ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: INCREASING CLIMATE RESILIENCE THROUGH RESTORATION OF DEGRADED LANDSCAPES IN THE ATLANTIC REGION OF CENTRAL AMERICA
Countries: Belize, Guatemala and Honduras
Thematic Focal Area: Disaster risk reduction and early warning systemsDisaster risk reduction and early warning systems
Type of Implementing Entity: Multilateral Development Organization
Implementing Entity: UN Environment
Executing Entities: WRI and CATIE
Amount of Financing Requested: 12.26 Millions (in U.S Dollars Equivalent)

Project Background and Context:

Central America is one of the most vulnerable regions to climate change world-wide. As warming of the atmosphere continues, the impacts of weather extremes in the exposed Atlantic coastal area of Central America pose a major risk for the region. A surge in land-falling hurricanes and an increase in average tropical cyclone wind speeds has been linked to increases in sea-surface temperature. Also, there is a documented shift toward a greater number of Category 4 and 5 hurricanes (Curry et al. 2009). Hurricanes in coastal areas cause heavy rainfall, massive river flooding, soil erosion and mudslides which destroy crops, affect infrastructure, limit potential for the expansion of coastal tourism and disrupt conservation and management of coastal vegetation. These climate extremes negatively affect people's livelihoods, economic activity, and drive-up migration and resettlement. Smallholder farmers and indigenous minorities are most vulnerable to these extremes. A report on the financial consequences of global warming (Vergara et al, 2013), concludes that the anticipated costs of weather extremes are amongst the most onerous in the region. Toba (2009), for example, places the annual costs of intensified hurricane activity in the region by 2050 at approximately $5 billion.

In this context, coastal-land restoration can be a cost effective measure to strengthen resilience to climate impacts protecting natural capital and social welfare. The consensus on this approach is reflected in the region's involvement in Initiative 20x20–an effort to change the dynamics of land degradation in Latin America and the Caribbean. To develop restoration as an adaptation action, there is a need to address: **a.** The lack of a conducive framework that enables adaptation actions on the ground; **b.** the lack of coordination among different local stakeholders; and **c.** information gaps that could lower the cost of restoration through land-restoration to address the impacts of climate change in coastal regions.

Project Objectives:

Building on Initiative 20x20, the project's objective is to strengthen resilience in the coastal Atlantic region of Belize, Honduras and Guatemala to the impacts induced by the intensification of weather extremes induced by climate change. This will be pursued through the promotion of sustainable landscape restoration efforts (restoration of degraded natural forest, reforestation, optimal management of vegetation, sustainable use of mangrove and coastal swamp forests) with an emphasis in poor rural coastal areas in the region. Efforts on coastal restoration align to the Central America Commission on Environment and Development's strategies (CCAD 2014).

Project Components and Financing in Belize, Honduras and Guatemala (5 years):

Components	Expected Outputs	Expected Outcomes	Amount (US$)
1. **Supporting a conducive regulatory**	- Assessments by technical partners and authorities of policy and regulatory measures for sustainable land restoration for adaptation	**At national level** in Belize, Honduras and Guatemala: -Improved use of available **technical, extension and financial services** in support of restoration	800,000

framework and conditions for adaptation implement ation	- Assessments by technical partners and authorities of fiscal and other economic incentives for the adoption of adaptation measures - Promotion by technical partners of coordination of actions between social organizations, communities and private parties to steer the process of restoration as an adaptation measure to extreme weather events in coastal areas of the Atlantic region	projects in coastal areas vulnerable to the intensification of extreme weather events. -Public authorities have increased awareness and act on the need for a coherent set of policies that support adaptation activities in coastal areas.	
2. **Addressing key information gaps**	- Regional information system covering the three participating countries, focused on land-use based management, adaptation-based response systems to the intensification of extreme weather events for adaptive planning purposes (technical authorities and national governments)	**At national level** in Belize, Honduras and Guatemala: -Improved and timely **access to information** reducing the damages caused by extreme weather events. -Local authorities and experts know of climate risks and impacts and inform adaptive land use planning processes and restoration efforts.	650,000
3. **Implement ing restoration measures**	- Design and deployment of specific measures in coastal land ecosystems with significant potential for replication by the private sector. - Produce a **pipeline of adaptation projects based on land restoration** (technical partners, private sector and communities). - Participation of **private sector in financing of restoration as adaptation measures.** - Design of monitoring processes to capture increased resilience of projects and landscapes adopting land-based adaptation measures (technical partners and government authorities).	**At regional level** across Belize, Honduras and Guatemala: -With restoration for adaptation investments in place, sustainable land use measures are recognized to have the potential to reduce vulnerability and improve social welfare through improved resilience, improved conditions for private investment in adaptation and protection of critical habitat for biodiversity conservation. -Local communities benefit from engaging in restoration productive processes. Technical know-how on land-use based adaptation methods flows to communities and enables them to contribute to the restoration process while improving their livelihoods.	8,400,000
4. **Disseminat ion of results**	- Results are disseminated for a wider set of actors in the region through an information campaign and a knowledge management plan (technical partners and authorities).	**At national level** in Belize, Honduras and Guatemala and **regionally**: -Increased awareness of proposed measures for adaptation.	500,000
6. Project/Programme Execution cost			950,000
7. Total Project/Programme Cost			550,000 WRI 400,000 CATIE
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			11,300,000
			960,000
Amount of Financing Requested			12,260,500

