cuban National System of Protected Areas are (i) the provision of ecosystem goods and services, (ii) reducing soil erosion and improving soil biology and quality, (iii) improved watershed management, (iv) sustainable rural development, and (v) improving the livelihoods of local populations in and around the reserves. Although agriculture biodiversity is an important resource within the reserve areas, current protected area management plans lack specific guidelines, mechanisms and options to include agricultural biodiversity management. The revised plans produced by the project will include strengthening the maintenance and use of agricultural biodiversity and associated local knowledge through the development and adoption of appropriate management models. Implementation of these plans will require building increased capacity of national and local institutions (including park management staff) and farmers and communities to jointly implement new models and approaches. In order to ensure that the adaptive management of agricultural biodiversity supports the ecosystem functions and conservation of non-agricultural biodiversity, the project will establish a programme of exchange and scaling out best agricultural practices from those Reserves (RBSD & RBCT) with documented sustainable practices to other Reserves facing anthropogenic threats to biodiversity. These practices will include organic agriculture, cropping rotation and permaculture, as well as support for local seed systems.

12. To ensure an improved management system of biodiversity for protected area management in Cuba, the project will establish common system-wide indicators to monitor benchmarks and progress of the implementation of management activities and local participation in protected area governance. System-wide indicators are indicators of agricultural biodiversity status and uses that are important for the management of the protected areas. Agricultural biodiversity is present in all six reserves but is not directly considered in management. These indicators on the extent, distribution, and uses of agricultural biodiversity, the sustainable use options and the mechanisms to involve farm households will be applicable to all the reserves in Cuba national protected area systems. Among the indicators included are: number of communities participating in sustainable management

practices, indigenous agricultural species and wild relatives sustainably managed and conserved, number of hectares using agricultural biodiversity consistent with conservation goals of reserves and agricultural biodiversity species and management practices adopted in buffer zones, transition zones and traditional *conuco* agriculture. This will be done through securing participation of local communities and holders of traditional knowledge, innovations and practices in the protected area management process. Their contribution to sustainable livelihoods will be mainstreamed through appropriate decision-making frameworks and community representation at the level of specific reserves and within committees contributing to the governance of the national protected area system. Furthermore, management plans will include putting in place a monitoring system to assess how the impact of changed practices improves the management of the Biosphere Reserves. Revised management plans for the Cuban Protected Areas System will be provided to UNESCO's world wide system of Man and Biosphere Reserves, as a protocol for other MAB reserves to make similar revisions to the management plans.

3. Benefit flows to communities linked to sustainable financing of the protected area management systems.

13. The sustainable management of protected areas will be achieved when individuals and communities within and around the protected areas are able to benefit from the conservation and sustainable use these protected areas. This includes benefits from the marketing of sustainably harvested products from the reserves and the promotion of agro-ecotourism. It also identifies the flow of benefits to individuals and communities as a result of maintaining ecosystem integrity and safeguarding genetic diversity for food security. To accomplish this, diversified revenue schemes linked to protected area management are needed.

14. A broader portfolio of income generation combined with increased participation and co-management by local communities will make significant contributions to the effectiveness and financial sustainability of Cuba's protected area system. Partners will identify and institutionalise income generation and marketing options for certified and non-certified products of *conuco* and ecoagriculture from the Biosphere Reserves; these include: (a) design of marketing campaigns that are linked to public awareness of the biological and biocultural value of Cuban Biosphere Reserves at national and international level, (b), promotion of the production of traditional and indigenous crop varieties with diverse genetic base, e.g. beans, edible aroids, sweet potato, cassava, tropical fruits, and gourds, (c) establishment of standards and guidelines for sustainable harvest and marketing of wild products.

