Concept Note

Climate Resilient Corridor Initiative (CRCI)

Honduras | CABEI

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GREEN CLIMATE FUND

Concept Note

Project/Programme Title:	Climate Resilient Corridor Initiative (CRCI)
Country(ies):	Republic of Honduras
National Designated Authority(ies) (NDA):	Secretaría de Recursos Naturales y Ambiente (MiAmbiente)
Accredited Entity(ies) (AE):	Central American Bank for Economic Integration (CABEI)
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Notes

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A. Project/Programme Summary (max. 1 page)			
A.1. Project or programme	☒ Project ☐ Programme	**A.2. Public or private sector**	☒ Public sector ☐ Private sector
A.3. Is the CN submitted in response to an RFP?	Yes ☐ No ☒ If yes, specify the RFP: _____	**A.4. Confidentiality[1]**	☐ Confidential ☒ Not confidential
A.5. Indicate the result areas for the project/programme	Mitigation: Reduced emissions from: ☐ Energy access and power generation ☐ Low emission transport ☐ Buildings, cities and industries and appliances ☐ Forestry and land use Adaptation: Increased resilience of: ☒ Most vulnerable people and communities ☒ Health and well-being, and food and water security ☐ Infrastructure and built environment ☒ Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO2eq over lifespan)		**A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)**	1.6 million beneficiaries 17% of total population
A.8. Indicative total project cost (GCF + co-finance)	Amount: USD 134.3 million	**A.9. Indicative GCF funding requested**	Amount: USD 43.3 million
A.10. Mark the type of financial instrument requested for the GCF funding	☒ Grant ☐ Reimbursable grant ☐ Guarantees ☐ Equity ☐ Subordinated loan ☐ Senior Loan ☐ Other: specify_____		
A.11. Estimated duration of project/ programme:	a) disbursement period: 5 years b) repayment period, if applicable: N/A	**A.12. Estimated project/ Programme lifespan**	20 years
A.13. Is funding from the Project Preparation Facility requested.[2]	Yes ☐ No ☒ Other support received ☐ If so, by who:	**A.14. ESS category[3]**	☐ A or I-1 ☒ B or I-2 ☐ C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes ☒ No ☐	**A.16. Has the CN been shared with the NDA?**	Yes ☒ No ☐
A.17. AMA signed (if submitted by AE)	Yes ☒ No ☐ If no, specify the status of AMA negotiations and expected date of signing:	**A.18. Is the CN included in the Entity Work Programme?**	Yes ☒ No ☐
A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	Honduras is highly exposed to negative effects of climate change (CC), which are expected to have a significant negative impact on agricultural systems and the wellbeing and health of highly vulnerable small-scale farmers in the Dry Corridor of Honduras. The Project aims at increasing the resilience to CC of their livelihoods and their families' wellbeing and health, by facilitating the adoption of climate resilient agriculture approaches, and "climate-proofing" their housing. The project will address other important barriers to adaptation, such as water scarcity and ineffective conservation and use of plant genetic resources. Executing Entities would be Invest-Honduras and FAO.		

[1] Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy (Decision B.12/35) and the Review of the Initial Proposal Approval Process (Decision B.17/18).
[2] See here for access to project preparation support request template and guidelines
[3] Refer to the Fund's environmental and social safeguards (Decision B.07/02)

B. Project/Programme Information (max. 8 pages)

B.1. Context and baseline (max. 2 pages)

1. **Honduras is a low middle-income country with high poverty and inequality.** While the country's poverty rate (people living under US$5.5 per person per day) dropped from 60.8 percent to 52.6% between 2005 and 2017, the extreme poverty rate (US$1.90 per person per day, the international poverty line) is around 17.2% percent; the highest rate in Latin America and the Caribbean (LAC) after Haiti. Inequality (GINI 50.5 in 2017, among the highest in the region and the world) has also resulted in one of the smallest middle classes in LAC (11% in 2015, compared with 35% regional average)[1]. Nearly 80% of Hondurans under the age of 15 live in poor households, around 49.3% of the national population is moderately or severely food insecure[2], and approximately one in four suffers from malnutrition, which has negative implications on their learning abilities and future earning capacity.

2. **Nearly half of the population of Honduras resides in rural areas, where the incidence of poverty is high and most poor rely on agriculture as their main livelihood.** Over half of the country's poor and two-thirds of its extreme poor live in rural areas. The rural poverty rate, when measured by income level is estimated to be around 70%, while when measured by unsatisfied basic needs (i.e. multidimensional poverty) is at about 86%. Rural poverty is concentrated in western and southern Honduras, in an area known as the Dry Corridor of Honduras (DCH). The DCH covers around 20,000 km^2 of the country's Pacific basin, and houses a population of approximately 2.5 million—primarily subsistence farmers of basic grains, landless farmers, and day labourers[3].

3. **An estimated 72% of agricultural families in the DCH engage in semi-subsistence farming**, typically characterized by low productivity and competitiveness, low revenue generation, and high vulnerability to shocks. Maize and beans are the main staple foods in Honduras. Around 400,000 and 160,000 ha are cultivated with maize and beans, respectively[4].

4. **Climate, vulnerability and Impacts**. Honduras' share of worldwide greenhouse gas emissions is lower than 0.1%. However, the country is considered to be highly vulnerable and poorly prepared with respect to the effects of Climate Change (CC)[5], as well as highly vulnerable to extreme weather events, and with little capacity to cope and adapt due to poverty[6]. In the period, 1931-2015 Honduras recorded 66 extreme events associated with hydro-meteorological phenomena. Most recurring events are floods, storms and droughts. Annual losses due to extreme events have been estimated at around 2% of GDP[7]. CC and other weather-related events are widely recognized to present critical risks for the water, soils, and other natural capital on which Honduran agriculture relies—with equally important links to migratory pressures[8].

5. Average annual temperatures in Honduras during the period 1901-2018 showed a clear rising trend. During the 1960-2000 period, temperatures increased by 0.75 C°, or approximately 0.02 C° per year[9]. Future climate scenarios project that average temperatures in Honduras would continue to rise through 2080, by at least 1.5 ° C (under the RCP 2.6 or Paris Agreement scenario), and up to 4.5°C (under the RCP 8.5 or business as usual scenario) [10]. In terms of precipitation, there is not a clear long-term downward or upward trend for the country as a whole, but records show high inter-annual variability, with some dryer years and some wetter years. Under future climate scenarios, however, rainfall is projected to decrease throughout the whole country[11].

6. In Honduras there are two clearly marked periods of rainfall, divided by a period of drought (called *canicula*), normally not longer than 60 days, during the June-July-August (JJA) trimester. This is a particular critical period for rain fed agriculture and thus for food security, as it is during the *canicula* that planting for the second production cycle (postrera) takes place for most short-term crops, including maize, beans and sorghum[12]. Projections (under RCP 8.5 scenario) call for a drop in rainfall of up to 30% during JJA quarter by 2080. This, coupled with the fact that projections also call for the period of *canicula* to become longer, by 15-25 days, is expected have serious implications for agriculture and food security, given the ensuing high risk of substantial crop losses. Agriculture in the DCH is highly sensitive to CC[13].

7. The expected variations in short and medium term of seasonal distribution of precipitation, the exacerbation of the *canicula* period, and projected increases in temperatures, are expected to result into higher rates of evapotranspiration, thermal and water stress in flora and fauna (including species of food and industrial importance). These effects were modelled considering future climate scenarios in the most important crops for small-scale farmers in the DCH. The results of this analysis to 2050, under the RCP 4.5 and RCP 8.5 scenarios, are presented in Table 1. below. For more details on the methodology and results, see the Pre-feasibility Study (PF-S) Annex V "Analysis of impact on agricultural productivity in different climatic scenarios".

Table 1. Projection of yields for basic crops to the year 2050 in scenario RCP4.5 and RCP8.5

2050 RCP 4.5	Maize	Beans	Sorghum
Losses in yield % compare to baseline			
Cycle 1 ("primera")	25.3%	20.7%	15.8%
Cycle 2 ("postrera")	34.6%	3.4%	32.0%

2050 RCP 8.5	Maize	Beans	Sorghum
Losses in yield % compare to baseline			
Cycle 1 ("primera")	29.4%	23.8%	19.7%
Cycle 2 ("postrera")	37.1%	4.4%	34.1%

Source: Own estimations, 2020.

8. Reduction in yields of the magnitude shown in Table 1. are expected to have a significant direct impact on households that depend on agriculture as their main means of livelihood, particularly to those in poverty. On the one hand, if farmers produce for the market, the family economy would be affected by the direct income

loss and the resulting reduction in purchasing power to cover their food and other basic needs. On the other hand, those who produce food mainly for family consumption, and who are usually most vulnerable, would see their availability of food at the household level reduced directly. In any case, by reducing income and/or food availability, the effects of CC are expected to increase the level food insecurity, in a country where around 49.3% of the national population is already moderately or severely food insecure[14].

