United Nations Development Programme

Project title: Developing the potential of *Thalassia testudinum* in the health sector in Cuba in accordance with the Nagoya Protocol and Biodiversity Conservation.		
Country: Cuba	**Implementing Partner (GEF Executing Entity):** Environmental Agency (AMA)	**Execution Modality***:* National Implementation (NIM); partial assisted NIM
Contributing Outcome (UNDAF/CPD)*:* Institutions, production and service sectors, territorial governments and communities improve the protection and rational use of natural resources and ecosystems, resilience to climate change, and comprehensive disaster risk reduction management		
UNDP Social and Environmental Screening Category: moderate	**UNDP Gender Marker:** 2	
Quantum Award: 00115542.1	**Quantum Project:** 00115542	
UNDP-GEF PIMS ID number: 6311	**GEF Project ID number:** 11037	
LPAC meeting date: *28th November 2022*		
Last possible date to submit to GEF: June 2022		
Latest possible CEO endorsement date: June 2022		
Project duration in months: 48		
Planned start date: April 2023	**Planned end date:** April 2027	
Expected date of Mid-Term Review: April 2025	**Expected date of Terminal Evaluation:** January 2027	

Brief project description:

This project aims to develop and implement the provisions of the Nagoya Protocol in Cuba through biodiversity conservation (seagrass ecosystems) by supporting the research phase of the *Thalassia testudinum* to allow the generation of benefits from the use of a genetic resource. The project will build capacities and introduce new regulations for Cuba based on the experiences generated from this research and the actions to be carried out related to access to the genetic resource, and the distribution of benefits at the local community level. The project's objective will be achieved through four components: 1) Strengthening the legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing; 2) Strengthened capacities for the research and development of a pharmaceutical product from a marine

angiosperm (*Thalassia testudinum)*; 3) Conservation of marine biodiversity and habitat of angiosperm used for pharmaceutical product development; and 4) Monitoring & Knowledge Management.

The project has a duration of 48 months and will provide the following global environmental benefits:

- A total area of 631 hectares under improved management:
  - GEF Core Indicator 2: 118 hectares of marine protected areas under improved management for conservation and sustainable use;
  - GEF Core Indicator 4: 513 hectares of marine habitat under improved practices (excluding protected areas);
- GEF Core Indicator 11: 475 (344 women + 131 men) direct beneficiaries as co-benefit of GEF investment.

The project will contribute to the following Aichi Biodiversity Targets: 10 and 16.

FINANCING PLAN		
GEF Trust Fund grant	USD 910,745	
(1) Total Budget administered by UNDP	**USD 910,745**	
(2) Total confirmed co-financing to this project	**USD 1,204,340**	
(3) Grand-Total Project Financing (1)+(2)	**USD 2,115,085**	
SIGNATURES:		
Signature: print name below Carlos Fidel Martha Rodriguez, Director DCEI, MINCEX	**Agreed by Government Development Coordination Authority**	**Date/Month/Year:** *within 6 months of GEF CEO endorsement*
Signature: print name below Maritza García García – Presidenta AMA/CITMA	**Agreed by Implementing Partner**	**Date/Month/Year:** *within 6 months of GEF CEO endorsement* 29-Mar-2023
Signature: print name below Fernando Hiraldo, Representante	**Agreed by UNDP** Resident FNUD	**Date/Month/Year:** *within 6 months of GEF CEO endorsement* 03/04/23

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II. LIST OF ACRONYMS

ABS	Access and Benefit-Sharing
AMA	Enviroment Agency
BD	Biological Diversity
CBD	Convention on Biological Diversity
CHM	Clearinghouse Mechanism
CITMA	Cuban Ministry of Science, Technology and Envoronmental
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
ICIMAR	Institute of Marine Sciences
MSP	Medium Sized Project
NHS	National Health System
NP	Nagoya Protocol
ORSA	Office of Environmental Regulation and Safety
PIR	GEF Project Implementation Report
POPP	Programme and Operations Policies and Procedures
PPG	Project Preparation Grant
STAP	GEF Scientific Technical Advisory Panel
BPPS NCE-VF	Bureau for Policy and Programme Support, Nature, Climate and Energy, Vertical Fund team

III. DEVELOPMENT CHALLENGE

Global significance

1. Cuba is among the 5 most important biodiversity hotspots on the planet. It has more than 11,700 species of invertebrates and 655 species of terrestrial and freshwater vertebrates. 96% of mollusks, 75% of arachnids and 95.2% of amphibians and 83.2% of reptiles are endemic. It holds third place in the world in plant endemism with respect to its territorial extension with more than 3,000 exclusives[1]; of the 5,367 taxa of flora studied, 47% are under some degree of threat. Among vertebrates, there are 52 critically endangered, 42 endangered and 63 vulnerable species, while among invertebrates, mollusks constitute the most threatened group with 31 critically endangered and 34 vulnerable species. In addition to having 26 endemic bird species, due to its geographical location, Cuba is the most important island region in the Caribbean for Nearctic and Neotropical migratory birds, several of which are threatened at the continental level[2]. In an effort to conserve Cuba's biodiversity, 211 protected areas have been declared, 77 of national significance, and 119 with legal approval by the Executive Committee of the Council of Ministers[3].

2. In addition to the conservation efforts made by the protected areas system, the sustainable use of biodiversity is a crucial opportunity for Cuba. Access and benefit-sharing (ABS) is a recognized and relevant topic in the commercial use of biological diversity (BD) and the perspectives of biotechnology and industries developed in Cuba, particularly with regards to the health sector. The Cuban State provides health care to its citizens through the National Health System (NHS), a unique, free and accessible health care system. The NHS has evolved with the needs of the country, with advancements in the control of non-communicable, communicable and immuno-preventable diseases, as well as the permanent search for independence with regards to technology, production of medicines and biotechnological products. The country's adoption of a co-development model between the NHS and the biotechnological and pharmaceutical industry, based on the health needs of the Cuban population, is distinguished worldwide. The government has established research and development institutes to facilitate the production of their respective products, research-production centers or full-cycle institutions.

3. BioCubaFarma, a Cuban state-owned business organization that integrates the country's biotechnology and pharmaceutical sectors, was created as part of the business reorganization process within the Cuban economic model. It focuses on the introduction of new drugs, technologies and the manufacture of 525 of the 849 medicines that make up the Basic Table of Medicines of the Cuban Ministry of Public Health, which has been decisive for the operation of several public health programs and the socioeconomic life of the country. It represents a strategic industry with high standards for its products and services and a solid international position. It has more than 21,600 workers, hundreds of high-level professional specialists involved in research-production and 62 production facilities. There are 16 productions, 3 marketing and 2 service companies with branches in all the provinces of Cuba, which are responsible for national distribution throughout the island. BioCubaFarma integrates an effective cycle for research, development and distribution. This approach has been instrumental to develop the Cuban biopharmaceutical industry - which has made possible to obtain results with a positive impact on social, economic and human aspects, guaranteeing the connection of scientific research with the development of Cuban society. In addition, BioCubaFarma's approach has facilitated technology transfer to other countries. As such, BioCubaFarma is an important source of income for the country through the commercialization of part of its products and technologies in different countries, representing approximately 0.4% of GDP/ US$ 84 693 M (2019).

Problem to be addressed

4. The loss of biodiversity is recognized in the National Environmental Strategy as one of the main environmental problems that must be addressed. This is associated, among other things, with the modifications and loss of habitats that have taken place on the island and with the vulnerability of an island country, which receives the impacts of climate change and various anthropogenic processes.

5. Furthermore, to date, little progress has been made in terms of providing legal protection and recognition of the biological heritage that sustains Cuba's biopharmaceutical industry. Actions have focused on copyrights and patents granted to institutions for products derived from biological resources, particularly from terrestrial biodiversity, and on patents related to traditional knowledge or practices that foster the production or synthesis of such products and the communities that

[1] González H. 2002. Biodiversidad de Cuba. Ediciones Polimita S. A, Guatemala. 320 pp
[2] González H. 2002. La migración de las aves. En: Aves de Cuba (H. González ed.) UPCPrint, Finland pp: 16- 19.
[3] Estrategia Ambiental Nacional 2016- 2020. Ministerio de Ciencia Tecnología y Medio Ambiente

contribute such knowledge. However, Cuba's regulatory framework is inadequate for enabling research, negotiations and investment in genetic resources. The current framework needs to be strengthened to regulate the use and protection of genetic resources under conditions of equity among the parties, and to promote and guarantee the conservation and sustainable use of biological diversity. The country needs to establish a legal framework to protect natural resources and the knowledge derived from them, which is directly related to their economic value, associated with the food, agriculture and biopharmaceuticals industries.

6. There is a growing trend towards the use and exploitation of genetic resources, practices and associated traditional knowledge, as well as the understanding of the goods and services that BD provides, both on land and sea. In Cuba, an important segment of the population depends on traditional medicine and largely on therapies derived from nature to cure their ailments. Indeed, a considerable number of prescription drugs in both developed and developing countries come from natural sources, so the benefits from such developments could be enormous. In the case of marine biodiversity, for example, it has been estimated that a compound derived from a marine sponge to treat herpes is worth US$ 50-100 million per year. Estimates of the value of anti-tumor agents derived from marine organisms amount to US$ 1 billion per year[4].

7. Seagrasses, in particular, are highly valued for the goods and services they provide, such as climate regulation, erosion control, nutrient cycling, habitat, food production, raw materials, genetic resources, recreation, and cultural services[5]. Seagrasses are estimated to cover about 50 % of the Cuban shelf[6] equivalent to 26,563 km^2 (2,656,300 ha). The most part of this area has *Thalassia testudinum,* a late-successional competitively-dominant species and the dominant seagrass in the Caribbean, South Atlantic and Gulf of Mexico. *T. testudinum* is highly resilient to natural phenomena such as hurricanes, but is very susceptible to anthropogenic impacts that provoke the reduction of light availability (eutrophication, erosion, dredges) as is common near coastal zones along the Cuban shelf. Unfortunately, *Thalassia testudinum* is often subject to clearcutting by hotels along the coast. Hotels "clean and improve" the coastal area to create conditions for the enjoyment of tourists. Recent studies[7] suggest *T. testudinum* could possess viable anti-tumor agents, of particular interest in the treatment of colon cancer. While there is potential for medicinal/pharmaceutical use of *T. testudinum,* the lack of a proper legal and institutional framework and sustainable harvesting/management protocols could threaten this genetic resource.

8. It is crucial that the development cycle for medical treatments in Cuba be based on a sound legal, regulatory and institutional framework in accordance with the Nagoya Protocol. This regulatory framework will ensure access to genetic resources and associated knowledge, as well as the fair and equitable sharing of the benefits derived from the utilization of genetic resources. The regulatory framework will take into account all rights over those resources, and through the appropriate transfer of relevant technologies, thereby contributing to the conservation of biological diversity and the sustainable use of its components.

Long-term solution

9. The Cuban State has devoted considerable resources and efforts to create the basis for knowledge on resources derived from nature and to develop scientific knowledge. This has favored the characterization of ecosystems throughout the island and has encouraged the development of biotechnology on the basis of the conservation and sustainable use of biological diversity. An articulated effort has been made to develop the means to commercialize genetic resources for the well-being of the people, but the distribution of benefits has not fulfilled society's expectations. There is a new economic scenario in Cuba comprised of new possibilities for industrial and local development, such as small-scale production. Under certain conditions, these opportunities for local small-scale production offer an important means to develop equitable access to genetic resources and sharing of benefits derived from them.

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[4] Clear rules needed to govern deep sea bioprospecting: UNU Vast genetic treasure on sea beds Peer-Reviewed Publication, UNITED NATIONS UNIVERSITY http://www.ias.unu.edu/binaries2/DeepSeabed_FINAL.pdf

[5] Martínez-Daranas, B., & Suárez, A.M. 2018. An overview of Cuban seagrasses. Bulletin of Marine Science 94, 269-282. https://doi.org/10.5343/bms.2017.1014

[6] Alcolado, P.M. 2007. Diversidad, utilidad y estado de conservación de los biotopos marinos. In: Claro R, editor. La biodiversidad marina de Cuba. La Habana: Instituto de Oceanología. p. 18-36. Available from: http://www.redciencia.cu/cdbio/

[7] Rodeiro I, *et. al*. (2018). Assessment of the cytotoxic potential of an aqueous-ethanolic extract from *T. testudinum* angiosperm marine grown in the Caribbean Sea. J Pharm & Pharmacol, doi: 10.1111/jphp.13001

Riera M, *et. al*. (2018) Chemical characterization and cytotoxic potential of a chloroform fraction obtained from marine plant *T. testudinum*. J. Chrom & Sep Tech, 9:3. DOI:10.4172/2157-7064.1000405

Barriers

10. Despite the years of work and the country's interest in this matter, there are still barriers that prevent the sustainable use of biodiversity from becoming a significant alternative for income generation with an impact on the welfare of the people and the community. These barriers include:

11. Barrier 1. Absence of specific procedures, methodologies and other guidance for the adequate implementation of the exxisting legislation on access to genetic resources and the equitable distribution of the benefits derived from their use. Consequently, the degree of implementation of the norm is remarkably low. In particular is the outdated Citma Resolution No. 111/1996, which is the main applicable norm in the matter of ABS, dated October 14, 1996. This Norm is ineffective and inefficient in relation to the implementation of the Nagoya Protocol as it lacks fundamental elements of the international regime due to its age, in relation to technological advances. In particular, it is ineffective with regards to access in emergency situations, prior informed consent, and the information exchange mechanism, just to mention a few.

12. In addition, although current legislation establishes that once access to genetic resources has been granted, as part of the mutually agreed conditions, the parties must agree on the benefit-sharing measures that will be applied, in practical terms there is no experience in the country in the application of these measures resulting in a limited application of this regulation. The project constitutes an opportunity to design and test possible measures - monetary and non-monetary - that could be applied in the context of Cuban society.

13. Key elements that define the context of Cuban society are:

- Socialist state ownership of natural resources (therefore there is no private ownership of wildlife and plants).

- A society with high social inclusion, in particular in terms of public health, priority care programs for certain diseases and / sectors of society (infants, adolescents, pregnant women, older adults, patients with HIV, etc.); and subsidized medicines to guarantee access.

14. Barrier 2. Weak research & development processes to obtain products from biodiversity.

There is national interest and human resources for the development of products from the country's biodiversity, but access is limited to the material resources and infrastructure necessary to carry out all stages of the process of research-development-innovation of bioproducts. Only one institution (Center for Natural Products/National Center for Scientific Research) in the country has managed to register two medicines for human use from a genetic resource of Cuba's biodiversity, in this case, from land. To date, the country's capacity to carry out bioprospecting and obtain products from marine sources is low and greater support is needed to market these resources for the well-being of local communities throughout the country.

15. Cuba is currently unable to pursue robust research and development activities for pharmaceutical products derived from natural marine sources due to the lack of materials such as reagents, expendable material, updated equipment and infrastructure. These are basic necessities for experimental models that combine *in vitro* and the use of experimental animals, as is the case of the tumor models required for the evaluation of the antitumor activity of a new therapeutic candidate. These tests require that the cells be kept in culture and then implanted in laboratory animals, in order to develop the tumor. For the success of these studies, the laboratory for the cultivation of tumor cells and the Bioterium (an installation for the maintenance and care of animals) must coincide in the same institution. There are only two research centers in the country that can undertake this type of tests in compliance with “Good Laboratory Practice” criteria: the Center for Molecular Immunology (CIM) and the Institute of Genetic Engineering and Biotechnology (CIGB), both from the Higher Organization of Business Management of BioCubaFarma. These institutes focus their research on the development of drugs by obtaining monoclonal, recombinant proteins, therapeutic vaccines, among other products from genetic engineering, immunology and biotechnological fermentation.

16. ICIMAR has relied on both institutions for the development of some of the research, but it has only been possible in a time-constrained and limited way, since the available infrastructure, equipment and materials do not allow them to expand their research beyond the current focus. Other constraints are found with regards to the materials required to carry out phytochemical characterization of natural extracts, particularly marine extracts, the identification of metabolites and compounds responsible for their activity, activity-guided chemical characterization studies. Currently, Cuba does not have enough cutting-edge analytical technology to carry out these studies, nor adequate training for marine areas, equipment and chemical reagents. Similarly, there are gaps in the area of genetic studies for the characterization of marine species, particularly marine plants.

17. Barrier 3. Limited capacity to establish and manage manage sustainable value chain that benefit local communities. For the successful commercialization of genetic resources in Cuba, it is necessary to increase the capacities and knowledge about both the most promising species, their role within the ecosystem, as well as their conservation and productive management. In the case of marine angiosperms, there is no documented traditional knowledge in Cuba for their use in any form. Research on these organisms as a source of bioactive substances is relatively recent. Furthermore, there is little knowledge by the Cuban population and decision makers about the importance of this ecosystem as a provider of numerous goods and services to humans and marine biodiversity in general. It is also not known whether the leaves of the species that arrive at the shores are bioactive, or whether the available resource allows for their ecological and economically sustainable use. For this reason, studies are needed to locate the best collection areas, determine the times of year to carry out these collections, reproduce the biological material with the best characteristics, have a management and conservation plan for the species and have trained and equipped personnel to carry out sustainable collection of biological material. It is essential to have a method of sustainable use for the conservation of this ecosystem and involve all value chain stakeholders, including local communities.

18. Barrier 4. There is little knowledge on the part of the Cuban population and decision makers about the importance of this ecosystem as a provider of numerous goods and services to humans and marine biodiversity in general. While there is worldwide evidence of the benefits of using natural products in the treatment of many ailments, terrestrial organisms have been the most widely used, while marine organisms are less recognized despite being a source of enormous prospects. Marine organisms are subject to unique environmental conditions (high pressure, high concentration of salts, predation), which favors the synthesis of molecules. These conditions may lead to the discovery of new structures and compounds with beneficial *sui generis* effects for the development of life on the planet. Therefore, the diversity of marine species today constitutes a resource of unlimited potential, which can be used in a beneficial way, through biotechnology, to develop new products for agriculture and the pharmaceutical industry, among other uses. However, to date, knowledge of marine biodiversity is incomplete and fragmented. This situation is a critical barrier to its sustainable use.

19. Furthermore, the presence of important volumes of *Thalassia testudinum* in areas used for tourist activities often leads to complaints from hotels and tourists because it inconveniences their recreational activities. Currently, there is an abundance of this plant in locations that compete with the need for clean beaches for the development of tourism in the country. This is noticeable, for example, in the tourist poles such as the north of Camagüey (Santa Lucía Beach). This situation is counterproductive to the conservation of the large *Thalassia* grasslands; measures are needed in these areas to reduce anthropogenic pressures on the sea grasses. Among these, the development of harvesting protocols under criteria of sustainability of the genetic resource would contribute to regulate its extraction in bathing areas with high tourist activity.

National scenario

20. Cuba signed the Convention on Biological Diversity (CBD) at the opening for signature and ratified it in March 1994, with the Ministry of Science, Technology and Environment as its Focal Point. In 1997, the National Environmental Strategy was elaborated and provided the basis for the National Biological Diversity Strategy and Action Plan, which have been updated continuously. At present, these actions have resulted in the National Program for Biological Diversity (PNDB) 2016-2020, which has 20 goals and constitutes the main platform of action for the implementation of the strategic objectives defined in the national environmental policy to confront the loss of biological diversity. The GEF project is directly aligned with several of these goals/targets: Target No. 15, which aims to "Ensure adequate access to genetic resources and benefit sharing in accordance with the Nagoya Protocol", has four actions aimed at full implementation of the Protocol in the country. Target 4 aims to restore coastal and aquaculture ecosystems through sustainable management; Target 10 aims to help reduce the multiple anthropogenic pressures on coral reefs, seagrasses, mangroves and beaches vulnerable to climate change; and Target 17 aims to make progress in developing human resources to support the implementation of the PNDB.

21. Thanks largely to the progress made in implementing the CBD and to national actions that have been developed in favor of the conservation and sustainable use of genetic resources, the country has recognized and studied the wealth, abundance and uniqueness of its biological diversity at different levels. It has monographs on Cuban marine and terrestrial flora and fauna, and a characterization of its ecosystems. There is a recognized development of biotechnology and this information is available to all communities in the country.

22. However, an analysis of the current reality identifies the need to deepen and continue working on the understanding that it is not only a matter of protecting plants and animals or forests and reefs, but also of continuing to build a country that is highly committed to natural resources, capable of using it on a sustainable basis and fulfilling the third objective of the CBD

by achieving a fair and equitable distribution of the benefits derived from them. Cuba must become capable of sustainably exploiting its genetic resources in order to increase the well-being and health of all its people. For example, despite the efforts made by the Health System, high rates of morbidity/mortality are reported annually in the country for certain diseases that urgently need to be solved and programs for their prevention and control established at the national level. These programs could be supported if the country had the mechanisms to implement an adequate distribution of benefits based on evidence of the biopharmaceutical potential of Cuba's biological biodiversity, both terrestrial and marine.

23. In order to achieve the above, Cuba signed the Nagoya Protocol (NP) in November 2015 and has ratified the need to increase, at different levels, the knowledge of the mechanisms and legal actions required to improve access to the equitable distribution of the benefits derived from the use of genetic resources. Cuba's incorporation as a State party to the Nagoya Protocol has been a high-profile political decision, demonstrating the island's commitment to the conservation and sustainable use of biodiversity. Crucial to this is the aforementioned National Program for Biological Diversity (2016-2020), which establishes the country's programmatic platform against indiscriminate use and appropriation by third parties to guarantee the fair and equitable distribution of resources to all citizens, and thus provides a solid baseline for the proposed project, considering the following:

24. There is a rich biological diversity of terrestrial and marine organisms in the extensive Cuban coastline and marine platform (more than 109,886.19 km2.) The potential of these resources has been studied. However, they are still under-exploited. Thus, there is ample opportunity to test the effectiveness of the legal framework that this initiative seeks to establish. It is important to mention that about 25.51% of the national marine surface is under some category of protected area. In addition, there is a system of permits to access the areas of intervention, all of which favors applying the NP's goals.

25. The Cuban Biotechnology Industry has the capacity to obtain new medicines, from natural sources, through genetic engineering and biotechnology techniques. This capacity is a strength. In addition, Cuba has professionals and qualified labor that can assimilate and develop new technologies in research centers and the targeted communities. The project, without question, will raise the scientific capacity and the quality of the proposed outputs and results.

26. The approved Strategic Plan for the Development of Science, Technology and Innovation at the national level has among its objectives: promote the conservation and rational use of natural resources such as soil, water, beaches, atmosphere, forests and biodiversity. In this regard, CITMA approved the implementation of the National Program for the Sustainable Use of the Components of Biological Biodiversity in Cuba. One of the objectives of this program is to generate new knowledge to increase the conservation and rational use of biological biodiversity, with emphasis on the ecosystem level, as well as the inter-relations between its entities and abiotic components, including the use and management of genetic resources in the area of ABS.

27. The project is also associated with the abobe-indicated National Program for the Sustainable Use of the Components of Biodiversity (NPSUCB) that began its execution in January 2019. The NPSUCB's objectives include the development of chemo-pharmaceutical studies, non-clinical efficacy and safety of the extract obtained from *T. testudinum* applying solid scientific criteria, and to lay the foundations for obtaining a new product with application in human health as a nutraceutical and biomedical. This is the result of two projects previously conducted within the program that studied and characterized the marine biodiversity of the island platform of Cuba, and provided data on the bioactive potential of the species in question. In addition, the proposed project is in synergy with other projects being implemented in ICIMAR and in collaboration with key institutions. The Lastly, the proposed project is linked to two national programs of the Cuban Ministry of Public Health. These programs study determinants of health, risk and disease prevention in vulnerable groups, and develop new phytomedicines and supplements from natural sources.

28. The components of the proposed project contribute to the achievement of the objectives of the NPSUCB. First, all components aim directly or indirectly to improve the sustainable use of biological biodiversity in the Cuban marine platform. Second, the project will strengthen the management of such resources to benefit the Cuban society by providing an alternative solution to a health problem on a national and supra-national scale. Third, the project components will contribute to achieving a more balanced and diverse income at the local level, i.e., balancing income from tourism activities and the additional income from biodiversity use and equitable ABS.

29. The project's development stems from a constant interaction between local communities, the Cuban civil society, and public agencies. It began with identifying the areas where the Thalassia meadows grow throughout the archipelago and the planning of its sustainable management. Consequently, the project will strengthen the above-indicated interaction to ensure a successful implementation and long-lasting results.

30. Given that the health-care system in Cuba provides community-wide and primary health care coverage for all citizens across the country, the project's benefits are expected to have a positive impact on the quality of life of patients at the national level in all regions of the country.

31. The project is framed within the different objectives defined in the national policies on science and technology. These objectives are included in the guidelines 131, 132, 136, 156, 221 and 222 of the Economic and Social Policy approved at the Seventh Congress of the Party and with the strategic trans-sectorial axis of the Program for Economic and Social Development of Cuba until 2030. The objectives are related to natural resources, environment and the development of the biotechnology industry, for example:

- Support and develop comprehensive research to protect, conserve and rehabilitate the environment and adapt environmental policy to the new projections of the economic and social context.
- Prioritize studies aimed at confronting climate change and, in general, the sustainability of the country's development.
- Emphasize the conservation and rational use of natural resources such as soils, water, beaches, the atmosphere, forests and biodiversity, and in particular the protection of marine genetic resources, as well as the promotion of environmental education throughout all communities in the country.
- Sustain and develop the results achieved in the field of biotechnology, medical-pharmaceutical production, the software industry and the process of computerizing society, basic sciences, natural sciences, scientific and technological services with high added value.
- Consolidate the pharmaceutical and biotechnology industry to develop its maximum export capacity, and introduce new products into the domestic market to substitute imports in priority areas.
- Develop the dietary supplements and natural medicine industry, from domestic inputs, for domestic consumption and export.

32. The project is aligned with the recently approved State Plan to Combat Climate Change (*Tarea Vida*). Task No. 6 of this plan aims to: Stop the deterioration, rehabilitate and conserve the coral reefs throughout the archipelago, with priority given to the crests that border the island platform and protect urbanized beaches for tourist use. Cuban sea grasses are one of the priority ecosystems to be conserved as part of *Tarea Vida*. Therefore, in order to take advantage of the sea grasses without losing the goods and services they provide, it is essential to develop methods that prevent the deterioration of the ecosystem.

33. Finally, this project contributes to the implementation of the Sustainable Development Goals (SDGs) in Cuba, as follows:

- SDG 3 "Ensure healthy lives and promote well-being for all at all ages" / (goal 3.b: Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all);
- SDG 4 "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" / (goal 4.3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university);
- SDG 5: "Achieve gender equality and empower all women and girls" / (goal 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life);
- -SDG 8 "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" / goal 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value);
- SDG 14 "Conserve and sustainably use the oceans, seas and marine resources for sustainable development" / (goal 14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans);
- SGD 15 "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss" / (goal 15.6: Protect access to genetic

resources and fair sharing of the benefits. UN definition: Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed); and

- SGD 17 “Strengthen the means of implementation and revitalize the global partnership for sustainable development” / (goal 17.17: Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships’ Data, monitoring and accountability).

IV. STRATEGY

34. This project aims to complete the legal framework needed for the effective implementation of the provisions of the Nagoya Protocol, as well as the development of programmatic and strategic instruments to establish priority actions. The peorject will take into account the national projections to 2030 and the implementation of policies related to genetic resources in the current context. The project will develop a guideline (standards) for the harvest and collection of the species, taking advantage of the beneficial properties identified in the marine plant angiosperma *T. testudinum*. It will make it possible to lay the groundwork for obtaining a new candidate drug with potential application in anti-tumor therapy and related diseases, based on the sustainable use of a marine diversity resource. It will also promote the recognition of the ecosystemic benefits of the species at a local level. The project will promote the future commercialization of a derivative of the genetic resource on the basis of an equitable sharing of its benefits, i.e. the implementation of the protocol in the country.

35. The Office of Environmental Regulation and Security, proposed as the National Authority for the Nagoya Protocol, and the Environmental Directorate of CITMA, have personnel trained to complete and implement a legal framework for access to genetic resources and benefit sharing. Likewise, these agencies can develop the programmatic and policy instruments that will support the existing legal framework. In this regard, a legal norm has been drafted to regulate the essential aspects of biodiversity and access to genetic resources; the norm is in an advanced stage of approval. The existing human resources of the scientific and productive institutions that will participate in the project, in particular ICIMAR, CIM-UH, IMRE-UH and "Oriente" Pharmaceutical Laboratories, are sufficient to complete the studies (i.e., produce the proof of concept) and subsequentrly start the clinical research phase under quality and sustainability criteria. However, in order to achieve these goals, financial and technological resources are needed. Finally, the project will generate new procedures that contribute to increasing the conservation and rational use of marine diversity, with emphasis on taxonomic groups of vital importance, according to the guidelines contained in the national goals for the conservation of biological diversity.

36. There is a market and social opportunity for the commercialization of the product derived from *T. testudinum*, and therefore, the project can develop a national model for generating economic benefits resuling from the conservation and use of products of its biodiversity. Further, taking into account the ongoing economic and structural transformation in Cuba that favors the adoption of policies in relation to genetic resources, it is the appropriate moment to initiate actions to streghten the implementation of the Nagoya Protocol.

37. The project’s four components aim at developing and strengthening the existing capacities to safeguarding the accumulated information on genetic resources of the Cuban marine platform, and making it available. The intervention will increase awareness on genetic resources and ABS in the institutions and local communities involved in the project. The project will allow them to have better access to information and strengthen their capacity to analyse different alternatives for the sustainable use of biological diversity, specifically of the Cuban marine platform, thus favoring the fair and equitable access to the benefits.

38. Component 1 aims to complete and implement the legal framework in accordance with the Nagoya Protocol and the ongoing introduction of a new economic model in the country, particularly in areas related to the use of natural resources and the distribution of wealth and benefits. In addition, this Component ensures, together with Component 3 (descrived below), an adequate level of information-sharing regarding the purpose and benefits derived from the project. This approach will demostrate transparency and promote the participation of stakeholders from the government sector and local communities.

39. Component 2 aims at strengthening the national capacity to conclude the research-development phase of the pharmaceutical product from Thalassia testudinum. This component will update ICIMAR’s Experimental Unit facilities and equipment to conduct pharmaco-toxicology using Good Laboratory Practice Standards (GLPS) and train researchers to ensure the adoption of GLPS. Thus, the project investment will enable ICIMAR’s capacity to evaluate compounds obtained from natural

sources with potential application in human therapeutics. The project will also help generate the pending technical data required to obtain permission to begin clinical evaluation of products from Thalassia testudinum.

40. Component 3 contributes to gathering and analyzing essential information on seagrass conservation with an emphasis on the behaviour of the *Thalassia testudinum*'s habitat and the characterization of the species in the intervention sites. At the same time, it will contribute to strengthening the local communities' capacity to manage and harvest genetic resources from marine biodiversity using environmentally sustainable practices. Equally important, this component will set the foundations to establish the T. testudinum supply and value chains.

41. Finally, Component 4 will raise awareness in Cuban society about the importance of the conservation and sustainable use of genetic resources on a legal basis in order to foster an enabling environment to implement the Nagoya Protocol.

42. The project will deliver GEBs related to the conservation of biodiversity and genetic resources. This will be achieved with the equal participation of men and women, ensuring that both groups benefit equally from the project and that the concerns and experiences of the women involved are an integral part of the design, implementation, and M&E of the project. The GEBs to be delivered are as follows:

- Fair and equitable sharing of the benefits arising from the utilization of genetic resources (to local communities, resource managers, and PA officials)
- Improved conservation of native marine biodiversity (118 hectares within PAs and 513 hectares outside)
- Improved conservation of coastal ecosystems from which leaves are collected (631 hectares)
- Increased awareness of the existence, use, and option values of biological resources among key audiences (475 direct beneficiaries)
- Contribution to the generation and potential replication of ABS best practices (agreements)
- Contribution to national development strategies and economic growth.

43. The project will contribute to the Implementing the Nagoya Protocol on ABS entry point under Objective 3 of the GEF Focal Area on Biodiversity. This project will develop an adequately supportive environment for the implementation of the NP, in terms of policy, legal, and planning instruments. To accomplish this, it will focus on the capacity building contemplated under GEFTF support to BD-3-9: including institutional capacity-building to carry out R&D to add value to genetic resources and capacities amongst stakeholders to negotiate between providers and users of genetic resources.

44. The project will contribute to implementation of Aichi Target 16: *By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation*, by contributing to the sustainable availability of biological crop protection agents. The project will also contribute to Sustainable Development Goal 9: *Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation*, and Goal 15: *Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*, to which Cuba is committed; specifically the promotion of fair and equitable sharing of the benefits arising from the utilization of genetic resources and promotion of appropriate access to such resources as internationally agreed.

45. The project is in line with Aichi target 10, which aims to reduce the multiple anthropogenic pressures on ecosystems. The project would promote the sustainable use of *T. testudinum*, while maintaining its integrity, bydemonstrating the sustainable management of *T. testudinum* and the harvesting of its leaves. The project envisages actions that would allow the sustainable regulation of the extraction of the resource and ensures the conservation of the species and its ecosystem services, thereby contributing to the achievement of the CBD's goals in Cuba.

46. Finally, the project would strengthen Cuba's human resource capacity in the knowledge and use of new technologies (bioinformatics, metabolomics, proteomics and genomics, among others) as part of the technological development of bioproducts, i.e. bioproducts obtained from the marine environment that are virtually unknown. To date, this work has been encouraged and developed in the country, but its scope and future success depends on having the financial and technological resources required for this task.

47. The Theory of Change (ToC), Figure 1, describes the strategy to deliver GEBs through four impact pathways:

a. framework for Nagoya Protocol implementation pathway;

b. research and development of a pharmaceutical product pathway;

c. conservation marine biodiversity pathway; and

d. monitoring and evaluation (M&E) and knowledge management (KM).

48. A central aspect to achieving the project objective will be to directly collaborate with key public, local communities and business sector stakeholders, including women; this aspect of the project is linked to the M&E and KM pathway through the implementation of a Stakeholder Engagement Plan and a Gender Action Plan, although stakeholder participation and gender mainstreaming is embedded throughout all the impact pathways. The identified four barriers described above, the causal pathways, and their key underlying assumptions are as follows.

Barriers:

Barrier 1. Absence of specific procedures, methodologies and other guidance for the adequate implementation of the existing legislation on access to genetic resources and the equitable distribution of benefits derived from their use.

Barrier 2. Weak research & development processes to obtain products from biodiversity.

Barrier 3. Limited capacity to establish and manage manage a sustainable value chain that benefits local communities.

Barrier 4. There is little knowledge on the part of the Cuban population and decision-makers about the importance of this ecosystem as a provider of numerous goods and services to humans and marine biodiversity in general.

Causal Pathway

Causal Pathway 1: Enhanced legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing.

- Key assumptions: 1a) there is political will to promote the required changes.

Causal Pathway 2: Improved institutional and individual capacities for the research and development of a pharmaceutical product from a marine angiosperm.

- Key assumptions 2a): key stakeholder, including national government, local communities and the pharmaceutical industry are actively involved.

Causal Pathway 3: Conservation of marine biodiversity and habitat of angiosperm used for pharmaceutical product development.

- Key assumptions: 3a) availability of the technical and financial resources to develop and assimilate the planned conservation actions.

Causal Pathway 4: Improved information sharing mechanisms and monitoring tools.

- Key assumption: 4a) there is broad and timely dissemination of information to improve decision-making and replication.