15. Other revenue schemes will include the public and financial recognition of using sustainable agricultural practices through the development of licensing schemes for households and communities that agree to practice sustainable agricultural practices. This would include reinforcing the traditional *conuco* agricultural practices of soil management, thus maintaining yields, reducing pressure to expand cultivation, and reducing soil runoff. The project will support the development of policy briefs extension manuals that will be providing policy advice to support these schemes. These briefs and manuals will be, produced through meetings of cross-sectoral platforms involving environment and science (CITMA-CNAP), agriculture and food (INIFAT and farm communities), and the ecotourism sectors. The platforms will provide lessons and options for national policymakers in order to secure the sustainability of the national Protected Area System (SNAP) and to further institutional support for the flow of benefits back to the communities within and around the reserves. Policy options will also be developed through these cross-sector platforms, to place improved MAB production practices and income generation activities in the context of wider development and poverty reduction programmes, including the support for a broadened crop genetic base of the Cuban agricultural sector.

16. The project will have the following **global environmental benefits**: (a) a portfolio of Biosphere Reserve management practices, which incorporate agricultural biodiversity conservation into national protected area systems that will be tested, adapted, and provided to the worldwide network of MAB reserves. (b) protected areas will contain an increased number of hectares that are sustainably managed; (c) an increased number of valuable crop and animal genetic resource will be used and conserved; (d) a strengthened system of adaptive buffering through an increased portfolio of useful plant varieties within the projection system to hedge against future risks, including those associated with climate change will be available to farming communities; (e) threats

to endangered and unique endemic species will be reduced through adoption of appropriate agricultural practices that reduce harmful impacts and promote corridors and connectivity; (f) enhanced leadership and decision-making capacity in the existing global MAB network of institutions, experts and communities in order to enable the mainstreaming and upscaling of project activities and outputs; and (g) development of indicators that measure the impacts—positive and negative—of agricultural practices on ecosystem functioning and ecosystem services which will facilitate the future management of human-influenced ecosystems; .

17. Cuba's protected area system is part of the global Man and the Biosphere Programme (MAB) of UNESCO that covers 553 reserves in 107 countries, representing the world's most important ecosystems with unique biodiversity. The global benefits generated by the project will be relevant to other tropical island biomes and will be disseminated for uptake through UNESCO/MAB's south-south cooperation programme, as well as global networking activities on biodiversity and ecosystem services as well as the link between biological and cultural diversity.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL PRIORITIES/PLANS:

18. Cuba is a signatory of the Convention on Biological Diversity (CBD) and has also ratified the International Treaty on Plant Genetic Resources for Food and Agriculture. All of Cuba's three CBD reports emphasize the need for conserving and sustainably managing natural resources, while its report on plant genetic resources for food and agriculture underlined the importance of completing inventories of agricultural biodiversity in rural communities where high genetic variability on a wide range of crops is concentrated. It also identified priorities for *in situ* conservation, for promoting the established of community genebanks, and for strengthening institutional capacities to regenerate genetic diversity that is undergoing erosion.

19. Cuban institutions have been conducting research on *in situ* conservation of agricultural biodiversity since 1992 with the support of Bioersivity International, the German Technical Cooperation agency (GTZ), the International Development Research Center–Canada (IDRC), and an Italian NGO CROCEVIA. The results of this work suggest that it is possible to achieve the integration of agricultural biodiversity use with conservation in ways that provide direct benefits to the rural livelihoods of communities in the Biosphere Reserves. Benefits include the conservation of genetic resources for food and agriculture and the management of protected areas for strengthened ecosystem services and opportunities for agro-eco-tourism. Cuban partners have noted the potential that Biosphere reserves hold for contributing to livelihoods and sustainability of agriculture in Cuba (see.Garcia M., Castineiras L (eds). *Biodiversidad Agrícola en Reservas de la Biosfera de Cuba: Un Reto para el Futuro*. Editorial Academia de Ciencias, La Habana, 2006 44 p.). The inter-ministerial committee comprising representatives of the Ministry of Science Technology and Environment and the Ministry of Agricultural and the Tourism sector that guided the development of this PIF will provide regular coordination among the actors involved in the implementation of this project under the chair of the CNAP and the GEF focal point