9. The expected reduction in food security through crop losses is compounded by the unsanitary conditions of home environments derived from the effects of CC. Higher temperatures and changes in rainfall and humidity patterns increase the risk of transmission of vector borne diseases (e.g. dengue, malaria, Chagas disease and leishmaniosis), and bacterial and parasitic water borne diseases and respiratory ailments. Heavy rains and floods, and their effects on water and sanitation through the reproduction and transport of infectious agents, exacerbate the foregoing[15]. In general, terms houses in rural areas (typically made of mud with thatched roofs, with dirt floors, with no latrines, and having to source drinking water from rivers or streams) are not adequate to prevent higher indoor temperatures and humidity, contaminated water sources, and diminished indoor air quality, that would result in higher morbidity. This makes adaptation measures in housing a key public health issue to mitigate the effects of CC on people's health and well-being, and also indirectly on their food security situation through the mutually reinforcing linkages between health and nutrient absorption.

10. **Alignment with National Priorities**. The proposed project, named Climate Resilient Corridor Initiative (CRCI), is consistent and aligned with higher-level development and climate change policies. The Strategic Government Plan 2018-2022, proposes actions on food security, resilience to CC, and the rational use of natural resources and territorial development, all which are at the canter of the CRCI's design. The National Climate Change Strategy (NCCS) that aims to achieve "low climate vulnerability levels to control and minimize negative CC impacts", has seven priority sectors: (i) water resources; (ii) agriculture, land and food security; (iii) forests, and biodiversity; (iv) coastal-marine systems; (v) human health; (vi) risk management; and (vii) hydroelectricity generation. The CRCI covers aspects of several of these, including water resources, agriculture, land and food security, water resources and forest and biodiversity. Fifteen out of the seventeen strategic targets of the strategy are focused on adaptation capacities, which is at the core of the CRCI.

11. In line with the NCCS, the National Determined Contributions (NDC) establish that CC adaptation is the priority for Honduras. Nevertheless, the country committed itself also to GHG emission reductions of about 15% from 2012-2030, with respect to the "business as usual" scenario. Its commitments also include afforestation and reforestation of one million ha by 2030, and a target to reduce 39% of wood consumption in households through a NAMA on "eco-fogones" (efficient cooking stoves). As for adaptation, the NDC prioritize two sectors identified in the NCCS: agri-food and coastal-marine. The CRCI will support the country's NDC particularly with respect to adaptation in the agri-food sector. However, given the proposed comprehensive approach that entails interlinkages with other sectors, it would also generate mitigation co-benefits in line to the NDC.

12. **Barriers to be addressed**. The barriers that will be addressed by this project are the following:

- Small-scale farmers lack knowledge of climate resilient agriculture approaches[4] (CRAA).
- Unhealthy home environment. The rural poor, including small-scale farmers, generally live in houses that do not offer the conditions to ensure a healthy indoor living environment, and access to water and sanitation, particularly under conditions such as those the projected, as described above. Climate-compromised home environments are directly linked to higher rates of morbidity.
- Poor farmers lack financial resources: small-scale farmers in the DCH do not have financial resources to cover the initial costs of goods (quality seed, fertilizer, water storage, irrigation equipment, etc.) and services (technical assistance) required to implement CRAA. The same goes for the improvements necessary to climate proof their housing environment. Most rural-poor do not have access to financial services. On one hand, financial service providers consider small-scale farmers to be a high-risk. On the other, the magnitude of the risks farmers themselves would have to assume if modifying their livelihood strategy without mitigating measures or circumstances, makes them extremely averse to credit.
- Lack of extension services: there are practically no public extension services outside those outsourced by the State, normally through externally financed projects. Services provided by these are limited with respect to the need, and usually do not address agricultural production through the lens of climate resiliency.
- Ineffective system for the conservation and use of plant genetic resources. The country lacks the infrastructure and technical capacities to identify and conserve critical plant genetic resources that are the base for the development of local cultivars adapted to current and future local climatic conditions. If not conserved these plant genetic resources gradually disappear, putting in grave risk the potential to develop new varieties and cultivars that are one of the most effective tools for climate change adaptation in agriculture.
- Reduced availability of quality seeds of local varieties of basic food crops**.** In Honduras, most farmers use commercial (consumption) grain as seed, being this one of the main causes for the low yields. Most common crop varieties with longer production cycles normally result in significant crop losses under CC and climatic variability scenarios, mainly due to water deficit. The availability of good quality seed of local varieties and cultivars of maize, beans and sorghum with climate-resilient qualities (e.g. shorter

[4] Practices, methods, tools, technology, etc.

cycle) is insufficient to cover the national demand. It is estimated that the availability of seed with these characteristics only covers around 30% of current demand in the case of maize, and 15% and 25% in the case of beans and sorghum, respectively.

- Lack of water infrastructure for irrigation: the most important constraint for agriculture in the DCH is water availability. Small-scale producers have limited access to water for irrigation due to insufficient infrastructure to collect, store and distribute surface water during the rainy season for use for during dry season.
- Limited capacities for sustainable management of water producing areas. Local community organizations lack technical and organizational capacities, and access to financing, to prepare and implement sustainable management plans for catchment areas of micro-basins, which puts at risk the sustainable provision of the ecosystem services generated by these areas, particularly those related to water. The deterioration of these areas and their services directly increases the vulnerability to CC of all local residents, including small-scale farmers that depend on these ecosystem services for their livelihood and water security.

B.2. Project/Programme description (max. 3 pages)

13. The **objective** of the CRCI is to "***Increase the resilience to the effects of climate change of rural residents of the Dry Corridor of Honduras, whose livelihoods depend primarily on agriculture and that are highly vulnerable due to their level of exposure and reduced adaptive capacity***". The project will achieve its objective by: (i) by supporting small-scale farmers in the DCH to adopt climate resilient agriculture approaches (ii) improving their housing environment to increase their resilience to projected climate effects on their wellbeing and health; (iii) strengthening the country's capacity to develop climate resistant crop varieties and cultivars and increasing the availability of good quality seed of local varieties and cultivars of basic food crops with climate resistant traits; and (iv) increasing the availability of water for irrigation and supporting the sustainable management of micro-basin's catchment areas supplying it. The project is structured in the three components that are described below.

14. In line with country priorities, the CRCI will be implemented in the DCH. A preliminary prioritization within the DCH yielded two potential intervention areas, as per Figure 1 and Table 1 of Annex 2. Zone I covers 82 municipalities with 49,615 potential beneficiaries. This area extends over the West and Central West development regions of Honduras on a Northwest-Southeast orientation along the border with Guatemala and El Salvador. The rural livelihoods prevalent in this zone are "basic grains and remittances", and "cultivation of basic grains and livestock"[16]. Zone II comprises 33 municipalities in the east of the country, in the Central East development region, where the main rural livelihood is the "cultivation of basic grains and livestock".

15. The demarcation of these zones was guided by the estimation of a Climate Resilient Index (CRI) at municipal level, using the IPCC"s (2013)[17] definition of risk as a function of danger, exposure and vulnerability. The CRI considered one variable for danger: (i) the proportion of the area of a municipality with more than 4 months of drought. It used two variables for exposure: (i) proportion of the economic active population in agriculture; and (ii) level of dependence on the main rural livelihood present in the municipality. Lastly, it considered three variables for measuring vulnerability: (i) the average change in the capacity of the territory to support the most sensitive crop of the predominant rural livelihood as a result of climate projections; (ii) the proportion of area affected by agricultural drought during the first production cycle of the year in 1984-2017; and (iii) the proportion of the population with three or more unmet basic needs. Further details of the methodology and results are presented in Chapter 4 of the PF-S. The intervention area will be further narrowed down during the preparation of the full financial proposal. Actual sites for some of the activities will be determined during project implementation.

16. The most relevant livelihood groups to the proposed CRCI beneficiaries are (i) subsistence grains and remittances, and (ii) grains and livestock. For both livelihood groups, households rely on rainfed agriculture, based on maize/sorghum and beans. They consume a significant proportion of their production, and sell any surplus production in informal markets, generating some income used towards covering basic needs. The sale of their unskilled labor is another important income-generating activity. For the subsistence grains and remittances group, money sent by family members who have migrated is an important additional source of income. In the case of grains and livestock group, they may also obtain meat, but mainly milk a few heads of cattle they raise. Both groups may occasionally complement their diet with meat from pigs and eggs from poultry they keep in the surroundings of their houses, and with local varieties of vegetables they produce in small backyard orchards. Over 90% of the households for both groups depend on firewood for cooking. This implies high pressure on forests and a focus of risk of contamination inside the home. Between 43% and 51% of the households have houses with a dirt floor, between 51% and 56% do not have sanitary service, and 74% and 80% mishandle garbage by burning it, throwing it in the open. All these indicators show the precarious sanitary conditions of the housing environment (more details are presented in the PF-S)[18].

17. Both livelihoods groups are the most exposed to the risks of food insecurity, since their main activity for the generation of food and income is rainfed agriculture. Small producers have a low level of productive capital, their homes are not conditioned for protection against rain, sun, heat and wind, and they have a low level of access to community resources, all that makes them highly vulnerable to climate change.

18. The direct beneficiaries of the project are families of small-scale farmers in poverty that reside in the DCH that will receive direct project assistance (around 13,500 families). Indirect beneficiaries are the families

of farmers countrywide that would benefit from the public goods generated with project assistance (close to 305,000 families). This translates into approximately 67,000 direct beneficiaries, and 1.5 million indirect beneficiaries for a total 1.6 million people or 17% of the country's total population. Because of the project, around 4,500 ha of farmland will have incorporated climate resilient agriculture approaches, 12,000 hectares will use good quality seed of local varieties and cultivars of basic food crops with climate resistant traits and 7,400 ha of land or forests of catchment areas will be managed under a landscape restauration approach, contributing to GHG emission reductions.