- Key assumption: 4b) institutions at the national and local levels have the capacity to successfully implement project activities and outcomes to deliver GEBs in a timely manner.

49. It is also assumed that climate variability will be within ranges that do not affect the outcomes of the project and the COVID-19 pandemic will recede. The identified pathways are based on the analysis of barriers. The supporting outputs and outcomes for each pathway, and the assumptions that they are built upon, will address the problems and barriers described above, allowing sustainable management of marine ecosystem, the adoption of sustainable practice to reduce pression on priority marine ecosystem, the availability of strong regulatory framework to support the implementation of the Nagoya Protocol and the development of a pharmaceutical natural product from marine biodiversity bases on Nagoya principles. The

project's ToC considers the active participation of public, business, and civil society stakeholders, as well as actions to contribute to gender equality and the empowerment of women in the local communities.

50. The ToC will serve multiple objectives, such as:

- Support adaptive management during implementation, e.g., the adaptation of the project's results framework (including indicators and targets), organizational structure and/or project management unit, gender and stakeholder participation approach, timelines and work plans, and priorities as a result of changes in context and needs including evolving and/or new social and environmental risks, or other risks;
- Engage all stakeholders and develop ownership;
- Communicate the rationality of the Project's goals, outcomes, outputs, and activities to relevant internal and external audiences; and
- Ensure that adequate data is collected to enable sound monitoring and evaluation throughout the life span of the Project and beyond.

51. The ToC is a dynamic framework that will be continually managed and appraised during project implementation. This strategy will deliver GEBs as well as social and economic benefits at the local level. The interrelated components described above are the means to achieve the GEB.

52. The GEBs to be delivered are:

- 631 hectares Total Area under improved management, corresponding to:
    a. 118 hectares of marine protected areas under improved management for conservation and sustainable use (GEF Core Indicator 2);
    b. 513 hectares of marine habitat under improved practices (excluding protected areas) (GEF Core Indicator 5);
- Selected species under conservation and sustainable use;
- 475 (344 women + 131 men) direct beneficiaries as co-benefit of GEF investment (GEF Core Indicator 11).

The project is aligned with the GEF7 Biodiversity (BD) Focal Area Objective 3: Further develop biodiversity policy and institutional framework, Focal Area Investments: Implementing the Nagoya Protocol on Access and Benefit Sharing.

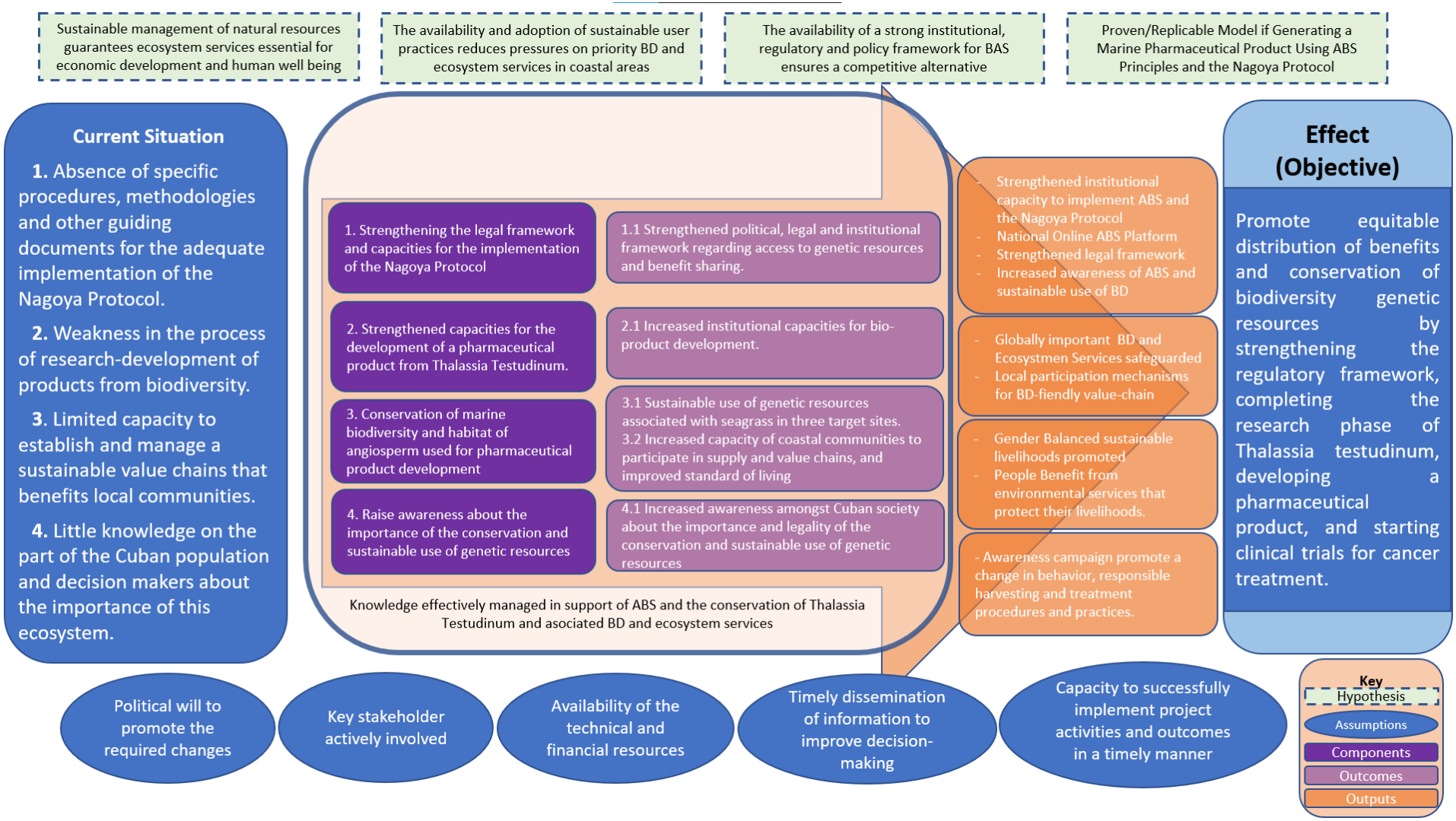


Figure 1. Theory of Change, ABS in Cuba

V. RESULTS AND PARTNERSHIPS

Expected Results*:*

53. GEF investment will increase national and regional capacity to design and implement a regulatory framework in accordance with the Nagoya Protocol on Access and Benefit-Sharing of Genetic Resources. The project will lead to the completion and implementation of the legal basis that will regulate access to genetic resources in a more effective manner, as well as benefit sharing from its use, an issue that is currently not sufficiently regulated in the country. It will make available to the national authority officials, material for training in ABS, and will allow the evaluation and report on the project's products, so that the construction of the regulatory framework is informed. This will be achieved through four components that complement each other, and that promote access and benefit sharing of genetic resources as a competitive alternative for the country.

54. The project will strengthen institutional and local capacity for the sustainable use and development of a natural product with potential application in cancer treatment. The project will improve preclinical evaluation conditions to ensure the introduction of the product, currently under development at ICIMAR, to the clinical research phase. The preclinical and clinical tests of the new product will meet national and international quality standards and could be subsequently registered for human use. The project will strengthen the supply and value chains, i.e., promoting a sustainable and efficient supply and market for medicines or nutraceuticals obtained from natural marine sources. In parallel, the project will improve the management and monitoring capacity of the T. testudinum species under sustainability and biodiversity conservation criteria. It will lay the groundwork for the future commercialization of a standardized quality product. The engagement of local communities is critical for developing the project and its sustainability. Through training directed to these ends, communities will be involved in harvesting, monitoring, and conservation of the seagrass (seibadales).

55. The above-indicated results will be achieved through the following Components:

Component 1. Strengthening the legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing.

56. This component seeks to strengthen the existing political and legal framework and the regulatory authority on ABS, through the design of procedures and other norms that complement the legislation. Consequently, the project aims to increase access and participation of Cuban civil society and local communities in the benefits derived from the management of the genetic resources. The expected results from this component are multiple, as they permeate every aspect of ABS in Cuba. Ultimately, this component will provide the strengthened capacities and regulatory framework necessary for Cuba to develop a standardized final product to be introduced in clinical evaluation; generate production capacity at an institutional and local level in sustainable management of marine ecosystems throughout the island; improve the plant material produced and increase the capacity to supply the leaves of the species; substantially increase the conservation of the species; validate the implementation of the provisions of the Nagoya Protocol; provide documents on access to the genetic resource, benefit sharing; and increase the capacity of institutions to manage procedures, permits and knowledge on access to the genetic resource.

Outcome 1.1. Strengthened political, legal and institutional framework regarding access to genetic resources and benefit sharing.

Output 1.1.1. Procedures, methodologies, and model clauses are proposed to complete the legislation that implements the Nagoya Protocol.

57. The project will increase national and regional capacity in the design and implementation of ABS procedures and guidelines, taking into account that there is also a Biodiversity Program that includes an ABS goal. The activities financed will lead to the completion and implementation of a legal basis that will regulate access to genetic resources in a more effective manner, as well as benefit sharing, which is currently not sufficiently regulated in the country. This will be complemented by a compilation and analysis of international experiences on ABS contractual procedures to determine what would work better in the context of Cuba. Based on these analyses, the project will elaborate proposals for procedures, methodologies and model clauses to bolster the ABS legislation (Norm) currently under elaboration.

58. The project will also support the development of methodological guidelines to identify monetary and non-monetary benefits derived from genetic material. These will first be used for the Thalassia supply chain in the Cuban context. In this

sense, the project will take into account not only the pharmaceutical (antitumoral) uses of *Thalassia testudinum* but also the other potential uses (nutraceutical, cosmetic, and agriculture) of this species.

59. The results from the other project's components will also be documented and used to ensure that the construction of the Norm is informed by practical experiences. In particular, the project will support the elaboration and validation of proposed procedures for the use of marine angiosperm based on the experiences generated with regards to obtaining a bioproduct from Thalassia testudinum in Component 3.

Output 1.1.2. Strengthened capacities of the regulatory authority to control access to genetic resources.

60. Despite the investments and resources available in the baseline scenario, the regulatory authority does not have sufficient capacity to advance ABS and generate impacts that are competitive with other land uses, such as tourism, which currently offer better sources of income for local coastal communities. GEF resources will help to break down commercial and legal barriers, and provide development possibilities to a level that would otherwise not be competitive. This will be achieved in synergy with the other project components.

61. The project will provide material to the national authority officials for training in ABS. The project will organize workshops and facilitate exchanges with national and international experts to develop complementary materials on ABS and associated knowledge, including those related to protecting and managing information and intellectual property rights. The purchasing of equipment (such as a laminar flux cabinet, CO_2 incubator, centrifuge, plate reader, microscopes, and freezers) will complement training and strengthen the authorities (CITMA, MES). For example, ICIMAR will need the laminar flux cabinet, CO_2 incubator, centrifuge, and the inverter microscope to establish checkpoints related to the starting of the cell culture laboratory. The project alternative will strengthen CITMA institutions and local communities in the targeted intervention areas. With project support, stakeholders will improve knowledge of marine genetic resources and management, including generating benefits and compensations for local communities. Harvesting the marine resources, applying conservation strategies, and accessing benefits derived from each of the project's interventions throughout implementation will involve local communities.

Output 1.1.3 Tools for training, protection, information management and scope of intellectual property rights.

62. The project will design high-leverage training tools such as a combined on-line and in-person training course aimed at building capacity in the different aspects of ABS covered by the project, especially contract negotiation, information management and scope of intellectual property rights. The course will target at least 255 participants from ORSA and related institutions located in the eastern, central and western regions of the country. This approach is critical to mange the COVID-19 pandemic situation. As a result of this training, it is expected that communities and stakeholders will have sufficient knowledge to participate in benefit sharing and progress in the case study activities in Component 3. Ultimately, this increased capacity will facilitate and accelerate the negotiation of ABS agreements. Existing agreements and contracts will be reviewed in accordance with the Nagoya Protocol, identifying corrective measures for full compliance with its provisions and validating the research-development process of the T. testudinum product.

Output 1.1.4 Dialogue platform to exchange of information on ABS and knowledge associated with biodiversity conservation.

63. The project will develop a dialogue platform for the exchange of information on ABS and knowledge associated with biodiversity conservation. Central to this is the design and construction of National ABS Platform online – the ABSCH – to house Cuba's official information on ABS as well as to disseminate the results of the project. The ABSCH will be consolidated and linked/integrated with the CBD's ABS Clearing House Mechanism (CHM). Furthermore, the project will conduct a seminar/workshop on the results of the project and the implementation of the Nagoya Protocol to exchange experiences and evaluate its impact on local communities and Cuban civil society. This project will facilitate the coordination between ORSA and AMA/IGT to ensure that the Infogeo platform of the National Environmental Information System (NEIS) includes Cuba's official information on ABS after project implementation.

Component 2. Strengthening institutional and individual capacities for the research and development of a pharmaceutical product from a marine angiosperm.

64. Component 2 seeks the development of a new product for human use from the marine angiosperm T. testudinum. This requires tests that guarantee its efficacy and safety. Therefore, studies related to the standardization and characterization of the product in question must be conducted. Non-clinical efficacy and safety trials play a defining role and must be carried

out in harmony with the standards established at national and international level. To achieve this, GEF resources will be used to increase the existing human capacities of the institutions involved in the development of the product, as well as the introduction of new methodologies and Standard Operating Procedures (SOPs) for the conduct of studies in compliance with quality standards.

65. The Institute of Marine Sciences (ICIMAR) has most of the technical infrastructure needed to support the project. However, this component aims to improve ICIMAR's technical and operational capacities to evaluate compounds obtained from natural sources with potential application in human therapeutics. Especifically, the infrastructure of ICIMAR's Experimental Unit to conduct pharmaco-toxicology research needs upgrading to meet Good Laboratory Practice Standards.

ICIMAR has experimental evidence about the anti-tumor potential of T. testudinum extract, but this is insufficient to request the Cuban Regulatory Unit to introduce it in the clinical research phase, a condition required to obtain a Health Registration as an alternative medicine or nutritional supplement to conventional anti-tumor therapy.

66. Component 2 will support the remaining 35% of the scientific-technical studies identified as necessary to fulfil the clinical information requirement as per national regulation. These includes key elements as following: characterization of the species in different collection sites, data on metabolism of the organism, combination analysis with conventional antitumoral drugs, data on chronic toxicity, technological development of the active pharmaceutical ingredient, and definition of the pharmaceutical form. Completing the above-listed data is indispensable to register a natural product.

67. The project's investment will trigger the establishment of the T. testudinum supply and value chains. This investment is critical to ensure sustainable sourcing, marketing and revenue generation. Besides, medicines or nutraceuticals, the project will include potential bioproducts such as cosmetics and agricultural input (fertilizer) obtained from marine sources. The project will also support the preparation of the documents required by the Cuban Regulatory Agency (CECMED)[8] for authorization to begin the clinical research phase. The project will facilitate the coordination between ORSA and AMA/IGT to ensure the National Environmental Information System (NEIS) throuhg its Infogeo platform includes the information on Cuba's official information on ABS after project implementation.

Outcome 2.1 Increased institutional capacities for bio-product development.

Output 2.1.1. Updated ICIMAR technical and operational capacities enable obtaining permission from the National Regulatory Unit to conduct non-clinical studies on the product.

68. With project support, ICIMAR seeks to conclude a research and development process that has been initiated but is pending completion to register a natural product with beneficial properties obtained from the marine angiosperm T. testudinum. The project will support the design and identification of technical standards to carry out the remodeling of the facilities of the Biotherium and laboratories involved in ICIMAR. It will facilitate the strengthening of the technical and operational capacities, and the necessary inputs for the execution of the work protocols related to the non-clinical studies. Finally, it will enable the installation of updated equipment and establishment of technical conditions to carry out the investigations under a controlled environment. These action will lead to the improvement of preclinical evaluation conditions for the introduction of the product in the clinical research phase. If feasible, the product will meet national and international quality standards to be registered as a new product for human use.

Output 2.1.2. Strengthened human resources in the non-clinical evaluation of products derived from marine biodiversity under a controlled environment.

69. Cuba has deployed considerable resources and efforts to creating the basis for knowledge and experience in resources derived from nature and to developing scientific knowledge. There is national interest and human resources for developing products from natural and autochthon biodiversity, but there is limited access to didactic resources and infrastructure to carry out all stages of the process of research-development-innovation of bioproducts and improve human resources specialization. The research-development stage includes the scientific-technical studies (65% completed, 35% will be supported by the

8 Autoridad Reguladora de Medicamentos, Equipos y Dispositivos Médicos de la República de Cuba / Regulatory Authority for Medicines, Equipment and Medical Devices of the Republic of Cuba. https://www.cecmed.cu

project's activities) and the pharmaceutical product development from Thalassia testudinum, which will be supported by BIOCUBAFARMA / Laboratorios Oriente (national co-financing).

70. The project will strengthen and train approximately 200 personnel, technicians and students from ICIMAR, CIM-UH, Havana University and BIOCUBAFARMA in the non-clinical evaluation of products derived from marine biodiversity in controlled environment. The availability of professionals and qualified labor will facilitate the uptaking of new technologies by the project's targeted agencies and communities, and will raise the quality of the outputs and results.

71. The project also will promote the participation in scientific exchanges, workshops, seminars and courses to strengthen stakeholder's and contribute to increasing the scientific knowledge to conduct of non-clinical studies for the evaluation of bio-products.

Output 2.1.3. Phytochemical characterization of natural extracts, identification of metabolites, and evaluation of anti-tumor effects and margin of safety of the active ingredient derived from T. testudinum.

72. The project will address constraints found in the baseline with regards to the materials required to carry out phytochemical characterization of natural extracts, particularly marine extracts, the identification of metabolites and compounds responsible for their activity, and activity-guided chemical characterization studies. The project will facilitate the acquisition of the necessary inputs for the execution of the experimental protocols. This project will enable the collection of specimens in the three intervention areas for studies on chemical-physical, microbiological characterization, genetic variability, efficacy and safety. Finally, the project will support the standardization of the process to obtain the bio-product under solid scientific criteria and it will make it possible to lay the groundwork for obtaining a new candidate drug with potential application in anti-tumor therapy and related diseases. *Thalassia testudinum* posseses antitumor activity, which indicates that there is potential for medicinal/pharmaceutical use of this species. To date, 65% of these studies have been concluded. The project will support the development of the remaining 35% of the studies to complete all the information and data requirements, as per national regulation.

Output 2.1.4. Documentation to obtain authorization for clinical studies under biodiversity conservation principles is completed.

73. This output will support the preparation of the documentation to be submitted for the application to the Cuban Regulatory Agency for authorization to begin the clinical research phase. In this sense, project should be into account the Regulation 21/2008 of the Regulatory Authority for Medicines, Equipment and Medical Devices of the Republic of Cuba (CECMED). These national regulations establish the "Requirements for the authorization of clinical trials". These requirements includes both Administrative Information, Ecological - Chemical - Pharmaceutical Information. As indicated above, *T. testudinum*'s research and development phase has a substantial advance, estimated by the MINSAP at 65%. Thus, the project intervention is critical to complete the clinical trial application file.

Component 3. Conservation of marine biodiversity and habitat of angiosperm used for bioproduct development.

74. Given the strategic importance of coastal/marine ecosystems, this component is essential to ensure the conservation and sustainable use of seagrasses, its habitat, and associated biodiversity. The project will identify best practices and optimal levels of harvesting and pruning to ensure that *T. testudinum* and its associated biodiversity continue providing ecosystems services. In addition, these sustainable harvesting techniques will contribute to increase the standard of living of the inhabitants of coastal communities by engaging them in sustainable supply and value chains.

Outcome 3.1 Conservation and sustainable use of genetic resources associated with seagrass in three target sites.

Output 3.1.1. Evaluation of environmental quality of seagrass ecosystem at intervention sites.

75. The ecosystem services of seagrass beds include sustaining diverse faunal communities, supporting fisheries, providing coastal protection through stabilization of sediments, cycling of nutrients, and carbon sequestration. The project will use the Ecological Evaluation Index (EEI) to assess the ecological status of the seagrass ecosystem, before and after the intervention. Variables addressed by this index include changes in seawater and sediments quality including salinity levels, nutrients, and heavy metals. Seagrasses are also an important food source and habitat for wildlife, supporting a diverse community of organisms including fish, octopuses, sea turtles, shrimp, blue crabs, oysters, sponges, sea urchins, anemones, clams, and squids. The project will assess the biodiversity associated to seagrasses in all collection sites. Seagrass ecosystems are also effective carbon sinks. Scientists have estimated that seagrass sequestration of carbon is 35 times more efficient than in the rainforest. The project will estimate the organic carbon sequestered in the sediments and seagrass biomass and the

impact of harvesting practices on carbon sequestration in the three pilot sites of the project. The EX-Ante Carbon-balance Tool (EX-ACT) has a seagrass and mangrove module that could be used for this exercise.

Output 3.1.2. Management protocols and recommendations for the conservation and sustainable use of seagrass.

76. Based on the scientific information collected in previous outputs, the project will propose management protocols and recommendations for the conservation and sustainable use of seagrasses. This information will improve the management plan of the protected area (PNP Rincón de Guanabo), where one of the intervention areas is found. Recommendations for the conservation of seagrasses at non-protected areas will be provided to the environmental authorities of the provinces Camagüey and Santiago de Cuba. This activity will contribute to maintain the valuable ecosystem services provided by seagrasses.

Output 3.1.3. Population analysis of Thalassia testudinum angiosperm.

77. The project's areas of intervention cover approximately 137 hectares, which is a relatively small area but with great potential for replication due to the extensive presence of T. testudinum in Cuba. The project will assess the variability of bioactive metabolites during project implementation which will provide information on the potential impacts of climate change and anthropogenic factors. It will also determine the availability of leaf biomass in the selected meadows. This output will also focus on assessing the effect of successive pruning of leaves with different intensities on the vitality of the plant (density, biomass, protein content, carbohydrates, and photosynthetic pigments). In parallel, the project will support an assessment of the genetic variability of *T. testudinum* meadows and its possible impact on the resilience and bioactive properties of the product. The project will propose a methodology to ensure the conservation and sustainable use of *T. testudinum*. This output will identify areas with healthy T. testudinum meadows and assess their bioactive potential for the production of secondary metabolites which are required for the research process and potential development of a product. In addition, through this output, the project will assess levels of pollution from land-based sources and potential conflicts with productive sectors (fishing and tourism) that might impact the conservation of seagrass beds and their associated biodiversity. Based on the findings of previous outputs, the project will conduct a population analysis model and feasibility study to evaluate the impact of harvesting practices on *T. testudinum*.

Output 3.1.4. Approved best practice/procedural tools for the management and the sustainable use of Thalassia testudinum.

78. The project will work with the competent authority in obtaining approval of a best practice/procedural tool for the sustainable harvest (and use) of the leaf biomass of T. testudinum by the local communities. To confirm the validity of proposed operational procedures, the project will carry out evaluations of the health of the seagrasses, analysis of the quality of the seawater and sediments, as well as existing information of the targeted areas. These actions will allow the harmonization and integration of the objectives of biodiversity conservation and sustainable use along the lines of the policies, regulations and strategies, and will inform decision-making processes at different levels.

Outcome 3.2 Increased capacity of coastal communities to generate a value chain, and improved standard of living, promoting equity between women and men.

Output 3.2.1: Training program on supply and value chains management associated to the seagrass ecosystem with emphasis on sustainable use of Thalassia testudinum.

79. This output aims to increase the capacity of local communities to set the foundations to establish sustainable supply and value chains and improve the standard of living of the inhabitants of coastal communities. To this end, the project will build local capacity to develop products from natural and autochthon biodiversity. The project will also strengthen the capacity of the institutions involved in the management, monitoring, and conservation of marine species. It is envisioned that supply and value chain experts with skills to work at a multi-stakeholder level will lead the achievement of this output. For example, at the supply chain level, the experts will work with local producers (communities) and input suppliers, assess the collection and pre-processing, and develop a road map for working at the value chain level in the future, once the product is approved. This output will be supported by output 1.1.3 (i.e., high leverage training course).

Output 3.2.2 Certification program for workers involved in the sustainable management and collection of samples in the intervention sites.

80. The Project will develop a certification program and training on the sustainable management and collection of samples of *T. testudium* targeting workers (women and men) from local communities. Approximately 20 workers will be certified by the regulatory authority (ORSA and CECMED). The certification is key to obtaining consistent and standardized

samples for research that meet phytopharmaceutical requirements. Certification is also critical to support the establishment of sustainable supply and value chains and, therefore, improve the standard of living of the inhabitants of coastal communities. Local communities and individuals will participate in the project through the stakeholder engagement process. Women, in particular, will be trained and engaged in processing the Thalassia. Ultimately, the activities implemented and promoted by the project will have a positive social and environmental effect and generate cumulative impacts with other existing activities in the area.

Component 4: Monitoring and knowledge management

81. This component will raise awareness in Cuban society about the importance of the conservation and sustainable use of genetic resources within a legal framework that can expedite the Nagoya Protocol's implementation.

Outcome 4.1 Increased awareness amongst Cuban society about the importance and legality of the conservation and sustainable use of genetic resources

Output 4.1.1 Gender responsive awareness campaign aimed at different stakeholders and users of genetic resources to promote a change in behavior, highlights responsible harvesting and treatment procedures and practices.

82. The Project will support the development and implementation of an awareness campaign. During inception, the project will define how communication activities can directly contribute to the project's objectives. This includes identifying the most effective strategy and messages to influence behavior change and impact expectes, and the messages and medium that will be most effective. A survey will be conducted at the project start with key stakeholders and project beneficiaries to determine their level of awareness about ABS, Intellectual Property management, and BD conservation. Based on the results of this survey, the Project will develop a campaign to increase awareness s amongst key stakeholders and project beneficiaries. The campaign will promote behavior change, responsible harvesting, and sound treatment procedures and practices. This process will be developed considering women and men in equitable conditions.

Output 4.1.2 M&E Plan, SESP and GAP implemented.

83. In accordance with GEF, UNDP and national policies, a series of social and environmental management plans have been developed based on analyses conducted during the Project's preparation. As such, the project will ensure the implementation and monitoring of these plans, and pursue adaptive management strategies, where appropriate.

Output 4.1.3 Publication and dissemination of the results and lessons learned.

84. The project will support increased knowledge of marine biodiversity found on the island platform. In particular, the project will provide new evidence on the biodiversity associated to *T. testudinum*, to support biodiversity conservation practices and models for this important ecosystem along the coasts of Cuba and other Caribbean islands. The project will redefine/update scientific knowledge on seagrass beds through publications of scientific findings, best management practices, and technical reports. Under this output the project will also publish methodological guidelines to identify monetary and non-monetary benefits derived from genetic material. Socialization will be carried out through publications and participation in scientific trainings, exchanges, workshops, courses, seminars, and events. Participation in these events will contribute to strengthen capacity building of scientists and local stakeholders. The project will also support participation of project staff in workshops, seminars and national and international events to facilitate the socialization and dissemination of outcomes and lessons learned.

Partnerships

85. The project will establish partnerships with several on-going projects related to the protection of marine and terrestrial biodiversity in Cuba. The objectives that these projects are sustainable development and measures for climate change adaptation, including biodiversity conservation, sustainable use and improvement of local communities livelihoods, and the reduction of existing threats to pristine ecosystems. These iniciatives are in complete synergy with this project. Besides, their experiences and lessons informed the development of this project and will continue to be crucial to its implementation. The following summarizes these important initiatives:

- "Use of *Thalassia testudinum* residues as an ecological fertilizer" financed by the Program of Science, Technology and Innovation: Sustainable use of the components of the biological diversity of Cuba (2019-2021). The project targets the need to increase agricultural yields using locally produced ecological fertilizers to ensure sustainable, environment-

friendly agriculture. The project promotes the use of waste from obtaining the extract of *T. testudinum to produce fertilizer for* short-cycle crops.

- "Potentials for using marine organisms from Vietnam and Cuba as pharmaceutical products and functional foods." This project will conduct chemical and pharmacological studies of marine species' extracts to determine their potential use in the pharmaceutical and food industries. The project will exchange knowledge, work methodologies, and research protocols for marine extracts from Cuba and VietNam, and promote specialized training and capacity building.
- "Sustainable use and benefits of an extract obtained from the marine plant *Thalassia testudinum*," financed by the Science, Technology and National Innovation Program: "Sustainable use of the components of Cuba's biological diversity" of CITMA (2019-2023). This project is working on the chemical characterization and pharmacological efficacy of the hydro-alcoholic extract obtained from the leaves of *T. testudinum.* The project will lay the groundwork for obtaining a new bioproduct with application in human health as a nutraceutical and biomedical product. This project was born from the initial pharmacological evidence obtained by ICIMAR and has provided the background that supports the present proposal. This project is the primary source of co-financing that will support the development of the project's actions.
- "Conservation and sustainable management of natural resources of the PNP Rincón de Guanabo for the benefit of the community," financed by the Small Grants Program of the Global Environment Facility (SGP/GEF). The project's objective is to promote an economically sustainable alternative for the members of the Guanabo community by applying a technology transfer process. The project provides training and awareness to improve coastal-marine ecosystems management, involving protection and conservation actions, monitoring protocols, and the transfer of knowledge to the coastal community of the Rincón de Guanabo National Park. The project will ensure the sustainable collection and processing of plant biomass and marine algae. The project includes the evaluation of *Thalassia testudinum's* biomass and will provide valuable data to the proposed project. For example, background information will be the starting point for designing the tasks under Component 3.
- State Plan for confronting Climate Change (Task Life). The proposed project is aligned with the objectives of Task 6 of Task Life, i.e., controlling deterioration, rehabilitating, and conserving the coral reefs throughout the archipelago, prioritizing the crests that border the island platform, and protecting urbanized beaches for tourist use. In particular, two of the intervention sites proposed to develop the project's actions are among the coastal communities prioritized in this task, the "Rincón de Guanabo" NNP and the Santa Lucia Beach in Camagüey. To date, Task Life actions have contributed to determining the biotopes present in the NNP "Rincón de Guanabo" and preparing a representative map of the total dry biomass present in the area. This project identified four biotopes, including seagrasses (46%). The seagrass zone is the one that encompasses the most significant percentage of the area, followed by the sand biotope, which is where the seabed settles. This project identified two seagrass species: *Thalassia testudinum* and *Syringodium filiforme Kützing; and provided data on the* influence of the surrounding environment on the seagrass. Data generated by this project also provides background supporting the design and implementation of the project proposal.
- "Incorporating multiple environmental considerations and their economic implications in managing landscapes, forests and productive sectors in Cuba" financed by UNDP. This project promotes the generation of multiple global environmental benefits based on the integrated economic valuation of ecosystem goods and services as a tool for decision-making at different levels. Specifically, it addresses the threats associated with the growth of mass tourism, the emission of liquid waste from industrial, extractive, and domestic sources, unsustainable agriculture, shipping, and port operations. Seagrasses are one of the ecosystems evaluated by this project, vis-a-vis sectorial productivity. This project will estimate the contribution of the seagrass and other coastal ecosystems to sectorial economic development and provide economic evidence-based information to improve decision-making.
- "Conservation and sustainable use of biodiversity from the approach of Integrated Management of Basins and Coastal Areas in Cuba" supported by UNDP. This project will improve the conservation, protection, and sustainable use of Cuba's biological diversity to support future socio-economic development for generations to come. This project promotes the rehabilitation of the already fragile and vulnerable watersheds and coastal ecosystems threatened by harmful anthropogenic activities and the effects of global warming. Training on managing monitoring systems to assess biodiversity and ecosystem health is central to this project and the objectives of the project proposal. In addition, within the framework of both projects, exchanges on experiences and lessons regarding the conservation, monitoring, and evaluation of seagrasses are of common interest.

87. Finally, the project will also establish synergies with the business of the Pharmaceutical Industry (PI), both including grant and in-kinds resources to support the project activities. It is take note that the PI, e.g., Laboratorios Oriente, is a State-owned company that belongs to the Superior Organization of Business Management (OSDE) Biocubafarma.

Co-financing source	Co-financing type	Co-financing amount	Included in project results?	If yes, list the relevant outputs
National government- Higher Business Development Organization (OSDE) BioCubafarma / Pharmaceutical Laboratories "Oriente"	Grants	1,335	No	-
	In-Kind	7,000		
Total BioCubaFarma		**8,335**		

Risks

88. As per standard UNDP requirements, the Project Coordinator will monitor risks on a quarterly basis and report on the status of risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP Risk Register (see Annex 6, which includes a description of all project risks). Risks will be reported as critical when the impact and probability are high (i.e., when impact is rated as 5, and when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported to the GEF in the annual Project Implementation Report (PIR).

89. As per the social and environmental risk screening exercise conducted during project preparation, the project risk has been categorized as Moderate. Annex 5 provides the project's Social and Environmental Screening Procedure, detailing the identified risks and management measures. For more details on the risks and the management measures see Annex 5 and 6.

Stakeholder engagement and south-south cooperation:

90. The project was prepared in collaboration with relevant stakeholders from the Cuban government and civil society, and will benefit of their permanent participation during implementation. The key stakehoklders are shown in the following Table:

Stakeholders	Role in Project Implementation
Ministry for Science, Technology and Environment (CITMA)	CITMA is a key Project partner together with ICIMAR and its Environmental Agency (AMA). In addition, its Environment Directorate (DMA) in coordination with ORSA, also CITMA, are important actors in Component 1 of the project.
Department of Environment (DMA), CITMA	The DMA is in charge of the preparation and proposal of the environmental policy and the control of its compliance in the country. Since the very creation of the Agency, this direction has lead the development of the environmental legislation program and the dissemination of existing regulations. It is currently in charge of the coordination and control of the State Plan for Confronting Climate Change at the national level. In this project, it will participate in Component 1 aimed at strengthening the legal framework and the necessary capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in the country.
Environment Directorate (AMA), CITMA	AMA coordinates the State Plan for Confronting Climate Change at the sectoral level. It will contribute with knowledge and tools to consolidate the integrating vision of the project from its components. It will facilitate the coordination of actions with other OSD, OACE and binding national and international projects. As part of its functions, it would also supervise the effective progress of the National Project Implementation Office. It also participates through its key research institutions, such as ICIMAR, BIOECO and CIMAC.
Institute of Marine Sciences (ICIMAR), AMA, CITMA	ICIMAR is the Project Implementing Partner. ICIMAR's mission is to carry out research aimed at developing the scientific bases for the knowledge, management, conservation, sustainable use and rehabilitation of natural resources and processes in the marine and coastal zone, as well as the commercialization of oceanographic, biological and of biomedical and industrial applications for the solution to social, environmental and economic problems. Its vision and the lines of research and services are firmly aligned with the main interventions proposed in the Project.