20. Cuba has a progressive and comprehensive legal framework, a number of sectoral policies and a National Environment Strategy related to biodiversity conservation. The strategy and action plans give high priority to the conservation of agricultural biodiversity, forest and marine ecosystems as well as to *in situ* conservation. The objectives of the National Programme 015 are to: (1) establish *in situ* conservation strategies of varieties of important crops in and their wild relatives as both alternatives and as complementary measures to *ex situ* conservation; (2) conserve associated traditional knowledge and rescue wild varieties of the species in danger of genetic erosion; (3) design alternative strategies for the development of the training and environmental education on plant genetic resources and (4) inventory underutilized species, their uses and market options/ Cuba's National Biodiversity Strategy and Action Plan (NBSAP) for 2006-2010 calls for the diversification of the commercialization of genetic resources, a study of biodiversity management in Protected Areas, the promotion of community projects and public awareness campaigns for the sustainable use and conservation of biodiversity and the strengthening of capacity of genebank managers in *in situ* conservation.

21. The proposed project is in line with Cuba's support to the UNESCO/MAB Madrid Action Plan (2008) of the Seville Strategy focused to transform the MAB reserves into "the principal designated areas dedicated to sustainable development in the 21st century." The project has been developed and will work closely with the national MAB committee hosted in Cuba's Ministry of Environment, Science and Technology. The National MAB committee liaises regularly with the global MAB programmed to disseminate results and receive scientific and policy advice from other network members and experts.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH [GEF STRATEGIES](#) AND STRATEGIC PROGRAMS:

22. The proposed project addresses Biodiversity Strategic Objective 2: *Mainstreaming Biodiversity in Production Landscapes/Seascapes and Sectors* and its Strategic Program 5. The project will also contribute to Biodiversity Strategic Objective 1: *To catalyze the sustainability of PA systems* in terms of its Strategic Programme 3 by providing information tools for including agricultural biodiversity conservation in PA management plans and provide options through the sustainable use of agricultural biodiversity to increase the flow of benefits and sustainability of Cuban MAB reserves. The project will identify and catalyze community initiatives and support small scale *conuco* agricultural production as cost-effective sustainable economic mechanisms which will benefit communities in and around the Biosphere Reserves, while recognizing and enhancing the value of natural landscapes for sustainable agriculture, livelihood security, and biocultural diversity. The management models designed on the basis of project experiences in two reserves will be applicable to the other four reserves in Cuba, and can be replicated in other Protected Areas worldwide which include coastal and marine ecosystems. By offering concrete avenues to the better integration of the sustainable use of agricultural biodiversity resources, the project will significantly contribute to the strengthening of Protected Area management plans and policies for mainstreaming biodiversity. Working in Biosphere Reserves with their associated buffer zones, the project will explore methods for simultaneously enhancing the conservation of agricultural biodiversity while improving the livelihoods of the rural poor in and around the protected areas. The ecosystem approach, the guiding principle in the management of Biosphere Reserves and other activities undertaken under the Convention on Biological Diversity, will be strengthened and improved by addressing the links between agricultural biodiversity and traditional farming practices in protected areas. This objective is central to the implementation of the GEF strategic priorities 1 and 2 on catalyzing sustainability of protected area systems at national levels and on mainstreaming biodiversity in production landscapes.