Component 1. Climate resilient livelihoods and home environments

19. This component aims at increasing the resilience to CC of agricultural production systems, the main livelihood of project beneficiaries, and of their families' wellbeing and health. The component aligns with GCF project level outcomes: A1.0 "Increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions"; and A2.0 "Increased resilience of health and well-being, and food and water security" and will generate co-benefits related to M7.0 "Lower energy intensity of buildings, cities, industries, and appliances". This Component will be implemented based on Investment Plans for Climate Resilience (PIRC), which will be defined according to the particular needs of the beneficiaries themselves, and which will include investments at farm and housing environment. The PIRCs will be prepared from a menu of options that will be defined during the detailed preparation of the financing proposal based on climate projections, the biophysical environment and the ecosystems of the territory, such as cultural aspects, among others. It has been structured in two subcomponents:

Subcomponent 1.1 Climate resilient agriculture

20. This subcomponent will focus in incrementing the climate resiliency of the agricultural systems of project supported small-scale producers, by providing technical assistance and access to productive inputs, equipment (mainly irrigation) and materials, which would enable them to transit from low productivity and highly vulnerable production systems, to higher yielding climate-adapted production systems. The outcome of the subcomponent will be that small-scale farmers in the DCH are implementing CRAA. The subcomponent will provide differentiated treatment based on two types of small-scale farmers: (i) farmers who produce basic grains (maize, beans and sorghum) mainly for family consumption and do not have access to permanent surface or underground water sources for irrigation; and (ii) farmers who grow largely the same crops, and who currently farm under rain fed systems but have or will have access through the actions of the project (under Component 3) to a source of water for irrigation.

Activity 1.1.1: Implementation of actions to increase climate resilience for farmers without access to surface or ground water for irrigation**.** This typology of farmers will be supported with technical assistance, inputs and small equipment and materials for rainwater harvesting and storing system, and irrigation of a plot of up to 200 m^2 of their farm. Technical assistance on CRAA (e.g. cover crops, minimum tillage, crop rotations, crop diversification, intercropping, drainage, introduction of trees, abandon fire-fallow cultivation), increased water availability and drip irrigation would allow these farmers to better cope with the projected reductions in precipitation and the extension of the canicula period, and produce food during this sensitive period, improving their resilience. By applying CRAA to the non-irrigated portion of their farm, they would be able to increase their production volumes and be able to increase their availability of food for family consumption and surpluses for sale in local markets during the periods where water scarcity is not a constraint. Farmers will also receive support to commercialize their surpluses. Technical assistance and commercialization support will be provided for at least three consecutive years. Water harvesting and drip-irrigation materials and equipment will be provided by the project once. Increased production levels and sale of surpluses to local markets will allow farmers to maintain and eventually replace the project-provided equipment. The output of this activity is: 10,100 small-scale farmers without access to surface or underground water implementing CRAA.

Activity 1.1.2: Implementation of actions to increase climate resilience for farmers with access to surface or ground water for irrigation. Farmers under this activity would be required to have access to sufficient water to irrigate a cultivable area of 2,500-3,500 m2. These farmers include the future users of the Comprehensive Water Security Systems (SIAS for its acronym in Spanish) that will be installed with support of project under Component 3 (as described further down). These farmers will also receive technical assistance to transit towards climate resilient agricultural production, and access to inputs, material, and equipment (mainly for irrigation). Technical assistance will be provided during at least three years, and will include CRAA, plot irrigation management, commercialization, etc. Irrigation equipment will be subsidized only once and inputs only during the first year. After that, farmers shall be able to generate sufficient revenues to cover their crop costs, the replacement cost of their irrigation equipment at the end of its useful life, the O&M costs for the water collection and distribution system or well, that feeds water to their irrigation systems, and a financial contribution towards the sustainable management of the micro-basin's catchment area that supplies the water they use. The output of this activity is: 2,520 farmers with access to surface or underground water implementing CRAA

Subcomponent 1.2 Resilient homes

21. This Subcomponent will contribute to improve the physical and sanitary soundness of the housing environment where the small-scale producers (mainly those supported in Activity 1.1.1) and their families live.

The outcome of the subcomponent is that beneficiary families will have implemented physical improvements to their house environment to protect them from projected climate effects and their consequences on family wellbeing and health. The housing improvements will allow for physical resistance to harsher weather, as well as maintaining adequate indoor temperatures, humidity levels and illumination; improved access to water and sanitation, more efficient and cleaner energy for cooking, ventilation, and through all these, in addition to protection from the elements, protection from mold, pests and indoor contaminants, and their effects on wellbeing and health.

Activity 1.2.1 Improving the housing environment to increase climate change resilience of family wellbeing and health. Among the physical improvements and equipment being considered under the subcomponent are: cement floors, improved walls and ceilings, construction/repositioning of latrines, windows or skylights, rainwater harvesting systems, grey water reutilization systems, water filters, improved cooking stoves, etc. Families will be able to choose up to five house improvements according to their particular needs. The introduction of efficient wood burning stoves as an option is in line with the country's NAMA on improved stoves. Improved stoves reduce the pressure on local forests, and the contamination of indoor spaces with toxic gases, which represent an additional health hazard that could hinder any gains achieved on the resilience of wellbeing and health gained through other home improvements supported by the project. The output of this activity is: 10,100 families with improved housing to protect their wellbeing and health from the effects of CC.

Component 2. Plant genetic resources to increase the climate resilience

22. CC constitutes the main threat to the conservation of local crop varieties that are used by the majority of farmers in Honduras, and which together with their wild relatives are the basis for the development of new varieties or cultivars with climate resilient traits.

23. Conserving genetic diversity has long been an essential element of successful strategies to reduce the effects of crop pests and diseases and abiotic tensions such as drought and high temperatures. This component seeks to ensure the conservation of the national plant genetic resources that constitute the basis for developing new climate-resilient varieties of crops of importance to food and agriculture, as well as increasing the availability of quality seed of local climate-adapted varieties of basic food crops to overcome current market seed deficits. The component aligns with GCF project level outcome A7.0 "Strengthened adaptive capacity and reduced exposure to climate risks". It is structured in the following subcomponents:

Subcomponent 2.1 Conservation of plant genetic resources

24. This subcomponent will support national efforts for in-situ and ex-situ conservation of national germplasm to prevent the continued erosion and eventual loss of the country´s plant gene pool. The outcome of this subcomponent will be the establishment basic system for conservation and use of important plant genetic resources to food and agriculture (PGRFA).

Activity 2.1.1: Develop a national network of germplasm banks. The project will support the development of a national network for the conservation of plant genetic resources, which would be linked to the initiatives of the academic sector that are currently underway. This action will allow safeguarding, classifying and describing local plant resources and prevent their loss. The material collected and conserved ex-situ will serve as a basis for future plant breeding programs that will respond to the challenges that CC brings to the country's agriculture. The expected outputs of this activity are: (i) a national collection PGRFA; (ii) a functioning national germplasm bank; (iii) two regional banks interlinked with the national bank; (iv) a national network of ex-situ conservation initiatives; and (v) at least 35 local banks (at the municipal level) that allow producers to store and access seed of varieties and cultivars with climate resilient traits. This activity is interlinked with Activity 2.2.1.

Subcomponent 2.2 Selection of plant genetic material

25. The outcome of this subcomponent will be the selection of varieties and cultivars of maize, beans and sorghum for the production of seeds adapted to agro-ecological conditions and the projected climatic effects.

Activity 2.2.1: National evaluation and selection of maize, beans and sorghum materials with greater resistance to water stress and main pests associated with CC. National materials or materials produced by international research canters, primarily seeking shorter production cycles, will go through a participatory evaluation process. The selection process will be based on the best attributes of each material, considering the specific conditions of each crop area and the farmers' interests. After the evaluation phase, the new materials will be released for multiplication, accompanied by their agronomic description and the technical recommendations. The output of this activity is that: varieties of basic grains that have characteristics of greater tolerance to droughts and the attack of pests and diseases associated with climate change have been released.

Subcomponent 2.3 Increasing the availability of good quality seed

26. The outcome of this subcomponent will be having increased the availability of good quality seed for maize, beans and sorghum. This will be achieved through supporting the establishment of 22 farmer-based seed multiplication enterprises. These 22 enterprises will produce enough seed for approximately 12,005 ha.

Activity 2.3.1: Establishment or consolidation of small associative enterprises or cooperatives for seed multiplication The project will promote the establishment and/or strengthening of 22 farmer associations or cooperatives devoted to the multiplication and marketing of good quality seed of local varieties or cultivars

of maize, beans and sorghum. These actions would be based on the successful experiences of the AECID-financed "Semillas para el Desarrollo" (Seeds for Development) project, implemented by FAO and country's Directorate for Agricultural Research Science and Technology (DICTA). Interested producers groups will receive training on all aspects related to seed production (multiplication), quality control, business management and issues related to the commercialization of seed. The project will also provide co-financing for the one-time acquisition of inputs, materials, equipment, after which the enterprises shall become financially sustainable. The output of this activity is that: at least 22 farmer-based seed multiplication enterprises have been established.