PART II: PROJECT / PROGRAMME JUSTIFICATION

Target sites and communities involved in the project. The project has a focus in biomes and rural communities in the Atlantic coast of Belize, Honduras and Guatemala (the coastal area from Izabal lake in Guatemala, Amatique Bay shared by Guatemala, Honduras and Belize to the northern coastal and Cay areas of Belize) or BHG for short.

Adaptation activities. The project proposes enabling activities for adopting land restoration as an adaptation measure through regulatory, information and technical actions leading to investments in improved resilience to intensifying weather extremes. Currently, incoherent or unproductive public policies, limited technical capacities and some sectorial development trends hamper resilience across coastal landscapes. Adding to this, a lack of information on the vulnerability and losses hinders the acknowledgment of scale of losses from extreme weather events, and the adaptive planning that stems from this information's use.

The project seeks to promote restoration methods that include revegetation and restoration of coastal areas, which have been shown to reduce risks of soil erosion, floods, mudslides, contribute to maintain stable surface hydrology and stabilize runoffs associated to heavy rainfall linked to extreme weather events (UNFCC, 2012).

Expected economic, environmental and social benefits Local communities and producers would benefit by improving their land use practices, avoiding further degradation, engaging in projects that increase the source of sustainable livelihoods and by allowing them to become more climate resilient and exploit business opportunities that maintain or improve the functionality of their lands. Promoted restoration of major wildlands, watersheds, areas lived in and governed by Miskito and Garifuna peoples, and the negative effects of climate extremes and land degradation, are all trans-frontier.

A regional approach however, can inform ongoing adaptation processes in the Central American coastal region where results can benefit from cross-dissemination of the sector's activities. Dissemination among countries is also required in the deployment of early-warning systems and management responses for climate extremes. Additionally, the regional approach of this project will permit intensive comparative multi-disciplinary monitoring of restoration in different political contexts.

Nature and scope of likely activities include: a) **Reforestation of deforested coastal areas** using native species with economic timber and non-timber value. Examples of areas where reforestation activities could take place include the Honduras' Mosquitia; b) **Restoration of degraded mangroves**. Mangrove recovery efforts will dampen the impacts of sea surges and shoreline protection against extreme weather events, again justifying the use of resources from the AF. Working to support partnerships between local communities, landholders, local government authorities and civil society, mangrove recovery efforts would be promoted in areas of significant mangrove loss (Placencia Peninsula in Belize, Amatique Bay in Honduras and Guatemala); private sector involvement would add resources to yield financial benefits through eco-tourism initiatives and the set-up of sustainable fisheries; c) **Restoration of Coastal swamp forest**. Coastal swamp forest in Honduras and Guatemala in Amatique Bay as well as in delta of the Patuca River have been heavily degraded. The recovery of coastal swampy forests, remnants of humid tropical forests and flooded savannah would contribute to maintain vegetation, recover natural drainage that would alleviate run offs during extreme weather events and maintain avifauna and flora unique to the area. Sustainability of the efforts could be achieved by promoting ecotourism and harvest of non-timber products with involvement from private sector. Local communities will participate as direct beneficiaries and shareholders as appropriate in these activities.