23. In addition the project indirectly contributes to SP4. The UNESCO MAB programme and global network has several mechanisms that will contribute to the global mainstreaming of the project. One is the Agro-Cultures programme which supports case studies and dissemination of best practices that "conciliate farming systems productivity and the conservation of natural resources through the development of agro-ecological practices". The tools and indicators developed in this project will be mainstreamed globally with the support of the Biosphere Reserve Integrated Monitoring (BRIM) that compiles and shares abiotic, biodiversity, socio-economic and integrated monitoring in the World Network, and provided platforms for the integration of the resulting information/data. Thus the projects new information on agricultural biodiversity and sustainable management practices along with the corresponding socioeconomic data will be available to the global network. Finally the outcomes of the project will be made available in the periodic global meetings to review and set conservation and sustainable development policies as the Madrid Action Plan for Biosphere Reserves 2008-2013 that aims to raise biosphere reserves to be the principal internationally-designated areas dedicated to sustainable development in the 21st century.

24. The project will contribute to SP5 through the implementation of a set of specific targeted activities aimed at improving the sustainable marketing of the products of rich agricultural biodiversity production systems within and around protected areas. This will be done through the development of marketing programs for certified and non-certified agricultural biodiversity products in a nationally recognised market chain. Conditions will be put in

place to promote markets which emphasize the production of traditional and indigenous crop varieties with diverse genetic base. By establishing standards and guidelines, Cuba will have a better regulatory framework for the marketing and sustainable harvesting of products from Biosphere Reserves. Marketing campaigns will help to building public awareness of the biological and bio-cultural value of Cuban Biosphere Reserves at national and international level and will also serve to improve markets and help to create opportunities and conditions for public and private investment in the agro-tourism and ecotourism that supports the protected areas in Cuba.

D. JUSTIFY THE TYPE OF FINANCING SUPPORT PROVIDED WITH THE GEF RESOURCES:

25. The project objective will be attained through the provision of technical and scientific assistance and analysis. No loan or revolving-fund mechanisms are considered appropriate, and therefore grant-type funding is considered most adequate to enable successful delivery of the project outcomes.

E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

26. The proposed project has already established linkages supported by Bioversity International and other international agencies working in Cuba on the conservation of crop wild relatives, tropical home garden systems, on-farm conservation of crop genetic diversity and maintenance of ecosystem services. The community management of biodiversity provides a body of technical and policy expertise that can support the proposed project. The proposed project is building on synergies and complementarities with other UNEP/GEF projects executed by Bioversity, which provide tried and tested agricultural practices that maximize the sustainable use of agricultural biodiversity and integration with wild relatives: “Conservation and Use of Crop Genetic Diversity to Control Pests and Diseases in Support of Sustainable Agriculture”, “*In-situ* conservation of crop wild relatives through enhanced information management and field application”, “*In situ*/On-Farm Conservation and Use of Agricultural Biodiversity (Horticultural Crops and Wild Fruit Species) in Central Asia.”

27. The proposed project has also established links with a related UNDP implemented project supported by GEF on “Strengthening the national system of Protected Areas in Cuba.” The objective of the UNDP project, which was initiated in 2003, is to conserve highly representative assemblages of four of Cuba's terrestrial eco-regions of global importance and classified as highest priority for conservation nationally and regionally. The proposed project builds on these results and in addition allows the inclusion of agricultural biodiversity elements. In addition the project is closely coordinated with the UNDP/GEF projects on the “Application of a Regional Approach to the Management of Marine and Coastal Protected Areas in Cuba's Southern Archipelagos”; the “Mainstreaming and Sustaining Biodiversity Conservation in Three Productive Sectors of the Sabana Camaguey Ecosystem” and the project on “Enhancing Prevention, Control and Management of Invasive Alien Species in Vulnerable Ecosystems” through linking these project to our proposed work that promotes the sustainable use of indigenous agricultural biodiversity in the restoration of degraded areas resulting from prior and preexisting unsustainable resource extraction in MAB reserves.