Component 3. Support to increased water availability

27. The objective of this Subcomponent is to increase water availability for irrigation by collecting water from rain, rivers, creeks or streams, during the rainy season for its use during dry periods, while protecting the generation of water-related ecosystem services in the corresponding catchment areas. This will be done through the installation of Comprehensive Water Security Systems (SIAS for their acronym in Spanish), which are the combination of water harvesting infrastructure at the micro basin level (known in Honduras and referred to from here on as "water harvesters"), with actions to strengthen the governance and local capacities for the sustainable management of the catchment areas, as well as actions to enable the efficient use of the water resource. See diagram in Annex 3. The component aligns with GCF project level outcomes A4.0 "Improved resilience of ecosystems and ecosystem services" A5.0 "Strengthened institutional and regulatory systems for climate responsive planning and development", A7.0 "Strengthened adaptive capacity and reduced exposure to climate risks". The component will also generate significant adaptation co-benefits related to M9.0 "Improved management of land or forest areas contributing to emissions reductions". It is structured in two subcomponents:

Subcomponent 3.1 Water harvesting infrastructure.

28. The expected outcome of this subcomponent is an increased local capacity to collect, store and distribute surface water for irrigation. This will be done by constructing 10 new water harvesters, and complementing 17 water harvesters already built by the Secretariat of Agriculture and Livestock (SAG) with national financing, which require additional investment to be able to operate at full capacity within a SIAS scheme. These water harvesters will be part of the SIAS to be installed by the project.

Activity 3.1.1 Identification of areas where new SIAS will be established. Micro basins in the geographic area of influence of the project will be assessed from a multidisciplinary perspective (including from biophysical, economic, social, environmental perspectives, etc.), to select the most suitable sites for the establishment of new SIAS to be constructed for irrigation purposes. As part of this diagnosis, the water supply and total demand, the conservation costs and the value of the water service from the micro-basis will be estimated. The sites to be selected must have: (i) sufficient demand for water resources for irrigation (number organized producers or producers willing to organize and work with climate resilient agricultural approaches, and that have land suitable for production under irrigation); (ii) interest on the part of the municipal authorities; and (iii) the necessary conditions to obtain a declaration of protected forest area or water supplying area by the Forest Conservation Institute (ICF) for the catchment area that will be supplying water to the SIAS. The output of this activity is that: the micro basins and sites for the installation of the 10 SIAS have been identified.

Activity 3.1.2 Selection of water harvesters built by SAG that will be complemented or refurbished so that they can operate at capacity under a SISH scheme. From the water harvesters built by SAG that do not yet operate at capacity, the 17 that have the better conditions to increase their efficiency and/or operate under an SIAS scheme will be selected. In addition to same parameters used for the selection of the sites for new SIAS (activity 3.1.1), the selection of the 17 water harvesters already built by SAG that would be complemented and integrated in to SIAS, would include a detailed diagnosis, and infrastructure audits from a civil and hydraulic engineering perspective. The output of this activity is that the 17 water harvesters built by SAG that will be complemented with the SIAS approach have been identified.

Activity 3.1.3 Pre-investment institutional studies and procedures to safeguard the sustainability of investments and the operation of SIAS. The necessary legal and technical studies will be carried out, and necessary steps will be taken to: (i) obtain the declaration of a protected forest area or protected water supplying area of the catchment areas that will supply water to the SIAS; and (ii) to obtain the rights of way for the water conduction and distribution infrastructure, and the easements of access to the water intake area of the micro basin, as well as the registration of the property where the reservoir will be constructed on the name of the water users organization (e.g. irrigation board). The outputs of this activity are, for each SIAS: (i) easements for infrastructure and access to legally established water recharge areas; (ii) declarations of water producing areas as a protected forest area or water supplying area; and (iii) titling of the lands where the reservoirs of the water harvesters will be built under the name of the water user organizations.

Activity 3.1.4 Design of the SIAS and construction or adaptation of water harvesters. The infrastructure of the SIAS will be designed taking into consideration the information collected during the process of selecting the sites, and other relevant information, including from consultations with local stakeholders. The design will include civil and hydraulic engineering drawings, and technical specifications for the construction of the 10 new water harvesters, and for the complementary or adaptation works required for the 17 existing water

harvesters built by the SAG. Based on these designs, the project will contract the construction of the 10 new water harvesters, and the complementary or refurbishing works for the existing 17 water harvesters. Output: Engineering designs for 27 SIAS.

Subcomponent 3.2 Sustainable management of catchment areas supplying water to the SIAS

29. The expected outcome of the subcomponent is that the catchment areas of the micro basins supplying water to the 36 installed SIAS are being managed sustainably, in order to restore and/or safeguard their water related ecosystem services. This will be achieved by supporting the establishment and/or capacity strengthening of existing community organizations that will be responsible for the sustainable management of catchment areas in the micro basins that will supply water to the SIAS, and by supporting the participatory development of the catchment areas' management plans under a landscape restoration approach.

Activity 3.2.1 Establishment and / or capacity building of community organizations that will be responsible for managing the catchment areas that will supply the SIAS. Community organizations responsible for the implementation of management plans for catchment areas supplying water to the SIAS, will receive technical assistance and training on relevant technical issues (e.g. restoration of degraded areas, watershed protection, reforestation, agroforestry systems, silvopastoril systems, fire prevention, etc.), and organizational development support (e.g. democratic and participatory management, gender inclusion, work planning, financial management, procurement, etc.). The output of this activity is: 36 community organizations legally constituted and technically and organizationally strengthened to manage the development and implementation of the management plans of the water producing areas of the SIAS.

Activity 3.2.2 Planning for the sustainable management of micro basins' catchment areas. Based on diagnostic studies and other existing information of micro basins and catchment areas that will supply water to the SIAS, and under technical guidance provided by the project, a management plan under a landscape restoration approach will be developed in a participatory manner for each relevant catchment area. The output of this activity is: 36 management plans for catchment areas that will supply water to the SIAS.

Subcomponent 3.3 Support for implementing management plans of micro basin catchment areas.

30. The outcome of this subcomponent is that the most critical actions of the catchment areas´ management plans have been financed. Under schemes and mechanisms to be identified and/or developed during the detailed preparation of the financing proposal, this subcomponent would co-finance priority actions of the catchment areas management plans (prepared through Activity 3.2.2). Grant financing from GCF would provide matching grants to stakeholders interested in supporting the sustainable management of the catchment areas. Stakeholders may include the Central Government, Municipal Governments, the residents of the catchment areas, direct users of SIAS (e.g. producers using the water for irrigation), non-governmental organizations and development partners, etc. The conditions to qualify for these matching grants (e.g. amount limits, minimum level of co-financing, etc.) would be differentiated based on the nature of the applicants and the type of activity. Matching grant co-financing for management plans would be a one-off capital injection necessary to spark the implementation of the plans and leverage funds from other stakeholders. It would be expected that after this initial capital injection funds for the continued implementation of the plans would be secured by the community organizations (that will be strengthened through Activity 3.2.1) in charge of their implementation, with support of local governments.

Activity 3.3.1 Develop financial instruments and mechanisms for the co-financing of priority actions of the catchment area management plans. This entails the development of a financial framework that would enable the efficient and transparent management of GCF grant monies aimed at co-financing priority actions of the management plans of catchment areas supplying water to the SIAS. During the detailed preparation of the financing proposal, the options of institutions or instances that could host a financial mechanism (e.g. a fund) will be identified and evaluated, and the basic framework for the actual financial mechanism will be developed. The potential articulation with the Water Fund to be established by the GFC-financed project "Promoting climate-resilient forest restoration and silviculture for the sustainability of water-related ecosystem services" in Honduras, will be explored during the preparation of the full financing proposal. The output of this activity is that: the financial mechanism and instruments to administer the matching grants for the implementation of the management plans of the catchment areas that will supply water to the SIAS have been established.

Activity 3.3.2 Co-financing priority actions of catchment areas' management plans. On a demand driven basis, and according to the criteria and established procedures in the operating manuals of the financial mechanism (developed under Activity 3.3.1), matching grants will be provided for the implementation of priority actions of the catchment areas management plans. The output of this activity is: co-financing for the implementation of the catchment areas that will supply water to the SIAS has been granted.

