

## **Belize**

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### **Resilient Rural Belize (Be-Resilient)**

Social, Environmental and Climate Assessment Procedures (SECAP) Note  
GCF Additional Financing

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# 1 Project Executive Summary

1. As a Small Island Developing State in the Caribbean hurricane belt, Belize is highly vulnerable to the impacts of climate change. While the most extreme and visible effect is an increased intensity of tropical storms and hurricanes, climate change also manifests itself through documented trends of increased droughts, flooding, and significant rainfall pattern variations. Where, according to the International Center for Tropical Agriculture: "The most detrimental effects on agriculture are likely to come from increased variability in the seasonal distribution of rainfall, which is expected to lead to more frequent droughts and floods. Additionally, projected rises in temperature of 1.3 °C by the 2030s will increase stress on crops and livestock, impacting agricultural systems, forcing changes in management practices, and threatening food production." (CIAT, World Bank. 2018)

2. Smallholder farmers are amongst the most vulnerable as they suffer devastating losses, most dramatically in the occurrence of an extreme event but similarly through the impacts of persistent and unpredictable seasonal variations. Due to the high cost of such events, smallholders' limited investment capacity is fully focused on recovery and purchase of inputs, thus preventing them from investing in assets and measures that would limit their exposure. As a result, the impacts of climatic events are more profound, and the recovery time is prolonged. This vulnerability is exacerbated by the poor market conditions for smallholder farming in Belize. With their current assets, capacities, and connections to markets, smallholders are not equipped to deliver a regular supply of adequate volumes of quality produce required for sustainable market access. As such, markets have turned towards imported goods to supply a large proportion of foods, including vegetables and fruits, that have traditionally been supplied by smallholders and can be competitively produced in Belize.

3. The project aims to introduce climate resilient agricultural practices that will allow smallholder farmers to have a sustainable production process and improved market access for their produce, even under the stress of climate change and extreme climatic events; therefore increasing their economic, social, and environmental resilience. In the context of smallholder farmers in Belize, improved resilience is defined as the capacity to minimize the impacts of climatic and economic shocks, enabling farmers to better confront periodic variations and strengthening their capacity to cope and recover in times of extreme stress. To achieve this in a manner that meaningfully improves smallholders adaptive capacity, significant improvements across the entire value chain are required, as weaknesses in production technologies and practices, fragile and variable physical access to markets, and limited capacity to respond to market demands are all factors that contribute to farmers' vulnerability. The project proposes a comprehensive, focalized, and climate resilient approach to reduce the exposure to climate and economic shocks by promoting climate resilient agricultural production, investing in climate proof infrastructure, supporting producer associations, and strengthening value chains to establish smallholder farmers as reliable and competitive suppliers of domestic produce in Belize for an expanding market for fruit and vegetables.

## 1.1 Project components

4. The proposed Project has two main complementary and mutually-reinforcing components: Component 1 "**Climate Resilient Value Chains Development (CRVC)**" and Component 2 "**Climate Resilient Rural Infrastructural and Assets Development (CRRIA)**", with cross cutting activities supporting both components. It will initially work in 23 communities clustered in five priority Districts

and activities will focus on the development of value chains of six vegetables (tomatoes, sweet peppers, hot peppers, cabbages, carrots, and onions), one fruit (pineapple), and beekeeping products (principally honey).

#### **1.1.1 Component 1: Climate Resilient Value Chains Development**

5. Component 1 will introduce/strengthen smallholder participation in select value chains through the promotion of climate resilient and environmentally sustainable production methods, product diversification, and related innovations. It will rely on technical support and the physical presence in the project Districts of climate resilient agriculture specialists working with Ministry of Agriculture (MoA) extension agents. A competitive matching grant fund (MGF), partially funded by the GCF loan, will be structured to support climate resilient production and value chain development investments. Producer Organizations (POs) as well as individual members receiving support from technical areas of the project will be eligible for funding. Additionally, this component will support food security, self-consumption and healthy food choices through implementation of backyard gardens.

#### **1.1.2 Component 2: Climate Resilient Rural Infrastructure and Assets Development**

6. Component 2 will support public climate resilient infrastructure enhancing smallholder farming business/ rural enterprise opportunities, while serving the largest number possible of direct and indirect project participants. It includes investments in rehabilitation of existing infrastructure and provision of climate proof roads, drainage and irrigation schemes as well as a nationwide climate information system. Water User Associations (WUA) will be formed and provided with technical assistance for institutional development and management of irrigation and drainage schemes.

7. The productive investments in Component 1 and the public infrastructure in Component 2 will be guided by regional Infrastructure and Production Plans, based on climate vulnerability and market studies. Both Components are also supported by cross-cutting activities which include government authorities capacity building, research and development (R&D), and policy engagement/consultation.

8. The project will introduce climate resilient agricultural practices that will allow smallholder farmers to have a sustainable production process and improved market access for their produce, even under the stress of climate change and extreme climatic events; therefore increasing their economic, social, and environmental resilience. Directly benefiting 30,000 rural people (of which 40% are women and 20% youth) and indirectly benefitting up to 29% of the population.

### **1.2 Project Financing**

9. The total Project cost is estimated at USD 20.0 million, including price and physical contingencies, to be executed in six years. The table below summarizes project costs by component and sub-component.