Stakeholders	Role in Project Implementation
	It will act as the main executing entity and national coordinator of the different components and activities proposed in technical and administrative terms. In addition, it will be in charge of directing and conducting the non-clinical research-development process of the extract obtained from T. testudinum within an ethical framework that guarantees the fair and equitable distribution of the benefits derived from the results of the project (Component 2), which will be carried out with the participation of IMRE-UH and Oriente Pharmaceutical Laboratories BioCubaFarma.
Office for Environmental Regulation and Environmental Safety (ORSA), CITMA	ORSA is the entity that has the mission of regulating and controlling in the national territory compliance with the regulations in force in matters of environmental protection. Ensure compliance with the international commitments contracted by the Cuban State in the field of environmental protection assigned to it. In the project, ORSA is responsible for directing and conducting the strengthening of the legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing (Component 1), which it will develop in coordination with the DMA of CITMA and ICIMAR.
Department of International Relations (DRI), CITMA	DRI has a relevant role in the international negotiations that take place under the umbrella of the Convention on Biological Diversity, including the Nagoya Protocol.
Marine Research Center of the University of Havana (CIM-UH), MES	The CIM-UH's mission is to contribute to the conservation of the environment and sustainable development, through the integration of scientific research and continuous training of professionals in Marine Biology, Aquaculture and Coastal Management, with a multidisciplinary approach and excellence. In the project, it participates in Component 3, designed for the development of studies on the conservation of marine biodiversity and the habitat of the angiosperm T. testudinum used for the development of the pharmaceutical product. To this end, ICIMAR, the Rincón de Guanabo Natural Landscape, CIMAC and BIOECO will collaborate in the development of the component.
Institute of Materials Science and Technology, University of Havana (IMRE-UH), MES	The IMRE is a higher education institution that will participate in Component 2, in the development and conduction of non-clinical studies aimed at obtaining the bioproduct from T. Testudinum, this entity will also participate In the design and execution of different studies framed in said component, it will be responsible for carrying out the bio-computer studies and the bio-statistical analyzes that support the efficacy and safety of the bio-product.
Higher Business Development Organization (OSDE) BioCubaFarma	OSDE will be involved in the technological development of the pharmaceutical formulation that will be obtained in Component 2, through its entity Laboratorios Farmacéuticos “Oriente”.
Pharmaceutical Laboratories "Oriente”, OSDE BioCubaFarma	Laboratorios "Oriente" is a productive entity that belongs to the BioCubaFarma Superior Business Development Organization that will participate in Component 2, it is in charge of obtaining the pharmaceutical formulation of the bioproduct.
Protected Area “Rincón de Guanabo” Natural Landscape, Havana del Este Municipality Museum, Ministry for Culture.	This is one of the intervention and data collection sites of component 3. It will participate in the studies of foliar biomass of T. testudinum, its incidence in the bioactivity and resilience to the pruning of leaves and the studies directed to the development of the most suitable method for the use of angiosperm.
Center for Biodiversity and Eastern Ecosystems (BIOECO), AMA, CITMA	BIOECO is an institution of the AMA of CITMA. In the project, it will participate in studies of foliar biomass and the effects of genetic variability of *T. testudinum* meadows, its impact on bioactivity and resilience to leaf pruning and studies aimed at developing the most appropriate method for the use of angiosperm.
Camagüey Environmental Research Center, CIMAC, AMA, CITMA	In the project, it will participate in studies of foliar biomass and the effects of genetic variability of T. testudinum meadows, its impact on bioactivity and resilience to leaf pruning and studies aimed at developing the most appropriate method for the use of angiosperm.

Stakeholders	Role in Project Implementation
Diving Club (TCP - Self-employed modality) Guanabo Community.	Direct beneficiaries
Community Initiative and Exchange Center (CIERIC), Non-governmental organization (NGO).	Accompanies the project stakeholders, gives visibility and support to the project results.
Centro Félix Varela (CFV)	Accompanies the project stakeholders, gives visibility and support to the project results.
Cuban Society of Pharmacology (SCF), ONG.	Accompanies the project stakeholders, gives visibility and support to the project results.
Local Government of the municipality of Habana del Este	The local community Rincón de Guanabo will be involved in the project through the participation of the residents who carry out the Self-Employment activity called "Collector seller of natural resources", in accordance with the provisions of Decree-Law No. 356/2018 "On the Exercise of Self-Employment". During the process of formulation and implementation of the Project, the Local Government of the Popular Power of Guanabo, of the municipality of Habana del Este, will be involved, including the Popular Councils that are framed in this area of intervention.
Territorial Delegations of CITMA	CITMA is the key body for the execution of the activities related to the project, fundamentally those related to those that will be developed in the intervention areas and with the implementation of the Nagoya Protocol, through the coordination of control, supervision and the analysis of the results.
General Customs of the Republic	This is a control body that guarantees the security and protection of society and the national economy at the border, as well as tax collection and foreign trade statistics. It is a key actor for the purposes of Project Result 1 in relation to the definition of checkpoints for the control of the transboundary movement of genetic resources.

91. In addition, to bringing the voice of Cuba to global and regional fora, the project will explore opportunities for meaningful participation in specific events where UNDP could support engagement with the global development discourse on ABS. The project will furthermore provide opportunities for regional cooperation with countries that are implementing initiatives on ABS in geopolitical, social and environmental contexts relevant to the proposed project in Cuba.

92. Learning opportunities and technology transfer from peer countries will be further explored during project implementation. To present opportunities for replication in other countries, the project will codify good practices and facilitate dissemination through global ongoing South-South and global platforms, such as the UN South-South Galaxy knowledge sharing platform and PANORAMA9.

93. As previously mentioned, Thalassia testudinum is the most abundant marine angiosperm in the Caribbean Sea and is widely distributed along the coasts of islands and cays in the area. Due to the proximity and community of cultural interests between Cuba and different full member countries of the Association of Caribbean States (ACS), with which there are signed cooperation agreements for the sustainable development of the region, it is foreseeable that the lessons and experiences learned from the Cuban experience in the sustainable and environmentally friendly management of this species can be taken advantage of in the rest of the Region.

94. During the implementation of the present project, the exchange of information and experiences with other countries in the region is foreseen, such as Mexico, Colombia and the Dominican Republic, countries with which the project participants have scientific collaboration on the subject. This could lead to their involvement in the exploration and characterization of the particular situation of angiosperms in the marine platforms of these countries, with emphasis on the northeast region, which could be a niche for the identification of possible new intervention sites, partners and new actors to be involved.

Gender equality and Women's Empowerment:

[9] https://panorama.solutions/en

95. Cancer is the leading cause of death in Cuba, both in men and women. Data from the last National Population Census showed that more women than men live on the island by sex category and that women play a decisive role in the family, the nucleus of Cuban society, as well as occupying a more significant percentage of the country's productive force every year. However, their capacities and quality of life are significantly affected by the onslaught of this disease, which is increasing annually in all provinces of the country. According to the latest epidemiological reports of the Ministry of Public Health (Annual Report, 2019), lung, breast and colon tumours are the most common cause of morbidity and mortality among Cuban women, followed by gynaecological causes. This disease, which has long been associated with old age, has begun to appear significantly earlier in the country in the last five years. Breast, cervical and colon cancer are among the priority programmes for prevention and early diagnosis at the population level. However, despite significant resources allocated to cancer control and prevention in Cuba, at present it is one of the top ten diseases for which there is no solution in the country. It is therefore a priority for the Cuban State to find new therapeutic alternatives for controlling the disease, and particularly the tumours with the highest frequency of occurrence and mortality rate. The increased survival observed in cancer patients as a result of the new therapeutic approaches will make it possible in the future to approach cancer as a chronic non-communicable disease that causes patients pain and compromises their quality of life, with a serious impact on the rate of incapacity for work in productive ages for women. Pain affects 48% of patients in the early stages of the disease and between 64-75% of those in advanced stages, so its alleviation as part of the management of the disease, considered a human right in accordance with the Montreal Declaration and the development of Palliative Care, is also a priority in Cuba as part of the control and management of the disease.

96. The data from the experimental studies carried out so far that have allowed the evaluation of the anti-tumour potential of the extract obtained from T. testudinum show favourable results in models of primary tumours of colon and breast cancer in mice, comparable to therapeutics of conventional use. Therefore, the development of a product derived from this species could become in the future a new medicine to be used in the treatment and control of cancer in Cuban patients, who would directly benefit from the results emanating from the execution of the project.

Innovativeness, Sustainability and Potential for Scaling Up:

97. This Project will promote the sustainable use on ABS principles of Cuba's marine diversity, specifically of the marine angiosperma Thalassia testudinum as a source of potentially useful chemical entities such as phytopharmaceuticals and nutritional additives, all with full participation of local communities. The proposal will also help in the search for innovative alternatives to meet the challenges of current therapeutics and health standards of the population. Under this approach, the project finds a niche at the interface between its health benefits and Cuba's natural and cultural diversity. As part of the innovation-development process, local communities will be involved, so this approach is novel and has not been attempted before for marine biodiversity. Innovation is privileged through cooperative prospecting between local communities, industry and researchers involved in the project and will be developed under components 2 and 3.

98. As part of the project's activities, the foundations to establishing the Thalassia testudinum supply and value chains will be established. In this sense, the project's approach will ensure a fair distribution of benefits across the supply and value chains stakeholders. Another innovative aspect is the collaboration with and co-financing from the Cuban pharmaceutical industry (OSDE Biocubafarma / Laboratorio Oriente). At the same time, the project will facilitate the development of corporate social and environmental responsibility.

99. This project will multiply its benefits through the Cuban program for sustainable local development, which is a source of innovation, making it possible to scale up the beneficial and sustainable use of Cuba's marine biodiversity resources and achieve national coverage. Cuba has a defined, robust and functional legal system that is beginning to be articulated with the environmental projection of state policy. In this way, the continuity and sustainability of the results derived from the project is secured. Besides, the introduction of ABS will provide legal support to the interrelations, processes and transactions that will allow the national industry, the academic sector and the local communities to share more widely and equitably the benefits derived from Cuban biodiversity. Therefore, it is expected that discoveries related to biodiversity will accelerate and expand sustainably, after the project is concluded.

100. Scientific: It will allow the expansion of knowledge on marine biodiversity based on chemical diversity and bioactivity of organisms that inhabit the island platform, particularly in this case new evidence will be provided about sea grasses, the angiosperma T. testudinum the most abundant on the coasts of Cuba and the most abundant located in the Caribbean Sea, its habitat, population dynamics, potential uses, chemical diversity, management and conservation.

101. Technological: The project will enable the development of future environmental management pilot studies. The implementation and development of new methodologies and technologies under a control environment aimed at obtaining bioproducts from marine organisms. The process of research-development of new candidates for nature-based drugs for the Cuban biotechnology industry is strengthened, particularly using the sea as a source, and the benefits derived from this are

guaranteed to reach the local communities. New methods of management, collection and harvesting of the species will be implemented, allowing synergy with other proposals.

102. Social: It will allow the harmonization and integration of the objectives of conservation and sustainable use of biodiversity with the policies, regulations and strategies of the country and with the decision-making processes at different levels according to social development. It will promote the development of a new drug candidate to be used in anti-tumor therapy in combination with the drugs of conventional use for the management and treatment of cancer, the second cause of death in Cuba.

103. COVID-19 context: According to the most recent WHO reports, older patients and those with significant comorbidity conditions are at substantially higher risk of dying from COVID-19 than the rest of the population. This has led to the identification that patients diagnosed with cancer are among the most vulnerable populations and are more likely to contract Covid 19. These observations correspond to the higher percentage of lethality observed in cancer patients in different affected countries compared to those who do not suffer from the disease. These observations correspond to the higher percentage of mortality observed in cancer patients in different affected countries compared to those without the disease. These people face great uncertainty in the era of COVID-19, the pandemic has fundamentally changed the balance between risks and benefits in cancer treatment (WHO, 2020).

104. In Cuba, the latest MINSAP report placed cancer as the leading cause of morbidity/mortality in the Cuban population in 2019 (Anuario Estadístico, MINSAP 2019).

105. Environment: It will be a space to increase environmental education at the level of the communities adjacent to the areas of intervention on the perspectives of rational use of genetic resources. It will allow for the first time in the country the possibility of using the benefits of a resource from marine biodiversity in line with national policies and guidelines that take into account the protection of taxonomic groups, the ecosystem and the environment in general. It will result in the first case study that considers the use of a marine resource in an environmentally-friendly manner.

VI. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): *3, 4, 5, 8, 14, 15 y 17*				
This project will contribute to the following country outcome (UNDAF/CPD, RPD, GPD): *Institutions, production and service sectors, territorial governments and communities improve the protection and rational use of natural resources and ecosystems, resilience to climate change, and comprehensive disaster risk reduction management*				
	Objective and Outcome Indicators **(no more than a total of 20 indicators)**	**Baseline** *Must be determined during PPG phase*	**Mid-term Target** *Expected level of progress before MTR process starts*	**End of Project Target** *Expected level when terminal evaluation undertaken*
Project Objective: Promote equitable distribution of benefits and conservation of biodiversity genetic resources by strengthening the regulatory framework, completing the research phase of *Thalassia testudinum, developing* a pharmaceutical product, and starting clinical trials for cancer treatment.	**1. Mandatory Indicator 1:** # direct project beneficiaries disaggregated by gender (*female/male)*	0 (0/0)	213 (140/73)	475 (344/131)
	2. Mandatory GEF Core Indicator 2: *Marine protected areas created or under improved management for conservation and sustainable use (Hectares)*	*0*	*60*	*118*
	3. Mandatory GEF Core Indicator 5: *Area of marine habitat under improved practices (excluding protected areas) (Hectares)*	*0*	*200*	*513*
Component 1	***Strengthening the legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing***			
Outcome 1.1 Strengthened political, legal and institutional framework regarding access to genetic resources and benefit sharing	***Indicator 4:*** *# national-level methodological instruments for ABS (Proposal for a legal standard on access to genetic resources and benefit sharing and a methodological tool to support the implementation of the legal standard).*	*0*	2 Drafts	- 1 proposal for a legal standard on access to genetic resources and benefit-sharing and 1 methodological tool to support the implementation of the legal standard presented for approval by the competent authority.
Outputs to achieve Outcome 1.1	*1.1.1. Procedures, methodologies, and model clauses are proposed to complete the legislation that implements the Nagoya Protocol.* *1.1.2. Strengthened capacities of the regulatory authority to control access to genetic resources.* *1.1.3 Tools for training, protection, information management and scope of intellectual property rights.* *1.1.4 Dialogue platform to exchange information on ABS and knowledge associated with biodiversity conservation.*			

Component 2	***Strengthening institutional and individual capacities for the development of a pharmaceutical product from a marine angiosperm.***			
Outcome 2.1 Increased institutional capacities for bio-product development	***Indicator 5:*** *Number of staff and students trained on the non-clinical evaluation of products derived from marine biodiversity in controlled environment*	0	100	200
	Indicator 6: *Request for permit to start clinical trials of a new product for human use from marine angiosperm*	0	75% of application file for permit has been completed	Request for permit submitted to National Authority
Outputs to achieve Outcome 2.1	*2.1.1. Updated ICIMAR technical and operational capacities enable obtaining permission from the National Regulatory Unit to conduct non-clinical studies on the product.* *2.1.2. Strengthened human resources in the non-clinical evaluation of products derived from marine biodiversity under a controlled environment.* *2.1.3. Phytochemical characterization of natural extracts, identification of metabolites, and evaluation of anti-tumor effects and margin of safety of the active ingredient derived from T. testudinum.* *2.1.4. Documentation to obtain authorization for clinical studies under biodiversity conservation principles is completed.*			
Component 3	***3. Conservation of marine biodiversity and habitat of angiosperm used for bioproduct development***			
Outcome 3.1 Conservation and sustainable use of genetic resources associated with seagrass in 3 target sites	**Indicator 7:** *Leaf Biomass of T. testudinum*	170 g/m2 in Rincón Guanabo TBD in Camagüey TBD in Santiago de Cuba The two previous values (i.e., TBD) will be estimated during the first year of project implementation	Maintain baseline values	Maintain baseline values
	Indicator 8: *Carbon stock (tons of carbon biomass)*	This value will be estimated during first year of the project implementation	This value will be estimated during first year of the project implementation	This value will be estimated during first year of the project implementation

Outputs to achieve Outcome 3.1	*3.1.1 Evaluation of environmental quality of seagrass ecosystem at intervention sites.* *3.1.2 Management protocols and recommendations for the conservation and sustainable use of seagrass.* *3.1.3 Population analysis of Thalassia testudinum angiosperm.* *3.1.4. Approved best practice/procedural tools for the management and the sustainable use of Thalassia testudinum.*			
Outcome 3.2 ***Increased capacity of coastal communities to generate a value chain, and improved standard of living, promoting equity between women and men.***	**Indicator 9:** # workers certified on sustainable management of T. testudinum	0	10	20
Outputs to achieve Outcome 3.2	*3.2.1 Training program on supply and value chain management associated to the seagrass ecosystem with emphasis on sustainable use of Thalassia testudinum.* *3.2.2 Certification program for workersinvolved in the sustainable management and collection of samples in the intervention sites.*			
Project component 4	**Monitoring and knowledge management**			
Outcome 4.1 ***Increase awareness amongst Cuban society about the importance and legality of the conservation and sustainable use of genetic resources***	***Indicator 10:*** *% implementation of the awareness campaign on ABS and BD conservation in Cuba*	0	20%	100%
	Indicator 11: *% implementation of the strategy for disseminating knowledge generated, including procedures on Good Laboratory Practice Standards*	0	20%	100%
Outputs to achieve Outcome 4.1	*4.1.1 Gender responsive awareness campaign aimed at different stakeholders and users of genetic resources to promote a change in behavior, highlights responsible harvesting and treatment procedures and practices.* *4.1.2 Project's M&E Plan, SESP and GAP implemented.* *4.1.3 Publication and dissemination of the results and lessons learned.*			

VII. MONITORING AND EVALUATION (M&E) PLAN

106. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP (including guidance on GEF project revisions) and UNDP Evaluation Policy. The UNDP Country Office is responsible for ensuring full compliance with all UNDP project M&E requirements including project monitoring, UNDP quality assurance requirements, quarterly risk management, and evaluation requirements.

107. Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF Monitoring Policy and the GEF Evaluation Policy and other relevant GEF policies[10]. The M&E plan and budget included below will guide the GEF-specific M&E activities to be undertaken by this project.

108. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report.

Minimum project monitoring and reporting requirements as required by the GEF:

109. Inception Workshop and Report: A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:

a. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
b. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
c. Review the results framework and monitoring plan.
d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
e. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework (where relevant) and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
f. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
g. Plan and schedule Project Board meetings and finalize the first-year annual work plan. Finalize the TOR of the Project Board.
h. Formally launch the Project.

110. GEF Project Implementation Report (PIR): The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. UNDP will undertake quality assurance of the PIR before submission to the GEF. The PIR submitted to the GEF will be shared with the Project Board. UNDP will conduct a quality review of the PIR, and this quality review and feedback will be used to inform the preparation of the subsequent annual PIR.

111. GEF Core Indicators: The GEF Core indicators included in Annex 14 will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent ground trothing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF website.

112. Independent Mid-term Review (MTR): The terms of reference, the review process and the final MTR report will follow the standard UNDP templates and UNDP guidance for GEF-financed projects available on the UNDP Evaluation Resource Center (ERC).

[10] See https://www.thegef.org/gef/policies_guidelines

113. The evaluation will be 'independent, impartial and rigorous'. The evaluators that UNDP will hire to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

114. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/NCE-VF Directorate.

115. The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by April 2025. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion.

116. Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the UNDP Evaluation Resource Center. TE should be completed 3 months before the estimated operational closure date, set from the signature of the ProDoc and according to the duration of the project. Provisions should be taken to complete the TE in due time to avoid delay in project closure. Therefore, TE must start no later than 6 months to the expected date of completion of the TE (or 9 months prior to the estimated operational closure date).

117. The evaluation will be 'independent, impartial and rigorous'. The evaluators that UNDP will hire to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

118. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/NCE-VF Directorate.

119. The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by January 2027. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion

120. Final Report. The project's terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

121. Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information**:** To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[11] and the GEF policy on public involvement[12].

122. **Monitoring Plan**: The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored by the Project Management Unit annually, and will be reported in the GEF PIR every year, and will be evaluated periodically during project implementation. If baseline data for some of the results indicators is not yet available, it will be collected during the first year of project implementation. Project risks, as outlined in the risk register, will be monitored quarterly.

[11] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/
[12] See https://www.thegef.org/gef/policies_guidelines

	Objective and Outcome Indicators	End of Project Target	Description of indicators and targets	Data source/ Collection Methods	Frequency	Resp. Party	Means of Verification	Risks/ Assumptions
Project Objective: Promote the equitable distribution of benefits and conservation of genetic resources of biodiversity through the strengthening of the regulatory framework and the evaluation of a product for the therapeutic management of cancer obtained from angiosperm *Thalassia testudinum.*	**1. Mandatory Indicator 1:** # direct project beneficiaries disaggregated by gender (*female/male)*	(475) (344/131)	*Comp 1: 255 participants in capacity building programs for ABS aimed at authorities, NGOs / civil society and other key partners (female/male)* *Comp 2: 200 personnel trained* *Comp. 3: 20 workers trained and certified in the sustainable use of Thalassia by ORSA and CECMED*	Data must be disaggregated by gender -Evaluation survey -Focus groups- -Registration of participants in all events carried out by the project or for the purposes established by the Project.	*Quarterly*	*Project Team*	*Information extracted or calculated based on information from third parties will be reviewed together with the Project Partners, as relevant to their competence.*	Risks: -Project Partners are unable to carry out the planned actions of the Project. - Lack of interest by target participants. *The resistance of the actors of the local communities to the project limits their involvement and the appropriation of the methods of sustainable use of Thalassia.* Assumptions: The planned actions of the Project are implemented together with the Project Partners. *- The targeted beneficiaries are interested in participating. Adequate consultation and involvement of local actors favors their involvement in the Project and the appropriation of the sustainable use methods of Thalassia.*
	2. Mandatory GEF Core Indicator 2 : *Marine protected areas created or under improved management for conservation and sustainable use (Hectares)*	*118*	- Area under sustainable harvest management and measures to conserve biodiversity	Calculation based on surface of harvest areas.	*Quarterly*	*Project Team*	*Information extracted or calculated based on information from third parties will be reviewed together with the Project Partners, as relevant to their competence.*	Risks: -The workers do not comply with the biodiversity conservation measures in pilot sites and protected areas Assumptions: -In the designated Pilot Sites, the actions provided for by the Project will be carried out.

	Objective and Outcome Indicators	End of Project Target	Description of indicators and targets	Data source/ Collection Methods	Frequency	Resp. Party	Means of Verification	Risks/ Assumptions
	3. Mandatory GEF Core Indicator 5: *Area of marine habitat under improved practices (excluding protected areas) (Hectares)*	*513*	- Area under sustainable harvest management and measures to conserve biodiversity	Calculation based on surface of harvest areas.	*Quarterly*	*Project Team*	*Information extracted or calculated based on information from third parties will be reviewed together with the Project Partners, as relevant to their competence.*	Risks: -The workers do not comply with the biodiversity conservation measures in pilot sites. Assumptions: -In the designated Pilot Sites, the actions provided for by the Project will be carried out.
Component 1	***Strengthening the legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing***							
Outcome 1.1 Strengthened political, legal and institutional framework regarding access to genetic resources and benefit sharing	***Indicator 4:*** *# national-level methodological instruments for ABS (Proposal for a legal standard on access to genetic resources and benefit sharing and a methodological tool to support the implementation of the legal standard).*	2	Proposal for a legal standard on access to genetic resources and benefit-sharing and 1 methodological tool to support the implementation of the legal standard presented for approval by the competent authority	- Reports of workshops / technical meetings in support of the elaboration of the instruments - Proposal of legal norms and procedures that regulate the ABS issue	Annual	Project Team	Scorecard Results	Risks: -There is no agreement or decision between the competent national bodies to coordinate the development and implementation of strategies, policies and regulatory frameworks that incorporate the conservation of biodiversity. -Updated information is not generated / consolidated. Assumptions: -The competent national organizations will coordinate the development and implementation of strategies, policies and regulatory frameworks that incorporate the conservation of biodiversity as planned by the Project.

	Objective and Outcome Indicators	End of Project Target	Description of indicators and targets	Data source/ Collection Methods	Frequency	Resp. Party	Means of Verification	Risks/ Assumptions
Component 2	***Strengthening institutional and individual capacities for the research and development of a pharmaceutical product from a marine angiosperm.***							
Outcome 2.1 Increased institutional capacities for bio-product development	***Indicator 5:*** *Number of staff and students trained on the non-clinical evaluation of products derived from marine biodiversity in controlled environment*	200	# personnel who participate in Project trainings	-Data must be disaggregated by gender -Registration of participants in all events carried out by the project or for the purposes established by the Project.	Quarterly	Project Team	The information is verified with the institutions involved in the project	Risks: -Project Partners are unable to carry out the planned actions of the Project. - Lack of interest by target participants. *The resistance of the actors of the local communities to the project limits their involvement and the appropriation of the methods of sustainable use of Thalassia.* Assumptions: The planned actions of the Project are implemented together with the Project Partners. *- The targeted beneficiaries are interested in participating. Adequate consultation and involvement of local actors favors their involvement in the Project and the appropriation of the sustainable use methods of Thalassia.*
	Indicator 6: *Request for permit to start clinical trials of a new product for human use from*	100%	Information necessary to compose the application file (32 tests performed)	- Accredited test certificate - Application file for a clinical trial	Quarterly	Project Team	The information is verified with the institutions involved in the project	Risks: National financing limitations could affect the contracting of technical scientific services that will be covered with national financing, depending on

	Objective and Outcome Indicators	End of Project Target	Description of indicators and targets	Data source/ Collection Methods	Frequency	Resp. Party	Means of Verification	Risks/ Assumptions
	marine angiosperm			permit prepared				obtaining part of the information necessary to compose the file. Delays in carrying out the planned tests with experimental animals as a consequence of limitations in the supply of these animals. Assumptions: Adequate planning of national co-financing resources allows the availability of financing for the adaptation of the contracting of scientific technical services that will be covered by national financing depending on the composition of the file. There is a stable supply of laboratory resources/ equipment to allow testing to be done in a timely manner.
Componente 3	***3. Conservation of marine biodiversity and habitat of angiosperm used for bioproduct development***							
Outcome 3.1 Conservation and sustainable use of genetic resources associated with seagrass in 3 target sites.								
	Indicator 7: *Leaf Biomass of T. testudinum*	Maintain baseline values	Data generated by the application of the Protected Areas monitoring	Feasibility study that allows establishing the harvest plan without	Semiannual	Project team	The information is verified with the scientific institutions involved in the project	Risks: Impact of anthropogenic activities, hurricane or other extreme event destroy the prairie in harvest areas. Assumptions:

	Objective and Outcome Indicators	End of Project Target	Description of indicators and targets	Data source/ Collection Methods	Frequency	Resp. Party	Means of Verification	Risks/ Assumptions
			protocol and the feasibility study at the 3 sites	affecting the meadow and associated fauna				Anthropogenic activities and extreme weather events do not harm the prairie. Free-living marine nematodes and meiofauna are used as indicators of environmental impact due to their high diversity, abundance, life cycles associated with sediment, and their ability to respond in the short and medium term.
	Indicator 8: *Carbon stock (tons of carbon biomass)*	This value will be estimated during first year of the project implementation	Data generated by the application of the seagrass monitoring at the 3 sites	Study on environmental quality of seagrass ecosystem at intervention sites	Baseline, Mid-term Review and Terminal Evaluation	Project team	The information is verified with the scientific institutions involved in the project	Risks: Impact of anthropogenic activities, hurricane or other extreme event destroy the prairie in harvest areas. Assumptions: Anthropogenic activities and extreme weather events do not harm the prairie. Free-living marine nematodes and meiofauna are used as indicators of environmental impact due to their high diversity, abundance, life cycles associated with sediment, and their ability to respond in the short and medium term.
Outcome 3.2 *Increased capacity of coastal communities to generate a value chain and improved standard of living, promoting equity between women and men.*	**Indicator 9:** # workers certified on sustainable management of T. testudinum	20	# workers certified	-Data must be disaggregated by gender -Registration of participants in all events carried out by the project or for the	Biannual	Project team	Methodology reconciled with the institutions involved in the project and presented to CITMA for consideration for replication across the country	Risks: Institutional changes in the structures and competencies of the organizations involved in the Project could cause delays in the process of conciliation of the proposals. Assumptions:

	Objective and Outcome Indicators	End of Project Target	Description of indicators and targets	Data source/ Collection Methods	Frequency	Resp. Party	Means of Verification	Risks/ Assumptions
				purposes established by the Project aims to support certifications on sustainable management of T. testudinum -Project report on workers certified				The stability in the structure and competence of the organizations involved in the Project favors the agreement on the proposals within the period foreseen by the project
Project component 4	**Monitoring and knowledge management**							
Outcome 4.1 *Increase awareness amongst Cuban society about the importance and legality of the conservation and sustainable use of genetic resources*	***Indicator 10:*** *% implementation of the awareness campaign on ABS and BD conservation in Cuba*	100%	The level of knowledge and awareness of the population at the pilot sites regarding ABS, Intellectual Property management, and BD conservation will be assessed through surveys at the beginning and end of the project.	A survey will be conducted, as well as interviews with key actors.	At the beginning and end of the Project.	Project Team	Through surveys and / or interviews.	Risks: That the surveys and / or interviews are not sufficiently representative or in places where people cannot make the problem visible. Assumptions: Surveys will be carried out in a representative way in places where knowledge of the problem can bring positive benefits for the conservation of threatened species.
	Indicator 11: *% implementation of the strategy for disseminating knowledge generated, including*	100%	The percentage of implementation of the communication and knowledge management	The main components and lines of action of the communicatio n and knowledge	Annual	Project Team	Evaluation based on the implementation of the main components and lines of action.	Risks: The communication and knowledge management strategy is not properly developed and implemented. Assumptions: The communication and knowledge

	Objective and Outcome Indicators	End of Project Target	Description of indicators and targets	Data source/ Collection Methods	Frequency	Resp. Party	Means of Verification	Risks/ Assumptions
	procedures on Good Laboratory Practice Standards		strategy to be developed during Y1 of the Project will be evaluated.	management strategy should be identified in order to define the stages of progress of its implementation for monitoring.				management strategy is elaborated and implemented appropriately.

Monitoring and Evaluation Plan and Budget:		
GEF M&E requirements	**Indicative costs (US$)**	**Time frame**
Inception Workshop and Report	*3,400*	Inception Workshop within 2 months of the First Disbursement
M&E of GEF core indicators and project results framework	*3,000*	Annually and at mid-point and closure.
GEF Project Implementation Report (PIR)	*None*	Annually typically between June-August
Monitoring of environmental and social risks, and corresponding management plans, as relevant (i.e. stakeholder engagement plan, gender action plan)	*10,000*	On-going.
Supervision missions	None	Annually
Learning missions	None	-
Independent Mid-term Review (MTR)	*11,000*	*April 2025*
Independent Terminal Evaluation (TE)	*11,000*	*January 2027*
TOTAL indicative COST	*38,400 (4.2%)*	

VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Section 1: General roles and responsibilities in the projects' governance mechanism

123. Implementing Partner: The Implementing Partner for this project is Environmental Agency (AMA).

124. The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

125. The Implementing Partner is responsible for executing this project. Specific tasks include:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.
- Overseeing the management of project risks as included in this project document and new risks that may emerge during project implementation.
- Procurement of goods and services, including human resources.
- Financial management, including overseeing financial expenditures against project budgets.
- Approving and signing the multiyear workplan.
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report or the funding authorization and certificate of expenditures

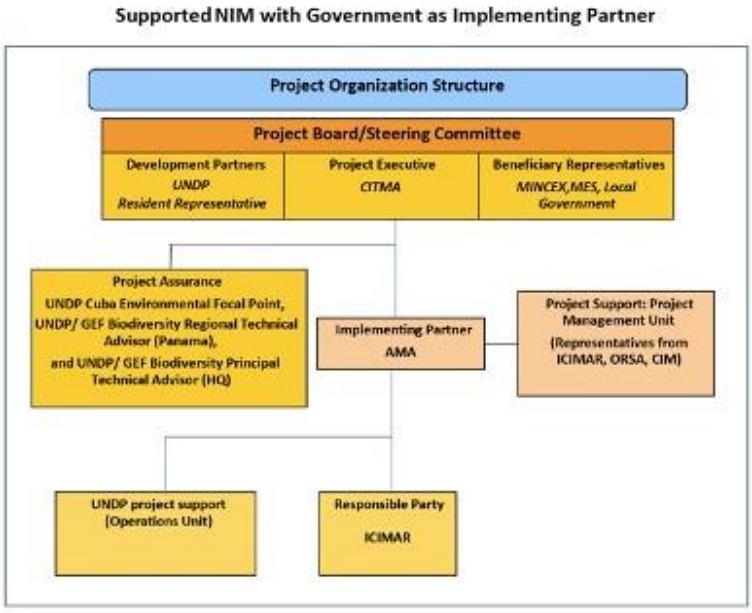
126. Responsible Parties: Responsible party for this project is the Institute of Marine Sciences (ICIMAR).

127. Project stakeholders and target groups: The Ministry of Science, Technology and Environment (CITMA) and its Territorial Delegations at the provincial levels are a key stakeholder in the project and will be involved in several activities implemented by the project at the national and the local level. In addition, Stakeholders and target groups of the project will be incorporated through the Technical Groups and Coordination Team at the provinces level (Camaguey and Santiago de Cuba) regarding the monitoring of the seagrasses habitats. In the Habana del Este municipality will be developed regarding both the seagrasses monitoring and its harvesting under sustainable practices through the active participation of the local peoples. See Annex 8: Stakeholder Engagement Plan for details.

128. UNDP: UNDP is accountable to the GEF for the implementation of this project. This includes overseeing project execution undertaken by the Implementing Partner to ensure that the project is being carried out in accordance with UNDP and GEF policies and procedures and the standards and provisions outlined in the Delegation of Authority (DOA) letter for this project. **The UNDP GEF Executive Coordinator, in consultation with UNDP Bureaus and the Implementing Partner, retains the right to revoke the project DOA, suspend or cancel this GEF project.** UNDP is responsible for the Project Assurance function in the project governance structure and presents to the Project Board and attends Project Board meetings as a non-voting member.

129. A firewall will be maintained between the delivery of project oversight and quality assurance performed by UNDP and charged to the GEF Fee and any support to project execution performed by UNDP (as requested by and agreed to by both the Implementing Partner and GEF) and may be charged to the GEF project management costs (only if approved by GEF). The segregation of functions and firewall provisions for UNDP in this case is described in the next section.

Section 2: Project governance structure



First line of defense
UNDP oversight of project support to IP cannot be UNDP staff providing project assurance or providing programmatic oversight support to RR.

Second line of defense

- Regional Bureau oversees RR and Country Office compliance at portfolio level.
- BPPS NCE RTA oversees technical quality assurance and GEF compliance. BPPS NCE PTA oversees RTA function.
- UNDP NCE Executive Coordinator and Regional Bureau Deputy Director can revoke DOA/cancel/suspend project or provide enhance oversight.

130. The UNDP Resident Representative assumes full responsibility and accountability for oversight and quality assurance of this Project and ensures its timely implementation in compliance with the GEF-specific requirements and UNDP's Programme and Operations Policies and Procedures (POPP), its Financial Regulations and Rules and Internal Control Framework. A representative of the UNDP Country Office will assume the assurance role and will present assurance findings to the Project Board, and therefore attends Project Board meetings as a non-voting member.

131. **UNDP project support:** The Implementing Partner and the GEF OFP have requested UNDP to provide support services in the amount of USD 6,000 for the full duration of the project, and the GEF has agreed for UNDP to provide such execution support services and for the cost of these services to be charged to the project budget. The execution support services – whether financed from the project budget or other sources - have been set out in detail and agreed between UNDP Country Office and the Implementing Partner in a Letter of Agreement (LOA). This LOA is attached to this Project Document.

132. To ensure the strict independence required by the GEF and in accordance with the UNDP Internal Control Framework, these execution services will be delivered independent from the GEF-specific oversight and quality assurance services.