31. **Theory of change.** The CRCI aims to increase the resilience to CC of rural residents of the DCH whose livelihood depend on agriculture, and are highly vulnerable because of their high level of exposure and low adaptive capacity. This will be achieved through a comprehensive approach with actions in four mutually separate but interlinked domains (e.g. farm level, housing environment, community level, and national level) to ensure the sustainability of the project results. At the farm level, the project (subcomponent 1.1) will address the limited knowledge of small-scale farmers on CRAA, and their limited financial resources to adopt them, by providing them with technical assistance, materials and equipment for water harvesting and/or irrigation, and productive inputs. At the home level, the project (subcomponent 1.2) will address the inadequacy of the farmers'

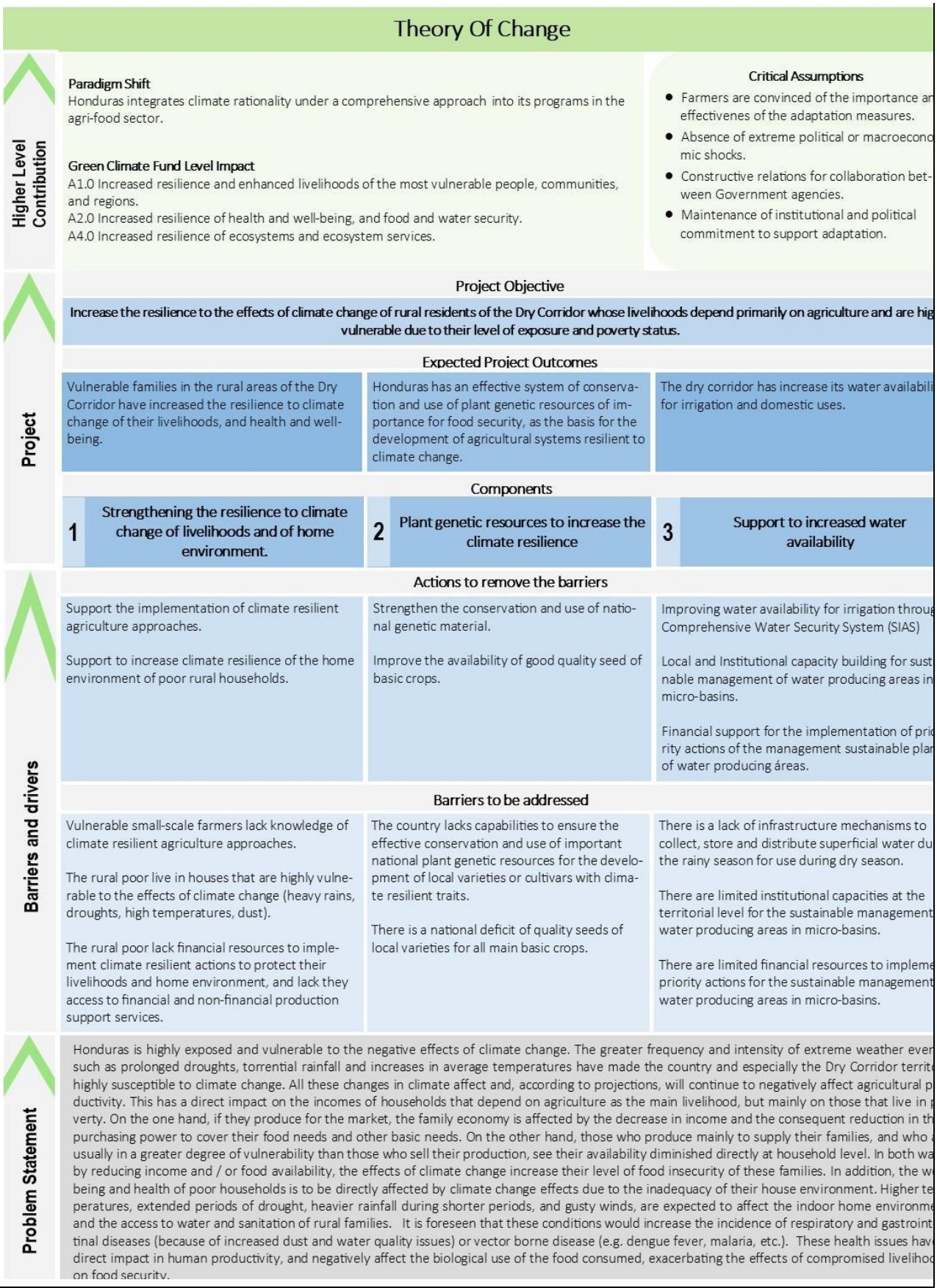
houses to withstand the consequences of projected climate scenarios with respect to indoor home environment conditions (high temperature, high humidity, increased indoor pollutants like dust) and the vulnerability of their water and sanitation systems, and related water quality issues; all which are tightly link to higher incidence of insect borne and other respiratory and gastrointestinal diseases. At the community level (Component 3), the project will address the lack of water infrastructure to collect, store and distribute surface water for irrigation, and the lack of capacities at the community level to sustainably manage the catchment areas that generate local water-related ecosystem services. Also at the local level, the project (subcomponent 2.2) will address the risk of losing local existing varieties of food crops with climate resilient traits, through local seed banks. Lastly, at the national level the project (subcomponent 2.1) will address the absence of an effective system for the conservation and use of plant genetic resources, which is the basis for the development of new varieties or cultivars of crops of importance to food and agriculture that are resilient to the effects of climate change. Also at national level (subcomponent 2.3), the project will address the significant shortage of good quality seed of varieties and cultivars adapted to local conditions and with climate resistant traits for the most important food crops (maize, beans and sorghum). See a diagram with Theory of Change in Annex 4.

32. **Implementation arrangements**. The Accredited Entity (AE) of the project is the Central American Bank for Economic Integration (CABEI), a multilateral development bank in Central America, recognized as direct access entity by GCF. CABEI´s mission is to promote the economic integration and the balanced economic and social development of its founding member countries, attending and aligning itself with their national policies and development priorities. CABEI finances public and private development projects. During the past 57 years, CABEI has approved credits for more than US$30.9 billion and has disbursed more than US$26.2 billion. CABEI requires that its operations comply with environmental and social standards, based on international best practices, aligned with CABEI's Environmental and Social Policy. Hence, CABEI is well placed to act as Accredited Entity for this Project.

33. In agreement with the Government of Honduras, CABEI will delegate the execution of the project to Strategic Investment of Honduras (Invest-H), which is a Project Management Unit (planning, administration and implementation) for strategic development projects and programs attached to the General Secretariat of Government Coordination (SGCG), and to the Food and Agriculture Organization of the United Nations (FAO). Invest-H would be the Executing Entity (EE) for Components 1 and 3 of the project, while FAO will be the EE for Component 2. The Secretariat for Agriculture and Livestock (SAG) will have the central role of national counterpart to ensure the adherence of project implementation to existing national policies and strategies, and to facilitate relations with other instances of the Central Government. A diagram of the proposed structure is presented in Annex 5. The justification of the selection of the EE can be found in the P-FS (Chapter 10).

Major financial and operational risks

34. Preliminary risks identified at the Concept Note stage include technical and operational, and social and environmental risks. These include (i) potential recruitment of unqualified human resources; (ii) lack of interest among project beneficiaries; (iii) turnover of key project personnel; (iv) extreme weather events; (v) changes in government; and (vi) social unrest and violence. The potential impact level, likelihood and possible mitigation means are presented in the CRCI Risk matrix in Annex 6. A full risk analysis will be undertaken during preparation of the full financing proposal, and final project design will incorporate relevant mitigation measures.



B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

Impact potential

35. At project completion, nearly 1.6 million people or 17% of the country's population would have benefited from it. Of this, direct beneficiaries (small-scale farmers in the DCH and their family members) to benefit from Component 1, Component 2 and Component 3 were estimated to total around 67,000 people. Indirect beneficiaries, those (farmers and their family members) benefiting countrywide of public goods generated by

the project (Component 2) were estimated at around 1.5 million people. Because of the project, around 4,500 ha of farmland will have incorporated climate resilient agriculture approaches (Component 1), 12,005 hectares will use good quality seed of cultivars of basic food crops with climate resistant traits (Component 2) and 7,400 ha of land or forests of catchment areas will be managed under a landscape restauration approach (Component 3), contributing to GHG emission reductions. Preliminary estimates indicate that the project could yield a net reduction in GHG, through land use changes (increased forest cover and soil-carbon sequestration) and reductions in the use of firewood for cooking, of up to 283,400 t CO2 eq. over a 20-year period.

Paradigm Shift Potential

36. **Innovation.** The project design is innovative on itself, as it proposes a comprehensive approach to the low resilience of agriculture dependent poor residents of DCH, with actions in four interlinked and mutually reinforcing spheres of action (farm level, home level, community/local level, and national level) that underpins the sustainability of project results. For more details, see description of Theory of change in paragraph 30 and Theory of change diagram in Annex 4.

37. **Potential for scaling up and replication**. Given the large universe of residents in the DCH that depend on agriculture and are highly vulnerable to CC, the actions directed to increase their climate resilience at the farm level and home level could be replicated extensively with the main limitation being access to financial resources. Actions directed to increase the availability of water for irrigation could be scale-up and replicated in as much there are micro-basins with conditions for the establishment of SIAS, and also availability of financing. Projected increases in the availability of good quality seed are expected to fulfil a minor proportion of the actual demand, and hence there are ample space for scaling-up and replicate the project's promotion of farmer-based seed multiplication enterprises.

38. **Potential for knowledge and learning**. Through Component 1 the CRCI will build the technical capacities of local technicians that will be contracted to provide technical assistance to beneficiary farmers, particularly on climate resilient agricultural approaches. These technicians will support the strengthening of capacities of beneficiary farmers during project implementation, and will remain a local resource for other future programs and projects. Lessons learnt during the implementation of the project will be systematized with the expressed intention of sharing knowledge with other programmes and projects, and inform policy makers. In addition, technical manuals of climate resilient agriculture approaches for the Dry Corridor that will be produced for the use of the project will be made available in digital format for the use of other programmes and projects, not only in Honduras, but also in other countries that share the Dry Corridor and face similar challenges. Through Component 2. The CRCI will build up the capacity of DICTA to establish and manage an effective system for the conservation and use of plant genetic resources. The project will also strengthened capacities of community based organizations that will be in charge of implanting the management plans of catchment areas of the micro basins under Component 3.