28. There are several relevant non-GEF projects that address agricultural biodiversity, mainly focused on *ex situ* and *in situ* crop genetic resources. The Canadian International Development Research Centre (IDRC) project on “Adaptive Management of Seed Systems and Gene-flow” supports a small pilot activity on seed systems of maize, bean and chili peppers and their impact on diversity in production systems, which was implemented through Bioversity’s partnerships with the Cuban national programme. Although, these other projects are small and narrowly focused they contribute specific knowledge as well as benefit from the long-term conservation and adaptation that the ecosystem approach provides through the proposed project. With the collaboration and financial support of the German NGO Brod für die Welt, a four-year project is being carried out in Cuba on contributing to food security through rescue and conservation of plant genetic resources. In the first phase three

community seed banks were created in some localities related to the Biosphere Reserve Sierra del Rosario, with the active participation of communities and their leaders, local and national authorities and national research centers. Close discussion has been on-going between project partners of this and the proposed project here to make use of these new innovative tools and practices. This project has an important component of environmental education and sustainable management of local agricultural biodiversity. In addition, with the collaboration and financial support of The Global Crop Diversity Trust, projects are currently underway to evaluate traditional cultivars of the common bean (*Phaseolus vulgaris* L.) under drought conditions on marginal lands, to regenerate traditional cultivars in the Cuban national common bean and lima bean (*P. lunatus* L.) collections and to study the contribution of traditional methods of *in situ* conservation and management of maize and bean diversity to the food security of rural families in Cuba

29. The project contributes to the UNESCO MAB network's policy options for channelling benefits back to the communities within and around the reserves. This can support protected area policies to further limit or eliminate extractive industries such as mining and forestry that degrade important portions of the protected ecosystems with downstream consequences for coastal ecosystems and watershed. The project will provide concrete options for sustainable use of agricultural biodiversity for income generation and restoration of degraded areas that contribute to the sustainability of the national protected area system (SNAP).

30. Globally, the project will also contribute to the implementation of the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA) and the Convention on Biological Diversity (CBD). This includes, placing improved MAB production practices in the context of wider development and poverty reduction programs, including the support of national policies in Cuba to broaden the crop genetic base of Cuban tropical agriculture and contribute practices and guidelines that may be adapted on a global scale within the UNESCO-MAB global network.

F. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH INCREMENTAL REASONING :

31. Cuba is committed to the maintenance of its National Protected Area System and to promoting sustainable agricultural management practices. However, national managers and policy makers lack the knowledge and tools to systematically use agricultural biodiversity as an option for both the improvement of conservation of protected areas and for providing communities within the reserves with sustainable agricultural management practices. Tools are lacking to mainstream the use of the agricultural biodiversity from protected areas into sustainable agriculture and more secure community livelihoods. Without the project, agricultural biodiversity will continue to remain outside the scope of Biosphere Reserve management plans resulting in the increased and unsustainable exploitation of the protected ecosystems due to poverty, demographic pressure and climate change.

32. The different Ministries and Departments of Agricultural, Forestry, Fisheries and the Environmental lack the capacity, linkages and tools to produce integrated management plans that cross the conservation and development divide. The project, by enabling the joint execution of two agencies, one under the ministry of agriculture and one under the environment ministry, provides a joint framework to develop such cross-sector cutting management plans that would not be possible without GEF funds. Without the project, globally applicable tools and methods will not be achieved. These tools will ensure the conservation of globally significant agriculture biodiversity for neo tropical protected areas and agricultural production systems. Therefore, without this project, globally significant biodiversity of the neotropic region will be lost and the globally applicable indicators of the impact of agricultural practices on the ecosystem functioning and services will not be available for the management of similar human-influenced ecosystems. In addition other protected areas around the world will not have the tools needed to include agricultural biodiversity into their management schemes, and thus this globally important biodiversity could potentially be lost and ecosystem functions will be degraded. This project, by integrating the use of agricultural biodiversity resources in Biosphere Reserves into the reserve management

plans, allows the status of agricultural biodiversity to be systematically monitored for the benefit of the local communities and the conservation authorities.