Section 3: Segregation of duties and firewalls vis-à-vis UNDP representation on the project board:

133. As noted in the Minimum Fiduciary Standards for GEF Partner Agencies, in cases where a GEF Partner Agency (i.e. UNDP) carries out both implementation oversight and execution of a project, the GEF Partner Agency (i.e. UNDP) must separate its project implementation oversight and execution duties, and describe in the relevant project document a: 1) Satisfactory institutional arrangement for the separation of implementation oversight and executing functions in different departments of the GEF Partner Agency; and 2) Clear lines of responsibility, reporting and accountability within the GEF Partner Agency between the project implementation oversight and execution functions.

134. In this case, UNDP's implementation oversight role in the project – as represented in the project board and via the project assurance function – is performed by Resident Representative and UNDP Cuba Nature, Climate and Environment Focal Point. UNDP's execution role in the project (as requested by the implementing partner and approved by the GEF) is performed by Operational Staff (Finance Unit), who will report to UNDP Cuba Operations Unit.

Section 4: Roles and Responsiblities of the Project Organization Structure:

a) Project Board: All UNDP projects must be governed by a multi-stakeholder board or committee established to review performance based on monitoring and evaluation, and implementation issues to ensure quality delivery of results. The Project Board (also called the Project Steering Committee) is the most senior, dedicated oversight body for a project.

135. The two main (mandatory) roles of the project board are as follows:

1. High-level oversight of the execution of the project by the Implementing Partner (as explained in the "Provide Oversight" section of the POPP). This is the primary function of the project board and includes annual (and as-needed) assessments of any major risks to the project, and decisions/agreements on any management actions or remedial measures to address them effectively. The Project Board reviews evidence of project performance based on monitoring, evaluation and reporting, including progress reports, evaluations, risk logs and the combined delivery report. The Project Board is responsible for taking corrective action as needed to ensure the project achieves the desired results.

2. Approval of strategic project execution decisions of the Implementing Partner with a view to assess and manage risks, monitor and ensure the overall achievement of projected results and impacts and ensure long term sustainability of project execution decisions of the Implementing Partner (as explained in the "Manage Change" section of the POPP).

Requirements to serve on the Project Board:

- Agree to the Terms of Reference of the Board and the rules on protocols, quorum and minuting.
- Meet annually; at least once.
- Disclose any conflict of interest in performing the functions of a Project Board member and take all measures to avoid any real or perceived conflicts of interest. This disclosure must be documented and kept on record by UNDP.
- Discharge the functions of the Project Board in accordance with UNDP policies and procedures.
- Ensure highest levels of transparency and ensure Project Board meeting minutes are recorded and shared with project stakeholders.

Responsibilities of the Project Board:

- Consensus decision making:
  - ✓ The project board provides overall guidance and direction to the project, ensuring it remains within any specified constraints, and providing overall oversight of the project implementation.
  - ✓ Review project performance based on monitoring, evaluation and reporting, including progress reports, risk logs and the combined delivery report;
  - ✓ The project board is responsible for making management decisions by consensus.
  - ✓ In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.
  - ✓ In case consensus cannot be reached within the Board, the UNDP representative on the board will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.
- Oversee project execution:
  - ✓ Agree on project manager's tolerances as required, within the parameters outlined in the project document, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded.
  - ✓ Appraise annual work plans prepared by the Implementing Partner for the Project; review combined delivery reports prior to certification by the implementing partner.
  - ✓ Address any high-level project issues as raised by the project manager and project assurance;
  - ✓ Advise on major and minor amendments to the project within the parameters set by UNDP and the donor and refer such proposed major and minor amendments to the UNDP BPPS Nature, Climate and Energy Executive Coordinator (and the GEF, as required by GEF policies);
  - ✓ Provide high-level direction and recommendations to the project management unit to ensure that the agreed deliverables are produced satisfactorily and according to plans.
  - ✓ Track and monitor co-financed activities and realisation of co-financing amounts of this project.
  - ✓ Approve the Inception Report, GEF annual project implementation reports, mid-term review and terminal evaluation reports.

- ✓ Ensure commitment of human resources to support project implementation, arbitrating any issues within the project.
- ✓ Risk Management:
- ✓ Provide guidance on evolving or materialized project risks and agree on possible mitigation and management actions to address specific risks.
- ✓ Review and update the project risk register and associated management plans based on the information prepared by the Implementing Partner. This includes risks related that can be directly managed by this project, as well as contextual risks that may affect project delivery or continued UNDP compliance and reputation but are outside of the control of the project. For example, social and environmental risks associated with co-financed activities or activities taking place in the project's area of influence that have implications for the project.
- ✓ Address project-level grievances.

- Coordination:
  - ✓ Ensure coordination between various donor and government-funded projects and programmes.
  - ✓ Ensure coordination with various government agencies and their participation in project activities.

136. **Composition of the Project Board**: The composition of the Project Board must include individuals assigned to the following three roles:

1. Project Executive: This is an individual who represents ownership of the project and chairs (or co-chairs) the Project Board. The Executive usually is the senior national counterpart for nationally implemented projects (typically from the same entity as the Implementing Partner), and it must be UNDP for projects that are direct implementation (DIM). In exceptional cases, two individuals from different entities can co-share this role and/or co-chair the Project Board. If the project executive co-chairs the project board with representatives of another category, it typically does so with a development partner representative. The Project Executive is: Senior Representatives of the CITMA.

2. Beneficiary Representative(s): Individuals or groups representing the interests of those groups of stakeholders who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often representatives from civil society, industry associations, or other government entities benefiting from the project can fulfill this role. There can be multiple beneficiary representatives in a Project Board. The Beneficiary representatives are: Senior Representatives of the MINCEX, MES and Local Government (Habana del Este Municipality).

3. Development Partner: Individuals or groups representing the interests of the parties concerned that provide funding, strategic guidance and/or technical expertise to the project. The Development Partner is: Fernando Hiraldo, *UNDP Resident Representative.*

b) Project Assurance: Project assurance is the responsibility of each project board member; however, UNDP has a distinct assurance role for all UNDP projects in carrying out objective and independent project oversight and monitoring functions. UNDP performs quality assurance and supports the Project Board (and Project Management Unit) by carrying out objective and independent project oversight and monitoring functions, including compliance with the risk management and social and environmental standards of UNDP. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. Project assurance is totally independent of project execution.

A designated representative of UNDP playing the project assurance role is expected to attend all board meetings and support board processes as a non-voting representative. It should be noted that while in certain cases UNDP's project assurance role across the project may encompass activities happening at several levels (e.g. global, regional), at least one UNDP representative playing that function must, as part of their duties, specifically attend board meeting and provide board members with the required documentation required to perform their duties. The UNDP representative playing the main project assurance function is: UNDP Cuba Programme Officer.

c) Project Management – Execution of the Project: The Project Manager (PM) (also called project coordinator) is the senior most representative of the Project Management Unit (PMU) and is responsible for the overall day-to-day management of the project on behalf of the Implementing Partner, including the mobilization of all project inputs, supervision over project staff, responsible parties, consultants and sub-contractors. The project manager typically presents key deliverables and documents to the board for their review and approval, including progress reports, annual work plans, adjustments to tolerance levels and risk registers.

A designated representative of the PMU is expected to attend all board meetings and support board processes as a non-voting representative.

The primary PMU representative attending board meetings is the Project Manager

IX. FINANCIAL PLANNING AND MANAGEMENT

137. The total cost of the project is USD 2,115,085. This is financed through a GEF grant of USD 910,745 administered by UNDP, and additional support of USD 1,204,340[13]. UNDP, as the GEF Implementing Agency, is responsible for the oversight of the GEF resources and the cash co-financing transferred to UNDP bank account only.

138. Co-financing: The actual realization of project co-financing amounts will be monitored by the UNDP Country Office and the PMU on an annual basis in the GEF PIF and will be reported to the GEF during the mid-term review and terminal evaluation process as follows:

Co-financing source		Co-financing type	Co-financing amount USD
National government Ministry of Science, Technology and Environment (CITMA)	Office for Environmental Regulation, ORSA	Grants	6,274
		In-Kind	30,888
National government Ministry of Science, Technology and Environment (CITMA)	Environmental Agency AMA (Sectorial Program of Biodiversity)	Grants	292,587
		In-Kind	90,800
National government Ministry of Science, Technology and Environment (CITMA)	Institute of Marine Sciences, ICIMAR	Grants	35,525
National government Ministry of Science, Technology and Environment (CITMA)	Financial Fund for Science and Innovation (FONCI) and National Environment Fund (FNMA)	Grants	625,000
National government Ministry of Science, Technology and Environment (CITMA)	Havana Provincial Delegation	Grants	45,000
Subtotal CITMA			**1,126,074**
National government Ministry of Higher Education (MES)	Havana University	In-kind	29,931
Subtotal MES			**29,931**
National government- Higher Business Development Organization (OSDE) BioCubafarma	Pharmaceutical Laboratories “Oriente”	Grants	1,335
		In-Kind	7,000
Subtotal BioCubaFarma			**8,335**
Subtotal National Government			**1,164,340**
TOTAL NATIONAL CO-FINANCING			**1,164,340**

[13] USD equivalent to CUP 27,994,110, as per the current official exchange rate defined by the Central Bank of Cuba (1 USD is equivalent to 24 CUP).

Co-financing source		Co-financing type	Co-financing amount USD
GEF Agency	UNDP	In-kind	40,000
TOTAL GEF AGENCY CO-FINANCING			**40,000**
GRAND TOTAL CO-FINANCING			**1,204,340**

139. **Budget Revision and Tolerance:** As per UNDP POPP, the project board may agree with the project manager on a tolerance level for each detailed plan under the overall multi-year workplan. The agreed tolerance should be written in the project document or approved project board meeting minutes. It should normally not exceed 10 percent of the agreed annual budget at the activity level, but within the overall approved multi-year workplan at the activity level. Within the agreed tolerances, the project manager can operate without intervention from the project board. Restrictions apply as follows.

140. Should the following deviations occur, the Project Manager/IP through UNDP Country Office will seek the approval of the BPPS/NCE-VF team to ensure accurate reporting to the GEF. It is strongly encouraged to maintain the expenditures within the approved budget at the budgetary account and at the component level:

a) Budget reallocations must prove that the suggested changes in the budget will not lead to material changes in the results to be achieved by the project. A strong justification is required and will be approved on an exceptional basis. Budget re-allocations among the components (including PMC) of the approved Total Budget and Work Plans (TBWP) that represent a value greater than 10% of the total GEF grant;

b) Introduction of new outputs/activities (i.e. budget items) that were not part of the agreed project document and TBWP that represent a value greater than 5% of the total GEF grant. The new budget items must be eligible as per the GEF and UNDP policies.

c) Project management cost (PMC): budget under PMC component is capped and cannot be increased.

Any over expenditure incurred beyond the available GEF grant amount must be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

141. **Project extensions:** The UNDP Resident Representative and the UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and subject to the conditions and maximum durations set out in the UNDP POPP; the project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the additional UNDP oversight costs during the extension period must be covered by non-GEF resources, in accordance with UNDP's guidance set out in UNDP POPP.

142. **Audit:** The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop. If the Implementing Partner is an UN Agency, the project will be audited according to that Agencies applicable audit policies.

143. **Project Closure:** Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. All costs incurred to close the project must be included in the project closure budget and reported as final project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget.

144. **Operational completion:** The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. **Operational closure must happen at the end date calculated by the approved duration after the Project Document signature or at the revised operational closure date as approved in the project extension. Any expected activity after the operational date requires project extension approval.** The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the project should have completed the transfer or disposal of any equipment that is still the property of UNDP.

145. **Transfer or disposal of assets:** In consultation with the Implementing Partner and other parties of the project, UNDP is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project (it is strongly encouraged to be done before the operational closure date). In all cases of transfer, a transfer document must be prepared and kept on file[14]. The transfer should be done before Project Management Unit complete their assignments.

146. **Financial completion (closure):** The project will be financially closed when the following conditions have been met: a) the project is operationally completed or has been cancelled; b) the Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

147. The project will be financially completed **within 6 months of operational closure or after the date of cancellation**. If Operational Closure is delayed for any justified and approved reason, the Country Office should do all efforts to Financially Close the project within 9 months after TE is completed. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the BPPS/NCE-VF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

148. **Refund to GEF:** Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the BPPS/NCE-VF Directorate in New York. No action is required by the UNDP Country Office on the actual refund from UNDP project to the GEF Trustee.

[14] See https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

X. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Quantum Award	00115542.1	Quantum Project	00115542
Atlas Proposal or Award Title:	ABS NAGOYA BENEFICIOS BIODIVERSIDAD		
Atlas Business Unit	CUB10		
Atlas Primary Output Project Title	ABS NAGOYA BENEFICIOS BIODIVER		
UNDP-GEF PIMS No.	6311		
Implementing Partner	Environmental Agency (AMA)		

Atlas Activity (GEF Component)	**Atlas Implementing Agent**	**Atlas Fund ID**	**Donor Name**	**Atlas Budgetary Account Code**	**ATLAS Budget Account Description**	**Amount Year 1 (USD)**	**Amount Year 2 (USD)**	**Amount Year 3 (USD)**	**Amount Year 4 (USD)**	**Total (USD)**	**See Budget Note:**
Component 1: Strengthening the legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing.	*Environment Agency (AMA)*	*62000*	*GEF*	71600	Travel		14,500	5,000	10,500	30,000	1
				72100	Contractual Services-Companies	3,000		3,000		6,000	2
				72500	Supplies	5,000		5,000		10,000	3
				72800	Information Technology Equipment	10,000				10,000	4
				72400	Communic & Audio Visual Equipment	500	500	500	500	2,000	5
				75700	Training, Workshops and Conferences	3,700	3,300	5,000	23,000	35,000	6
Total Component 1						**22,200**	**18,300**	**18,500**	**34,000**	**93,000**	
Component 2: Strengthened capacities for the development of a pharmaceutical product from a marine angiosperm.	*Environment Agency (AMA)*	*62000*	*GEF*	71600	Travel	8,000	54,400	21,500	10,000	93,900	7
				72100	Contractual Services-Companies		45,000			45,000	8
				72200	Equipment and furniture	23,500	54,503			78,003	9
				72300	Materials and goods		10,000			10,000	10
				72400	Communic & Audio Visual Equipment	3,500	1,000	2,000	2,000	8,500	11
				72800	Information Technology Equipment	12,000				12,000	12
				75700	Training, Workshops and Conferences		22,500			22,500	13
Total Component 2						**47,000**	**187,403**	**23,500**	**12,000**	**269,903**	
Component 3: Conservation of marine biodiversity and habitat of angiosperm used for bioproduct development.	*Environment Agency (AMA)*	*62000*	*GEF*	72200	Equipment and furniture		239,500			239,500	14
				72300	Materials and goods		58,000	18,000	12,000	88,000	15
				72400	Communic & Audio Visual Equipment	2,304	1,696	2,000	2,000	8,000	16
				72800	Information Technology Equipment	10,000				10,000	17
				73400	Rental & Maint of Other Equip		6,000	3,000	3,000	12,000	18

Atlas Activity (GEF Component)	Atlas Implementing Agent	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	See Budget Note:
				75700	Training, Workshops and Conferences	1,200	72,100	14,900	12,800	101,000	19
Total Component 3						**13,504**	**377,296**	**37,900**	**29,800**	**458,500**	
Monitoring and Knowledge Management	*Environment Agency (AMA)*	*62000*	*GEF*	71200	International consultants		11,000		11,000	22,000	20
				71300	Local Consultants	4,000	4,000	2,000		10,000	21
				75700	Training, Workshops and Conferences	3,400	4,600	1,000	1,800	10,800	22
				74200	Audio Visual&Print Prod Costs		8,000	6,000	3,000	17,000	23
Total M&E						**7,400**	**27,600**	**9,000**	**15,800**	**59,800**	
PMC	*Environment Agency (AMA)*	*62000*	*GEF*	72400	Communic & Audio Visual Equipment	2,000	1,500	1,500	1,500	6,500	24
				72500	Supplies	1,500	1,000	1,000	500	4,000	25
				72800	Information Technology Equipment	4,042				4,042	26
				73400	Rental & Maint of Other Equip		2,000	1,000	1,000	4,000	27
				74100	Professional Services			5,000		5,000	28
	UNDP			74596	Service to Projects – GOE	1500	1,500	1,500	1,500	6,000	29
Total PMC						**9,042**	**6,000**	**10,000**	**4,500**	**29,542**	
Total Project						**99,146**	**616,599**	**98,900**	**96,100**	**910,745**	

Budget note	Total	Comments
1	30,000	International travel of Cuban specialists to exchange experiences and lessons learned on regulatory and legal framework in ABS: Year 2 - Exchange of experiences in El Salvador. Total cost $5,000 (3pax, 6 days. ATKT $1,500; DSA $3,355; travel insurance $45 and visa $100) - Exchange of experiences in Peru. Total cost $5,000 (3pax, 6 days. ATKT $1,500; DSA $3,355; travel insurance $45 and visa $100) - 4 specialists to participate in the Central Region Meeting, 2 days, to socialize the ABS legislation and to complete the required documentation for it ($4,500) Year 3 - Exchange of experiences in Mexico. Total cost $5,000 (3pax, 6 days. ATKT $1,500; DSA $3,355; travel insurance $45 and visa $100) Year 4 - Exchange of experiences in Argentina. Total cost $5,000 (3pax, 6 days. ATKT $1,500; DSA $3,355; travel insurance $45 and visa $100) - 4 specialists to participate in the Western Region Meeting, 2 days, to socialize the ABS legislation and to complete the required documentation for it. ($5,500)
2	6,000	Contractual services to design the Web site ABS CH in Cuba. **Total cost $3,000**

Budget note	Total	Comments
		Contractual services to design graphical outputs (promotional material) **Total cost $3,000**
3	10,000	Office supplies (paper, pens, files, toners, etc.) to support the activities of the Component 1
4	10,000	ICT equipment and accessories to strengthen the capacities of the regulatory entity (ORSA) and other entities involved in the design of norms, regulations and other legal documents: -3 Laptops ($3,300); 4 PC ($3,600); 4 monitors ($1,200); 4 Back-ups ($400), 2 printers ($500); accessories ($1,000)
5	2,000	Cell phones and internet service for specialists in ORSA in charge of the monitoring and coordination of the activities in Component 1: -Cell phones (1) = $600 -Internet service = $1,400
6	35,000	Regional and National Workshops and meetings, with the participation of local and national authorities, to complete, disseminate and validate the ABS legislation
Sub-total Component 1	**93,000**	
7	93,900	Travel allowance (ATKT, DSA and terminals) for international experts on non-clinical evaluation of bioproducts with application in human health, specifically in the development of natural anti-tumoral, safe and effective to train and advisor Cuban specialists on new knowledge, design and production of studies protocols, data analysis and results reports as well as, supplies acquisition and setting-up for the development of non-clinical testing in the Biological Unit located at ICIMAR. **Total cost: $13,900** International travels of Cuban specialists to world-renowned institutions to exchange theoretical and practical experiences, transfer of technologies, update knowledge and upgrade skills in non-clinical evaluation of new products with potential application in cancer therapy, under the compliance of good laboratory practices, as well as in the preparation of the required documentation to be submitted the results to the Cuban regulatory entity. **Total cost: $50,000** Transfer and accommodation in the project areas of Cuban specialists, in charge of coordination meetings and the exchange of experiences and results in the accomplishment of the Component 2 goals. **Total cost: $25,000** Transfer and accommodation in the project areas of Cuban specialists, to coordinate the training activities of international experts in Component 2. **Total cost: $5,000**.
8	45,000	Construction project (Biological Unit at ICIMAR) to ensure the compliance with the biological safety requirements. **Total cost: $45,000** (Year 2).
9	78,003	Laboratory equipment for cell cultivation laboratory and Bioterio, both located at ICIMAR) to support the certification of non-clinical testing: transiluminator attached to computer, DNA Electrophoresis chamber, electrophoresis power, UV Lamp, image gel capturator, lab miscellaneous, ventilator racks, conventional cages for rodents and accessories, temperature and humidity equipment, surgical sets, pletysmometer, hot plate analgesimeter. Total cost: $78,003
10	10,000	Laboratory supplies and reagents for the development of the non-clinical testing (analytical chemistry, pharmacology and toxicology) for the pharmaceutical formulation: -Laboratory supplies (Cell cultivation supplies, trays, test tubs 15 and 50 ml, vials, boots, masks, gloves, lab coats, absorbent paper, material or cleaning and disinfection and other laboratory means of protection) -Chemical and biological reagents (Solvents, laboratory standards, cells, bacterial strains, enzymes, plasmid DNA, diagnosis kits for biomarkers detection)

Budget note	Total	Comments
11	8,500	Cell phones, communication costs and internet service for specialists (ICIMAR, IMRE, and Laboratorios Oriente) involved with the activities in Component 2: -Cell phones (3) = $1,800 -Communication costs ($10*12months*4years*10persons) = $4,800 -Internet service = $1,900
12	12,000	ICT equipment and accessories for specialists in ICIMAR, IMRE, and Laboratorios Oriente to support the storage, processing and analysis of data collected during the testings and studies, as well as the preparation of the documentation required to conform the clinical test file. -4 Laptops ($4,400); 3 PC ($3,000); 5 monitors ($2,000); 5 back-ups ($500); 3 printers ($900); accessories -external hard drives 1 TB and 2TB, USB flash- ($1,200)
13	22,500	International experts on non-clinical evaluation of bioproducts with application in human health, specifically in the development of natural anti-tumoral, safe and effective. Training and advisoring of Cuban specialists on new knowledge, design and production of studies protocols, data analysis and results reports as well as, supplies acquisition and setting-up for the development of non-clinical testing in the Biological Unit located at ICIMAR Preparation and conduction the following activities: - Training on the introduction of new technologies (omics) in non-clinic products development, from natural resources under a controlled environment. **Total cost $5,960** (1 expert, 10 days) - Training on models of cancer in vivo and in vitro. **Total cost $5,960** (1 expert, 10 days) - Workshop on strategies of chemio sensibilization in the research and development of anti-tumoral therapies. Rol of natural products. **Total cost $4,620** (1 expert, 7 days) - Workshop on experimental models for the risk study and the security of pharmaceutical products with natural origin. **Total cost $5,960** (1 expert, 10 days
Sub-total Component 2	**269,903**	
14	239,500	Equipment located in CIM-UH, PNP Rincon de Guanabo, BIOECO y CIMAC (**$30,100**): 3 Stereo microscopes ($5,800); 3 Biological microscopes ($10,600) for studying the biodiversity associated to sea grass meadows; Corers for taking samples of biomass and meiofauna, 6 light sensors and temperature ($3,200); Data loggers for physical variables (salinity, temperature, irradiancy) in meadows; 5 Diving equipment ($10,500) to support the sampling at the Rincón de Guanabo, Camagüey and Santiago de Cuba, as well as the monitoring of Component results. Equipment located in ICIMAR for the ecosystem environmental quality studies (**$130,000**): Standard incubator of CO2, inverted optical microscope, vertical Laminar Flow Cabinet; centrifuges, freezer (-80 oC), nitrogen thermo, peristaltic pump, CO and CO2 cylinders, vacuum pump, filtration equipment, thermostatic bath, absorbance/fluorescence microplate reader, splits, technical balances, extraction hood. Office and laboratory furniture (chairs, tables, cabinets) (**$34,400**) located in CIM-UH and ICIMAR to strengthen the capacities for the laboratory good practices in the process of certification by the national regulatory entity. One vehicle (microbus) (**$45,000**) located in ICIMAR to support the mobility of specialists in charge of carry on the activities programmed under this Component.
15	88,000	Chemical reagents for the analysis of chemical composition and genetic variability of Thalassia testudinum, as well as the water quality. **Total cost: $60,000** Laboratory supplies (cover glass, slides, Petri dishes, vials, plastic syringes, and microscopes spare parts) to support the studies of the biodiversity associated to sea grasses. **Total cost $28,000**

Budget note	Total	Comments
16	8,000	Audiovisual equipment, communication costs and internet service for specialists (CIM-UH, ICIMAR, PNP Rincon de Guanabo, BIOECO, CIMAC) involved with the activities in Component 3 and to support the access to updated scientific information: - Cell phones (4) = $2,400 -Digital camera waterproof (7) = $2,100 -Digital camera GO Pro (3) = $1,250 -Communication costs ($40*4years*7persons) = $1,120 -Internet service = $1,130
17	10,000	ICT equipment and accessories for specialists in CIM-UH, Rincon de Guanabo, CIMAC y BIOECO involved with the activities in Component 3. -3 Laptops ($3,300); 3 PC ($3,000); 3 monitors ($1,200); 3 back-ups ($300); 3 printers ($1,000); accessories -external hard drives 1 TB and 2TB, USB flash- ($1,200).
18	12,000	Maintenance of transportation equipment, fuel, lubricants and spare parts
19	101,000	International experts on methods for an effective use of the marine angiosperm Thalassia testudinum, the study of its genetic variability and impacts in the resilience and bioactivity. The international consultants/experts will train Cuban specialists by preparing and conducting the following activities: -Workshop No. 1 on Feasibility studies of sea grasses. **Total cost $5,216** (1 expert, 9 days). -Workshop on Molecular basis for the genetic variability of marine angiosperm and the relation with the bioactivity and resilience in response to stress. **Total cost $5,960** (1 expert, 10 days) - Workshop No. 2 on Feasibility studies of sea grasses. **Total cost $5,800** (1 expert, 10 days) Travel allowance to international experts on methods for an effective use of the marine angiosperm Thalassia testudinum, the study of its genetic variability and impacts in the resilience and bioactivity: -Travel allovance for Workshop No. 1 on Feasibility studies of sea grasses. **Total cost $4,484** (1 expert, 9 days) -Travel allovance for Workshop on Molecular basis for the genetic variability of marine angiosperm and the relation with the bioactivity and resilience in response to stress. **Total cost $3,840** (1 expert, 10 days) -Travel allovance for Workshop No. 2 on Feasibility studies of sea grasses. **Total cost $4,900** (1 expert, 10 days). International travels of Cuban specialists to receive theoretical and practical trainings and to conduct experiments related to Thalassia Testudinum genetic, in order to contribute to the implementation of the most effective method for the use of this angiosperm and to the study of its genetic variability and impacts on resilience and bioactivity. Year 2 ($32,000) -Travel for Training in France, Belgium and Spain. **Total cost $32,000** Year 3 ($14,900) -Travel for Training in Latin America. **Total cost $14,900** Year 4 ($7,000) -Travel for Training in Latin America. **Total cost $7,000** Transfer and accommodation of Cuban specialists, in charge of carry on the field work in the project areas: harvest, gender, training of actors in the community and other activities programmed to accomplish the Component 3 goals. **Total cost: $16,900** Year 1: $1,200, 10 pax Year 2 and 3: $9,900, 12 pax/5 days/year Year 4: $5,800, 5 pax/5 days

Budget note	Total	Comments
Sub-total Component 3	**458,500**	
20	22,000	Year 2. International evaluator to conduct the Mid Term Evaluation of the Project. **Total cost $11,000** Year 4. International evaluator to conduct the Terminal Evaluation of the Project. **Total cost $11,000**
21	10,000	National consultants to elaborate the social and environmental safeguards plans as well as risks management plan associated with the project implementation
22	10,800	Inception workshop, annual workshops, monitoring of gender and environmental safeguards. **Total cost $ 6,400** Lessons learned workshops. **Total cost $ 4,400**
23	17,000	-Printing of brochures and promotional material, as well as technical documents generated (methodologies, procedures and regulations). (Year 1, $2,000; Year 3, $3,000) **Total cost $5,000** - Publishing fees of specialized magazines. Publication of the results of the pharmaceutical formulation, in order to give visibility to the use of the bio product obtained in a sustainable way. ($2,000/year) **Total cost $8,000** -Printing of brochures and other promotional materials to support education and to promote the sustainable use of Thalassia Testudinum and gender experiences in the project activities ($1,000/year) **Total cost $4,000**
Sub-total Component 4	**59,800**	
24	6,500	Cells phones, communication costs and internet service to support the activities of the Project Management Unit: -Cell phones (2) = $1,200 -Communication costs ($10*month*4years*4persons) = $1,920 -Internet service = $3,380
25	4,000	Office supplies (paper, pens, files, toners, etc.) to support the activities of the Project Management Unit.
26	4,042	ICT equipment and accessories for Project Management Unit. 2 Laptops ($2,800); 1 Projector ($1,000); accessories ($242).
27	4,000	Maintenance of transportation equipment, fuel, lubricants and spare parts.
28	5,000	1 External audit during year 3.
29	6,000	Execution support services provided by UNDP, as per signed LoA between Government and UNDP-Cuba and as agreed with GEF. Total Cost: $6,000; $1,500 per 4 years, during years 1 to 4.
Sub-total PMC	**29,542**	
Grand Total	**910,745**	

XI. LEGAL CONTEXT

149. This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement (SBAA) between the Government of Cuba and UNDP, signed on 17 May 1975. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

150. This project will be implemented by the Environmental Agency (AMA) ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

151. The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XII. RISK MANAGEMENT

1. Consistent with the Article III of the SBAA [or the Supplemental Provisions to the Project Document], the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;

b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.

2. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.

3. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.

4. The Implementing Partner acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the Implementing Partner, and each of its responsible parties, their respective sub-recipients and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.

a) In the implementation of the activities under this Project Document, the Implementing Partner, and each of its sub-parties referred to above, shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").

b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, the Implementing Partner, and each of its sub-parties referred to above, shall not engage in any form of sexual harassment ("SH"). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment.

5. a) In the performance of the activities under this Project Document, the Implementing Partner shall (with respect to its own activities), and shall require from its sub-parties referred to in paragraph 4 (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, the Implementing Partner will and will require that such sub-parties will take all appropriate measures to:

i. Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;

ii. Offer employees and associated personnel training on prevention and response to SH and SEA, where the Implementing Partner and its sub-parties referred to in paragraph 4 have not put in place its own training regarding the prevention of SH and SEA, the Implementing Partner and its sub-parties may use the training material available at UNDP;

iii. Report and monitor allegations of SH and SEA of which the Implementing Partner and its sub-parties referred to in paragraph 4 have been informed or have otherwise become aware, and status thereof;

iv. Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and

v. Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. The Implementing Partner shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties referred to in paragraph 4 with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the Implementing Partner shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.

d) The Implementing Partner shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the Implementing Partner, and each of its sub-parties referred to in paragraph 4, to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.

6. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

7. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

8. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

9. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

10. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

11. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes in accordance with UNDP's regulations, rules, policies and procedures. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.

12. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

13. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail the Implementing Partner's obligations under this Project Document.

Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

14. Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

15. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

16. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled "Risk Management Standard Clauses" are included, mutatis mutandis, in all sub-contracts or sub-agreements entered into further to this Project Document.