39. **Contribution to the creation of an enabling environment.** The project will be instrumental in changing the strategies and practices of traditional agriculture (slash and burn, monoculture, uncovered land, use of self-produced grain as seed, etc.) that have made farmers in the Dry Corridor highly susceptible to weather variability and the projected effects of climate change, and that have even contributed to the degradation of natural resources that support their livelihood. The project will assist the county to take its first steps towards fulfilling a vision, where small-scale farmers countrywide produce under sustainable and more climate resilient agricultural systems, with smaller carbon footprints.

40. The project will provide non-reimbursable financing to beneficiaries at the farm and home levels. The financial sustainability of outcomes at the farm and home levels, which involve non-reimbursable in-kind financing to beneficiaries, is underpinned by expected increases in production and income to be realized by the adoption of climate resilient agriculture approaches and increased water availability derived from project actions. Also through increased knowledge and income, direct beneficiaries will be able to operate and maintain the built-infrastructure of the SIAS that supply them with water for irrigation. Those benefiting from the SIAS are expected to generate enough income to contribute towards the implementation of the management plans of the corresponding catchment areas.

41. The project will also seek to articulate with other programs and projects being implemented in the DCH to avoid duplications and to take advantage of complementarities, such as the Government of Honduras (GoH) safety-net programs, or health education programs, etc. Lessons learnt from the implementation of this comprehensive approach to climate resiliency in the agricultural sector will be systematized as to serve as input for the development of new programs and projects in the region, and in the country, and to inform policy makers accordingly. The result of the proposed impact evaluation will also be systematized for learning purposes. The project will also produce technical manuals vis-a-vis approaches to increase the climate resiliency of small-scale farmers in the DCH. These would be made available for widespread use. This project will support the shift of the agricultural sector to be viewed as end in and of itself to vehicle to achieve climate resiliency of vulnerable rural populations whose livelihoods are largely dependent on agriculture.

Needs of recipients

42. **Honduras is a low middle-income country with high poverty and inequality**. Honduras poverty rate was estimated at 52.6% in 2017, and the extreme poverty rate at around 17.2% percent; the highest rate in Latin America and the Caribbean, after Haiti. Inequality (GINI 50.5 in 2017) is among the highest in the region

and the world[19]. Nearly 80% of Hondurans under the age of 15 live in poor households, and approximately one in four suffers from malnutrition, and its effects on learning abilities and future earning capacity.

43. **Rural poverty in Honduras is extremely high and it is concentrated in the DCH**. About half of the country's population lives in rural areas where the incidence of poverty is almost 77%. While urban poverty has decreased nationwide in recent years, extreme poverty has increased in rural areas by around 10%. When measured through their unsatisfied basic needs 86% of rural residents live in poverty[20].

44. **The rural poor overwhelmingly rely on agriculture as their principal livelihood.** Around 72% of agricultural families in Honduras are engaged in semi-subsistence farming, which is typically characterized by low marginal productivity and extreme vulnerability to shocks. Rural poverty in Honduras is mainly concentrated in the western and southern regions of the country, known as the Honduras Dry Corridor (DCH), which represents 70% of total poverty and 58% of all extreme poverty[21].

45. **Agricultural systems of small-scale producers in the DCH are extremely vulnerable to CC compromising household food security.** This is mainly due to their high climatic exposure, and the low adaptive capacity, including lack of water for irrigation, insufficient availability of good quality seed of local varieties or cultivars of crops adapted to the effects of the CC. Expected reductions in yields under projected climate scenarios (see Table 1. in section B1) will have a direct impact on the economies and food security of households that depend on agriculture as their main means of livelihood, but mainly of those living in poverty. Through lower income and/or food availability, the effects of CC are expected to increase the level of food insecurity that is already at 49.3% of the national population[22].

46. **Small-scale farmers in Honduras depend on rainfed production of a few low-value staple food crops (i.e. Maize, sorghum and beans)**. If producers are to successfully transition into more productive and climate resilient farming systems they need to generate sufficient revenue to cover incremental costs. Given land size and other resource constraints, farmers must strive to diversify at least a share of their productive output to higher value crops.

47. **The wellbeing and health of the rural poor in Honduras is also being directly affected by CC**. The erosion of food security due to the climate effects on the livelihoods of the rural poor, as explained above, is exacerbated by the vulnerability of their home environment. In Honduras, health is also directly affected by the greater frequency of extreme weather events. The rise in temperatures has increased the risk of death due to heat and related diseases, and water vector borne diseases, due to compromised air and water quality (but also indirectly through increased malnutrition). In the DCH, rural houses are predominantly built of mud with thatched roofs, or other fragile materials or construction methods that fail to sufficiently insulate their occupants from harsh weather conditions, as those projected in all future climate scenarios. Housing deficiencies, when coupled with higher temperatures and more intense rainfall over shorter periods, and extended droughts, will result in home environments (with higher indoor temperature and humidity, and increased pollutants, like dust) that are good breeding ground for protozoa, bacteria, viruses, and disease vectors, such as mosquitoes. For instance, the incidence of malaria and dengue fever has been linked to increases in temperatures, especially when they exceed 30^{o} C, and when accompanied with increased rainfall, both of which are projected effects of CC in the DCH. Extreme weather events such as droughts or floods, as well as changes in the rainfall regime, also often result in increased cases of diarrhea. While diarrhea is in and of itself a serious health problem, particularly for younger children, diarrhea and malnutrition reinforce each other. While malnourished people are more likely to suffer from debilitating diarrhea because of their compromised immune system, diarrhea reduces the body's ability to absorb nutrients increasing malnutrition.

48. Projected climate effects, such as heavier rains over shorter periods, higher temperatures and more intense and prolonged droughts, as well their impact in the incidence of water and vector borne diseases, are expected to result in a general decline in wellbeing and overall health of poor rural families. Compromised health will in turn have a direct impact on food security through reduced biological utilization of food.

49. **Honduras is amongst the most vulnerable countries to extreme climate events, and to the effects of CC, but is one of the least prepared**. According to the German Watch's 2020 Global Climate Risk Index (CRI), Honduras ranks as the 42nd most exposed and vulnerable country of the world to extreme weather events, when assessing the 1999-2018 period[23]. Annual losses resulting for these extreme events are estimated at around 2% of the country's GDP[24]. In addition, according to the Global Adaptation Index of the University of Notre Dame, which measures vulnerability and preparedness of countries to CC, Honduras ranks as the 70th most vulnerable and 44th least prepared of over 180 countries with respect to CC.[25]

50. **Honduras requires grant financing from the Green Climate Fund to complement other ongoing efforts to address the effects of climate on its more vulnerable population**. In 2014, Honduras embarked on a program to foster inclusive growth through fiscal, monetary, and governance reforms. At the time, Honduras was facing numerous macroeconomic challenges; with slowing economic activity, a trying external environment and political uncertainty. Fiscal policy in previous years had led to a rapid increase in public debt, the current account deficit had increased, and reserve coverage was limited. Against this backdrop, the GoH implemented a front-loaded fiscal consolidation, reducing the fiscal deficit by almost 7 percent of Gross Domestic Product in three years. In 2016, the GoH enacted the Fiscal Responsibility Law (FRL), amongst other measures to make the financial system more resilient. Despite the positive results of these actions with respect to macroeconomic stability and increased confidence, important challenges remain to reduce risks and vulnerabilities to the economy. Poverty is still high and the dire financial situation of the public owned enterprises is constraining public spending. Under these conditions, in order to maintain confidence and to reducing

financing costs for the economy by keeping country's risk premium low, the GoH remains committed to fiscal prudence, within the framework of the FRL. Honduras entered a two-year Stand-By Arrangement and a two-year arrangement under the Standby Credit Facility of the International Monetary Fund on July, 2019. According to the IMF[26], by protecting the revenue mobilization efforts made, the GoH is trying to reduce the infrastructure gap and increase social spending; efforts which are critical to reduce poverty and inequality, while maintaining a prudent fiscal position that secures debt sustainability over the medium term. Even under the aforementioned economic and fiscal policy scenario, and significant investments already being made to restore its forests and build climate-resilient infrastructure, the GoH remains committed to creating space in the national budget for further climate action. However, to be able to finance much needed additional climate action interventions, such as the CRCI, Honduras requires access to external non-reimbursable financing. Honduras Central Government Debt represented 48.74 percent of its GDP in 2018[27].

Sustainable development potential

51. In addition to its CC adaptation benefits and mitigation co-benefits, the CRCI is expected to generate development co-benefits in several areas. In terms of economic co-benefits, the project has the potential to generate up to around 4,000 jobs (full time equivalent) in the agricultural sector. These are to come directly from labor demand generated by the implementation of climate resilient approaches promoted in 4,500 hectares (Component 1), as well as the demand for labor generated by the use of good quality seed in over 12,000 ha to be potentially planted with good quality seed produced with project support (Component 2). Albeit indirectly, the project will significantly contribute to revitalize the local economy through increased local demand for goods and services (e.g. food, medicine expendable supplies and materials of various types, transportation and other services) underpinned by the higher purchasing power of direct beneficiaries. Amongst its social co-benefits, and through its impact on the sanitary conditions of home environments (see description of Subcomponent 1.2), the project will reduce morbidity and indirectly, through this, contribute to increase household food security. Reduced incidence of diseases will also contribute to increase labour productivity, reduce school absentee rates, freeing time of childcare providers (mainly women) and reducing medical expenses, including indirectly reducing transport costs and loss wages. Reduced use of firewood through improved stoves will, in addition to have a health co-benefit, free time of women who are usually responsible for this task at the household. In terms of environmental co-benefits, through the application of conservation agriculture principles (Component 1), the project is expected to have a direct impact on improving soil quality, in terms of organic content, nutrients, and water retention capacity, among others. The project will also have a major role in the conservation of biodiversity though its germplasm conservation actions (Component 2), and through the sustainable management of micro-basin catchment areas (Component 3). Also through sustainable management of catchment areas, the project will contribute to safeguarding water regulation and supply, and other ecosystem services such as air and water quality, reduced soil loss, etc.