33. Without this GEF project, MAB farming communities will remain inadequately recognised and supported. Not recognizing farming communities in the MAB reserves may also create ‘user vacuums’ when communities are prevented from carrying out their traditional land management practices. External users with less knowledge of the ecosystems and their services may fill the vacuum and pose even greater threats to biodiversity in the protected areas. These threats include increased poaching, land conversion, logging, soil erosion, and non-sustainable farming practices. Without the components proposed in this project, there will be a temporal and spatial gap in restoration and rehabilitation of eroded and denuded areas within the Reserves and their buffer zones. Filling the gap in knowledge and practice of agricultural biodiversity will facilitate their use as buffers and for restoration of ecosystem functions and services. In addition, by including traditional knowledge of agricultural biodiversity in the management of the Biosphere Reserves, new income-generating activities based on sustainable biodiversity management practices, that would otherwise not be available, will be an option for local communities.

G. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MEASURES THAT WILL BE TAKEN:

Assumptions	Rating *	Risk Mitigation Measure
a) stable political and economic environment	M	<ul style="list-style-type: none"> Project activities underpinned by long-term national commitments to international treaties related to biodiversity conservation (e.g. CBD) and supported by international networks.
b) conflicts between conservationists and resource users	M	<ul style="list-style-type: none"> Participatory approach designed to take into consideration and reconcile different needs. Focus on bridging aspirations and thus minimizing conflicts between development needs of local communities and the need to protect surrounding natural ecosystems. Build understanding that aims of conservation and agriculture can be complementary.
c) continued functioning of the UNESCO MAB network and its ability to effectively communicate project findings to other reserve areas	L	<ul style="list-style-type: none"> Project idea developed in collaboration with UNESCO and is strongly supported. MAB network designed into perpetuity and supported by strong policy framework; participating reserves can be expected to subscribe to the values expressed in Seville Strategy for Biosphere Reserves, which this project will help to implement.
d) target beneficiaries, including local communities, adopt project recommendations and best practices	L	<ul style="list-style-type: none"> Recommendations and best practices will be formulated on the basis of a participatory research process. They will combine ‘traditional’/‘indigenous’ and scientific knowledge to increase their appropriateness and adaptability to local circumstances. Practices are designed to improve livelihoods and increase income, not to impose additional burden of conservation. Capacity building and support structures will decrease barriers to adoption
e) farmers and communities willing to take part in project activities and share information	L	<ul style="list-style-type: none"> The project will strive to assist indigenous and local communities in achieving recognition and support for the contribution their livelihood practices make to PA management and biodiversity conservation. The project will encourage social inclusion and equity throughout its implementation. Implementing good practices by community management of biodiversity (CBM) model which build local institutional capacity in decision making and implementations of locally driven conservation actions
f) PA management staff and local partners willing to collaborate with and yield influence to communities	M	<ul style="list-style-type: none"> Demonstration of mutual benefits of integrated conservation and use PA management models to conservation and agriculture. Discussion forums will stimulate communication and increased understanding between communities and park management.
g) Climate change risk	L	The project itself seeks to buffer communities from climate change by making available a portfolio of agricultural biodiversity management practices, which increases their options to adapt to change.

*Risk rating – H (High Risk), S (Substantial Risk), M (Modest Risk), and L (Low Risk).

H. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:

34. The project seeks to use available resources most effectively through the use of two pilot sites for trials, testing and the development of tools and methodologies. These will then be rolled out to the remaining four reserves in Cuba. The alternative of developing tools and methods simultaneously in all six reserves would result in duplication and waste of resources. However, once a suite of tools has been developed, a focus on the entire system of six biosphere reserves, rather than individual funding for each reserve, is essential. The focus on the system allows synergies to be developed through shared practices and experiences, which are greater than the sum of the individual reserves.