The regional approach is justified by: a) the Atlantic corridor of BHG experiences similar climate impacts (it constitutes the prime landing area of tropical storms/hurricanes in the Caribbean Sea); b) as indicated before, there is considerable evidence that weather events in the area will intensify in strength and frequency as a result of climate change; c) the coastal area in BHG has a similar biophysical make up, and local populations (amongst the most vulnerable). A regional approach will add in economies of scale and sharing of experiences across BHG. It will provide improved adaptation benefits in the area as a whole and provide co-benefits (e.g. improved habitats for key species, and mitigation co-benefits). It will also reduce the costs associated with the collection and use of information related to climate impacts and the deployment of alternative adaptation measures in an otherwise very similar area spanning the coasts of the three countries. This approach will be ensured through a steering committee (see Part III) and through the involvement of regional institutions such as CCAD (see stakeholder analysis in annex). The committee will review actions of regional nature under the project with the support of WRI (as secretariat to the Initiative 20x20).

Innovation. The use of restoration approaches as adaptation measures in coastal areas is innovative. Linking private impact investment to support restoration as adaptation efforts will be a first in the region. The cross fertilization between private and public inputs in three countries exposed to the same risks is also innovative. The project will initiate a regional communication program and form a regional information center that will collect, analyse and disseminate information generated through the project and other sources. The information will support decision-making and allocation of resources in the participating nations.

Cost effectiveness. The involvement of three nations exposed to the same level of risks and sharing an area of high risks of weather extremes (Amatique Bay, part of Hurricane Alley) improves the cost effectiveness of the solutions. Also, the cultural and social similarities of affected populations in the coastal areas in the three

countries calls for a regional approach. The use of restoration approaches rather than hard infrastructure is expected to yield lower costs and result in longer-term adaptation impacts. Involvement of the private sector will ensure that solutions deployed are cost effective. Dissemination of lessons learned will contribute to drive future costs lower.

Development strategies alignment. The three target countries are part of a regional strategy for the conservation and sustainable use of biodiversity in Mesoamerica as well as a Regional Strategy for Rural Development[1]. These are complemented by a Regional Climate Change Strategy (CCAD 2010a) and a Regional Strategy for the Integrated Management of Water Resources (CCAD 2010b). Also, Central America has also adopted a Regional Strategic Program for the Management of Forest Ecosystems, which calls for sustainable use, conservation and restoration of forest resources (Programa Estratégico Regional para el Manejo de los Ecosistemas Forestales - Perfor (CCAD y CAC, 2014)).

Guatemala The project supports the implementation of the National Forest Landscape Restoration Strategy, the National Strategy on Biological Diversity (Objective 11) and the Action Plan 2012-2022 from the National Council of Protected Areas (CONAP). Additionally, it contributes to the National Strategy for the Reduction of the Deforestation and the goals of the National Development Plan K'atun 2032.

Honduras The project supports the National Strategy for Productive Landscapes; the Country Vision Plan for 2038 (Goal 3.6 on sustainable use of natural resources to reduce environmental vulnerability); the National Plan 2010-2022; the National Plan for a Better Life; the National Law for Climate Change, the National Strategy for Climate Change, and the National Adaptation Plan.

Belize The project is consistent with key national and sectoral policies, strategies and action plans to incorporate climate change to enhance Belize's resilience. Priority actions are outlined in the National Climate Change Policy, Strategy and Action Plan (2015-2020)[2]. The project will contribute to address Belize's information gap on the role of best land-use practices and enabling investments in restoration.

Knowledge management. The project is proposing a dissemination component for knowledge capture and sharing of progress and results with local and regional stakeholders.

Consultative process. WRI and the executing entities have consulted stakeholders including national authorities for all three countries in the region, technical and financial partners, local organizations and communities using the network of partners and government institutions involved in Initiative 20x20[3]. At the current conceptual stage an initial contact with local communities has been undertaken and some organizations have expressed their interest in participating in the project[4]. A comprehensive consultation process will be launched in the region once the concept stage of the project is approved by the Secretariat of the AF, so that expectations are not raised if the project is not to take place. The consultation will involve the local communities and other stakeholders working on site with population at risk.

Sustainability. The project relies on the long-term involvement of the private sector to expand and complement the financing from the adaptation fund. Private sector is anticipated to provide a 2:1 leverage on the AF financing. Private resources will ensure that the restoration activities are also cost-effective and deliver adaptation benefits. This will include for example: reforestation though agroforestry and sustainable use of secondary forests as well as sustainable use of restored mangroves.

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[1] Estrategia Regional para la Conservación y Uso Sostenible de la Biodiversidad en Mesoamérica (CCAD 2003) and Estrategia Centroamericana de Desarrollo Rural Territorial - ECADERT (CAC, 2010)

[2] The action plan calls for, inter alia, the reviewing of national strategies and regulations, designing monitoring and evaluation frameworks, improving mangrove and habitat conservation and management, institutional strengthening, integrated water resource management through restauration and the undertaking of comprehensive assessments on human settlements and infrastructure. More specific climate change adaptation needs in the sectorial plans include the need to educate different stakeholder groups about climate change adaptation measures and to help them develop capacity to research, develop and implement adaptation strategies.