52. Project implementation shall result in positive gender-sensitive development impacts, as well. The project will set explicit and ambitious targets to reach women and contribute to correct gender empowerment imbalances. This would be done by purposely targeting women headed households (approximately 11%[28]) for participation under Component 1, and promoting women participation in farmer based seed multiplication organizations that will be supported under Component 2. Women, when present in the household, will have the primary role of selecting housing improvements under subcomponent 1.2 and will participate in other decisions such as selection of crops for family consumption and sale. In addition, the project will actively promote the participation of women in leadership roles and general membership of community organizations responsible for the implementation of sustainable management plans of catchment areas, supported under Component 3. In terms of positive gender impacts, housing improvements (improved stoves, better roofs, walls and floors, rainwater harvesting systems, latrines, etc.) shall reduce the time and effort required for tasks, such as cooking, washing and cleaning, firewood and water collection, among others. Since women and girls disproportionally carry out these tasks, they would benefit the most from the resulting workload reduction. Reductions to the incidence of diseases through home improvements will reduce the time required by adults to care for sick children, another task that is generally performed by women.

Country Ownership

53. The CRCI is aligned with the challenges and objectives set forth in the framework of public policies, and will contribute to the achievement of international commitments and the country's climate action goals (see paragraphs 10 and 11 of section B1 for a more detail on the CRCI's coherence and alignment with national climate strategies and priorities, and other existing policies.).

54. Teams from FAO and the SAG of Honduras have held over 30 meetings and workshops for the preparation of the CRCI's Concept Note. The preparation work has been done in close coordination and with the guidance of the Natural Resources, Environment and Mines Secretariat (MiAmbiente) the country's National Designated Authority (NDA). Five meetings were held with the NDA to present and discuss the project idea, review its progress and receive feedback. The formulation team also benefited from the guidance of the CC Presidential Office (Clima+), the Government's instance responsible for approving and articulating public policy and investments in CC, with whom it met on three occasions. Details of several other meetings and workshops with other stakeholders are listed in Annex X).

Capacity of executing entities

55. **Invest H** is the proposed EE to implement Components 1 and Component 3 of the CRCI. Invest-H is a management unit (planning, administration and implementation) of strategic projects and programs for the development of the country attached to the General Secretariat of Government Coordination (SGCG), in operation since 2005 when it was created to administer the Account of the Millennium Pact (US $ 215 million) between the United States and Honduras. It has extensive experience in the management of investment projects in the DCH, among which the Access to Production and Nutrition (ACS-USAID) project financed by the United States International Development Agency-USAID (US $ 69 million) , the Dry Corridor Food Security Project (ACS-PROSASUR) financed by the Global Agriculture and Food Security Program (GAFSP) and administered by the World Bank-WB (US $ 30 million), and the Rural Competitiveness Project (COMRURAL) financed by the WB (US $ 21.2 million + US $ 25 million). In addition, it has been selected to implement two new projects that will begin operations in 2020 in the area of influence in the Dry Corridor: (i) the Integral Rural Development and Productivity Project with financing from the Inter-American Development Bank-IDB (US $ 90 million); and (ii) the Project Integrating Innovation for Rural Competitiveness with financing from the World Bank (US $ 75 million). Additionally, Invest-H has managed investment projects in road infrastructure with other financial institutions, such as CABEI, and the Inter-American Development Bank (IDB), and therefore has experience in project management under the standards and procedures a wide range of institutions.

56. **FAO** is the proposed EE to implement Component 2. FAO is the specialized agency of the United Nations Organization for food and agriculture. It has staff and offices around the world. The FAO country office for Honduras, established in 1978, currently manages 18 projects throughout the country, with an annual budget of US $ 14.1 million. The implementation of Component 2 will be carried out by a dedicated project team based on the FAO country office in Honduras. FAO will implement Component 2 according to its standards for the financial management of the project, procurement, audit and reports, whose standards were reviewed and approved by the GCF in the context of the Organization's request to become AE in 2016. The FAO country office in Honduras has administrative and technical staff in a wide range of fields. Behind the country-level team, FAO has technical specialists based in its headquarters (HQ) in Rome, and the Regional Office for Latin America and the Caribbean (RLC) and the Subregional Office for Mesoamerica (SLM). Component 2 of the project deals directly with the conservation and use of plant genetic resources, one of the topics where FAO has extensive experience and comparative advantages. Over the years, FAO has consistently participated in this area through concrete actions, among others: (i) International awareness of the importance of maintaining plant genetic diversity for food security, through agencies and the organization of intergovernmental meetings; (ii) Regulatory assistance and support for international negotiations and agreements, as well as related regulatory frameworks; (iii) Support for capacity building for the conservation and sustainable use of genetic resources, at regional and national level, through projects and the publication of technical standards and guidelines; (iv) Strengthening the management and exchange of information through international, and national databases and networks and training of personnel.

Efficiency and Effectiveness

57. **Financial adequacy and appropriateness of concessionality**. Honduras is a low-middle-income country, which faces fundamental socioeconomic challenges, and the country's ability to generate its own resources or contract additional sovereign debt for CC adaptation and mitigation is limited, as explained in more detail in paragraph 47 above. The country is committed to fulfil its commitments under the Paris Agreement but to do so requires significant external support in the form of non-reimbursable financing.

58. **Amount of co-financing**. By request of the GoH the proposal has been designed to articulate and co-levarage financing with the Water Security in the Dry Corridor of Honduras Project (WS-DCH), under preparation and to be financed with an IDA-World Bank credit of US$ 70 million and a US$15 million contribution from the GoH. Its preliminary Project Development Objective is to “improve water service delivery and strengthen water governance in select areas of the Dry Corridor of Honduras”. Both the WS-DCH and the CRCI are complementary and essential pieces of GoH plans and efforts to address water security in the DC in the context of CC, and to implement CC adaptation interventions while fostering long-term resilience. The GoH intends that the WS-DCH be a vehicle to leverage non-reimbursable climate financing to scale-up interventions and thus is being presented as co-financing to the CRCI. While weighing options on how to structure both proposals, the determination was made that both operations should be prepared with all the elements needed to be independently approved by their respective financiers. This, mainly to mitigate the risk of potential delays from having to navigate the policies, procedures and requirements of both the World Bank and the GCF together, under one joint proposal. In addition, the risk that one project could not start operations if the other one was delayed, or not approved, needed to be avoided. The preparation teams of both operations have worked closely so far, and will continue to do so during the preparation of the CRCI’s full financing proposal. During the preparation of the CRCI Concept Note, both formulation teams met on seven occasions, in addition to video-conferencing and exchanges through electronic correspondence (see Annex X of the PF-S). With the preparation process of the WS-DCH being ahead of the CRCI”s, the project document of the former, in its final stages, explicitly illustrates the proposed linkages with the CRCI, if approved by the GCF. To ensure efficient coordination of actions during implementation, the CRCI proposes that both its Component 1 and Component 3, which are the components where it intersects with the WS-DCH, ought to be implemented by Invest-H, the same government agency that will implement the WS-DCH. The CRCI will also leverage around 6 million from SAG, through its productive solidarity programme. Contributions from beneficiaries, which have not be included as co-financing, have been estimated at around US$ 8 million.

59. **Financial viability and other financial indicators**. A preliminary ex-ante economic cost-benefit analysis of CRCI was performed to assess its expected net incremental economic benefits of the requested GCF Grant, from the perspective of society as a whole. For a 20-year period of analysis, the net present value of incremental economic benefits for the entire project was estimated at US$ 29.9 million. This represents the net return to society of having invested US$ 134.3 million (the total cost of the project), when valuing the opportunity cost of capital at an annual rate of 12%. The corresponding economic internal rate of return (IRR) was estimated at 21.2%, which confirms the economic feasibility of the CRCI. The economic feasibility of the project proved robust when subjected to a sensitivity analysis with respect to implementation delays, general potential cost increments and/or of reduced expected benefits (see Annex VII of the PF-S). The analysis considered all expected project costs, and the following two types of benefits: (i) the economic value of increased agricultural production from implementing climate-resilient agricultural systems; and (ii) benefits associated with environmental/climate-mitigation co-benefits, mainly carbon sequestration and storage and reduction soil loss due to soil erosion. Other expected benefit to society were not included at this stage in the analysis. These include the economic impact of increased health from improved home environment and increased food security, as well as other local environmental co-benefits such as water production and regulation, temperature regulation, and indirect effects like local economic revitalization through the increased demand for goods and services generated by higher incomes, etc.