XIII. MANDATORY ANNEXES

1. GEF Budget Template
2. GEF execution support letter
3. Project Map and geospatial coordinates of the project area
4. Multiyear Workplan
5. Social and Environmental Screening Procedure (SESP)
6. UNDP Atlas Risk Register
7. Overview of technical consultancies/subcontracts
8. Stakeholder Engagement Plan
9. Environmental Social Management Framework (ESMF)
10. Gender Analysis and Gender Action Plan
11. Procurement Plan for first year of implementation
12. GEF focal area specific annexes
13. Additional agreements
14. GEF Core indicators
15. GEF Taxonomy
16. Good practices for the conservation of biodiversity in ecosystems impacted by tourism activities

Annex 1: GEF Budget Template

Expenditure Category	Detailed Description	Component (USDeq.)								Total (USDeq.)	Responsible Entity (Executing Entity receiving funds from the GEF Agency)[1]
		Component 1	*Component 2*	*Component 3*		*Component 4*	*Sub-Total*	*M&E*	*PMC*		
				Sub-component 3.1	*Sub-component 3.2*						
Equipment	Equipment located in CIM-UH, PNP Rincon de Guanabo, BIOECO y CIMAC ($30,100): 3 Stereo microscopes ($5,800); 3 Biological microscopes ($10,600) for studying the biodiversity associated to sea grass meadows; Corers for taking samples of biomass and meiofauna, 6 light sensors and temperature ($3,200); Data loggers for physical variables (salinity, temperature, irradiancy) in meadows; 5 Diving equipment ($10,500) to support the sampling at the Rincón de Guanabo, Camagüey and Santiago de Cuba, as well as the monitoring of Component results. Equipment located in ICIMAR for the ecosystem environmental quality studies ($130,000): Standard incubator of CO2, inverted optical microscope, vertical Laminar Flow Cabinet; centrifuges, freezer (-80 oC), nitrogen thermo, peristaltic pump, CO and CO2 cylinders, vacuum pump, filtration equipment, thermostatic bath, absorbance/fluorescence microplate reader, splits, technical balances, extraction hood. Office and laboratory furniture (chairs, tables, cabinets) ($34,400) located in CIM-UH and ICIMAR to strengthen the capacities for the laboratory good practices in the process of certification by the national regulatory entity.			194 500			194 500			194 500	*Environment Agency (AMA)*

Equipment	Laboratory equipment for cell cultivation laboratory and Bioterio, both located at ICIMAR) to support the certification of non-clinical testing: transiluminator attached to computer, DNA Electrophoresis chamber, electrophoresis power, UV Lamp, image gel capturator, lab miscellaneous, ventilator racks, conventional cages for rodents and accessories, temperature and humidity equipment, surgical sets, pletysmometer, hot plate analgesimeter. Total cost: $78,003		78 003				78 003			78 003	*Environment Agency (AMA)*
Equipment	Audiovisual equipment, communication costs and internet service for specialists (CIM-UH, ICIMAR, PNP Rincon de Guanabo, BIOECO, CIMAC) involved with the activities in Component 3 and to support the access to updated scientific information: - Cell phones (4) = $2,400 -Digital camera waterproof (7) = $2,100 -Digital camera GO Pro (3) = $1,250 -Communication costs ($40*4years*7persons) = $1,120 -Internet service = $1,130			8 000			8 000			8 000	*Environment Agency (AMA)*
Equipment	Cell phones and internet service for specialists in ORSA in charge of the monitoring and coordination of the activities in Component 1: -Cell phones (1) = $600 -Internet service = $1,400	2 000					2 000			2 000	*Environment Agency (AMA)*
Equipment	Cell phones, communication costs and internet service for specialists (ICIMAR, IMRE, and Laboratorios Oriente) involved with the activities in Component 2: -Cell phones (3) = $1,800 -Communication costs ($10*12months*4years*10persons) = $4,800 -Internet service = $1,900		8 500				8 500			8 500	*Environment Agency (AMA)*
Equipment	Cells phones, communication costs and internet service to support the activities of the Project Management Unit: -Cell phones (2) = $1,200 -Communication costs ($10*month*4years*4persons) = $1,920 -Internet service = $3,380						-		6 500	6 500	*Environment Agency (AMA)*
Equipment	ICT equipment and accessories for Project Management Unit. 2 Laptops ($2,800); 1 Projector ($1,000); accessories ($242).						-		4 042	4 042	*Environment Agency (AMA)*

Equipment	ICT equipment and accessories for specialists in CIM-UH, Rincon de Guanabo, CIMAC y BIOECO involved with the activities in Component 3. -3 Laptops ($3,300); 3 PC ($3,000); 3 monitors ($1,200); 3 back-ups ($300); 3 printers ($1,000); accessories -external hard drives 1 TB and 2TB, USB flash- ($1,200).			10 000			10 000			10 000	*Environment Agency (AMA)*
Equipment	ICT equipment and accessories for specialists in ICIMAR, IMRE, and Laboratorios Oriente to support the storage, processing and analysis of data collected during the testings and studies, as well as the preparation of the documentation required to conform the clinical test file. -4 Laptops ($4,400); 3 PC ($3,000); 5 monitors ($2,000); 5 back-ups ($500); 3 printers ($900); accessories -external hard drives 1 TB and 2TB, USB flash- ($1,200)		12 000				12 000			12 000	*Environment Agency (AMA)*
Equipment	ICT equipment and accessories to strengthen the capacities of the regulatory entity (ORSA) and other entities involved in the design of norms, regulations and other legal documents: -3 Laptops ($3,300); 4 PC ($3,600); 4 monitors ($1,200); 4 Back-ups ($400), 2 printers ($500); accessories ($1,000)	10 000					10 000			10 000	*Environment Agency (AMA)*
Vehicle	One vehicle (microbus) ($45,000) located in ICIMAR to support the mobility of specialists in charge of carry on the activities programmed under this Component.			45 000			45 000			45 000	*Environment Agency (AMA)*
Sub-contract to executing partner	Execution support services provided by UNDP, as per signed LoA between Government and UNDP-Cuba and as agreed with GEF. Total Cost: $6,000; $1,500 per 4 years, during years 1 to 4.						-		6 000	6 000	*Environment Agency (AMA)*
Contractual services-Company	Construction project (Biological Unit at ICIMAR) to ensure the compliance with the biological safety requirements. Total cost: $45,000 (Year 2).		45 000				45 000			45 000	*Environment Agency (AMA)*
Contractual services-Company	Contractual services to design the Web site ABS CH in Cuba. Total cost $3,000 Contractual services to design graphical outputs (promotional material) Total cost $3,000	6 000					6 000			6 000	*Environment Agency (AMA)*

International Consultants	Year 2. International evaluator to conduct the Mid Term Evaluation of the Project. Total cost $11,000 Year 4. International evaluator to conduct the Terminal Evaluation of the Project. Total cost $11,000						-	22 000		22 000	*Environment Agency (AMA)*
Local Consultants	National consultants to elaborate the social and environmental safeguards plans as well as risks management plan associated with the project implementation						-	10 000		10 000	*Environment Agency (AMA)*
Training, Workshops, Meetings	Contractual services to support the inception workshop, annual workshops, monitoring of gender and environmental safeguards and Total cost $ 6,400						-	6 400		6 400	*Environment Agency (AMA)*
Training, Workshops, Meetings	International experts on methods for an effective use of the marine angiosperm Thalassia testudinum, the study of its genetic variability and impacts in the resilience and bioactivity. The international consultants/experts will train Cuban specialists by preparing and conducting the following activities: -Workshop No. 1 on Feasibility studies of sea grasses. Total cost $5,216 (1 expert, 9 days). -Workshop on Molecular basis for the genetic variability of marine angiosperm and the relation with the bioactivity and resilience in response to stress. Total cost $5,960 (1 expert, 10 days) - Workshop No. 2 on Feasibility studies of sea grasses. Total cost $5,800 (1 expert, 10 days) Travel allowance to international experts on methods for an effective use of the marine angiosperm Thalassia testudinum, the study of its genetic variability and impacts in the resilience and bioactivity: -Travel allovance for Workshop No. 1 on Feasibility studies of sea grasses. Total cost $4,484 (1 expert, 9 days) -Travel allovance for Workshop on Molecular basis for the genetic variability of marine angiosperm and the relation with the bioactivity and resilience in response to stress. Total cost $3,840 (1 expert, 10 days) -Travel allovance for Workshop No. 2 on Feasibility studies of sea grasses. Total cost $4,900 (1 expert, 10 days).				30 200		30 200			30 200	*Environment Agency (AMA)*

Training, Workshops, Meetings	International experts on non-clinical evaluation of bioproducts with application in human health, specifically in the development of natural anti-tumoral, safe and effective. Training and advisoring of Cuban specialists on new knowledge, design and production of studies protocols, data analysis and results reports as well as, supplies acquisition and setting-up for the development of non-clinical testing in the Biological Unit located at ICIMAR Preparation and conduction the following activities: - Training on the introduction of new technologies (omics) in non-clinic products development, from natural resources under a controlled environment. Total cost $5,960 (1 expert, 10 days) - Training on models of cancer in vivo and in vitro. Total cost $5,960 (1 expert, 10 days) - Workshop on strategies of chemio sensibilization in the research and development of anti-tumoral therapies. Rol of natural products. Total cost $4,620 (1 expert, 7 days) - Workshop on experimental models for the risk study and the security of pharmaceutical products with natural origin. Total cost $5,960 (1 expert, 10 days		22 500				22 500			22 500	*Environment Agency (AMA)*

Training, Workshops, Meetings	International travels of Cuban specialists to receive theoretical and practical trainings and to conduct experiments related to Thalassia Testudinum genetic, in order to contribute to the implementation of the most effective method for the use of this angiosperm and to the study of its genetic variability and impacts on resilience and bioactivity. Year 2 ($32,000) -Travel for Training in France, Belgium and Spain. Total cost $32,000 Year 3 ($14,900) Travel for Training in Latin America. Total cost $14,900 Year 4 ($7,000) Travel for Training in Latin America. Total cost $7,000 Transfer and accommodation of Cuban specialists, in charge of carry on the field work in the project areas: harvest, gender, training of actors in the community and other activities programmed to accomplish the Component 3 goals. Total cost: $16,900 Year 1: $1,200, 10 pax Year 2 and 3: $9,900, 12 pax/5 days/year Year 4: $5,800, 5 pax/5 days			70 800			70 800			70 800	*Environment Agency (AMA)*
Training, Workshops, Meetings	Lessons learned workshops Total cost $ 4,400					4 400	4 400			4 400	*Environment Agency (AMA)*
Training, Workshops, Meetings	Regional and National Workshops and meetings, with the participation of local and national authorities, to complete, disseminate and validate the ABS legislation	35 000					35 000			35 000	*Environment Agency (AMA)*

Travel	International travel of Cuban specialists to exchange experiences and lessons learned on regulatory and legal framework in ABS: Year 2 - Exchange of experiences in El Salvador. Total cost $5,000 (3pax, 6 days. ATKT $1,500; DSA $3,355; travel insurance $45 and visa $100) - Exchange of experiences in Peru. Total cost $5,000 (3pax, 6 days. ATKT $1,500; DSA $3,355; travel insurance $45 and visa $100) - 4 specialists to participate in the Central Region Meeting, 2 days, to socialize the ABS legislation and to complete the required documentation for it ($4,500) Year 3 - Exchange of experiences in Mexico. Total cost $5,000 (3pax, 6 days. ATKT $1,500; DSA $3,355; travel insurance $45 and visa $100) Year 4 - Exchange of experiences in Argentina. Total cost $5,000 (3pax, 6 days. ATKT $1,500; DSA $3,355; travel insurance $45 and visa $100) - 4 specialists to participate in the Western Region Meeting, 2 days, to socialize the ABS legislation and to complete the required documentation for it. ($5,500)	30 000					30 000			30 000	*Environment Agency (AMA)*

Travel	Travel allowance (ATKT, DSA and terminals) for international experts on non-clinical evaluation of bioproducts with application in human health, specifically in the development of natural anti-tumoral, safe and effective to train and advisor Cuban specialists on new knowledge, design and production of studies protocols, data analysis and results reports as well as, supplies acquisition and setting-up for the development of non-clinical testing in the Biological Unit located at ICIMAR. Total cost: $13,900 International travels of Cuban specialists to world-renowned institutions to exchange theoretical and practical experiences, transfer of technologies, update knowledge and upgrade skills in non-clinical evaluation of new products with potential application in cancer therapy, under the compliance of good laboratory practices, as well as in the preparation of the required documentation to be submitted the results to the Cuban regulatory entity. Total cost: $50,000 Transfer and accommodation in the project areas of Cuban specialists, in charge of coordination meetings and the exchange of experiences and results in the accomplishment of the Component 2 goals. Total cost: $25,000 Transfer and accommodation in the project areas of Cuban specialists, to coordinate the training activities of international experts in Component 2. Total cost: $5,000.		93 900				93 900			93 900	*Environment Agency (AMA)*
Office Supplies	Office supplies (paper, pens, files, toners, etc.) to support the activities of the Component 1	10 000					10 000			10 000	*Environment Agency (AMA)*
Office Supplies	Office supplies (paper, pens, files, toners, etc.) to support the activities of the Project Management Unit.						-		4 000	4 000	*Environment Agency (AMA)*
Other Operating Costs	1 External audit during year 3.						-		5 000	5 000	*Environment Agency (AMA)*

Other Operating Costs	Printing of brochures and promotional material, as well as technical documents generated (methodologies, procedures and regulations). (Year 1, $2,000; Year 3, $3,000) Total cost $5,000 - Publishing fees of specialized magazines. Publication of the results of the pharmaceutical formulation, in order to give visibility to the use of the bio product obtained in a sustainable way. ($2,000/year) Total cost $8,000 Printing of brochures and other promotional materials to support education and to promote the sustainable use of Thalassia Testudinum and gender experiences in the project activities ($1,000/year) Total cost $4,000					17 000	17 000			17 000	*Environment Agency (AMA)*
Other Operating Costs	Chemical reagents for the analysis of chemical composition and genetic variability of Thalassia testudinum, as well as the water quality. Total cost: $60,000 Laboratory supplies (cover glass, slides, Petri dishes, vials, plastic syringes, and microscopes spare parts) to support the studies of the biodiversity associated to sea grasses. Total cost $28,000			88 000			88 000			88 000	*Environment Agency (AMA)*
Other Operating Costs	Laboratory supplies and reagents for the development of the non-clinical testing (analytical chemistry, pharmacology and toxicology) for the pharmaceutical formulation: -Laboratory supplies (Cell cultivation supplies, trays, test tubs 15 and 50 ml, vials, boots, masks, gloves, lab coats, absorbent paper, material or cleaning and disinfection and other laboratory means of protection) -Chemical and biological reagents (Solvents, laboratory standards, cells, bacterial strains, enzymes, plasmid DNA, diagnosis kits for biomarkers detection)		10 000				10 000			10 000	*Environment Agency (AMA)*
Other Operating Costs	Maintenance of transportation equipment, fuel, lubricants and spare parts			12 000			12 000			12 000	*Environment Agency (AMA)*
Other Operating Costs	Maintenance of transportation equipment, fuel, lubricants and spare parts.						-		4 000	4 000	*Environment Agency (AMA)*
Grand Total		**93 000**	**269 903**	**428 300**	**30 200**	**21 400**	**842 803**	**38 400**	**29 542**	**910 745**	

Annex 2: GEF execution support letter

CITMA
MINISTERIO DE CIENCIA TECNOLOGIA Y MEDIO AMBIENTE

MINISTERIO DE CIENCIA, TECNOLOGÍA Y MEDIO AMBIENTE
Dirección de Relaciones Internacionales

DRI: 446 **/ 2022**

Havana, May13th, 2022.

To: Pradeep Kurukulasuriya,
Execute Coordinator
Environmental Finance, BPP
UNDP

Subject: Letter of Support to request GEF Agency Execution for the project "Developing the potential of *Thalassiatestudinum* in the health sector in Cuba in accordance with the Nagoya Protocol and Biodiversity Conservation" (PIMS 6311).

1. In my capacity as GEF Operational Focal Point for Cuba, I hereby request UNDP, the GEF implementing agency for the aforementioned project, to also carry out execution services for the above project/program, on an exceptional basis.

2. The execution services provided by UNDP are expected to include:

- Financial transactions (Payments, disbursements and other financial transactions).

3. The execution services to be provided by the Environmental Agency (AMA) belonging to Ministry of Science, Technology and the Environment (CITMA) of Cuba are expected to include:

- Identification and/or recruitment of project and programme personnel and consultants.
- Procurement of services, goods and equipment.
- Organization of training activities, conferences, and workshops.
- Visa requests, ticketing, and travel arrangements.

4. Execution activities, including those provided by UNDP will be described in detail in the GEF CEO Endorsement/Approval request and accompanying project/program documents, including the project/program budget.

Sincerely,

MINISTERIO DE CIENCIA TECNOLOGIA Y MEDIO AMBIENTE
DIRECCIÓN DE RELACIONES INTERNACIONALES

Sr. Ulises Fernández Name
GEF Political and Operational Focal Point

Calle 18 A # 4118 e/ 41 y 47, Playa, La Habana 11300, CUBA
Tel: (537)214 4256, Fax:(537)214 4257 e- mail: ulises@citma.gob.cu

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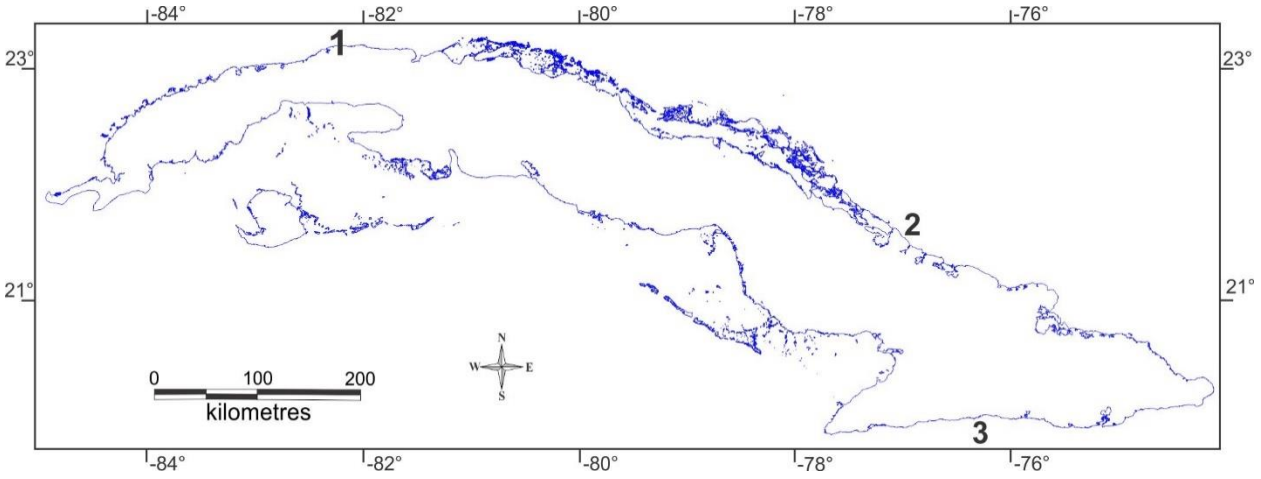
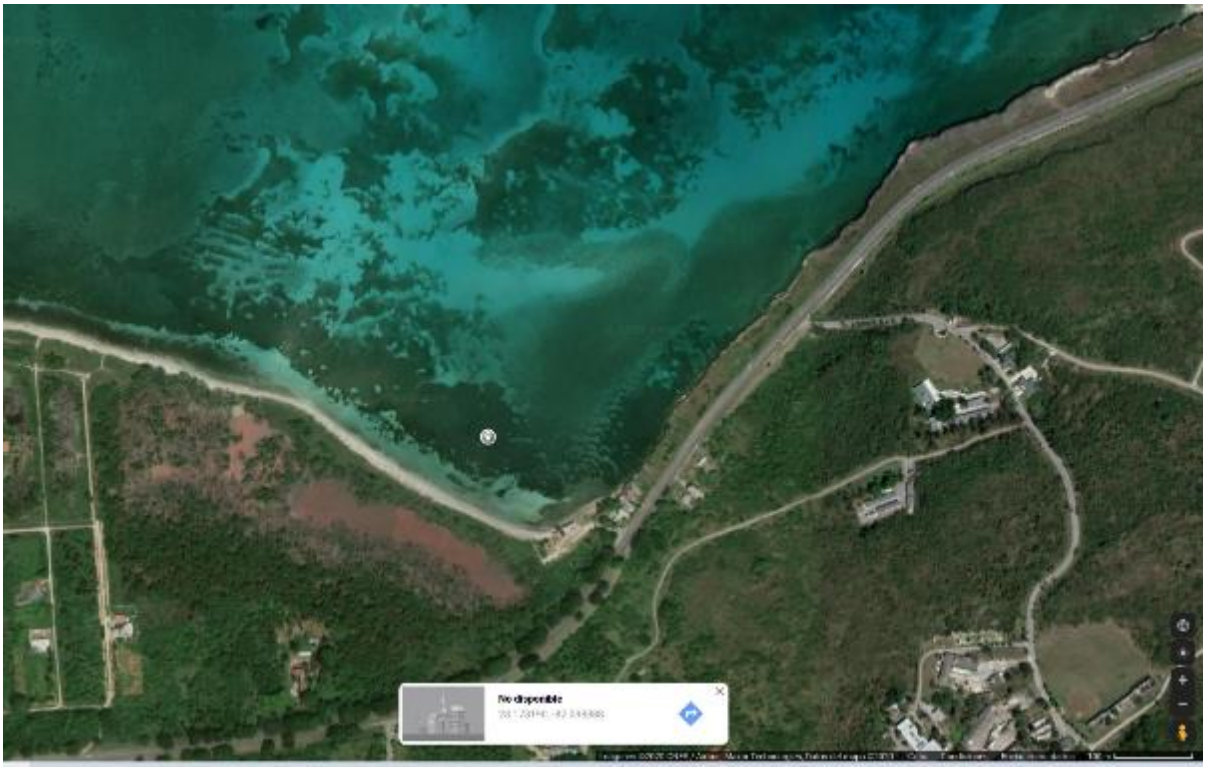
Annex 3: Project map and Geospatial Coordinates of project sites

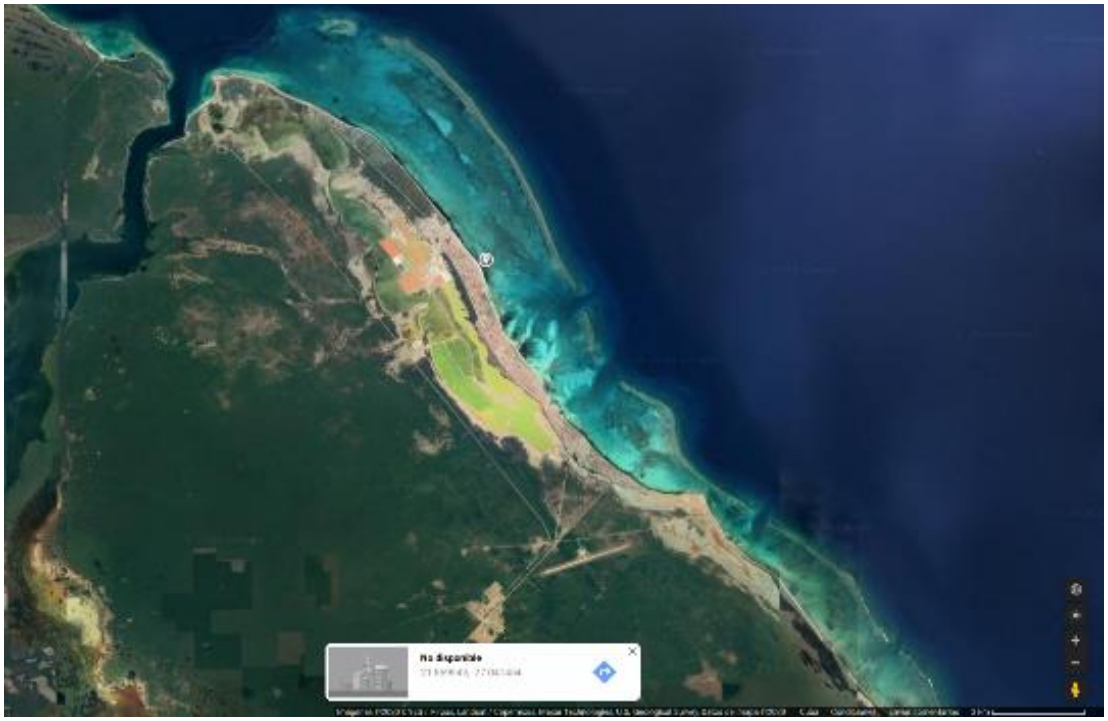
Location of the 3 areas of intervention of the project:



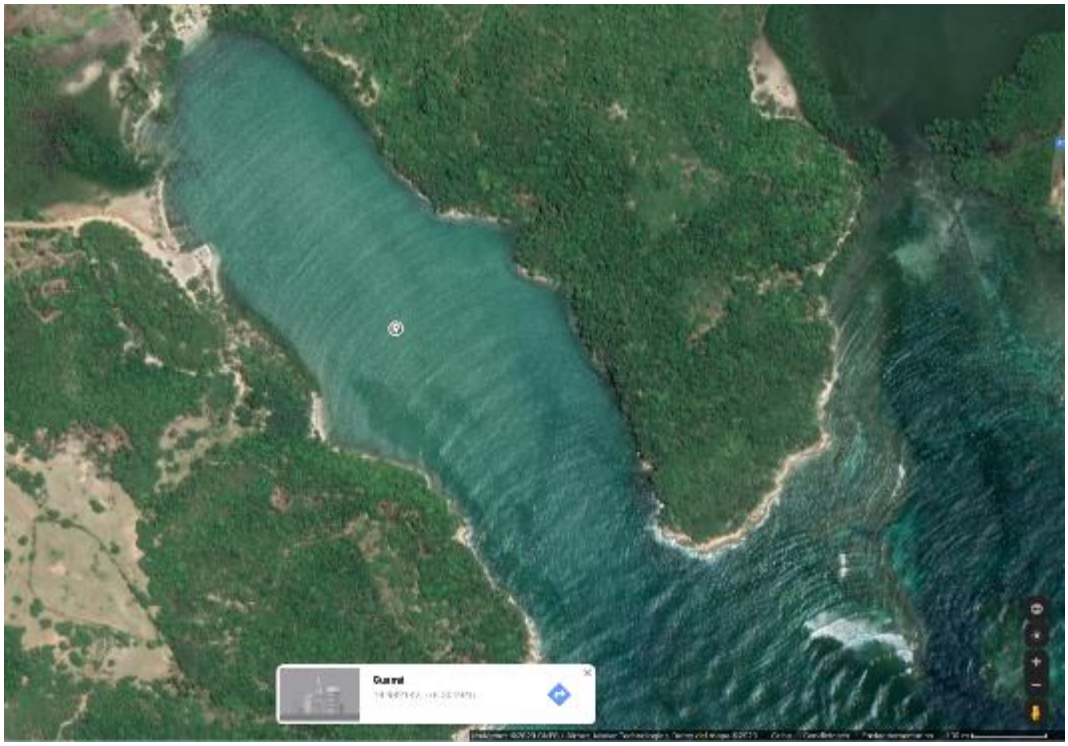
1. Rincón de Guanabo, Playas del Este, Havana; Coordinates: 23° 10' 26", -82° 05' 50"; Intervention area: 14 ha



2. Santa Lucía Beach, Camagüey: Coordinates: 21° 33' 26", -77° 02' 07"; Intervention area: 100 ha



3. Larga Bay, Guamá, Santiago de Cuba: Coordinates: 19° 58' 58", -76° 18' 07"; Intervention area: 23 ha.



Annex 4: Multi Year Work Plan

Outcomes	Outputs	Activities	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1. Strengthening the legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing																		
Outcome 1.1 Strengthened political, legal and institutional framework regarding access to genetic resources and benefit sharing	1.1.1 Procedures, methodologies and model clauses are proposed to complete the legislation that implements the Nagoya Protocol	Comparative study of model clauses (Govt.)		X	X													
		Compile and analyze international experiences on ABS contract procedures.					X	X	X	X	X	X	X	X	X	X		
		Elaboration of proposals for procedures, methodologies, model clauses and guidelines on ABS				X		X		X		X		X				
		Share proposed ABS procedures and guidelines with CITMA and other key stakeholders																
		Validation workshop of the proposed procedures for the use of marine angiosperm (based on the experiences generated with regards to obtaining a bioproduct from *Thalassia testudinum* in Component 3).														X		
		Organize and participate in specialized exchanges, workshops and national and international courses for the socialization of the project results and knowledge about the values, conservation, monitoring, management and sustainable use of sea grasses.					x	x	x	x	x	x	x	x	x	x	x	x
		Elaborate methodological guidelines to define monetary and non-monetary benefits derived from genetic resources in the context of Cuba. These will first be used for the Thalassia supply chain in the Cuban context.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
		Delivery and presentation of the final version of the procedures and model clauses for contracting Access.															X	
	1.1.2 Strengthened capacities of the regulatory authority to control access to genetic resources	Organize workshops and facilitate exchange with national and international experts to develop complementary documents and checkpoints needed for ABS, including the protection and management of information and the scope of intellectual property rights.					X	X	X	X								
		Purchase of equipment for the institutional strengthening of the authorities for the Nagoya Protocol (establish ABS Checkpoints)	X	X	X	X												
	1.1.3 Tools are created for training, protection, information management and scope of intellectual property rights	Design a virtual course aimed at building capacity in the different aspects of ABS covered by the project			X	X	X	X										
		Training course on control of Access to Genetic Resources held online or in-person for the Eastern, Central and Western regions of Cuba					X	x			X	x						
		Publication of informative materials on the Nagoya Protocol and national procedures	X	X	X	X					X	X	X	X				

Outcomes	Outputs	Activities	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	1.1.4 Dialogue platform to exchange of information on ABS and knowledge associated with biodiversity conservation	Hire the design and programming of the Cuban ABSCH.		X	X	X												
		Design and programming of the Cuban ABSCH					X	X	X	X	X	X	X	X				
		Commissioning and launch of the Cuban ABSCH													X	X	X	X
Component 2. Strengthening institutional and individual capacities for the research and development of a pharmaceutical product from a marine angiosperm																		
Outcome 2.1 Increased institutional capacities for bio-product development	2.1.1 Updated ICIMAR technical and operational capacities enable obtaining permission from the National Regulatory Unit to conduct non-clinical studies on the product.	Design and development of the technical dossier for the remodeling of the ICIMAR Bioterium laboratory facilities.	x	x														
		Execution of the technical task for the remodeling of the ICIMAR Bioterium facilities.			x	x	x	x	x	x								
		Acquisition of laboratory equipment and the necessary inputs for the execution of the work protocols of the ICIMAR Bioterium.		x	x	x	x	x	x									
		Installation, start-up of the acquired equipment and establishment of technical conditions to carry out investigations under a controlled environment.						x	x	x	x	x						
	2.1.2 Strengthened human resources in the non-clinical evaluation of products derived from marine biodiversity under a controlled environment.	Redefine/update what is known as the "state of the art" in the field.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
		Participation in workshops, seminars and courses to increase the preparation of human resources in the development and implementation of standardized work protocols required for the certification of assays at the Bioterium and the laboratories of the Biological Unit of ICIMAR.					x	x	x	x	x	x	x	x				
		Participation in scientific exchanges, trainings, seminars and courses that contribute to increasing the scientific preparation and level in the design and conduct of non-clinical studies for the evaluation of bio-products.		x	x		x	x	x		x		x		x			
	2.1.3 Phytochemical characterization of natural extracts, identification of metabolites, and evaluation of anti-tumor effects and margin of safety of the active ingredient derived from *T. testudinum.*	Acquisition of the necessary inputs for the execution of the experimental protocols.		x			x	x			x	x			x			
		Collection of specimens in the three intervention areas for studies of chemical-physical, microbiological characterization, genetic variability, efficacy and safety.			x		x		x		x		x					
		Chemical-physical and microbiological characterization of the product.			x		x		x		x		x					
		Optimization of the process of obtaining the product from the species			x	x	x	x	x	x								
		Characterization of the anti-tumor effects of the product using *in vitro* models in the presence of drugs of conventional use in cancer therapy.		x	x	x	x	x	x	x			x	x				
		Characterization of the anti-tumor effects of the product using *in vivo* models in the presence of drugs of conventional use in cancer therapy.				x	x	x	x	x	x	x	x	x				

Outcomes	Outputs	Activities	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		Development of scientific criterio and procedural protocols for non-clinical toxicological studies.		x	x	x	x	x	x	x	x	x	x	x				
	2.1.4 Documentation to obtain authorization for clinical studies under biodiversity conservation principles is completed.	Preparation of the documentation to be submitted for the application to the Cuban Regulatory Agency for authorization to begin the clinical research phase.												x	x	x	x	x
Component 3. Conservation of marine biodiversity and habitat of angiosperm used for bioproduct development																		
	3.1.1 Evaluation of environmental quality of seagrass ecosystem at intervention sites.	Evaluation of the health and quality of the marine environment at the angiosperm habitat. Estimation the Ecological Evaluation Index (EEI) of the seagrass ecosystem. Assessment of the organic carbon sequestered in the sediments and seagrass biomass and the impact of harvesting practices on carbon sequestration in the three pilot sites of the project. The EX-Ante Carbon-balance Tool (EX-ACT) has a seagrass and mangrove module that could be used for this exercise.	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
	3.1.2 Management protocols and recommendations for the conservation and sustainable use of seagrass.	To define recommendations to the management plan of the protected area (PNP Rincón de Guanabo), and for the conservation of seagrasses at non-protected areas of the provinces Camagüey and Santiago de Cuba				x				x				x				x
Outcome 3.1 Conservation and sustainable use of genetic resources associated with seagrass in three target sites	3.1.3. Population analysis of Thalassia testudinum angiosperm.	Determine the variability of the product's bioactivity in selected areas of the Cuban marine platform and times of the year.		x	x	x	x	x	x	x	x	x	x	x	x	x		
		Determine the areas and availability of leaf biomass of T. testudinum in the selected meadows		x	x	x	x	x	x	x	x	x	x	x	x	x		
		Assess the genetic variability of T. testudinum meadows and its possible impact on the resilience and bioactive properties of the product.		x	x	x	x											
		Conduct a feasibility study to evaluate the effect of harvesting T. testudinum leaves on indicators of the species' vitality and associated biodiversity, at different time and space scales.			x	x	x	x	x	x	x	x	x					
	3.1.4. Approved best practice/procedural tools for the management and the sustainable use of Thalassia testudinum	Develop operational procedures aimed at the sustainable harvest (sustainable use) of the leaf biomass of T. testudinum by the community.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Outcome 3.2 Increased capacity of	3.2.1. Training program on supply and value chains management associated to	Strengthen the capacity of human resources in the institutions involved in the management, monitoring and conservation of marine species		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Outcomes	Outputs	Activities	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
coastal communities to generate a value chain, and improved standard of living, promoting equity between women and men.	the seagrass ecosystem with emphasis on sustainable use of Thalassia testudinum																	
	3.2.2 Certification program for workersinvolved in the sustainable management and collection of samples in the intervention sites	Organize training and empowerment activities in local communities, involving women, in particular, in the implementation of the angiosperm conservation strategy.					x	x	x	x	x	x	x	x	x	x	x	x
Component 4: Monitoring and knowledge management																		
Outcome 4.1 Increase awareness amongst Cuban society about the importance and legality of the conservation and sustainable use of genetic resources	4.1.1 *Gender responsive* awareness campaign aimed at different stakeholders and users of genetic resources to promote a change in behavior, highlights responsible harvesting and treatment procedures and practices	Conduct virtual survey with key stakeholders and project beneficiaries to determine their level of awareness about ABS, Intellectual Property management, and BD conservation	x	x												x	x	
		Develop a campaign to increase awareness about ABS and associated issues amongst key stakeholders and project beneficiaries			x	x												
		Implement the awareness campaign at the national and local levels				x	x	x	x	x	x	x	x	x	x	x		
	4.1.2 Project's M&E Plan, SESP and GAP implemented, ensuring the achievement of the planned goals	Project Start and Inception Workshop	x	x														
		Monitor Environmental and Social Management Framework		x		x		x		x		x		x		x		x
		Monitor Gender Action Plan		x		x		x		x		x		x		x		x
		Update and organize indicator values in preparation for external Mid-term Review							x	x								
		Mid Term Review								x								
		Update and organize indicator values in preparation for external Terminal Evaluation														x	x	
		Terminal Evaluation																x
	4.1.3 Publication and dissemination of the results and lessons learned	Redefine/update what is known as the "state of the art" in the field by writing and publishing the scientific findings and technical performance reports.				x		x		x		x			x	x	x	x
		Participation in scientific exchanges will contribute to increasing the preparation and level of the human resources involved. Participation in workshops, seminars and national and international congresses will facilitate the socialization and dissemination of the results and leasson learned.				x	x	x	x		x		x		x		x	

SOCIAL AND ENVIRONMENTAL SCREENING TEMPLATE (2021 SESP TEMPLATE, VERSION 1)

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document at the design stage. Note: this template will be converted into an online tool. The online version will guide users through the process and will embed relevant guidance.

Project Information

Project Information	
1. Project Title	**Developing the potential of *Thalassia testudinum* in the health sector in Cuba in accordance with the Nagoya Protocol and Biodiversity Conservation**
2. Project Number (i.e. Atlas project ID, PIMS+)	6311
3. Location (Global/Region/Country)	Cuba
4. Project stage (Design or Implementation)	Implementation
5. Date	October 2022

Part A. Integrating Programming Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Programming Principles in Order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the project mainstreams the human rights-based approach
The project will search for a pharmaceutical product by accessing the genetic resources of the species *Thalassia testudinum*, which represents a solution to a health problem of national and supra-national scope (cancer). The public health system in Cuba is responsible for ensuring that all citizens have free access to health services, including health care, protection, and recovery services. Therefore, the benefits from this project will undoubtedly impact patients' quality of life at the national and local levels. In parallel, the project's results will improve the livelihoods, i.e., income, of the local communities using marine natural resources beyond tourism-related activities. Overall, the project will advance ABS under the Nagoya protocol, achieving more equitable participation in the benefits derived from *Thalassia testudinum*. The project aims to strengthen capacities to develop and apply safeguards and manage the Cuban marine platform's accumulated information regarding genetic resources. It intends to increase the knowledge about ABS, at the project site level, in the local communities' culture, and within local institutions (regulatory and

research organizations). The project will support preparing the "Clinical Trial Authorization Request" to search for local alternatives that benefit health based on the sustainable use of biological diversity in the Cuban marine platform. It will strengthen the national legislation and promote monetary and no monetary instruments to improve benefit-sharing from utilizing genetic resources. Permanent interaction with the local communities and the Cuban civil society (academy, research centers, and Non-Governmental Organizations) will support the project's implementation. Stakeholders will participate actively in identifying the habitat areas of *Thalassia testudinum* and planning its sustainable management and harvesting. The project stakeholders' participation will guarantee successful results.

Briefly describe in the space below how the project is likely to improve gender equality and women's empowerment

The project development team designed a strategy to address gender during implementation. This strategy is based on the project's Gender Analysis. The gender strategy will contribute to women's economic empowerment through activities linked to the collection and pre-processing of *Thalassia testudinum,* in the community of Rincón de Guanabo. The project will emphasize establishing women-led management and harvesting schemes to create new jobs when the pharmaceutical bioproducts be approved. Thus, women can improve and diversify their work and working conditions. Besides, add new professional and technical skills and fully benefit from the project interventions.

Women will have an active role in the project activities related to research, training, and reviewing/updating ABS policy and its regulatory framework. The Cuban society policy framework supports women's participation, noted in the Gender Analysis. There is a strong female presence in the leading institutions participating in the project. For example, most of the employees of ICIMAR (IP) are women. Likewise, in other institutions participating in the project: the CIM-UH, the ORSA, the DMA of CITMA, and the AMA, women are the majority. Women are also leading the project's coordination group. Therefore, the project is an exceptional opportunity to increase their capacities to manage international projects, which will benefit these professionals and the participating institutions.