35. The project will not concentrate on individual objectives (e.g. the mitigation of mining impacts in Cuban biosphere reserves) or separate sectors (e.g. poverty alleviation, biodiversity conservation, responsible tourism, agriculture, water, soil), but will pursue an integrated systems approach in which solutions are sought in the synergies created between the different objectives and sectors. In the context of Biosphere Reserves such an integrated approach is in fact necessary for any single objective to be met. The envisaged improvements in Cuban Biosphere management practices, increased involvement of and benefit to local communities and other stakeholders, and the preservation and reinvigorated use of valuable crops and traditional knowledge are expected to increase significantly the cost-effectiveness of the Biosphere Reserves national system. As the Cuban MAB network has been designated in perpetuity, these benefits will extend beyond the duration of the project.

36. The project's cost effectiveness is enhanced through integration with two international bodies providing resources, information and methodologies. The UNESCO-MAB network is an existing global network of biosphere reserves supported by a strong policy framework. In a two-way process, methods and practices from other Reserve systems around the world can be used to the benefit of this project, and project results will contribute to the management of Biospheres Reserves worldwide. By tapping into the added-value of Bioversity's resources and experience in developing globally relevant methods for, *inter alia*, on-farm management, ethnobotany, home gardens biodiversity, conservation economics and crop wild relatives, the project will be able to achieve its goals more quickly without re-inventing methods and tools.

I. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:

37. UNEP's comparative advantage derives from its mandate to coordinate UN activities with regard to the environment, including its convening power, its ability to engage with different stakeholders at national and international level to develop innovative solutions and its capacity to transform these into policy- and implementation-relevant tools.

38. The project complements UNEP's aim to promote specific technologies and demonstrate methodologies and policy tools that could be replicated on a larger scale by other partners. As a GEF Agency for this project UNEP will support a collaborative partnership between several national and international organizations, which will bring the best available expertise in science and knowledge from the scientific and development community in both social and natural sciences. Bioversity, the leading executing agencies for this project, in partnership with UNESCO will provide scientific and policy support and technical expertise to UNEP in line with UNEP's mandate in GEF to catalyze the development of scientific and technical analysis and advancing environmental management in GEF-financed activities. UNEP/GEF has a long term working relationship with Bioversity International

39. The proposed project is also in line with the increasing commitment of UNEP to improving the sustainability of agro-ecosystems and supports the work of UNEP's Division of Environmental Policy Implementation on the medium- to long-term response to the food crisis and to the future of agriculture and environment, including the issue of food prices and volatility, sustainability of responses, the role of agricultural

biodiversity for food security and the linkages to the climate change challenge. The project is also in line with the UNEP's Division of Environmental Laws and Conventions current work with India and Kenya in assisting development of access and benefit sharing provisions both under the CBD Access to Benefits Sharing process as well as the Plant Variety Protection issues. The project is fully consistent with UNEP's Ecosystem Management Programme, and it directly supports Option 4 of the "Seven Options for Improving Food security" of the 2009 UNEP Rapid Response Assessment of the environment's role in averting future food crises, to "Support farmers in developing diversified and resilient ecoagriculture systems that provide critical ecosystem services" and "minimize dependency on external inputs like artificial fertilizers, pesticides and blue irrigation, and the development, implementation and support of green technology also for small-scale farmers" (http://www.grida.no/res/site/file/publications/FoodCrisis_lores.pdf: p 8).


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

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

NAME	POSITION	MINISTRY	DATE (Month, day, year)
Jorge Luis Fernandez Chamero	Director, GEF Operational Focal Point	MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT (CITMA)	MARCH 12 2009

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.

Agency Coordinator, Agency name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
GEF Agency Coordinator: Maryam Niamir-Fuller Director Division of Global Environment Facility (GEF) Coordination UNEP		10/22/2009	Marieta Sakalian UNEP/DGEF Programme Management/Liaison Officer (CGIAR/FAO), Biodiversity FAO Headquarters TCAP Unit, D708 Viale Delle Terme di Caracalla 00153 Rome Italy	+39 06570 55969	Marieta.Sakalian@unep.org