[3] Consulted stakeholders include: FUNDAECO; Caribbean Community Climate Change Center (CCCCC), INAB in Guatemala, Defensores de la Naturaleza, Althelia, American Bird Conservancy.

[4] Organizations and communities contacted include: Organization of Garifunas Communities in Belize and Guatemala (OFRANEH, Miriam Miranda, representative) based in Honduras; Organization of coastal communities in Guatemala (Ut'che), based in Guatemala; and Ramiro Batzin, a local expert and contact with Indigenous Communities on the coastal zone of Belize. Expressions of interest for participation in project activities have been received from local indigenous communities and organizations including, Organización Ak' Tenamit in Guatemala and Organización Maya Leaders Alliance and Julian Cho Society in Belize.

PART III: IMPLEMENTATION ARRANGEMENTS

UN Environment is the Implementing Agency. The institutional framework of Initiative 20x20 through WRI and its investments partners (ALTHELIA, FCF) will assist in the execution of the project components. Investors will bid for expansion and operation of the adaptation measures designed under the project leveraging 2:1 the resources from the Fund. WRI will be the lead executing agency and coordinate all activities. It will also lead in the formulation of proposed interventions and coordination with the private impact funds. CATIE will lead in the assessment on policy and regulation for adaptation measures through restoration. UN Environment as MIE for this project will participate in the steering committee delegated by the Ministries to ensure the use of a regional approach. UN Environment is experienced in the implementation of projects that promote adaptation to climate change at global, regional and national levels. Through the implementation of these projects, UN Environment develops innovative solutions for national governments and local communities to adapt to the current and predicted effects of climate change in an environmentally sound manner. This is achieved by: i) providing methods and tools to support decision-making; ii) addressing barriers to implementation; iii) testing and demonstrating proposed solutions; and iv) enhancing climate resilience by restoring valuable ecosystems that are vulnerable to climate change. UN Environment has accumulated a substantial knowledge base through its experience of implementing previous and ongoing projects. This experience is globally recognized and includes community-based and natural resource management projects. The agency will draw upon this experience during the implementation of the project. UN Environment also has strong technical and scientific capacity in the field of climate change. Specifically, the agency's work on climate change adaptation focuses on three main areas: i) Science and Assessments; ii) Knowledge and Policy Support; and iii) Building the Resilience of Ecosystems for Adaptation. At a country level, a coordinating body with representation from the Ministry of Agriculture and INAB in Guatemala, the Ministry of Environment in Honduras and the Ministry of Environment in Belize. These bodies plus the technical institutions above will support the task team for purposes of project implementation. The task team will engage the Initiative 20x20 network of technical partners when relevant. Local communities will be engaged by the technical partners to facilitate private partnerships and investment projects in specific landscapes. A consultation process has occurred but will continue to assess collaboration opportunities between communities and the private investors.

PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[5]

Mr. Alfonso Rafael Alonzo Vargas, Minister, ***Ministry of Environment and Natural Resources of Guatemala***	October 5th, 2018
Dr. Joseph Waight, ***Finance Secretary. Ministry of Finance of Belize***	September 7th 2018
José Galdamés, Minister, ***Ministry of Energy, Natural Resources, Environment, and Mines of Honduras***	September 28th, 2018

B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Belize´s National Climate Change Policy, Strategy and Action Plan 2015-2020, Guatemala´s National Forest Landscape Restoration System and Hondura´s National Adaptation Plan) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Leo Heileman Regional Director and Representative, UN Environment Office for Latin America and the Caribbean Alberto Tejada Street, Building 103 City of Knowledge, Panama City, Panama Implementing Entity Coordinator	
Date: February 4th, 2019	Tel. and email: (507)305-3100/(507)305-3135 Leo.heileman@un.org
Project Contact Person: Gustavo Mañez Gomis, gustavo.manez@un.org	

Annexes

Consultation processes

Initial consultation discussions (June 2018)

Individual calls with country representatives, organizations' and communities' leaders were held to gauge interest and level of progress within the focus countries and themes. (see contacted participants list below).