In Cuba, cancer has been the second cause of death, since 2013, in both men and women. According to data from the last National Population Census, women are the majority. Also, women play a decisive role in the family, the nucleus of Cuban society, and represent a significant percentage of the country's productive force. Cancer undermines women's position in society; it affects their health and productivity because of its increasing annual trend in all provinces. According to the latest epidemiological reports from the Ministry of Public Health (Annual Report, 2018), breast, colon, and lung tumors have the highest incidence of morbidity/mortality in Cuban women.

According to the Cuban Government, cancer is among the top ten health challenges despite the Government's important resources invested in cancer control and prevention. For example, breast and colon cancer programs are the most prioritized programs for cancer prevention and early diagnosis. Therefore, it is a priority for the Cuban Government to find new therapeutic alternatives to control cancer and increase patients' quality of life, mainly by early detection and targeting tumors with the highest frequency and mortality rate.

The experimental studies show that evaluating the antitumor potential of the product obtained from *Thalassia testudinum* is promising. ICIMAR's existing research shows favorable results in primary tumor treatment models of colon and breast cancer in mice, comparable to conventional therapeutic drugs. Therefore, developing a product derived from *Thalassia Testudinum* may not be far. Thus, the project is relevant.

Briefly describe in the space below how the project mainstreams sustainability and resilience

The project will establish sustainable development pathways and contribute to the implementation of Effect 3 of the Country Document, agreed between the Government of Cuba and UNDP for the 2020 and 2024 period: "Institutions, productive and service sectors, territorial governments, and communities improve the protection and rational use of natural resources and ecosystems, resilience to climate change and the comprehensive management of disaster risk reduction".

This initiative is in line with the basis of the Economic and Social Development Plan by 2030, Objective 4, Strategic Axis on Natural Resources and Environment: "protection of biodiversity and sustainable use of the ecosystem good and services." Also, Objective 9 of the Strategic Axis on Human Potential, Science, Technology and Innovation focuses on "developing national processes and technologies that guarantee an adequate and sustainable use of the natural resources".

Within the above-indicated framework, the Government of Cuba finances the National Research Program on "Sustainable Use of Components of Biological Diversity," one of the national co-financing sources for this project. This initiative is aligned with the efforts of the country's scientific community to find new pharmaceutical products for fighting Covid 19.

The project also supports implementing important national policies such as the State Plan for Confronting Climate Change and the National Program on Biodiversity, 2016-2020. The latter recognizes specific targets related to access to genetic resources and benefit-sharing according to the Nagoya Protocol (target 15); and focuses on reducing multiple anthropogenic pressures on coral reefs, seagrasses, mangroves, and beaches (target 10). The indicated initiatives align with the VI National Report of the Republic of Cuba to the Convention on Biological Biodiversity, which recognizes the importance of seagrass conservation and sustainable management.

The project supports the implementation of the **Sustainable Development Goals** (SDGs) in Cuba, in the following areas:

- SDG 3 "Ensure healthy lives and promote well-being for all at all ages" / (goal 3.b: Support the research and **development of vaccines and medicines** for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all);

- SDG 4 "Ensure inclusive and equitable quality education and promote lifelong **learning opportunities for all**" / (goal 4.3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university);

- SDG 5: "Achieve **gender equality** and empower all women and girls" / (goal 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life);

-**SDG 8** "Promote sustained, inclusive and sustainable economic growth, full and **productive employment** and decent work for all" / goal 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value);

- SDG 14 "Conserve and sustainably use the oceans, **seas and marine resources for sustainable development**" / (goal 14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans);

- SGD 15 "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss" / (goal 15.6: Protect **access to genetic resources and fair sharing of the benefits**. UN definition: Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed); and

- SGD 17 "Strengthen the means of implementation and revitalize the global **partnership for sustainable development**" / (goal 17.17: Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships' Data, monitoring and accountability).

Briefly describe in the space below how the project strengthens accountability to stakeholders

The project has a robust stakeholder consultation process and stakeholder engagement plan as tools to enable full, effective and inclusive stakeholder participation throughout the project cycle. An assessment of the consultations, which served as the basis for the project design, is provided, as well as a description of the mechanisms that will facilitate outreach and communication procedures throughout project implementation. The consultation process has been relevant both for the design of the project's physical interventions (biodiversity conservation and sustainable use practices of the marine ecosystem), as well as for the soft interventions for which local stakeholder ownership and buy-in is particularly important. The Project Management Unit (PMU), with the involvement of CITMA (ICIMAR and ORSA) and MES (CIM) and, in particular, the safeguard and gender officer, will ensure inclusive stakeholder participation, with special attention to the participation of women and other groups with unique accessibility needs (elderly, people with disabilities).

The inclusive participation strategy described in this document covers the entire project cycle and includes: (i) stakeholder identification; (ii) information dissemination; (iii) consultation; and (iv) complaints and grievance procedure. Project managers will provide clear and concise information on: (i) the various national and international grievance mechanisms available to them, as outlined above, and (ii) where and how they can access these mechanisms and related remedies. All such information shall be provided in the most efficient and effective manner possible and shall be tailored, as appropriate, to the cultural and socioeconomic characteristics of the parties concerned.

The implementation of this project is likely to require some form of the prior informed consent (PIC) from local communities according to the rules of the Nagoya Protocol. Regarding the participation of local communities and prior informed consent, the Protocol establishes (articles 6, 7, 11, 15, 16) that each Party should take measures, as appropriate, with the aim of ensuring that prior informed consent (PIC) or approval and involvement of indigenous and local communities is obtained for access to genetic resources where they have established right to grant access to such resources.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Complete SESP Attachment 1 before responding to Question 2.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5below before proceeding to Question 5*			**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**
Risk Description (broken down by event, cause, impact)	***Impact and Likelihood (1-5)***	***Significance (Low, Moderate Substantial, High)***	***Comments***	***Description of assessment and management measures for risks rated as Moderate, Substantial or High***

Risk 1: Exclusion of stakeholders There is a risk that insufficient/ineffective engagement and consultation with certain stakeholders will limit their participation in the project activities and/or in decisions that might affect them. Also stakeholders will be affected due to their limitations to access the benefits arising from the utilization of *T. testudinum* genetic resources, whether appropriate measures on access and benefit-sharing (ABS) are not defined Principle P.13 and Standard 1.13	I = 3 L= 2	Moderate	Project outputs 1.1.1, 1.1.2, 1.1.3, and 1.1.4 will establish the regulatory framework, strengthened capacity and tools needed for the application of an ABS mechanism to the harvesting and exploitation of *T. testudinum*. Insufficient/ineffective consultation and engagement with local communities and other stakeholders could lead to their interests/rights not being fully represented in the project and/or these stakeholders not achieving their full potential benefits. Risk related to the benefit-sharing arising from access to natural resources, considering that monetary and non-monetary measures has not yet been defined in the country.	**Stakeholder engagement** was conducted as part of the project formulation (Stakeholder Engagement Plan SEP – Annex 9 of ProDoc). Going forward, stakeholder engagement will need to be conducted according to the *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization* to ensure no stakeholder group is excluded from the ABS mechanism. The ESMF (Annex 10 of PRODOC) includes a set of guidelines for stakeholder engagement during implementation. There are no records of traditional use of this marine species in Cuba, whose ownership belongs to the state. Considering natural resources belong to the state, as per national regulations, once the National Environmental Authority gives the authorization to access genetic resources its means that Prior Informed Consent (PIC) have been approved. However, there is no experience with the Mutually Agreed Terms (MAT) application in the national context. The project will develop a methodological proposal to define monetary and non-monetary benefits resulting from the *T. testudinum* supply chain, in the Cuban context, which will be a reference to define a model clause on access and benefit-sharing (ABS) and agree benefit-sharing, as well. (ProDoc, Outputs 1.1.1 and 3.2.3). The ESMF (Annex 10 of ProDoc) includes the basic principles of MAT and monetary and non-monetary benefits, as established in the Nagoya Protocol.

Risk 2: Women's limited participation and benefit sharing due to prevailing cultural and social norms that prevent women from fully participating in the project Principle P.10	I = 3 L= 3	Moderate	Despite the significant role of women in social and economic development in Cuba, some prevailing gender stereotypes in the targeted communities and in the Cuban society at large may hinder women's participation in the project's activities: from harvesting to processing of *T. testudinum*. For instance, some prejudices persist that limit the participation of women in activities involving physical effort (e.g., harvesting of marine species, execution of some industrial processes, etc.).	Gender-responsive ABS schemes are essential to enable the effective participation of both women and men in the design, negotiation, distribution, and use of benefits. The **Gender Analysis and Action Plan** (GAAP) – Annex 11 of the ProDoc – includes a number of actions to encourage women's participation: mainstreaming gender considerations, training and awareness actions, and working conditions.
Risk 3: Damage to *Thalassia testudinum* habitat and associated ecosystem services provided by marine seagrasses meadows Standard 1 (1.1, 1.3, 1.10) and Standard 2 (2.3)	I = 4 L= 2	Moderate	Inappropriate harvest practices could lead to damage to the seagrass meadow ecosystem and the provision of ecosystem services, including its capacity to regulate wave impacts in case of extreme meteorological events or coastal floods due to the sea level rise, as well as its role as a refuge of marine species of environmental and/or commercial interest.	A better understanding of the environment of *T. testudinum* is required to identify risks to biodiversity and ecosystem services. The ESMF (Annex 10 of PRODOC) includes '**Biodiversity Risks Assessment**' guidelines and the outline of a Biodiversity Action Plan.
Risk 4: Potential adverse impacts to environmentally sensitive areas	I = 4 L= 2	Moderate	The harvesting of *Thalassia Testudinum* for testing its potential medical benefits will take place in the Rincón de Guanabo Protected Area. This area is classified under the	The ESMF includes the outlines of a **Biodiversity Action Plan** (to mitigate potential biodiversity risks). This tool will be developed and updated throughout the Project to avoid any impacts on the protected landscape of Rincon de Guanabo.

Standard 1 (1.2)			management category "Protected Natural Landscape". Although harvesting will not take place in the core conservation areas of this protected area, without sustainable practices, the seagrass can be affected, and consequently, reduce the flow of ecosystem services.	In addition, the project will ensure full compliance with the provision on environmental quality and sustainability contained in the Decree-Law 201 (National System of Protected Areas). Harvesting of *Thalassia testidinum* will need to be conducted by observing the measures provided in the Protected Area Management Plan concerning the specific harvesting area, acceptable volumes, and season.
Risk 5: Induced overexploitation of *Thalassia testudinum* Standard 1 (1.3, 1.4) and Standard 2 (2.2, 2.1)	I = 4 L=2	Moderate	Although there are no records of traditional use of *Thalassia testudinum* in Cuba, there is a potential risk for the expansion of the use of the species by other local communities, once they become familiar with the pharmaceutical product. This awareness could lead to the spontaneous and inappropriate search, harvesting, and consumption of the species by part of the population and harm the composition and health of marine seagrasses meadows.	Component 4 of the Project involves raising awareness of stakeholders and users of genetic resources to promote a change in behavior and highlight responsible harvesting and treatment procedures and practices. As part of the **Stakeholder Engagement Plan** - SEP (Annex 9), promote communication and awareness with local communities and more broadly at the national level with communication products and campaigns to raise awareness of ABS practices and benefits.
Risk 6: Climate risks impacting the production and harvesting of *Thalassia testudinum*	I = 4 L= 2	Moderate	The coastal infrastructure (ports, docks, etc.) in the intervention areas and the marine seagrasses meadows themselves could be affected by tropical cyclones, hurricanes, and other extreme events (severe winds, storm surges). These events could	Because of the pilot nature of the Project (with a 4-year duration), long-term changes in climate variables are not likely to become apparent during the lifespan of the Project. However, prior to the selection of the intervention areas, a **Climate Risk Assessment** will be conducted according to the guidelines includes in the ESMF (Annex 10 of PRODOC). This assessment will allow the Project to select areas of marine seagrasses production where the probability to be damaged by extreme events is lower.

Standard 2 (2.1 and 2.2)			impact the production and harvesting of *T. testudinum*.	Institutions/stakeholders engaged in the Project will include in the Civil Defense System Action Plan to coordinate any actions required to prevent and manage climate risks.
Risk 7: Occupational risks associated with the harvesting and processing of *Thalassia testudinum* including laboratory tasks. Standard 7 (7.6)	I = 4 L= 2	Moderate	A number of occupational risks have been identified in some of the steps involved in the harvesting and processing of *T. testudinum*: divers involved in harvesting (output 3.1.3), use of cutting tools in the mill facility, and exposure to hazardous chemicals at the laboratory facilities.	The Project will develop **Labor Management Procedures** (outline included in the ESMF – Annex 10 of PRODOC) including an **Occupational Health and Safety Plan** with provisions for the prevention and management of these risks. This plan also includes the training of workers and personnel involved in the harvesting and processing of *T. testudinum*. The project will also upgrade ICIMAR Research Unit facilities, including occupational hazard control mechanisms to manage any potential occupational risks.
Risk 8: Inadequate disposal of non-hazardous, both liquid and solid waste generated as a by-product of processing *Thalassia Testudinum* Standard 3 (3.2, 3.5) and Standard 8 (8.1, 8.2, 8.3)	I = 4 L= 2	Moderate	The Project will generate non-hazardous waste as part of the processing of seagrass (Component 2). If this waste is not disposed adequately, there could be pollution risks.	The Project will develop a **Pollution Prevention and Waste Management Plan** (outline included in the ESMF – Annex 10 of PRODOC) to ensure adequate disposal of waste. This plan will be part of the **Standardized Working Procedure** for the processing of *T. testudinum*. The Waste Management Plan is part of ICIMAR's risk prevention plan developed considering the evaluation and characterization of *Thalassia testudinum* waste. One of the waste management options to be explored is the use of dried solid waste in controlled-released manures and fertilizers for agriculture.
Risk 9: Accidental release of hazardous effluents (ethanol) Standard 3 (3.2, 3.5) and Standard 8 (8.4)	I = 4 L= 2	Moderate	As part of the extraction process (Component 2) of the pharmaceutical formulation, a flammable chemical reagent (graded ethanol 50%) will be used. If turned into waste, it would be considered "hazardous waste" and, accordingly, it will require specific management measures	The Project will need to develop a Pollution Prevention and Waste Management Plan (outline included in the ESMF – Annex 10 of PRODOC) to ensure adequate provisions are implemented to avoid the release of ethanol. This plan will be part of the **Standardized Working Procedure** for the processing of *T. testudinum*. This procedure will be refined and validated throughout the implementation of the Project.

			in accordance with the national legislation.	
Risk 10: Energy use and **water consumption** Standard 8 (8.6)	I = 2 L= 2	Low	The *Thalassia testudinum* washing process during the harvest requires water and energy for the grinding process. If not implemented well or appropriately, the project could overuse those resources Given the pilot nature of the activity, it will not imply the consumption of considerable quantities of water and energy.	Measures aren't needed in this case because the current risk is low. As part of the Project implementation, water and energy consumption, per kilo of collected material, will be calculated. This action is key to systematizing information to define appropriate levels of water and energy consumption for this activity.
Risk 11: Exposure to Covid-19 Standard 3 (3.4)	I = 2 L= 2	Low	International consultants will not travel to Cuba during the first year of implementation. The project does not involve work in indoor crowded places. The risk of exposure to Covid-19 infection is therefore considered low.	Measures aren't needed in this case because the risk is low. However, this risk category will be updated according to the national regulations from the Health Authority to combat Covid-19.
Risk 12: Impacts on marine-based livelihoods Harvesting of *T. testudinum* may conflict with other uses of these marine areas in the target coastal areas, particularly shellfish harvesting and tourism	I = 3 L= 2	Moderate	If new regulations and procedures (outputs 1.1.1, 1.1.2, 1.1.3, and 1.1.4) restrict access to intervention areas, there might be an impact on the livelihoods (economic displacement) of individuals (mainly self-employed workers) engaged in marine-based activities. Restrictions of access are expected to be temporary	More information is needed in order to identify the current uses of the target marine areas and the socio-economic structure of the coastal communities. A **Livelihoods Risk Assessment** will be conducted at the intervention areas. Based on the results of this assessment, a **Livelihoods Action Plan** might be required for SES compliance. The ESMF (Annex 10 of ProDoc) includes the outlines for both the Livelihoods Risk Assessment and the Livelihoods Action Plan.

Principle P. 13, Standard 1 (1.3) and Standard 5 (5.2)			(only for the duration of harvesting; output 3.1.3).	
Risk 13: Limited capacity of the duty-bearers to meet their obligations in the Project Principle P.2	I = 4 L= 2	Moderate	The national stakeholders involved in the project (BioCubaFarma, ICIMAR, CIM-UH, University of Havana) are established institutions with relevant experience for the project's objectives. However, the strengthening of capacities foreseen by the project (specialized laboratory equipment, training of personnel in the application of laboratory practices and training of the local people on environmentally sustainable production practices) is decisive to ensure the achievement of the project's objectives regarding the sustainable development of the pharmaceutical product. Also, it is critical to strengthen capacity at the community level to ensure the appropriation of environmentally sustainable production practices.	The ProDoc includes activities and a budget to support: - Strengthening research capacities, through the acquisition of laboratory equipment and training of personnel in the application of laboratory practices. The increased capacity will enable the completion of the relevant data on the properties of the *Thalassia testudinum*. This data is required to submit, to the Cuban Regulatory Agency, the application for authorization to begin the clinical research phase. - Strengthening the capacity of local people to harvest *Thalassia testudinum*. To this end, the project will support the acquisition of diving equipment (necessary for monitoring seagrasses and for their harvesting) and the training of local personnel, to ensure the use of sustainable practices.
	QUESTION 4: What is the overall project risk categorization?			
	Low Risk	☐		

	Moderate Risk	X	The Project might lead to limited environmental and social risks or impacts that can be reasonably mitigated and, therefore, require targeted, focused analysis and assessment specific to the adverse risks and impacts identified during the screening process.		
	Substantial Risk	☐			
	High Risk	☐			
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)				
	Question only required for Moderate, Substantial and High Risk projects				
	Is assessment required? (check if "yes")	X			***Status? (completed, planned)***
	if yes, indicate overall type and status		X	Targeted assessment(s)	Planned (guidance included in ESMF)
			☐	ESIA (Environmental and Social Impact Assessment)	
			☐	SESA (Strategic Environmental and Social Assessment)	
	Are management plans required? (check if "yes)	X			
	If yes, indicate overall type		X	Targeted management plans (e.g. Gender Action Plan, Biodiversity Action Plan, Livelihood Action Plan, Labour Management Procedures,	Completed (Gender Action Plan)

				Pollution Prevention and Waste Management Plan)	Planned (guidance included in ESMF)
			☐	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	
			X	ESMF (Environmental and Social Management Framework)	Completed including guidance for required targeted assessments and management plans
	Based on identified <u>risks</u>, which Principles/Project-level Standards triggered?		**Comments (not required)**		
	Overarching Principle: Leave No One Behind				
	Human Rights	X	Insufficient/ineffective consultation and engagement with local communities and other stakeholders could lead to their interests/rights not being fully represented in the project and/or these stakeholders not achieving their full potential benefits.		
	Gender Equality and Women's Empowerment	X	Risk of women not fully benefitting/participating in the project due to persisting cultural and social norms.		

	Accountability	X	
	1. Biodiversity Conservation and Sustainable Natural Resource Management	X	Potential risks to environmentally sensitive areas and harvesting *T. testudinum* in a sustainable manner require further assessments.
	2. Climate Change and Disaster Risks	X	Project activities are located in areas subject to climate risks (hurricanes, storms, etc.) and potential exposure to climate risks while harvesting.
	3. Community Health, Safety and Security	X	Potential pollution of water and soil due to the accidental release and/or inadequate disposal of chemicals used in the processing of *Thalassia testudinum*.
	4. Cultural Heritage	☐	No impacts on cultural heritage from project activities are foreseen.
	5. Displacement and Resettlement	X	Potential risks to marine-based livelihoods (moderate) due to the restrictions on access/use of areas where marine-based activities (e.g., fishing, harvesting of seashells) are conducted.
	6. Indigenous Peoples	☐	Not applicable since there are no indigenous communities in the intervention areas.
	7. Labour and Working Conditions	X	Occupational risks associated with the harvesting and processing of *Thalassia testudinum*
	8. Pollution Prevention and Resource Efficiency	X	Inadequate disposal of non-hazardous solid waste generated as a by-product of processing *Thalassia testudinum*. Accidental release of hazardous substances (ethanol).

Final Sign Off

Final Screening at the design-stage is not complete until the following signatures are included

Signature	***Date***	***Description***
QA Assessor Gricel Acosta Oficial de Programa DocuSigned by: 6CC618DD08A14AE...	03-abr.-2023	UNDP staff member responsible for the project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver Ivan Zverzhanovski Rep. Res. Adjunto DocuSigned by: 52007F7A8820418...	03-Apr-2023	UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair Edith Felipe Coord. Unidad Programa DocuSigned by: CF25FB04B369410...	03-Apr-2023	UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

DS

Yamilka Caraballo, Analista de Programa
03-Apr-2023

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks	
INSTRUCTIONS: The risk screening checklist will assist in answering Questions 2-6 of the Screening Template. Answers to the checklist questions help to (1) identify potential risks, (2) determine the overall risk categorization of the project, and (3) determine required level of assessment and management measures. Refer to the SES toolkit for further guidance on addressing screening questions.	
Overarching Principle: Leave No One Behind **Human Rights**	**Answer (Yes/No)**
P.1 Have local communities or individuals raised human rights concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	*No*
P.2 Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	*Yes*
P.3 Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?	*No*
Would the project potentially involve or lead to:	
P.4 adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
P.5 inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? [15]	No
P.6 restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	No
P.7 exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Gender Equality and Women's Empowerment (Gender Equality and Women's Empowerment)	
P.8 Have women's groups/leaders raised gender equality concerns regarding the project, (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
Would the project potentially involve or lead to:	
P.9 adverse impacts on gender equality and/or the situation of women and girls?	*No*

[15] Prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender and transsexual people.

P.10	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	*Yes*
P.11	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being*	No
P.12	exacerbation of risks of gender-based violence? *For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc*.	No
Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below		
Accountability		
Would the project potentially involve or lead to:		
P.13	exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them? (exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?)	Yes
P.14	grievances or objections from potentially affected stakeholders?	
P.15	risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	
Project-Level Standards		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
Would the project potentially involve or lead to:		
1.1	adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	Yes
1.2	activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	Yes
1.3	changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	Yes

1.4	risks to endangered species (e.g. reduction, encroachment on habitat)?	Yes
1.5	exacerbation of illegal wildlife trade?	No
1.6	introduction of invasive alien species?	No
1.7	adverse impacts on soils?	No
1.8	harvesting of natural forests, plantation development, or reforestation?	No
1.9	significant agricultural production?	No
1.10	animal husbandry or harvesting of fish populations or other aquatic species?	Yes
1.11	significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.12	handling or utilization of genetically modified organisms/living modified organisms?[16]	No
1.13	utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)[17]	Yes
1.14	adverse transboundary or global environmental concerns?	No
Standard 2: Climate Change and Disaster Risks		
Would the project potentially involve or lead to:		
2.1	areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunami or volcanic eruptions?	Yes
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change or disasters? *For example, through increased precipitation, drought, temperature, salinity, extreme events, earthquakes*	Yes
2.3	increases in vulnerability to climate change impacts or disaster risks now or in the future (also known as maladaptive or negative coping practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	Yes
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	No
Standard 3: Community Health, Safety and Security		
Would the project potentially involve or lead to:		

[16] See the Convention on Biological Diversity and its Cartagena Protocol on Biosafety.
[17] See the Convention on Biological Diversity and its Nagoya Protocol on access and benefit sharing from use of genetic resources.

3.1	construction and/or infrastructure development (e.g. roads, buildings, dams)? (Note: the GEF does not finance projects that would involve the construction or rehabilitation of large or complex dams)	No
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	Yes
3.3	harm or losses due to failure of structural elements of the project (e.g. collapse of buildings or infrastructure)?	No
3.4	risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	Yes
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	Yes
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g. food, surface water purification, natural buffers from flooding)?	No
3.7	influx of project workers to project areas?	No
3.8	engagement of security personnel to protect facilities and property or to support project activities?	No
Standard 4: Cultural Heritage		
Would the project potentially involve or lead to:		
4.1	activities adjacent to or within a Cultural Heritage site?	No
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	No
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.4	alterations to landscapes and natural features with cultural significance?	No
4.5	utilization of tangible and/or intangible forms (e.g. practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
Would the project potentially involve or lead to:		
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	No
5.2	economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	Yes

5.3	risk of forced evictions?[18]	
5.4	impacts on or changes to land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples (Standard 6: Indigenous Peoples)		
Would the project potentially involve or lead to:		
6.1	areas where indigenous peoples are present (including project area of influence)?	No
6.2	activities located on lands and territories claimed by indigenous peoples?	No
6.3	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? *If the answer to screening question 6.3 is "yes", then the potential risk impacts are considered significant and the project would be categorized as either Substantial Risk or High Risk*	No
6.4	the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? *Consider, and where appropriate ensure, consistency with the answers under Standard 5 above*	No
6.7	adverse impacts on the development priorities of indigenous peoples as defined by them?	No
6.8	risks to the physical and cultural survival of indigenous peoples?	No
6.9	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices? *Consider, and where appropriate ensure, consistency with the answers under Standard 4 above.*	No
Standard 7: Labour and Working Conditions		
Would the project potentially involve or lead to: (note: applies to project and contractor workers)		
7.1	working conditions that do not meet national labour laws and international commitments?	No
7.2	working conditions that may deny freedom of association and collective bargaining?	No

[18] Forced eviction is defined here as the permanent or temporary removal against their will of individuals, families or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection. Forced evictions constitute gross violations of a range of internationally recognized human rights.

7.3	use of child labour?	No
7.4	use of forced labour?	No
7.5	discriminatory working conditions and/or lack of equal opportunity?	No
7.6	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	Yes
Standard 8: Pollution Prevention and Resource Efficiency		
Would the project potentially involve or lead to:		
8.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	Yes
8.2	the generation of waste (both hazardous and non-hazardous)?	Yes
8.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	Yes
8.4	the use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention*	Yes
8.5	the application of pesticides that may have a negative effect on the environment or human health?	No
8.6	significant consumption of raw materials, energy, and/or water?	Yes

Annex 6: UNDP Risk Register

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
1	**Delays in Project implementation start.** Signing the National Terms of Reference is a prerequisite for signing the Project Document (ProDoc) between the Government of Cuba and the UNDP.	Organizational	Causes for the delay in Project implementation. L = 2 I = 4 Moderate risk	The National Terms of Reference have been discussed with Project key stakeholders during the drafting phase of the ProDoc. The Terms of Reference are expected to be signed well in advance, so as to ensure the signing of the ProDoc once it has been approved by GEF.	PMU [19] / ICIMAR/AMA
2	**Delay in Project implementation due to delays in the procurement processes (import processes).** Due to insufficient supply in the domestic market and the Cuban financial context, the execution of any international project requires a procurement process for importing goods, equipment and technologies according to the technical specifications defined. This implies the possibility of delays in Project deadlines since the import process affects the financial execution of the Project, as well as the implementation of the pilot interventions.	Organizational	Limits the procurement of equipment and disposable material required for non-clinical research related to the pharmaceutical product to be obtained. It would cause delays in the schedule of nonclinical tests, which would in turn imply delays in submitting the documents for product approval, which represents the main component of product, representing the main outcome of component 2 of the Project. L = 4 I = 5 High risk	During the project formulation phase a Procurement Plan was defined for each of the project execution years (See Annex XX). National regulations on additional requirements of the import process were also defined. Timely Identification of bottlenecks associated with import processes. Closely monitor the importation process, jointly with MINCEX, AMA, ICIMAR and the importing company. Opportunities arising from the emerging domestic non-state market have been identified in order to procure certain goods required by the Project such as cages for laboratory animals, lighting systems for vivarium, and equipment for evaluating animal behavior.	PMU / ICIMAR/AMA
3	**Institutional changes at national and local levels.** Institutional changes at national and local levels in the context of the process of updating the	Regulatory	It would imply the need to adjust the roles and functions of key stakeholders involved in the Project, in case there is	Systematic monitoring of institutional status and timely adjustment in Project coordination and implementation roles.	PMU / ICIMAR/AMA

[19] Project Management Unit

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
	economic and social model in Cuba generate changes in Project key stakeholders and their respective responsibilities.		any change in their subordination and field of competence. Likewise, it could imply the need to include new stakeholders in the implementation of the Project. P = 3 I = 3 Moderate risk		
4	**Delays in outsourcing national services for construction repairs in ICIMAR facilities, to be carried out with domestic cofinancing.** Construction repairs required to refurbish ICIMAR facilities in order to build the required capacities for obtaining the product, must be approved under the investment plan, which can be a long and complicated process. Besides, once the relevant approvals have been obtained, shortage of building resources may delay or even prevent the construction work foreseen or affect its quality. Shortage of resources is due to the economic situation of our country, plus the fact that priority is given to persons who have lost their homes due to natural disasters as well as works that carry a big economic impact, such as hotel and industrial infrastructures.	Organizational	Failure to carry out the refurbishment of ICIMAR facilities will affect the implementation of tests necessary for the 100% information required to submit the "Request for authorization of clinical trials" for the new pharmaceutical product. P = 4 I = 3 Moderate risk	A recruitment plan has been developed and approved with the relevant financial support commitment, feasibility study and consultation with the construction companies, as well as for the procurement of construction materials on time.	PMU / ICIMAR/AMA
5	**Limited availability of committed domestic cofinancing or material resources in the domestic market.** **Lack of adequate public financial allocations for the procurement of the proposed activities in the project.**	Financial/ Organizational	Failure to carry out the tests/studies on laboratory animals and the refurbishment required in ICIMAR facilities, as well as delays in the studies on the	A plan has been developed and approved for the design and approval of a study protocol, which includes a contract for the procurement of animals with the supplying center, in order to reduce the risk of non-availability of such animals.	PMU / ICIMAR/AMA

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
	The Project has domestic committed cofinancing. However, the epidemiological or climate emergencies (such as pandemics or tropical hurricanes) could limit the availability of these funds due to the need to allocate available resources to address said emergencies. In addition, given the economic situation of the country, there could be insufficient availability of material resources in the country (laboratory animals, fuel, construction materials) that may limit the implementation of activities under the Project, as is the case of the tests foreseen in it (laboratory research), the study of the Thalassia Testudinum in its natural habitat and the refurbishment of ICIMAR's laboratory.		Thalassia Testudinum species, would affect the development of the tests required for the 100% information necessary for the "Request for authorization of clinical trials" for the new pharmaceutical product. P = 3 I = 3 Moderate risk	A recruitment plan has been developed and approved with the relevant financial support commitment, feasibility study and consultation with the construction companies, as well as for the procurement of construction materials on time. In case limited availability of fuel will not enable the Project to support transportation for the activities related to the study of the Thalassia in its natural habitat, the problem will be addressed with the resources of their own by key stakeholders.	
6	**Low connectivity to access ABS information mechanisms.** Though in recent years, connectivity in our country has experienced a significant improvement, connection speed is still not sufficient to easily access big international databases. This is mainly due to lack of state-of-the-art technology and the restrictions imposed by the US Government regarding access to servers based in its country. Our country is currently involved in developing an IT policy to which this Project will contribute since building up the technological infrastructure of entities involved, in particular the AN, and easier access to the ABSCH databases through a national portal, are among the objectives of the Project. Hence, the probability	Operational	Any connectivity problem will have an impact on the results of all Project components, since they all depend on access to information available in databases in international websites P = 3 I = 2 Low risk	A connectivity plan has been designed as scheduled. Communication capacity through mobile phones and Internet (mobile data) of key stakeholders will be supported with Project funds. This is particularly important for a working scenario under the tele-computer modality.	PMU / ICIMAR/AMA
7	**Failure to obtain authorization to collect species in the areas proposed for the implementation of the Project.**	Organizational	The existing environmental legislation in our country states that intervention in any natural area must be	Permits and licenses required for the collection of biological material have been requested as scheduled.	PMU / ICIMAR/AMA

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	The Environmental Regulatory Authority is also part of the Project and is highly involved in the Project decision-making process. Besides, there is wide experience in the process for obtaining this kind of prior authorization for the collection of species in one of the areas. Most importantly, however, is the fact that the Project foresees the sustainable and environmentally safe use of the species, thus there is little probability of the authorization being denied.		submitted to an evaluation and approval process by the environmental regulatory authority, specifically regarding the collection of species from biodiversity. In the worst case scenario, i.e. if collection of the species in the intervention areas under the Project is denied, Project outcomes related to the product to be obtained will be at risk. P = 1 I = 3 Low risk		
8	**Lack of perception about the opportunities provided by the Project could imply the involvement of local key stakeholders.** Raising awareness about the objective, scope and benefits of the Project is essential to involve local stakeholders, as well as for appropriate understanding of the opportunities provided by this initiative for sustainable use of the species and for generating new jobs at the local level. This is essential for fishing communities with a sense of ownership regarding local biodiversity, mainly fishermen and other persons whose livelihood is directly linked to the use of biodiversity and may think that the Project will hinder their access to these resources if they are not properly informed about the objectives and scope of the Project.	Strategic (public opinion and media)	The involvement of the local community is essential to achieve the objectives of the Project. The community is taken into consideration not only as the beneficiary of the Project outcomes but also as the main actors in harnessing the *Thalassia Testudinum* to obtain a pharmaceutical product. P = 1 I = 3 Low risk	Designing communication products to socialize the objectives, scope and outcomes of the Project, where appropriate, at the community level and through the media. Follow-up of commitments made during the prior consultation process with the communities Introduction of Project objectives in community Councils and the development and implementation of involvement strategies to increase the community's understanding of their role and the potential benefits of the provided by the Project.	PMU / ICIMAR/AMA

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
9	**Climate change impact causing modifications in the expected production pattern of secondary metabolites, higher degree of organic pollutants in the environment, and impact of hurricanes and other natural hazards.** The probability of this hazard depends to a great extent on the duration of the Project. Being a 4-year Project, the direct impact of climate change due to modification of environmental parameters such as salinity, temperature, and other, should not be significant. Also, climate change could affect the bioactives metabolites in this species. Though the probability of the impact of a high intensity hurricane in 4 years is high, the fact that the Project has three intervention areas consequently reduces the probability of running out of raw material for the product. In addition, the fact that the use of this marine resource is sustainable makes populations more resilient to the impact of these natural hazards.	Environmental	As a marine organism, there are many environmental parameters that can affect the production of these metabolites, which are essential for the development of the product. Storms and hurricanes could also affect salt meadows, which will in turn affect the production of biomass and metabolites. P = 3 I = 3 Moderate risk	Hazard, vulnerability and risk protocols regarding the extinction of this species in the marine ecosystem due to climate change impacts in Cuba have been designed and are in place. Output 3.1.3 includes an activity on assessing the variability of bioactive metabolites during project implementation which will provide information on the potential impacts of climate change and anthropogenic factors.	PMU/ICIMAR/AMA
10	**Participation in project activities could pose a potential risk of exposure to COVID-19.** This is considered a low risk due to strong national policies to protect worker health and safety and a national strategy to guide the reopening of the tourism sector post-pandemic. Cuba is preparing to gradually restart its tourist services, for which it has designed and implements rigorous sanitary and hygienic protocols. This allows the gradual recovery of the tourism sector, contributing to the economic recovery of the country, without compromising national health security. The design of the project interventions will take into account the specific measures necessary to mitigate any	Health	P = 3 I = 3 Moderate risk	In accordance with current health restrictions associated with the COVID-19 pandemic, project implementation will employ videoconferencing equipment for virtual meetings and workshops, when necessary; adjust the workplan so that some activities in the field or related to consultations take place later, as necessary; and/or provide personal protective equipment (PPE) to prevent exposure among project stakeholders and participants. During the PPG, Budget will be included for IT support and PPE.	PMU/ICIMAR/AMA