B.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

60. As mentioned in more detail in paragraph 51 above, SAG actively participated throughout the identification and design of the project concept. MiAmbiente, the country's NDA, has been involved and kept abreast, as well as Clima+. Other Government institutions that were consulted during concept design include the Forest Conservation Institute (ICF), the Ministry of Social Development and Inclusion (SEDIS), the Ministry of General Coordination of Government (SCGG). Consultations where also held with both proposed EE, FAO and Invest-H. Details of consultations with these and other stakeholders are listed in Annex X.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

Component	Indicative Cost (million USD)	GCF financing		Co-financing		
		Amount (million USD)	Financial Instrument	Amount (million USD)	Financial Instrument	Name of Institutions
Component 1.Climate resilient livelihoods and home environments	**$23.8**	**$19.2**		**$4.6**		
Subcomponent 1.1. Climate resilient agriculture	$18.7	$14.1		$4.6		
Output: *Small farmers with or without access to water for irrigation have implemented climate resilient agriculture approaches*	*$18.7*	*$14.1*		*$4.6*	In Kind	SAG
Subcomponent 1.2. Resilient homes	$5.1	$5.1		$0.0		
Output: *Families with improved housing to protect their wellbeing and health from the effects of climate change*	*$5.1*	*$5.1*		*$0.0*		
Component 2. Plant genetic resources to increase the climate resilience	**$5.7**	**$4.3**		**$1.4**		
Subcomponent 2.1. Conservation of plant genetic resources	$2.8	$1.6		$1.2		
Outputs: *(i) a national collection PGRFA*	*$0.3*	*$0.3*		*$0.0*		
(ii) a functioning national germplasm bank;	*$0.6*	*$0.4*		*$0.2*		
(iii) two regional banks interlinked with the national bank	*$0.6*	*$0.5*		*$0.2*		
(iv) a national network of ex-situ conservation initiatives	*$0.7*	*$0.2*		*$0.5*		
(v) at least 35 local banks (at the municipal level) that allow producers to store and access seed of varieties and cultivars with climate resilient traits	*$0.5*	*$0.2*		*$0.3*	In Kind	SAG
Subcomponent 2.2. Selection of plant genetic material	$1.3	$1.1		$0.2		
Output: *Varieties of basic grains that have characteristics of greater tolerance to droughts and the attack of pests and diseases associated with climate change have been released*	*$1.3*	*$1.1*	Grant	*$0.2*		
Subcomponent 2.3. Increasing the availability of good quality seed	$1.7	$1.7		$0.0		
Output: *Seed multiplication enterprises have been established*	*$1.7*	*$1.7*		*$0.0*		
Component 3. Support to increased water availability	**$92.6**	**$16.6**				
Subcomponent 3.1. Water harvesting infrastructure		$14				
Output: *(i) the micro basins and sites for the installation of the SIAS have been identified*		*$0.3*				
(ii) water harvesters built by SAG that will be complemented with the SIAS approach have been identified		*$0.0*				
(iii) for each SIAS (a) easements for infrastructure and access to legally established water recharge areas; (b) declarations of water producing areas as a protected forest area or water supplying area; and (c) titling of the lands where the reservoirs of the water harvesters will be built under the name of the water user organizations		*$0.4*		**$76.0**	Credit (USD 70 million) and counterpart funding from government (USD 15 million)	IDA (World Bank) and Invest H
(iv) SIAS have engineering designs		*$13.5*				
Subcomponent 3.2. Sustainable management of catchment areas supplying water to the SIAS		$1.1				
Outputs: *(i) community organizations are legally constituted and technically and organizationally strengthened to manage the development and implementation of the management plans of the water producing areas of the SIAS*		*$0.23*				

(ii) management plans for catchment areas that will supply water to the SIAS formulated		*$0.90*				
Subcomponent 3.3. Support for implementing management plans of micro basin catchment areas		$1.21				
Outputs: *(i) the financial mechanism and instruments to administer the matching grants for the implementation of the management plans of the catchment areas that will supply water to the SIAS have been established*		*$0.9*				
(ii) co-financing for the implementation of the catchment areas that will supply water to the SIAS has been granted		*$0.3*				
Project Management	**$12.2**	**$3.2**		**$9.0**		
Indicative total cost	**$134.3**	**$43.3**		**$91.0**		
Proportion	**100%**	**32%**		**68%**		

61. The co-financing from SAG is in-kind. It includes agricultural inputs to be provided to beneficiaries (Bono de Solidaridad Productiva), human resources, use of vehicles, per diem, for distribution, etc. Beneficiaries will make an in-kind contribution that includes on farm provided by families valued at USD 8 million.

As previously indicated, for the formulation of CRCI and WS-DCH were prepared and are being submitted independently in order to avoid the risk of delays of designing a joint proposal that would need to be approved by two different institutions: GCF and World Bank. In this way, the components, activities and products have been defined independently, so it is not possible to allocate the WS-DCH project budget to the CRCI outputs.

C.2. Justification of GCF funding request (max. 1 page)

62. In Honduras, access to reimbursable public financing, even if concessional, is constrained by stringent fiscal legislation and commitments, in a context of critical competing demands. Thus, in order to be able to implement the CRCI the country must obtain grant financing from the GCF. This is explained in more detailed in paragraph 48 above.

63. The private sector will seldom entertain financing the generation of public goods, such as the results of the conservation and use of plant genetic resources, or of the sustainable management of micro basins' catchment areas, proposed under Components 2 and 3, respectively. The financing of private goods under Component 1 of the CRCI is justified on the basis of addressing market failures that are preventing poor farmers in the DCH to access technical assistance and financing to transition towards more productive and climate resilient agricultural productions systems and housing. The one-off public financing of private goods under Component 1 will put these farmers and their families on a climate resilient and financially sustainable path, as described in paragraph 18 above.

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

64. The sustainability strategy for the overall project rests on its own design, that takes into account lessons learnt from previous and current programmes and projects implemented in Honduras and the DCH. The project proposes a comprehensive approach to addressing the main identified barriers to achieve its objective. It puts forward actions at four different but interdependent domains (i.e. farm level, home environment, community/local level and national level). Through this approach, the project will: (i) provide knowledge and goods to assist farmers and their families to the climate resiliency of their livelihoods and of their wellbeing and health; (ii) strengthen the country's capacities to conserve key plant genetic resources for the development of climate resilient varieties, and increase the availability of good quality seed for relevant crops as a key element of the strategy to increase the resilience of agricultural systems; (iii) increased water availability for irrigation; and (iv) restore and/or safeguard the water related ecosystem services of the catchment areas supplying water to project beneficiaries. Without one of these elements, the sustainability of the results could be compromised.

65. The design of the interventions at the farm level considers the diversification of crops with marketing potential in local markets. Preliminary financial cost-benefit analyses of farm level investments provide indications that through increased and more stable production and sales, farmers will be able to generate sufficient financial returns to cover their operational and investment costs, thus allowing for re-investing in subsequent production cycles, and operate and maintain, and replace at the end of their useful life the equipment (irrigation) and home improvements. The project will finance technical assistance for providing training of the beneficiaries on O&M (including asset management, regular system maintenance, prioritization of maintenance works of the systems, etc.) and agriculture aspects, for a minimum of two years after construction is completed, to ensure financial and environmental sustainability. After this, they should be able to manage on their own.

66. Investments, both hard and soft, for the conservation and use of plant genetic resources will remain with DICTA, and other participating partners from the academic/research sector, when at central level, and with municipalities at local level. They will use and provide financing for operation and maintenance through their core budgets, and provision of services, as part of their regular functions.

67. The sustainability of investments to promote the establishment or consolidation of farmer-based seed multiplication organizations or cooperatives is based on expectations of profitability of their operations after initial project support. Previous pilot experiences in Honduras under a relatively recent project financed by the Spanish Agency for International Cooperation for Development and implemented by FAO, support this expectation. Preliminary market assessments indicate that the market for good quality seed of local varieties

of maize, beans and sorghum is highly undersupplied. During the preparation of the full financing proposal, a detailed ex–ante financial cost benefit analysis for the seed multiplication enterprises will be performed and market conditions assessed in more detail.

68. The sustainability of infrastructure investments under Component 3 will rest on the expected high quality of the works, which is supported by evidence of similar infrastructure already constructed in the DCH by Invest-H, the proposed EE for that component. In addition, farmers as direct water users will be generating sufficient revenue and will be trained and organized with project support to operate and maintain infrastructure.

69. As for investments to support the sustainable management of catchment areas, also under Component 3, their sustainability is based on: (i) the fact that the community organizations in charge of implementing the catchment areas management plans will have been strengthened, including vis-à-vis financial management and fund raising; (ii) the project will have left a functioning financial mechanism to administer financing of the management plans of the catchment areas; and (iii) that farmers and other users of the ecosystem services generated by the managed areas will contribute, in-cash and/or in-kind, to financing the implementation of the management plans.

70. The monitoring after project implementation for Component 1 will rest with SAG as part of its regular functions, while those of Component to by DICTA. ICF, SAG, municipal governments, and local civil society groups will monitor long-term sustainability of Component 3 results.

C. Supporting documents submitted (OPTIONAL)

- ☒ Map indicating the location of the project/programme
- ☒ Diagram of the theory of change
- ☒ Economic and financial model with key assumptions and potential stressed scenarios
- ☒ Pre-feasibility study
- ☐ Evaluation report of previous project
- ☐ Results of environmental and social risk screening

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes ☒ No ☐

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes ☒ No ☐

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