Representatives

Countires	Name	Institution	e-mail
Belize	Wilber Sabido, CFO	Forest Department	cfo@forest.gov.bz
	Percival Cho, CEO	Ministry of Agriculture, Fisheries, Forestry, Sustainable Development, the Environment, Climate Change and Solid Waste Management Authority	ceo@environment.gov.bz
	Miriam Miranda	OFRANEH	
	Filiberto Penados	-Organización Maya Leaders Alliance -Julian Cho Society	fpenados@gmail.com
Guatemala	Ramiro Batzin	Alianza Mesoamericana	batzinr@gmail.com
	Rudy Virgilio Bautista Miranda	Defensores de la Naturaleza	rbautista@defensores.org.gt
	Juan Carlos Diaz Contreras, Coordinador de la Unidad de Cooperación Intencional	MARN	jcdiaz@marn.gob.gt / juancarlosdiaz.marn@gmail.com
	Jose Roman Carrera	Rainforest Alliance	jcarrera@ra.org
	Miriam Miranda	OFRANEH	
	Ronnie de Camino	FCCF	ronnie@funcostarica.org
	Dolores de Jesus Cabnal	Organización Ak' Tenamit	mujer.maya@gmail.com
Honduras	Julio Carrillo, Oficina Coordinadora de Proyectos	MiAmbiente (Secretaria de Recursos Naturales y Ambiente)	
	Miriam Miranda	OFRANEH	
	Ana Fortin	Rainforest Alliance	fpenados@gmail.com

Companies or investors who have provided letters of interest

Impact Investors and private sector companies who are partners to Initiative 20x20 have been consulted to assess interest in investing in the region of focus

Private Sector	Name	Letter of interest	e-mail
Forestry and Climate Change Fund	Kaspar Wansleben	Yes	kaspar@lmdf.lu
Althelia funds	Juan Carlos Gonzalez Aybar	Yes	jcgonzalez.aybar@althelia.com
AndGreen Fund	Johnny Brom	Regional interest	brom@sailventures.com
EcoEnterprises Fund	Tammy Newmark	Regional interest	tnewmark@ecoenterprisesfund.com

Private Sector	Name	Letter of interest	e-mail
Root Capital	Elicia Carmichael	Regional interest	ecarmichael@rootcapital.org
Pomona Impact	Richard Ambrose	Regional interest	rich@pomonaimpact.com

Stakeholder analysis

Main stakeholders include the Central American Commission on Environment and Development (CCAD, Spanish acronym), national governments and their ministries, "mancomunidades" and municipalities, NGOs, communities, financial institutions and private investors as well as the academia and research centers.

Stakeholder	Roles
Environment and Agriculture Ministries across the three countries in the project	The ministries are working to regulate environmental and agricultural production management and promote sustainable development in countries in a participatory way. Initiative 20x20 collaborates with the governments to identify areas where technical assistance and a link to technical expertise will be of value. For the current project, government leaders will engage with the project to ensure a coordinated action between the project and the ministries' work.
National Designated Authorities (NDAs)	The NDAs will track progress of the program and engage to support national processes according to needs.
Central American Commission on Environment and Development (CCAD, Spanish acronym)	The three countries that are part of this proposal belong to a supranational integration system, the Central American Integration System (SICA, Spanish acronym). The preparation of this concept note responds well to the priority activities that the countries have outlined in a regional strategy for the conservation and sustainable use of biodiversity in Mesoamerica (Estrategia Regional para la Conservación y Uso Sostenible de la Biodiversidad en Mesoamérica (CCAD 2003)) as well as a Regional Strategy for Rural Development (Estrategia Centroamericana de Desarrollo Rural Territorial - ECADERT (CAC, 2010). These are complemented for purposes of the proposed project by a Regional Climate Change Strategy (Estrategia Regional de Cambio Climático - ERCC (CCAD 2010a)) and a Regional Strategy for the Integrated Management of Water Resources (Estrategia y Plan para la Gestión Integrada de Recursos Hídricos en Centroamérica – ECGIRH, created in collaboration with CEPREDENAC (CCAD 2010b)). All of these are set in the context of a Regional Environmental Strategy (Estrategia Regional Ambiental Marco 2015-2020 – ERAM (CCAD 2014)). The region has alos adopted a Regional Strategic program for the Management of Forest Ecosystems, which calls for sustainable use, conservation and restoration of forest resources (Programa Estratégico Regional para el Manejo de los Ecosistemas Forestales - Perfor (CCAD y CAC, 2014))
"Mancomunidades", municipalities	Local authorities within each country will be able to support convening activities and mediation between authorities and communities. Municipalities will ensure adoption of adaptation activities and benefit of
Communities	Communities will be instrumental in supporting the project in the identification of investment proposals for potential investment from the financial partners within local territories. Members of the communities wil engage in projects to scale up practice in the region. Communities will also be beneficiaries
Private impact investors / Financial institutions	Financial institutions include 20x20 investment partners from the private sector, but other financial institutions working in the region as well. Local financial institutions will include sectorial banks, cooperatives, local development banks and micro financial institutions. These institutions will be beneficiaries from workshops on investment on resilient practice in the land use sector in coastal areas.
Academia, research centers, existing climate change platforms	Regional (e.g UN Environment-REGATTA), CATIE