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	potential risk of exposure during implementation.				
11	**The results of the research-development phase do not demonstrate the anticancer properties of the Thalassia testudinum.** Thalassia testudinum's anticancer properties has been demostrate based on 65% of the scientific-technical studies developed. However, a risk that the remaining 35% of the scientific-technical studies suggest the opposite is identified**.**	Strategic	P = 3 I = 3 Moderate risk	If the Project cannot demonstrate the hypothesis that the product obtained from T. Testudinum can be used as an antitumor/anticancer drug, the project will adjust it engagement protocol. This adjustment will be done considering other potential alternatives to use this bioproduct (pharmaceutical, cosmetic and agriculture). The project does not include the commercialization process, its scope is limited to support the activities leading to the presentation of the request for the Clinical Trial authorization.	PMU/ICIMAR/AMA
12	There is a risk that insufficient/ineffective engagement and consultation with certain stakeholders will limit their participation in the project activities and/or in decisions that might affect them. Project outputs 1.1.1, 1.1.2, 1.1.3, and 1.1.4 will establish the regulatory framework, strengthened capacity and tools needed for the application of an ABS mechanism to the harvesting and exploitation of *T. testudinum*. Insufficient/ineffective consultation and engagement with local communities and other stakeholders could lead to their interests/rights not being fully represented in the project and/or these stakeholders not achieving their full potential benefits. This risk relates to the application of Prior Informed Consent (PIC) under the Nagoya Protocol.	Social	I = 3 L= 2 Moderate risk	**Stakeholder engagement** was conducted as part of the project formulation (Stakeholder Engagement Plan SEP – Annex 9 of ProDoc). Going forward, stakeholder engagement will need to be conducted according to the *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization* to ensure no stakeholder group is excluded from the ABS mechanism. The ESMF (Annex 10 of PRODOC) includes a set of guidelines for stakeholder engagement during implementation. There are no records of traditional use of this marine species in Cuba, whose ownership belongs to the state. Considering natural resources belong to the state, as per national regulations, once the National Environmental Authority gives the authorization to access genetic resources its means that Prior Informed Consent (PIC) has been approved. However, there is no experience with the Mutually Agreed Terms (MAT) application in the national context. The project will develop a methodological proposal to define monetary and non-monetary benefits resulting from the *T. testudinum* supply chain, in the Cuban	PMU/ICIMAR/AMA

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				context, which will be a reference to define a model clause on access and benefit-sharing (ABS) and agree benefit-sharing, as well. (ProDoc, Outputs 1.1.1 and 3.2.3). The ESMF (Annex 10 of ProDoc) includes the basic principles of MAT and monetary and non-monetary benefits, as established in the Nagoya Protocol.	
13	**Women's limited participation and benefit sharing** due to prevailing cultural and social norms that prevent women from fully participating in the project. Despite of the significant role of women in social and economic development in Cuba, some prevailing gender stereotypes in the targeted communities and in the Cuban society at large may hinder women's participation in the project's activities: form harvesting to processing of *T. testudinum*. For instance, some prejudices persist that limit the participation of women in activities involving physical effort (e.g., harvesting of marine species, execution of some industrial processes, etc.).	Social	I = 3 L= 3 Moderate risk	Gender-responsive ABS schemes are essential to enable effective participation of both women and men in the design, negotiation, distribution and use of benefits. The **Gender Analysis and Action Plan** (GAAP) – Annex 11 of the ProDoc – includes a number of actions to encourage women's participation: mainstreaming gender considerations, training and awareness actions and working conditions.	PMU/ICIMAR/AMA
14	**Damage to *Thalassia testudinum* habitat and associated ecosystem services** provided by marine seagrasses meadows. Inappropriate harvest practices could lead to damage of the seagrass meadow ecosystem and the provision of ecosystem services, including its capacity to regulate wave impacts in case of extreme meteorological events or coastal floods due to the sea level rise, as well as its role as	Environmental	I = 4 L= 2 Moderate risk	A better understanding of the environment of *T. testudinum* is required to identify risks to biodiversity and ecosystem services. The ESMF (Annex 10 of PRODOC) includes '**Biodiversity Risks Assessment**' guidelines and the outline of a Biodiversity Action Plan.	PMU/ICIMAR/AMA

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	refuge of marine species of environmental and/or commercial interest.				
15	**Potential adverse impacts to environmentally sensitive areas.** The harvesting of *Thalassia Testudinum* for testing its potential medical benefits will take place in the Rincón de Guanabo Protected Area. This area is classified under the management category "Protected Natural Landscape". Although harvesting will not take place in the core conservation areas of this protected area, without sustainable practices, the seagrass can be affected, and consequently, reduce the flow of ecosystem services.	Environmental	I = 4 L= 2 Moderate risk	The ESMF includes the outlines of a **Biodiversity Action Plan** (to mitigate potential biodiversity risks). This tool will be developed and updated throughout the Project to avoid any impacts to the protected landscape of Rincon de Guanabo. In addition, the project will ensure full compliance with the provision on environmental quality and sustainability contained in the Decree-Law 201 (National System of Protected Areas).	PMU/ICIMAR/AMA
16	**Induced overexploitation** of *Thalassia testudinum.* Although there are no records of a traditional use of *Thalassia Testudinum* in Cuba, there is a potential risk for the expansion of the use of the species by other local communities, once they become familiar with the pharmaceutical product. This awareness could lead to the spontaneous and inappropriate search, harvesting and consumption of the species by part of the population and harm the composition and health of marine seagrasses meadows.	Environmental	I = 4 L=2 Moderate risk	Component 4 of the Project involves raising awareness of stakeholders and users of genetic resources to promote a change in behavior, highlight responsible harvesting and treatment procedures and practices. As part of the **Stakeholder Engagement Plan** - SEP (Annex 9), promote communication and awareness with local communities and more broadly at the national level with communication products and campaigns to raise awareness on ABS practices and benefits.	PMU/ICIMAR/AMA
17	**Climate risks** impacting the production and harvesting of *Thalassia testudinum.* The coastal infrastructure (ports, docks, etc.) in the intervention areas and the	Environmental	I = 4 L= 2	Because the pilot nature of the Project (with a 4-year duration), long-term changes in climate variables are not likely to become apparent during the lifespan of the Project. However, prior to the selection of the	PMU/ICIMAR/AMA

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	marine seagrasses meadows themselves could be affected by tropical cyclones, hurricanes and other extreme events (severe winds, storm surges). These events could impact the production and harvesting of *T. testudinum*.		Moderate risk	intervention areas, a **Climate Risk Assessment** will be conducted according to the guidelines includes in the ESMF (Annex 10 of PRODOC). This assessment will allow the Project to select areas of marine seagrasses production where the probability to be damaged by extreme events is lower. Institutions/stakeholders engaged in the Project will include in the Civil Defense System Action Plan in order to coordinate any actions require to prevent and manage climate risks.	
18	**Occupational risks** associated to the harvesting and processing of *Thalassia testudinum* including laboratorytasks. A number of occupational risks have been identified in some of the steps involved in the harvesting and processing of *T. testudinum*: divers involved in harvesting (output 3.1.3), use of cutting tools in the mill facility, and exposure to hazardous chemicals at the laboratoryfacilities.	Environmental	I = 4 L= 2 Moderate risk	The Project will develop **Labor Management Procedures** (outline included in the ESMF – Annex 10 of PRODOC) including an **Occupational Health and Safety Plan** with provisions for the prevention and management of these risks. This plan also includes the training of workers and personnel involved in the harvesting and processing of *T. testudinum*. To manage any potential occupational risk, the project will also upgrade ICIMAR Research Unit facilities, including occupational hazard control mechanisms.	PMU/ICIMAR/AMA
19	**Inadequate disposal of non-hazardous solid waste** generated as a by-product of processing *Thalassia Testudinum.* The Project will generate non-hazardous waste as part of the processing of seagrass (Component 2). If this waste is not disposed adequately, there could be pollution risks.	Environmental	I = 4 L= 2 Moderate risk	The Project will develop a **Pollution Prevention and Waste Management Plan** (outline included in the ESMF – Annex 10 of PRODOC) to ensure adequate disposal of waste. This plan will be part of the **Standardized Working Procedure** for the processing of *T. testudinum*. The Waste Management Plan is part of ICIMAR's risk prevention plan developed considering the evaluation and characterization of *Thalassia Testudinum* waste. One of the waste management options to be explored is the use of dried solid waste in controlled-released manures and fertilizers for agriculture.	PMU/ICIMAR/AMA

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
20	**Accidental release** of hazardous effluents (ethanol). As part of the extraction process (Component 2) of the pharmaceutical formula a flammable chemical reagent (graded ethanol 50%) will be used. If turned into waste, it would be considered a "hazardous waste" and, accordingly, it will require specific management measures in accordance with the national legislation.	Environmental	I = 4 L= 2 Moderate risk	The Project will need to develop a Pollution Prevention and Waste Management Plan (outline included in the ESMF – Annex 10 of PRODOC) to ensure adequate provisions are implemented to avoid the release of ethanol. This plan will be part of the **Standardized Working Procedure** for the processing of *T. testudinum*. This procedure will be refined and validated throughout the implementation of the Project.	PMU/ICIMAR/AMA
21	**Energy use** and **water consumption.** The *Thalassia testudinum* washing process during the harvest requires water and energy for the grinding process. If not implemented well or appropriately, the project could overuse those resources Given the pilot nature of the activity, it will not imply the consumption of considerable quantities of water and energy.	Environmental	I = 2 L= 2 Low	Measures aren't needed in this case because the current risk is low. As part of the Project implementation, water and energy consumption, per kilo of collected material, will be calculated. This action is key to systematize information to define appropriate levels of water and energy consumption for this activity.	PMU/ICIMAR/AMA
22	**Exposure to Covid-19.** International consultants will not travel to Cuba during the first year of implementation. The project does not involve work in indoor crowded places. The risk of exposure to Covid-19 infection is therefore considered low.	Environmental	I = 2 L= 2 Low	Measures aren't needed in this case because the risk is low. However, this risk category will be updated according to the national regulations from the Health Authority to combat Covid-19.	PMU/ICIMAR/AMA
23	**Impacts on marine-based livelihoods.** Harvesting of *T. testudinum* may conflict with other uses of these marine areas in the target coastal areas, particularly shellfish harvesting and tourism. If new regulations	Social	I = 3 L= 2 Moderate risk	More information is needed in order to identify the current uses of the target marine areas and the socio-economic structure of the coastal communities. A **Livelihoods Risk Assessment** will be conducted at the intervention areas. Based on the results of this assessment, a **Livelihoods Action Plan** might be required	PMU/ICIMAR/AMA

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
	and procedures (outputs 1.1.1, 1.1.2, 1.1.3, and 1.1.4) restrict access to intervention areas, there might be an impact on the livelihoods (economic displacement) of individuals (mainly to self-employed workers) engaged in marine-based activities. Restrictions of access are expected to be temporary (only for the duration of harvesting; output 3.1.3).			for SES compliance. The ESMF (Annex 10 of ProDoc) includes the outlines for both Livelihoods Risk Assessment and Livelihoods Action Plan.	
24	**Limited capacity of the duty-bearers to meet their obligations in the Project.** The national stakeholders involved in the project (BioCubaFarma, ICIMAR, CIM-UH, University of Havana) are established institutions with relevant experience for the project's objectives. However, the strengthening of capacities foreseen by the project (specialized laboratory equipment, training of personnel in the application of laboratory practices and training of the local peoples on environmentally sustainable production practices) is decisive to ensure the achievement of the project's objectives regarding the sustainable development of the pharmaceutical product. Also, it is critical to strengthen capacity at the community level to ensure the appropriation of environmentally sustainable production practices.	Social	I = 4 L= 2 Moderate risk	The ProDoc includes activities and budget to support: - Strengthening research capacities, through the acquisition of laboratory equipment and training of personnel in the application of laboratory practices. The increased capacity will enable the completion the relevant data on the properties of the *Thalassia testudinum*. This data is required to submit, to the Cuban Regulatory Agency, the application for authorization to begin the clinical research phase. - Strengthening the capacity of local people to harvest *Thalassia testudinum*. To this end, the project will support the acquisition of diving equipment (necessary for monitoring seagrasses and for its harvesting) and training of local personnel, to ensure the use of sustainable practices.	PMU/ICIMAR/AMA

Annex 7: Overview of Project Staff and Technical Consultancies

Consultant	Time Input	Tasks, Inputs and Outputs
For Project Management[20]		
Local / National contracting		
None (The national staff/experts involved in the project implementation, both in the technical and operational activities, at the national and local levels, will be financed by the national co-financing).		
International / Regional and global contracting		
International consultant to carry out the Mid-term Review. *Rate: $11,000 / 4 weeks*	20 days/in Year 2	The Mid-term Review Expert will assess progress towards the achievement of the project objectives and outcomes as specified in the Project Document, and assess early signs of project success or failure with the goal of identifying the necessary changes to be made in order to set the project on-track to achieve its intended results. The MTR will also review the project's strategy, and the risks to sustainability, among other elements.
International consultant to carry out the Terminal Evaluation. *Rate: $11,000 / 4 weeks*	20 days/in Year 4	The Terminal Evaluation expert will undertake an evaluation of the project to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.
For Technical Assistance		
Component 2: "Strengthening institutional and individual capacities for the research and development of a pharmaceutical product from a marine angiosperm"[21]		
International / Regional and global contracting		
Course-Workshop on the introduction of new technologies in the non-clinical development of products from natural sources under a controlled environment. *Rate: $9,800 / 2 weeks*	9 days/in Year 2	*This consultancy will allow the assimilation by* the national specialists involved in the project *of the current knowledge, technologies and procedures in the field of molecular pharmacology of cancer as tools for the development of new, safer and more effective drugs. In addition, the consultant will support the review and confirmation of the operational and methodological procedure of the laboratory practices, including advise the procurement process of equipment and supplies, for the strengthening of institutional capacities in ICIMAR.*

[20] See budget note number 26.
[21] See budget note number 8.

Consultant	Time Input	Tasks, Inputs and Outputs
		It will contribute to the achievement of the following project products: • *Strengthening the technical capacity of the human resources involved.* • *Characterization of the antitumor and antimetastatic effects of the product in combination with drugs of conventional use in anticancer therapy.* • *A cell culture laboratory has been set up at the ICIMAR Biological Unit for the development of alternative studies to the use of experimental animals and studies required to demonstrate the efficacy of the product under development as an anticarcinogenic candidate.*
Course on "in vivo" and "in vitro" models of cancer. *Rate: $9,800 / 2 weeks*	9 days/in Year 2	*This consultancy will support the training of the national specialists involved in the project.* *It will contribute to the achievement of the following project products:* • *Strengthened and trained human resources on laboratory practices.* • *The anti-tumor and anti-metastatic effects of the product have been studied in combination with drugs of conventional use in cancer therapy.* • *Strengthening and establishment of new technologies and Standardized Work Procedures for conducting studies in compliance with quality regulations in the Bioterium, Pharmacology Laboratory and the new Cell Culture Laboratory which will be set up within the framework of the development of the project in the ICIMAR Biological Unit. This will enable the development of the in vitro studies required to demonstrate the efficacy of the product under development as an anticancer candidate.*
Course-Workshop: Chemo-sensitization strategies in the research-development of antitumor therapies. Role of natural products. *Rate: $7,600 / 1 week*	7 days/in Year 2	*This consultancy will support the training of the national specialists involved in the project.* *It will contribute to the achievement of the following project products:* • *Strengthening the technical capacity of the human resources involved.* • *Characterization of the antitumor and antimetastatic effects of the product in combination with drugs of conventional use in anticancer therapy.*
Course on experimental models for the study of the risk and safety of drugs of natural origin. *Rate: $9,200 / 2 weeks*	9 days/in Year 2	*This consultancy will support the training of the national specialists involved in the project in the development of natural products under the international regulations approved for the development of medicines for human use, contributing to increase their preparation and scientific level.* *It will contribute to the achievement of the following project products:*

Consultant	Time Input	Tasks, Inputs and Outputs
		• *Strengthening the technical capacity of the human resources involved.* • *Characterization of the antitumor and antimetastatic effects of the product in combination with drugs of conventional use in anticancer therapy.* • *Strengthening and establishment of new technologies and Standardized Work Procedures for conducting studies in compliance with quality regulations in the Bioterium, Pharmacology Laboratory and the new Cell Culture Laboratory which will be set up within the framework of the development of the project in the ICIMAR Biological Unit. This will enable the development of the in vitro studies required to demonstrate the efficacy of the product under development as an anticancer candidate.*
Component 3: "Conservation of marine biodiversity and habitat of angiosperm used for pharmaceutical product development"[22]		
International / Regional and global contracting		
Course-Workshop on Seagrass Feasibility Studies (I). *Rate: $9,700 / 2 weeks*	8 days/in Year 2	*This consultancy will support the assimilation by the national specialists involved in the project of new knowledge and procedures in the field of marine ecology, in particular on the methods for feasibility studies of the sea grasses to achieve a method of harvesting the leaves of T. testudinum, without affecting the seagrass habitat and its ecosystem services.* *It will contribute to the achievement of the following project products:* • *Strengthen the capacity of human resources in the institutions involved in the management, monitoring and conservation of marine species.* • *The areas and foliar biomass of T. testudinum that can be used by the community to obtain the extract are known.* • *Develop operational procedures aimed at the sustainable harvest (sustainable use) of the leaf biomass of T. testudinum by the community.*
Course-Workshop on Seagrass Feasibility Studies (II). *Rate: $10,700 / 2 weeks*	9 days/in Year 3	*This consultancy will support the training of the national specialists involved in the project on the analysis of the data obtained in the seagrass feasibility studies to achieve a method of harvesting the leaves of Thalassia testudinum, without affecting the seagrass habitat and its ecosystem services.* *It will contribute to the achievement of the following project products:*

[22] See budget note number 17.

Consultant	Time Input	Tasks, Inputs and Outputs
		• *Strengthen the capacity of human resources in the institutions involved in the management, monitoring and conservation of marine species.* • *The areas and foliar biomass of T. testudinum that can be used by the community to obtain the extract are known.* • *Develop operational procedures aimed at the sustainable harvest (sustainable use) of the leaf biomass of T. testudinum by the community.*
Course on molecular bases for the study of the genetic variability of marine angiosperms and its relationship with the bioactivity and resilience of the angiosperm under stress. *Rate: $9,800 / 2 weeks*	9 days/in Year 2	*This consultancy will support the training of the national specialists involved in the project.* *It will contribute to the achievement of the following project products:* • *Strengthen the capacity of human resources in the institutions involved in the management, monitoring and conservation of marine species.* • *The areas and foliar biomass of T. testudinum that can be used by the community to obtain the extract are known.* • *Develop operational procedures aimed at the sustainable harvest (sustainable use) of the leaf biomass of T. testudinum by the community.*

Annex 8: Stakeholder Engagement Plan

This plan seeks to strengthen the capacities of UNDP partners for managing social and environmental risks and guarantee the full and effective participation of all interested parties. As stated in the UNDP Social and Environmental Detection Guidance Plan (SES), "effective stakeholder participation is essential to achieve the Sustainable Development Goals (SDGs). This project will contribute to improving the well-being and quality of life of the Cuban population. In the current context, Cuba needs to have a regulatory framework that enables research, negotiation and investment regarding its genetic resources, and allows regulation regarding the use and protection of these resources under conditions of equity between the parties, promote and guarantee the conservation and sustainable use of biological diversity. It is necessary to approve and implement a legal framework that allows the protection of natural resources and the knowledge derived from them, which is directly related to at the same time to its economic value, as a source of bioproducts with application in priority industries for sustainable development in the short, medium and long term (food, agricultural and biopharmaceutical).

Regulations and Requirements

Public consultation and disclosure requirements related to the social and environmental evaluation process are a key element of public policies in the country. Thus, given the policy context and regulatory framework in which the project will be applied in Cuba, there is no risk that the project's interventions exclude stakeholders, which could lead to them being potentially affected or excluded from participating fully in the decisions derived from the execution of the project, from the national level to the level of Popular Councils.

Summary of previous participation activities of local actors

The following Table details the activities that have been carried out to date to involve stakeholders in the Project, including representatives of the Rincón de Guanabo Natural Landscape Protected Area:

Activity	Date	Localización	Topics	Developed actions	Verification source
Workshop to define baseline	December, 9th-13th, 2019	UNDP Cuba	Review of the elements to be updated based on the Consultant's proposal (first draft)	ICIMAR elaborates the second drafts and socializes information	Section II of the ProDoc document sent to the Consultant
Workshop to confirm baseline and Teory of Change	14-16 January, 14th – 16t, th	ICIMAR	Validate the Consultant's proposal, develop the Theory of Change process and create a Problem Tree	Theory of change and defined Problem Tree	Section II of the ProDoc document sent to the Consultant
Workshop on Gender Assesssment	February, 12th, 2020	PNUD Cuba	Develop the Gender Analysis linked to the Project	ICIMAR prepares Gender Plan	Gender Plan sent to the Consultant
Workshop on Results Framework (first draft)	January, 19th-20th, 2020	ICIMAR	Validate the Results Matrix prepared by the Consultant	ICIMAR prepares the proposal and socializes information first draft)	Results Matrix sent to the Consultant
Workshop on Results Framework (validation - confirmation)	February, 10th-12th, 2020	ICIMAR	Validate the Results Famework prepared by the Consultant	Results Framework, national cofinanciers (source of co-financing and its amounts)	Results Framework sent to the Consultant and co-financing table presented to UNDP
Workshop on Risk analysis, including social and environmental	December, 9th-13th, 2019 2019	PNUD Cuba	Prepare the Risk Analysis (first draft)	Prepare the Risk AnalysisRisk Analysis ORSA prepares the SESP (first draft)	Risk Analysis and SESP sent to the Consultant

Activity	Date	Localización	Topics	Developed actions	Verification source
risks (first draft)					
Workshop for the elaboration of the Participation Plan of Local Actors	December, 9th-13th, 2019	PNUD	Prepare the Participation Plan for Local Actors	ICIMAR forms the Plan and socializes information	Local Actors Participation Plan sent to the Consultant
Workshop on Risk analysis, including social and environmental risks (validation)[23]	February, 10th, 2020	ORSA	Validate the Risk Analysis and Participation Plan for Local Actors	ORSA elaborates the proposal and socializes information	Risk Analysis, SESP and Participation Plan sent to the Consultant

Before concluding project formulation, a validation workshop was conducted with stakeholders that, in addition to confirming the project plan, also includes a review and agreement on the stakeholder engagement plan.

At the beginning of project implementation, an initial workshop will be held to help project partners understand the approved project design, understand their role and responsibilities in the project, including the participation of all stakeholders during project implementation and monitoring.

Local Actors

Identification of Local Actors. Stakeholders are beneficiaries and public institutions with an interest in the project or the ability to influence project results. The following table describes all the stakeholders involved in the preparation of the project and who will participate either directly or indirectly in its execution:

Stakeholders	Role in Project Implementation
Ministry for Science, Technology and Environment (CITMA)	CITMA is a key Project partner together with ICIMAR and its Environmental Agency (AMA). In addition, its Environment Directorate (DMA) in coordination with ORSA, also CITMA, are important actors in Component 1 of the project.
Department of Environment (DMA), CITMA	The DMA is in charge of the preparation and proposal of the environmental policy and the control of its compliance in the country. Since the very creation of the Agency, this direction has directed the development of the environmental legislation program and the dissemination of existing regulations. It is currently in charge of the coordination and control of the State Plan for Confronting Climate Change at the national level. In this project, it will participate in Component 1 aimed at strengthening the legal framework and the necessary capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in the country.
Environment Directorate (AMA), CITMA	AMA is the Project Implementing Partner. It coordinates the State Plan for Confronting Climate Change at the sectoral level. It will contribute with knowledge and tools to consolidate the integrating vision of the project from its three components. It will facilitate the coordination of actions with other OSD, OACE and binding national and international projects. As part of its functions, it would also supervise the effective progress of the National Project Implementation Office. It also participates through its key research institutions, such as ICIMAR, BIOECO and CIMAC.

[23] In addition, documents on Social and Environmental Risk have been reviewed by and international consultant during 2021 and 2022.

Stakeholders	Role in Project Implementation
Institute of Marine Sciences (ICIMAR), AMA, CITMA	ICIMAR's mission is to carry out research aimed at developing the scientific bases for the knowledge, management, conservation, sustainable use and rehabilitation of natural resources and processes in the marine and coastal zone, as well as the commercialization of oceanographic, biological and of biomedical and industrial applications for the solution to social, environmental and economic problems. Its vision and the lines of research and services are firmly aligned with the main interventions proposed in the Project. It will act as the main executing entity and national coordinator of the different components and activities proposed in technical and administrative terms. In addition, it will be in charge of directing and conducting the non-clinical research-development process of the extract obtained from T. testudinum within an ethical framework that guarantees the fair and equitable distribution of the benefits derived from the results of the project (Component 2) , which will be carried out with the participation of IMRE-UH, Oriente Pharmaceutical Laboratories and CECMED.
Office for Environmental Regulation and Environmental Safety (ORSA), CITMA	ORSA is the entity that has the mission of regulating and controlling in the national territory compliance with the regulations in force in matters of environmental protection. Ensure compliance with the international commitments contracted by the Cuban State in the field of environmental protection assigned to it. In the project, ORSA is responsible for directing and conducting the strengthening of the legal framework and capacities for the implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing (Component 1), which it will develop in coordination with the DMA of CITMA and ICIMAR.
Department of International Relations (DRI), CITMA	DRI has a relevant role in the international negotiations that take place under the umbrella of the Convention on Biological Diversity, including the Nagoya Protocol.
Marine Research Center of the University of Havana (CIM-UH), MES	The CIM-UH's mission is to contribute to the conservation of the environment and sustainable development, through the integration of scientific research and continuous training of professionals in Marine Biology, Aquaculture and Coastal Management, with a multidisciplinary approach and excellence. In the project, it participates in Component 3, designed for the development of studies on the conservation of marine biodiversity and the habitat of the angiosperm T. testudinum used for the development of the pharmaceutical product. To this end, ICIMAR, the Rincón de Guanabo Natural Landscape, CIMAC and BIOECO will collaborate in the development of the component.
Institute of Materials Science and Technology, University of Havana (IMRE-UH), MES	The IMRE is a higher education institution that will participate in Component 2, in the development and conduction of non-clinical studies aimed at obtaining the bioproduct from T. Testudinum, this entity will also participate In the design and execution of different studies framed in said component, it will be responsible for carrying out the bio-computer studies and the bio-statistical analyzes that support the efficacy and safety of the bio-product.
Higher Business Development Organization (OSDE) BioCubaFarma	OSDE will be involved in the technological development of the pharmaceutical formulation that will be obtained in Component 2, through its entity Laboratorios Farmacéuticos “Oriente”.
Pharmaceutical Laboratories "Oriente”, OSDE BioCubaFarma	Laboratorios "Oriente" is a productive entity that belongs to the BioCubaFarma Superior Business Development Organization that will participate in Component 2, it is in charge of obtaining the pharmaceutical formulation of the bioproduct.
Rincón de Guanabo” Natural Landscape, Havana del Este Municipality Museum, Ministry for Culture	This is one of the intervention and data collection sites of component 3. It will participate in the studies of foliar biomass of T. testudinum, its incidence in the bioactivity and resilience to the pruning of leaves and the studies directed to the development of the most suitable method for the use of angiosperm.
Center for Biodiversity and Eastern Ecosystems (BIOECO), AMA, CITMA	BIOECO is an institution of the AMA of CITMA. In the project, it will participate in studies of foliar biomass and the effects of genetic variability of *T. testudinum* meadows, its impact on bioactivity and resilience to leaf pruning and studies aimed at developing the most appropriate method for the use of angiosperm.

Stakeholders	Role in Project Implementation
Camagüey Environmental Research Center, CIMAC, AMA, CITMA	In the project, it will participate in studies of foliar biomass and the effects of genetic variability of T. testudinum meadows, its impact on bioactivity and resilience to leaf pruning and studies aimed at developing the most appropriate method for the use of angiosperm.
Diving Club (TCP - Self-employed modality) Guanabo Community	Direct beneficiaries
Community Initiative and Exchange Center (CIERIC), ONG	Accompanies the project stakeholders, gives visibility and support to the project results.
Centro Félix Varela (CFV), ONG	Accompanies the project stakeholders, gives visibility and support to the project results.
Cuban Society of Pharmacology (SCF), ONG	Accompanies the project stakeholders, gives visibility and support to the project results.
Local Government of the municipality of Habana del Este	The local community Rincón de Guanabo will be involved in the project through the participation of the residents who carry out the Self-Employment activity called "Collector seller of natural resources", in accordance with the provisions of Decree-Law No. 356/2018 "On the Exercise of Self-Employment". During the process of formulation and implementation of the Project, the Local Government of the Popular Power of Guanabo, of the municipality of Habana del Este, will be involved, including the Popular Councils that are framed in this area of intervention.
Territorial Delegations of CITMA	CITMA is the key body for the execution of the activities related to the project, fundamentally those related to those that will be developed in the intervention areas and with the implementation of the Nagoya Protocol, through the coordination of control, supervision and the analysis of the results.
General Customs of the Republic	This is a control body that guarantees the security and protection of society and the national economy at the border, as well as tax collection and foreign trade statistics. It is a key actor for the purposes of Project Result 1 in relation to the definition of checkpoints for the control of the transboundary movement of genetic resources.

The identification of the interested parties has been carried out as part of the formulation of this project. All of them are active in defining the full scope of the project and are fully engaged during its implementation. Taking into account that this is the first time that this issue has been addressed in the country from an international cooperation initiative, during the implementation of the project, particular attention will be paid to the possibility of incorporating other key actors that have not been identified during the formulation.

Stakeholder analysis. The following analysis shows the process of assessing the key interests of project stakeholders and the ways in which these stakeholders can influence project results. This exercise is essential because it creates belonging, strengthens the integrity and design of the project, and helps to create fundamental relationships that can contribute to constructive problem solving if difficulties or challenging problems arise during the implementation process.

The following Table provides an overview of the interests of the parties involved, the importance and influence of the project results or operations that were validated in the preparation stage through a participatory exercise.

Stakeholders identifications and theirs priorities *(interests)*				
Target Group	**Relationship with project's interests *(objectives)***	**Effect of the project on stakeholder's interest (+ 0 –)**	**Importance (relevance) (scale 1 a 5, 5 = high)**	**Influence (scale 1 a 5, 5 = más high)**
CITMA	Technical standards approbal,	+	5	5

	increased influence in support of achieving project objectives			
AMA	Greater influence in support of the achievement of project objectives, technical support	+	5	5
ICIMAR	Technical support	+	5	5
ORSA	Technical standards approbal	+	5	5
CIM-UH	Technical support	+	5	5
IMRE-UH	Technical support	+	5	5
BIOECO	Technical support	+	5	5
CIMAC	Technical support	+	5	5
OSDE BioCubaFarma	Technical support	+	5	5
Diving Club (TCP - Self-employed modality) Guanabo Community	Equity, greater influence in the appropriation of productive practices of sustainable use of Thalassia testudinum, Women's rights, equity	+	5	5
Territorial Delegations of CITMA	Opportunity to influence in support of the achievement of project objectives	+	4	4
Non-governmental organization (NGO): Community Initiative and Exchange Center (CIERIC), entro Félix Varela (CFV) and Cuban Society of Pharmacology (SCF).	Opportunity to support awareness of production practices for the sustainable use of Thalassia	+	3	4
Local Government of the municipality of Habana del Este	Greater citizen participation	+	4	4
General Customs of the Republic	Greater influence in strengthening the regulatory framework on ABS	+	5	4

Stakeholder engagement approach. The target users of this Plan are the stakeholders and UNDP staff involved in the development and implementation of the results derived from the project. Its compliance will be evaluated during the planned midterm and final workshops of the project, in addition, as part of the periodic reports planned annually in the project. It is important to point out that no indigenous people will be affected at all by the results of this project taking into account that the existence of indigenous peoples is not verified in the Republic of Cuba.

Complaint Mechanisms. The process through which the people affected or potentially affected by the project can express their complaints for their consideration and solution is contemplated and will be directly oriented through the mechanisms established by CITMA, the MES and the local governments of the People's Power. This will include consultations through the existing mass organizations in the institutions participating in the project, the feedback mechanisms existing in the directorates of these institutions, public consultations in the Popular Councils of the areas involved in the Project and through the Municipal Assemblies of People's Power in the municipalities involved in the project intervention.

Monitoring and Reporting. The project will establish a variety of communication channels to meet possible concerns from the parties involved, especially from the residents of the local communities where the project will operate and react to them as explained in the previous Section.

The ESMF shows the principles associated with the identified risks and the risk categorization of the SES analysis classified as relevant together with the management / mitigation measures.

Annex 9: Environmental Social Management Framework (ESMF)

(Included as a separate annex)

Annex 10: Gender Analysis and Action Plan

Table of Contents

I. Introduction

The promotion of gender equality and the empowerment of women are intrinsic to UNDP's human rights-based approach and all projects and programmes need to be informed by gender analysis in their design and implementation.

Due to several root causes (e.g., social and cultural norms, generalized stereotypes, etc.), women and girls tend not to fully benefit from ABS partnerships. Gender-responsive ABS schemes are essential to enable effective participation of both women and men in the design, negotiation, distribution and use of benefits (UNDP 2019).

This GAAP discusses gender issues as they relate to the implementation of the project 'Developing the potential of Thalassia testudinum in the health sector in Cuba in accordance with the Nagoya Protocol and Biodiversity Conservation'. Specifically, this project contributes to the development of different production chains based on the sustainable use of this marine angiosperm, a genetic resource that can be used to treat cancer, a disease that constitutes one of the main causes of morbidity and mortality in the country. The project will strengthen the development process of this product with anticancer properties, consolidate the capacity of local communities in the management of the species, its harvest and collection, and propose new regulations in the country regarding the use and benefits of genetic resources from marine biodiversity.

The project aims at contributing to SDG 5: "Achieve gender equality and empower all women and girls" / (goal 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life).

II. Existing Gender Inequality in Cuba

According to data obtained from the last Cuba Territorial Panorama 2016, the Cuban population was 11,239,300 people. Of these, 50.2% were women and 49.8% were men. Cuba is the oldest country in the Latin American region with 18.3% of its population aged 60 and over. In this demographic panorama, women survive the longest with a longer life expectancy than men . Although, the Cuban population is an aged population, it is active in the labor market, since Law No. 105 on Social Security extended retirement to 60 years in the case of women and 65 in the case of men, giving the possibility of returning to be hired after retirement.

Cuban women face large workloads, including managing the demands of domestic work that in many home environments is considered "women's work". In 1958, only 20% of the female population between the ages of 25 and 44 was employed, mainly in domestic work. While, in 1983, 59% of the total female population of the same age was employed, including occupation in jobs that require high professional and technical specialization. However, Cuban families continue to reproduce today in raising children the sexual division of labor within the home that they learned from previous generations. Thus, the so-called "double shift" and other gender gaps that threaten economic

autonomy, professional development, self-care and free time of women are reproduced. They are also the ones who mostly assume the tasks related to the care and attention of the elderly, chronically ill and dependent people, a function that in recent years with population aging has increasingly occupied the time of the female population.

Some statistics cited by comrade Raúl Castro Ruz during the Conference of global leaders on gender equality and the empowerment of women, held in New York in 2015, attest to the presence of women in the economic and social development of the country : “They represent 48% of the total number of persons employed in the civil state sector and 46% of senior management positions; 78.5% of health personnel, 48% of scientific researchers and 66.8% of the force with the highest technical and professional qualification. They study, on average, 10.2 degrees and are 65.2% of the graduates in higher education. 48.86% of our Parliament is made up of women, which places us as the second country in the American hemisphere, second only to Bolivia, and fourth in the world.” Likewise, during her speech the president acknowledged that "we still have a lot to do."

The political participation of women in Cuba has also been one of the purposes of the revolutionary government since 1959, with an impact of their presence in public life and the promotion of their contribution to the economic-social development of the country. In the last six decades, the number of Cuban women in the current composition of the National Assembly of People's Power (2018) has grown significantly with more than 53%. These statistics place Cuba as the country that holds the second place in the world with the highest proportion of women executives or with legislative work. Consequently, the participation of women in decision-making has increased in Cuba, not only because of their presence in Parliament, but also because their presence in the Council of State and in the Council has also grown in recent years. of Ministers. Although they do not represent the majority in ministerial sectors, multiple ministries are chaired by women, in particular 8 of them (Minister of Food Industry, Minister of Internal Trade, Minister of Education, Minister of Finance and Price, Minister of Labor and Security Social, Minister of Science, Technology and Environment, Minister-President of the Central Bank of Cuba, the Comptroller General of the Republic). In addition, more and more women hold positions and hold leadership positions in Institutes, educational institutions at all levels of education and culture, service centers and key institutions for the economy and of social relevance in Cuba. However, their high educational level sometimes does not correspond to the jobs they occupy, which shows that some forms of gender inequality still persist in Cuban society.

In particular, the Science, Technology and Innovation (STI) system that represents the set of social actors that operate within the national scope in this sector and the dynamic articulation of their competences, is favored by the presence of women. The Cuban CTI infrastructure includes 222 entities (including 136 research centers) and 52 universities, to which 30 CTI entities and 94 municipal headquarters are attached. In the country there are 89 214 people dedicated to system activities and 53 percent are women. The personnel dedicated to research-development and innovation in the STI entities add up to 57,198 workers, 54 percent are women. 77 percent of the staff have higher or technical degrees, and 6,954 researchers are categorized, 47 percent, women.

III. Legal and Administrative Framework Protecting Women and Protecting Gender Equality

In Cuba, women have been active subjects and main beneficiaries of all development achieved. As part of the actions for social justice that the country has developed, the battle for the full exercise of equal rights and opportunities for women and men in all areas and at all levels of society has been ongoing. This is supported by the adoption of legislative, judicial and administrative measures that have guaranteed the fulfillment of the fundamental Human Rights of all the people and, in particular, of women, thereby creating the necessary bases for the implementation of legislation that proclaims and underpins these principles; Among which occupies a priority place to fight to eradicate any type of inequality or discrimination, including that caused by gender.

The Constitution of the Republic of Cuba (2019) provides that the State recognizes and guarantees to the person the enjoyment and the inalienable, imprescriptible, indivisible, universal and interdependent exercise of human rights, in accordance with the principles of progressiveness, equality and not discrimination (Article 41), being its respect and guarantee of obligatory compliance for all. The principle of equality and non-discrimination on the grounds of sex, gender, sexual orientation and gender identity is explicitly recognized (Articles 42 and 48). All people are equal before the law, receive the same protection and treatment from the authorities and enjoy the same rights, freedoms and opportunities, without any discrimination based on sex, gender, sexual orientation, gender identity, age, ethnic origin, skin color, religious belief, disability, national or territorial origin, or any other personal condition or circumstance that implies a distinction that is harmful to human dignity. Similarly, they have the right to enjoy the same public spaces and service establishments. They also receive equal pay for equal work, without discrimination.

Violation of the principle of equality is proscribed and is sanctioned by law. All these principles are in accordance with the National Follow-up Action Plan of the IV UN Conference on Women (PAN) that defines the “gender policy”.

Cuba was the first country in the world to sign the Convention on the Elimination of All Forms of Discrimination Against Women, on March 7, 1980, and the second to ratify it, on July 17 of that year. The Cuban State has periodically submitted its reports to the Committee for the Elimination of Discrimination against Women in fulfillment of its international commitments and obligations and in correspondence with the political will of the Cuban Party and Government to guarantee the full exercise of the equality of the women in all areas of society.

Cuba's employment policy since 1959 has been based on the principles of guaranteed employment, which translates into full employment for all citizens, the principle of equality and non-discrimination based on skin color, sex or religious beliefs and the principle of harmony between communal and individual interests. The legal framework related to employment is based on the Constitution of the Republic. However, while the gender equality policy is strong, in practice, Cuban women continue to be burdened with domestic and childcare responsibilities, and this, together with insufficient technical training, reduces women's chances of gaining access. to more complex leadership and salary positions in some sectors of society.

The Federation of Cuban Women (FMC), an organization created by the will of the women themselves and officially established on August 23, 1960, has played a fundamental role in all this process. The FMC has been and is a decisive factor in the initiative, proposal and materialization of the laws for the benefit of women and the family throughout these years, particularly with concrete actions such as the case of the creation of the Children's Circles in all the municipalities of the country from the first years of the Revolution. These entities dedicated to the care and education of children during preschool age, which have allowed mothers to enter their jobs at this complex stage of their lives. With its proposals and initiatives, the FMC has decisively influenced Cuban legislation to contemplate a different perspective of man-woman relations at the level of the entire society. Thus, the FMC has been the main contributor in Cuba for the design and implementation of gender actions. Since its inception, its actions have been aimed at reducing social inequalities and establishing mechanisms for the incorporation of women into the economic and social development of the country. .

The country has also dedicated special care in legislation for working women. Both the Central de Trabajadores de Cuba (CTC) and the FMC have been promoters and decisive factors in the study and proposal of laws that benefit and support both working women and the family. The current Labor Code (Law No. 116, June 17, 2014) reaffirms the protection of working women in its Chapter IV and its inclusion in the growing non-state sector of the economy, with special regulations for the work of the woman. This is the case of Chapter VIII of the Code, which regulates jobs and their working conditions and establishes special protections when required, such as the stage of motherhood. This legal body manifests and recognizes the importance of the participation of women in work, their high social function of being a mother and the specific protection for adolescents and pregnant women.

The rights to Protection, Safety and Hygiene at Work were established by Law No.13 of February 27, 1977, its regulation and attached legislation that establishes the duty of administrations to create adequate working conditions that benefit the participation of the woman in the labor process. Currently, these conditions are regulated by Law No. 116 Labor Code. These principles do not exclude the right of women to prove their aptitude and ability to fill complex jobs. For a time there was an excess of "protectionism", excluding it from work options that it could perform, which prevented the full exercise of its rights. Later, concepts and regulations were applied, modified on the basis that only maternity protection constitutes a work limit and not the sexist tendency to prohibit her from carrying out certain tasks.

Currently, these concepts are perfected and enriched through research, experiences and practical results of female labor activity, in order to prevent false protectionism from masking discriminatory behaviors. In the laws enacted for Social Security and Assistance, the principles that also protect women have been established. The current Social Security Law No. 105 establishes guidelines to ensure the maternity of the working woman and the protection of the widow in the event of the death of her spouse.

In maternity laws, the different stages of pregnancy and the protection that women and their daughter or son should have in the occupational medical order have been valued. The Maternity Law for Working Women and all the articles that both the Labor Code and other labor laws have in relation to the subject, are an example of the positive discrimination measures that have been necessary to establish and that have served throughout the years to protect the rights that women must be guaranteed in the labor order.

Other actors in the country involved in the development and implementation of actions aimed at reducing social inequalities and establishing mechanisms for the incorporation of women into the country's economic and social development are the Commission for the Care of Children, Youth and Equal Rights of Women of the National Assembly of People's Power, the National Center for Sexual Education and its provincial and municipal commissions, the Prevention and Social Care Commissions at all levels. In addition, the universities have played a fundamental role in the development of gender studies, the Chairs of Women and the Family have been created and at the University of Havana a Master's Degree in Gender Studies is developed.

Finally, the actions of both Cuban and international NGOs stand out, which, by including programs based on the gender approach within their cooperation projects in various areas of action (health, agriculture, local human development, natural disasters, environment and sustainable development, among others) have, in general, enabled high levels of participation in decision-making, in training and the creation of new jobs or in accompanying national authorities in fulfilling the purposes and commitments of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and the Beijing Platform for Action.

IV. Gender issues in intervention communities

In general, women consititute a slight majority in the country, specifically in the municipalities where the intervention sites are located at the project community level, as is the case of the Habana del Este municipality, where the National Park is located. Protected Area "Rincón de Guanabo" with 51.8% of women. In addition, in the municipality of Nuevitas, Camagüey, which includes the Playa de Santa Lucia, with 49.7% and Santiago de Cuba, with a female presence of 51.4%, sites where the characterization and conservation studies of the species under study (Thalassia testudinum) will be carried out.

The decisive participation of women within the country's STI system is reflected in this project, in the institutions and actors involved in it. To cite an example, in the Institute of Marine Sciences (ICIMAR), which is the guiding center of the project's activities, the presence of women predominates, representing 52% of all workers. Among the women, 31 are researchers and 32 are specialists or technicians directly linked to Science and Technology activities. Of the total number of researchers with scientific degrees from ICIMAR, 55% of doctors are women and 60% of science teachers. The institute has a total of 6 women administrative cadres, 66% and 10 reserves of which 70% are women. Likewise, in the conception, coordination and execution of project tasks from ICIMAR, the presence of women predominates. This panorama is representative of the human potential of the rest of the centers and of the intervention sites involved.

In February 2020, a gender analysis was carried out within the framework of the preparatory phase for the formulation of the Prodoc, which made it possible to identify which could be the main actions to be carried out within the framework of the project to cross-examine the gender issue. As a result of the analysis carried out, it was possible to identify that it is important in the framework of the project to address the issue, which is conceived to be carried out through transformative actions in the productive activities of harvesting and processing of Thalassia testudinum in the community of Rincón de Guanabo.

The participation of women in the tasks of the project that will be carried out in the intervention sites and in the participating scientific institutions during its development will be encouraged. In addition. Their working conditions will be improved, and the professional and technical capacities of women will be increased, so that they will also be indirect beneficiaries of the development of the project. Likewise, priority will be given to the participation of women in activities related to research, training, updating and support for the implementation of the political and regulatory framework of the Nagoya protocol. The gender gaps identified were the following:

1. The greater female workload, associated with the still widespread consideration in society that women are the most responsible for the education and care of the offspring, is also a gap in the scientific sector and identified within the framework of the project.

2. Some prejudices persist that limit the participation of women in tasks of greater physical effort (harvesting of marine species, execution of some industrial processes, etc.).

V. Recommendations

Table 1 shows the key recommendations to encourage women's participation in all stages of the project.

Mainstream gender considerations into the ABS chain

In order to mainstream gender considerations and maximize women's participation and benefits from this project, the "MIND your step!" (UNEP 2019) tool will be applied in the first year of implementation to identify entrypoints to design gender smart ABS value chains.

This tool is an analytical framework applied in four steps:

Step 1: Map-out the differentiated roles assigned to both women and men along an ABS value chain

There are usually four stages involved in an ABS chain:

- Stage 1- PIC & MAT (Prior Informed Consent and Mutually Agreed Terms)
- Stage 2- Input provision, production & harvesting
- Stage 3 Processing, transportation & export
- Stage 4- R&D and commercialization

Identify the set of actors and activities that would bring turtle grass to final use, and where at each stage value is added to the product. Are women likely to be involved in all these stages? What are the main challenges or barriers to women participation? This information can be collected through targeted surveys or key informant interviews in the coastal communities where the project will be implemented.

Step 2: Identify in your context the social and cultural determinants that limit women's effective participation to ABS value chains

There are some prejudices regarding women's participation in activities involving physical effort, such as potentially harvesting turtle grass. At this step, the social and cultural barriers to women's participation in the project should be explored in detail.

Step 3: Notice the interlinkages between gender and the overall performance of the ABS value chain

This step looks for the potential benefits at each stage of the value chain. if we close the gender gap, how women can contribute to increasing performance?

Step 4: Design gender-smart ABS value chains

Mainstreaming gender starts with identifying entry-points to provide women with appropriate avenues to enable their effective participation and empower them to go downstream the value chain to fully benefit from the value-creation and market potential. Based on role played by women along the value chain and the understanding of the social and cultural determinants shaping these gender dynamics, define a set of actions to improve gender inclusion in the ABS chain.

The outputs of this analysis will inform the training and working conditions actions in the Gender Action Plan.

Training and awareness

Various training courses and workshops will be developed throughout the project to raise awareness on gender issues as they relate to the application of the Nagoya protocol and to encourage women's participation in the various steps of the Thalassia testudinum harvesting and processing chain.

To maximize the impact of these training initiatives, gender-sensitive training principles should be considered in the design of courses and workshops. Gender sensitive training (ICIMOD 2009, UNWTO 2021) entails an understanding of existing gender relations and the obstacles to women's active participation in the training process. It addresses these obstacles by proposing content that addresses both women's and men's interests and needs, and by adopting training and facilitation methods that enhance women's participation.

Guidelines for gender sensitive training

It is not necessary to explicitly include in the training program contents about (or directly mention) gender sensitivity. Gender sensitive training aims to ensure the equitable participation of women and men during the training process by:

- Ensure there is a sufficient number of women among participants by setting up participation goals (e.g., 50% women among participants);
- Adopt attitudes and behaviors that value differential experiences and perspectives;
- Ensure listening and respect for each other's experiences and views. This is especially important in the tourism sector because women and men play different roles and normally engage in different tasks;
- Facilitate good communication practices in which misunderstandings, insults, blaming, and demands are recognized and resolved, and participants are brought back to facts, views, values, and requests;
- Know and raise some gender dimensions related to the subject, and recognize and integrate gender aspects put forward by the participants;
- Adapt the training or workshop format and schedule to optimize the meaningful participation of women;
- Ensure that both women and men express their true opinion, and listen to and respect each other's experiences and views;
- Create an atmosphere in which women and men feel respected, safe, and encouraged to share their views, and to interact with women and men with diverging views;
- Defining an appropriate schedule is crucial for the active participation of the participants, especially for women.

Working conditions

Based on the diagnostic of the "MIND your step!" analysis, specific actions to improve working conditions of women throughout the value chain of T. testudinum. These actions will likely involve the strengthening of professional and technical capacities of women and developing occupational hazard plans that take into account risks that could particularly affect women.

Table 1: Gender Action Plan

Activity related to reducing gender gaps	Indicator	Target	Baseline	Budget[24]	Timeline	Responsible
Conduct gender mainstreaming analysis: "MIND your step!" tool (applies to the three components)	No. of analytical frameworks completed	- 1 complete analytical framework for each intervention area - Set of recommendations for gender mainstreaming	Existing gender dynamics	AWP	Year 1	PMU, jointly with ICIMAR, CIM and Administration of the Rincón de Guanabo Protected Area
Develop actions to promote awareness and training on issues of gender inequality to project participants and other related actors from the science and technology sector (responds to the three components)	No. of training spaces (courses, workshops) on issues of gender inequalities. No. of surveys to participants and actors involved in the development of the project.	- Gender workshop within the framework of the implementation of the Nagoya Protocol in Cuba and on the participation of women for the development and registration of new bioproducts with biomedical applications. - Training conferences focused on gender equity, aimed at universities close to the project. -Training workshop focused on gender equality, aimed at key actors related to human resources, researchers, project managers, teachers and tutors.	Gender-sensitive Sector Strategies and Guidelines	AWP	Year 1 to the end of the project.	PMU, jointly with ORSA, , CIM and Administration of the Rincón de Guanabo Protected Area
Promote participation of women in *Thalassia Testudinum* harvesting and processing in coastal communities	Proportion of women participating in the harvesting activity in the local communities where the development of the project is framed.	- Number of women engaged in productive activities of collecting and processing *Thalassia Testudinum* in the community of Rincón de Guanabo. - Improved working conditions and professional and technical capacities of women.	Lower number of women who collect the marine species and have access to expeditions	AWP	Year 1 to the end of the project	PMU, jointly with ICIMAR, CIM and Administration of the Rincón de Guanabo Protected Area

[24] GEF financing for these activities will be included in the Annual Work Plan (AWP) as described in Budget Notes 17 and 25.

Activity related to reducing gender gaps	Indicator	Target	Baseline	Budget[24]	Timeline	Responsible
Ensure that the training activities planned within the project favor female participation	% of women participating in training activities.	Training activities planned at times that are favorable for the participation of women.	General hours of activities.	AWP	Year 1 to the end of the project	PMU, jointly with ORSA, , CIM and Administration of the Rincón de Guanabo Protected Area
Attention to occupational risk and improvement of working conditions focused on gender.	Number of occupational hazards identified focused on gender to reduce their impacts (biological, chemical, physical).	Work procedures implemented in the laboratory that favor compliance with the standards of protection and hygiene in the face of biological risk of women, particularly in reproductive ages.	Labor Protection and Hygiene Standards.	AWP	Year 1 to the end of the project	PMU, jointly with ICIMAR, CIM and Administration of the Rincón de Guanabo Protected Area

References

ICIMOD. 2009. *Guidelines for Gender Sensitive Training*. Prepared by Min Bdr Gurung, Diederik Prakke and Brigitte Leduc http://www.icimod.org/resources/446

UNDP. 2019. MIND Your Step! A gender tool for ABS value chains https://www.undp.org/sites/g/files/zskgke326/files/publications/undp-gef-bpps-Mainstreaming_Gender_into_ABS_Value_Chains_Toolkit.pdf

World Tourism Organization (2021), *UNWTO Inclusive Recovery Guide – Sociocultural Impacts of Covid-19, Issue 3: Women in tourism*, UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284422616

Annex 11: Procurement Plan

ITEM	ITEM DESCRIPTION	ESTIMATED COST (US $)	PROCUREMENT METHOD	ESTIMATED START DATE	PROJECTED CONTRACTING DATE
Goods and Non-Consulting Services					
Supplies	Office materials (paper, pens, folders, toners, etc.)	6,500	International procurement – Competitive Sourcing	QTR1-YR1	QTR3-YR1
Equimpent and Furniture	Office and laboratory furniture (Chairs, tables, cabinets) to strengthen the capacities for the laboratory good practices in the process of certification by the national regulatory entity, ICIMAR	23,500	International procurement – Competitive Sourcing	QTR1-YR1	QTR3-YR1
Communic & Audio Visual Equipment	Cell phones (10), 10x600	6,000	Local procurement	QTR1-YR1	QTR1-YR1
Communic & Audio Visual Equipment	Mobile data (16pax x 12 months x $12)	2,304	Local procurement	QTR1-YR1	QTR1-YR1
Information Technology Equipment	Computers (10), 10 x $1,100 = $11,000 Laptops (12), 12 x $1,100 = $13,200 Printers (8), 8 x $250 = $2,000 Monitor TV (12), 12 x $400 = $4,800 Backups (8), 8 x $100 = $800 Datashow (1) $992 USB flash (75), 75 x $15 = $1,500 1Tb external hard drives (7) 7 x $100 = $700 2Tb external hard drives (7) 7 x $150 = $1,050	36,042	International procurement – Competitive Sourcing	QTR1-YR1	QTR3-YR1
Training, Workshops and Conferences	1 Inception workshop: 30 pax x 2 days x $35 meals = $2,100 Venue = $1,300	3,400	Local procurement – Competitive Sourcing	QTR1-YR1	QTR1-YR1
Training, Workshops and Conferences	1 meeting in central region with authoririte and users (25 pax x 2 days x $30-meals) to	3,700	Local procurement –	QTR1-YR1	QTR1-YR1

	disseminate the legislation and to complete the documents: 10 transfer x $150 = $1,500 10 lodging x $70 x 1 night = $700 25 meals x $30 x 2 days = $1,500		Competitive Sourcing		
Contractual Services-Companies	Design the Web site ABS CH in Cuba	3,000	Local procurement – Competitive Sourcing	QTR3-YR1	QTR3-YR1
Contractual Services-Companies	3 technical meetings with local actors in Rincón de Guanabo: 1 transfer x $100 = $100 10 meals x $30 = $300	1,200	Local procurement – Competitive Sourcing	QTR1-YR1	QTR1-YR1
Contractual Services-Companies	4 monitoring trips and field visits: Transfers x 3 pax x $400 = $1,200 Accommodation and meals: 3pax x 3 nights x $70 = $630	8,000	Local procurement – Competitive Sourcing	QTR1-YR1	QTR1-YR1
Local Consultants	National consultants to elaborate the social and environmental safeguards plans as well as risks management plan associated with the project implementation	4,000	Local procurement – Competitive Sourcing	QTR1-YR1	QTR1-YR1
Direct Project Costs	Execution support services provided by UNDP, as per signed LoA between Government and UNDP-Cuba and as agreed with GEF.	1,500	Direct Payment	QTR4-YR1	QTR4-YR1
TOTAL (US $)		**99,146**			

Annex 12: GEF focal area specific annexes

(METT provided separately)

Annex 13: Additional agreements

STANDARD LETTER OF AGREEMENT
BETWEEN UNDP AND THE GOVERNMENT OF CUBA
FOR THE PROVISION OF SUPPORT SERVICES

Dear First Deputy Minister:

1. Reference is made to consultations between officials of the Ministry of Science, Technology and the Environment (hereinafter referred to as "the Government") and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Implementing partner in the relevant programme support document or project document, as described below.

2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall support the strengthening of the capacity of the Implementing Partner to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.

3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:
   (a) Financial transactions.

4. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP resident representative and the Implementing partner.

5. The relevant provisions of the Standard Basic Assistance Agreement between the Government of Cuba and UNDP, signed in Havana in May 17, 1975 (the "SBAA"), including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme or project through the Implementing partner. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the programme support document or project document.

6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.

7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the programme support document or project document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.

10. If you are in agreement with the provisions set forth above, please sign and return to this office three signed copies of this letter. Upon your signature, this letter shall constitute an agreement between the Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,

DocuSigned by:
52007F7A8820418...

Signed on behalf of UNDP
Ivan Zverzhanovski
Deputy Resident Representative
13-May-2022

MINISTERIO DE CIENCIA TECNOLOGIA Y MEDIO AMBIENTE
DIRECCIÓN DE RELACIONES INTERNACIONALES

For the Government
Ulises Fernández
GEF Political and Operational Focal Point

On behalf of José Fidel Santana Núñez
First Deputy Minister
Ministry of Science, Technology and the Environment
[Date]

Attachment

DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

Reference is made to consultations between the Ministry of Science, Technology and the Environment (CITMA), the institution designated by the Government of Cuba and officials of UNDP with respect to the provision of support services by the UNDP country office for GEF Project: "Developing the potential of *Thalassia testudinum* in the health sector in Cuba in accordance with the Nagoya Protocol and Biodiversity Conservation", Award ID: 118944, Project ID: 115542.

1. In accordance with the provisions of the letter of agreement signed and the *project document referred to above*, the UNDP country office shall provide support services for the *Project* as described below.

2. Support services to be provided:

Support services (insert description)	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount and method of reimbursement of UNDP (where appropriate)
1. Payments, disbursements and other financial transactions -Unit price: $37.50 -Estimated amount of transactions per years: 40 *($37.50 x 40 trans. x 4 years)*	During project implementation	Universal Price List	Direct Project Costs charged to the Project Budget.
		Total: Up to USD 6,000 from GEF grant	

4. Description of functions and responsibilities of the parties involved:

The project will be conducted through the National Implementation Modality of UNDP (NIM). The Environmental Agency (AMA) belonging to Ministry of Science, Technology and the Environment (CITMA) will act as the National Implementing Partner. UNDP will act as the GEF Implementing Agency. Additional information regarding functions and responsibilities of the parties involved is described in the Project Document.

UNDP will provide technical and operational support for the implementation of specific activities when requested by AMA/CITMA. In those cases, UNDP office will ensure that consultant contracts, purchases orders and contracts for company services are in compliance with UNDP standards and procedures. Therefore, these processes will not be subjected to the national implementation audits. Instead, they will be covered by the internal UNDP audits

Annex 14: GEF Core indicators

Core Indicator 2	**Marine protected areas created or under improved management for conservation and sustainable use**						**(Hectares) 118**
				Hectares (2.1+2.2)			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	*TE*
					118		
Indicator 2.2	Marine protected areas under improved management effectiveness						
Name of Protected Area	WDPA ID	IUCN category	Hectares	METT Score			
				Baseline		Achieved	
				PIF stage	Endorsement	MTR	TE
Paisaje Nacional Protegido Rincon de Guanabo		V Protected Landscape/Seascape	*118*		49		
		Sum	*118*				
Core Indicator 4	**Area of landscapes under improved practices (hectares; excluding protected areas)**						***(Hectares) 513***
				Hectares (4.1+4.2+4.3+4.4)			
				Expected		Expected	
				PIF stage	Endorsement	MTR	TE
					513		
Indicator 4.1	Area of landscapes under improved management to benefit biodiversity						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
					513		
Core Indicator 11	**Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment**						***(Number)* 475**
				Number			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
		Female			344		
		Male			*131*		
		Total			*475*		

Annex 15: GEF 7 Taxonomy

Level 1	Level 2	Level 3	Level 4
☒ **Influencing models**			
	☐ **Transform policy and regulatory environments**		
	☒ **Strengthen institutional capacity and decision-making**		
	☐ **Convene multi-stakeholder alliances**		
	☐ **Demonstrate innovative approaches**		
	☐ **Deploy innovative financial instruments**		
☒ **Stakeholders**			
	☐ **Indigenous Peoples**		
	☐ **Private Sector**		
		☐ Capital providers	
		☐ Financial intermediaries and market facilitators	
		☐ Large corporations	
		☐ SMEs	
		☐ Individuals/Entrepreneurs	
		☐ Non-Grant Pilot	
		☐ Project Reflow	
	☒ **Beneficiaries**		
	☒ **Local Communities**		
	☒ **Civil Society**		
		☐ Community Based Organization	
		☐ Non-Governmental Organization	
		☒ Academia	
		☐ Trade Unions and Workers Unions	
	☐ **Type of Engagement**		
		☐ Information Dissemination	
		☐ Partnership	
		☐ Consultation	
		☐ Participation	
	☒ **Communications**		
		☒ Awareness Raising	
		☒ Education	
		☐ Public Campaigns	
		☐ Behavior Change	
☒ **Capacity, Knowledge and Research**			
	☐ **Enabling Activities**		
	☒ **Capacity Development**		
	☒ **Knowledge Generation and Exchange**		
	☐ **Targeted Research**		
	☐ **Learning**		
		☐ Theory of Change	
		☐ Adaptive Management	

Level 1	Level 2	Level 3	Level 4
		☐Indicators to Measure Change	
	☒**Innovation**		
	☒**Knowledge and Learning**		
		☒Knowledge Management	
		☒Innovation	
		☒Capacity Development	
		☒Learning	
	☒**Stakeholder Engagement Plan**		
☒**Gender Equality**			
	☒**Gender Mainstreaming**		
		☒Beneficiaries	
		☐Women groups	
		☒Sex-disaggregated indicators	
		☐Gender-sensitive indicators	
	☒**Gender results areas**		
		☒ Access and control over natural resources	
		☒Participation and leadership	
		☒Access to benefits and services	
		☒Capacity development	
		☒Awareness raising	
		☒Knowledge generation	
☒**Focal Areas/Theme**			
	☐**Integrated Programs**		
		☐ Commodity Supply Chains (Good Growth Partnership)	
			☐ Sustainable Commodities Production
			☐Deforestation-free Sourcing
			☐Financial Screening Tools
			☐High Conservation Value Forests
			☐High Carbon Stocks Forests
			☐Soybean Supply Chain
			☐Oil Palm Supply Chain
			☐Beef Supply Chain
			☐Smallholder Farmers
			☐Adaptive Management
		☐ Food Security in Sub-Sahara Africa	
			☐Resilience (climate and shocks)
			☐Sustainable Production Systems
			☐Agroecosystems
			☐Land and Soil Health
			☐Diversified Farming
			☐ Integrated Land and Water Management
			☐Smallholder Farming
			☐Small and Medium Enterprises

Level 1	Level 2	Level 3	Level 4
			☐ Crop Genetic Diversity
			☐ Food Value Chains
			☐ Gender Dimensions
			☐ Multi-stakeholder Platforms
		☐ Food Systems, Land Use and Restoration	
			☐ Sustainable Food Systems
			☐ Landscape Restoration
			☐ Sustainable Commodity Production
			☐ Comprehensive Land Use Planning
			☐ Integrated Landscapes
			☐ Food Value Chains
			☐ Deforestation-free Sourcing
			☐ Smallholder Farmers
		☐ Sustainable Cities	
			☐ Integrated urban planning
			☐ Urban sustainability framework
			☐ Transport and Mobility
			☐ Buildings
			☐ Municipal waste management
			☐ Green space
			☐ Urban Biodiversity
			☐ Urban Food Systems
			☐ Energy efficiency
			☐ Municipal Financing
			☐ Global Platform for Sustainable Cities
			☐ Urban Resilience
	☒ **Biodiversity**		
		☒ Protected Areas and Landscapes	
			☐ Terrestrial Protected Areas
			☒ Coastal and Marine Protected Areas
			☐ Productive Landscapes
			☐ Productive Seascapes
			☐ Community Based Natural Resource Management
		☐ Mainstreaming	
			☐ Extractive Industries (oil, gas, mining)
			☐ Forestry (Including HCVF and REDD+)
			☐ Tourism
			☐ Agriculture & agrobiodiversity
			☐ Fisheries
			☐ Infrastructure
			☐ Certification (National Standards)
			☐ Certification (International Standards)
		☒ Species	

Level 1	Level 2	Level 3	Level 4
			☐ Illegal Wildlife Trade
			☐ Threatened Species
			☐ Wildlife for Sustainable Development
			☐ Crop Wild Relatives
			☒ Plant Genetic Resources
			☐ Animal Genetic Resources
			☐ Livestock Wild Relatives
			☐ Invasive Alien Species (IAS)
		☒ Biomes	
			☐ Mangroves
			☐ Coral Reefs
			☒ Sea Grasses
			☐ Wetlands
			☐ Rivers
			☐ Lakes
			☐ Tropical Rain Forests
			☐ Tropical Dry Forests
			☐ Temperate Forests
			☐ Grasslands
			☐ Paramo
			☐ Desert
		☐ Financial and Accounting	
			☐ Payment for Ecosystem Services
			☐ Natural Capital Assessment and Accounting
			☐ Conservation Trust Funds
			☐ Conservation Finance
		☒ Supplementary Protocol to the CBD	
			☐ Biosafety
			☒ Access to Genetic Resources Benefit Sharing
	☐ **Forests**		
		☐ Forest and Landscape Restoration	
			☐ REDD/REDD+
		☐ Forest	
			☐ Amazon
			☐ Congo
			☐ Drylands
	☐ **Land Degradation**		
		☐ Sustainable Land Management	
			☐ Restoration and Rehabilitation of Degraded Lands
			☐ Ecosystem Approach
			☐ Integrated and Cross-sectoral approach
			☐ Community-Based NRM
			☐ Sustainable Livelihoods
			☐ Income Generating Activities

Level 1	Level 2	Level 3	Level 4
			☐ Sustainable Agriculture
			☐ Sustainable Pasture Management
			☐ Sustainable Forest/Woodland Management
			☐ Improved Soil and Water Management Techniques
			☐ Sustainable Fire Management
			☐ Drought Mitigation/Early Warning
		☐ Land Degradation Neutrality	
			☐ Land Productivity
			☐ Land Cover and Land cover change
			☐ Carbon stocks above or below ground
		☐ Food Security	
	☐ **International Waters**		
		☐ Ship	
		☐ Coastal	
		☐ Freshwater	
			☐ Aquifer
			☐ River Basin
			☐ Lake Basin
		☐ Learning	
		☐ Fisheries	
		☐ Persistent toxic substances	
		☐ SIDS : Small Island Dev States	
		☐ Targeted Research	
		☐ Pollution	
			☐ Persistent toxic substances
			☐ Plastics
			☐ Nutrient pollution from all sectors except wastewater
			☐ Nutrient pollution from Wastewater
		☐ Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		☐ Strategic Action Plan Implementation	
		☐ Areas Beyond National Jurisdiction	
		☐ Large Marine Ecosystems	
		☐ Private Sector	
		☐ Aquaculture	
		☐ Marine Protected Area	
		☐ Biomes	
			☐ Mangrove
			☐ Coral Reefs
			☐ Seagrasses
			☐ Polar Ecosystems
			☐ Constructed Wetlands
	☐ **Chemicals and Waste**		
		☐ Mercury	

Level 1	Level 2	Level 3	Level 4
		☐Artisanal and Scale Gold Mining	
		☐Coal Fired Power Plants	
		☐Coal Fired Industrial Boilers	
		☐Cement	
		☐Non-Ferrous Metals Production	
		☐Ozone	
		☐Persistent Organic Pollutants	
		☐ Unintentional Persistent Organic Pollutants	
		☐ Sound Management of chemicals and Waste	
		☐Waste Management	
			☐Hazardous Waste Management
			☐Industrial Waste
			☐e-Waste
		☐Emissions	
		☐Disposal	
		☐New Persistent Organic Pollutants	
		☐Polychlorinated Biphenyls	
		☐Plastics	
		☐Eco-Efficiency	
		☐Pesticides	
		☐DDT - Vector Management	
		☐DDT - Other	
		☐Industrial Emissions	
		☐Open Burning	
		☐ Best Available Technology / Best Environmental Practices	
		☐Green Chemistry	
	☐**Climate Change**		
		☐**Climate Change Adaptation**	
			☐Climate Finance
			☐Least Developed Countries
			☐Small Island Developing States
			☐Disaster Risk Management
			☐Sea-level rise
			☐Climate Resilience
			☐Climate information
			☐Ecosystem-based Adaptation
			☐Adaptation Tech Transfer
			☐National Adaptation Programme of Action
			☐National Adaptation Plan
			☐Mainstreaming Adaptation
			☐Private Sector
			☐Innovation
			☐Complementarity
			☐Community-based Adaptation

Level 1	Level 2	Level 3	Level 4
			☐Livelihoods
		☐**Climate Change Mitigation**	
			☐ Agriculture, Forestry, and other Land Use
			☐Energy Efficiency
			☐ Sustainable Urban Systems and Transport
			☐Technology Transfer
			☐Renewable Energy
			☐Financing
			☐Enabling Activities
		☐**Technology Transfer**	
			☐ Poznan Strategic Programme on Technology Transfer
			☐ Climate Technology Centre & Network (CTCN)
			☐Endogenous technology
			☐Technology Needs Assessment
			☐Adaptation Tech Transfer
		☐ **United Nations Framework on Climate Change**	☐Nationally Determined Contribution
	☒ **Rio Markers**		
		☐Paris Agreement	
		☒Sustainable Development Goals	
		☐Climate Change Mitigation 0	
		☒Climate Change Mitigation 1	
		☐Climate Change Mitigation 2	
		☐Climate Change Adaptation 0	
		☒Climate Change Adaptation 1	
		☐Climate Change Adaptation 2	