Community engagement

Local communities are a key target of the proposed concept. Landowners in coastal areas are amongst the most vulnerable to extreme whether events in the region. The project components would seek to improve resilience in these groups by engaging them and promoting adoption of sustainable land use practices; ensuring the adoption of response systems to extreme weather events and facilitating discussions with interested investors that can potentially support

restoration in agricultural and forestry practice that simultaneously improves the livelihoods of people and achieves resilient landscapes.

The following are some of the community groups that will be engaged in the project.

Group	Location
Miskito	Honduras (Gracias a Dios) Miskito are Central American indigenous people of the lowlands along the Caribbean coast of northeastern Nicaragua and western Honduras. The modern Miskito are agricultural, their staple crop being cassava. They also keep poultry, cattle, and other farm animals.
Garifuna	Belize, Guatemala (Izabal, Zacapa), Honduras The Afro-Caribbean Garifuna people originated with the arrival of West African slaves. Garifuna communities along the Caribbean Sea live mostly in coastal towns and villages in the Central American countries of Belize, Guatemala, Honduras and Nicaragua.

Expected positive environmental, economic and social impacts

Table 1.- Expected positive environmental, economic and social impacts of coastal restoration

Environmental	*Economic*	*Social*
Restoration of degraded and climate vulnerable coastal ecosystems through different strategies (e.g. reforestation, forest management, agroforestry systems, sustainable fuelwood practices) will result in an improvement and enhancement of ecosystem services (Harvey et al. 2016), including under future climate conditions (de Sousa et al. 2017). Expected benefits are, among others: • Enhanced soil fertility by progressive accumulation of organic matter through leaf-litter to replenish top soil and improve its structure. • Reduced soil erosion from water runoff. Enhanced water infiltration, and soil moisture retention. • Improved water quality and availability. • Enhanced biodiversity, increased ecosystem services from bees, birds, insects and wildlife, and improved landscape connectivity. • Risk management: conserved or restored wetlands, mangroves, forests and agroforestry systems act as natural barriers, controlling and mitigating the impact of floods, droughts, extreme temperatures and wildfires. • Maintenance of carbon sinks.	The implementation of adaptation measures along coastal land ecosystems will result in a reduction of rural poverty in the region, job diversification and improved incomes: • Opportunities to develop green business and alternative livelihoods, according to the results of climate scenarios and demand for products and services in local and international markets will be identified. • Training will be provided in supply and maintenance of EbA and adaptation activities promoted by the project, including manufacture, distribution and repair of water-efficient technologies, establishment of mixed nurseries for forest restauration, sustainable wood extraction, and other EbA-related economic activities. • Finally, access to finance to establish small green businesses and alternative livelihoods will be facilitated. Savings will be made from avoided damage in comparison with other alternatives: Measures such as conserved wetlands, forests and agroforestry systems that act as natural barriers, controlling and mitigating the impact of floods, droughts, extreme temperatures and wildfires represent savings compared to grey adaptation alternatives such as dams or infrastructure works (De Groot et al. 2013, Rao et al. 2013).	The project will contribute to financial inclusion and contribution to national goals in rural poverty reduction. • Increased food and nutritional security, by promoting the diversification of sources of income. • Maintenance of traditional knowledge, complemented with other types of knowledge. • Empowerment and social cohesion enhanced by participative processes conducted. • Positive impacts in migration expected: In absence of alternative livelihoods, younger population, which shows little inclination or preference for remaining anchored to the rural-agricultural world, tends to opt for migration. • The adoption of water efficient technologies such as rainwater harvest systems will increase the availability of water within the household. • The use of species considering their suitability under future climate conditions contributes also to the sustainability of local livelihoods.

Source: Own formulation using inputs from various entities that have documented the environmental, economic and social co-benefits of EbA in tropical ecosystems (UN Environment-WCMC, UNDP, USAID, UICN, Conservation International, CIRAD and CATIE, as well as international academia and cooperation entities), including Central American countries.