**Table 1 Total Project Financing Summary**

Component	Sub-component	Amount (for entire project in USD)	Amount (for entire project in BZD)	GCF funding amount	Currency of disbursement to recipient
1. Climate Resilient Value Chains Development (CRVC)	1.1 Infrastructure and Production Plans (IPP)	1,196,557	2,393,115	250,286	
					USD
	1.2 Strengthening of Producers' Organizations	591,548	1,183,095	103,435	USD
	1.3 Value Chains Development	6,072,266	12,144,532	3,184,264	USD
2. Climate Resilient Rural Infrastructure and Assets Development (CRRIA)	2.1 Investment in Rural Roads Improvements (RRI)	4,526,207	9,052,413	1,357,862	USD
	2.2 Investment in Small-scale Irrigation and Drainage (SSID)	3,700,449	7,400,899	2,547,609	USD
	2.3 Climate Information System	256,300	512,600	224,263	USD
Component 3	Cross Cutting Activities	295,138	590,275	129,899	USD
	Project Management Unit	3,364,433	6,731,649	202,382	USD
<b>Total project financing</b>		<b>20,002,898</b>	<b>40,008,578</b>	<b>8,000,000</b>	<b>8,000,000</b>



## **2 Major Characteristics and Issues (Social, Natural Resources and Climate)**

### **2.1 Socio-Economic Context**

10. Belize has an area of 22,960 square kilometers (8,800 sq. mi) and a population of 374,600 (2017). Thus, it is the most sparsely populated nation in Central America (16 people per km<sup>2</sup>). The country's population growth rate of 1.87% per year (2015) is the second highest in the region. Slightly more than half of the people live in rural areas (54%) and most of the population is located in the coastal zone and lowlands of Belize, where the bulk of economic activity takes place.

11. Belize is dependent upon natural resources for its economic livelihood. Agricultural products, fisheries, forests, and the ecosystems that serve as tourist attractions support more than thirty percent of the Gross Domestic Product (GDP) and through export products these natural resources generate significant amounts of foreign exchange earnings.

12. Agriculture constitutes a great portion of national GDP in Belize. The sector is significantly constrained by infrastructure weaknesses and is vulnerable to adverse weather events. In particular, recurring natural disasters and the effects of climate change have significantly impacted agricultural yields, food production, food prices, and the livelihoods of the rural population. The impact of hurricanes and climate change worsen an already difficult economic situation, causing significant losses in agriculture and tourism, with economic costs estimated at about 5.5% of GDP (Detailed information on contribution to gross domestic product by activity can be found in annex 2 of PDR).

13. The poorest people and communities in Belize are predominantly rural, and their livelihoods depend heavily on climate-sensitive sectors such as small-scale agriculture, fishing, and tourism (which impact their food security and livelihoods). Moreover, a large population of the poor living in coastal areas is exposed to the risks of hurricanes and storm surges, with those living near rivers prone to flooding. These areas generally have lower levels of protective infrastructure, and housing is of lower quality, thus increasing their vulnerability to hurricane and flood risks.

14. Even though the project areas are not completely defined, the five priority rural areas where the Project will start activities will be in the Districts of Toledo, Stann Creek, Cayo, Belize, and Orange Walk. Many of the inhabitants in these areas are by now Belizean citizens but originally come from El Salvador, Honduras and Guatemala. Depending on the District, the percentage of poor households varies between 20% to up to 65% (see annex 2 for poverty information dis-aggregated by District).

15. Small farmers in these areas produce a variety of crops for subsistence consumption and the local markets including corn and beans, banana, plantain, fruits (pineapple, watermelon, cantaloupe), and vegetables (tomato, sweet pepper, cucumber, carrot, onion, potato). All produce is marketed locally through middlemen, farmers markets or retail outlets.

16. Vegetable production is important in reducing household spending in the southern districts whereas they are mainly grown as cash crops in the Cayo, Belize and Orange Walk Districts. Vegetables are not exported but production for the domestic market provides significant foreign exchange savings whilst contributing to the potential for food security if widespread access and affordability can be secured for consumers across the nation.

17. The main production systems practiced by small farmers are milpa,<sup>1</sup> semi-mechanized, irrigated open plots and covered structures. Size of open plots ranges from 1/8 acre to about five acres. Covered structures are about 3,000 to 4,000 sq. ft. These structures play a key role in reducing unit costs of production and ensuring a longer growing season.

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<sup>1</sup> Traditional slash-and-burn agriculture.

18. Women and men play different roles in guaranteeing food security for their households and communities. While men grow mainly field crops, women are usually responsible for growing and preparing most of the food consumed at home (most families have backyard gardens as part of their coping strategy and household food security). Women also carry out most home food processing, which ensures a diverse diet, minimizes losses and provides marketable products. Women are more likely to spend their incomes on food and children's needs.

19. In these areas, the main constraints related to markets have to do with the farmers' disadvantaged negotiation position with middlemen and nearby processing plants, flooding from nearby markets and contraband from Mexico especially in the northern districts. However, they could alleviate the situation if they were able to organize themselves and plan agricultural production during the year in order to avoid flooding of the market.

20. Challenges related to rural infrastructure include bad conditions of feeder roads (especially during the rainy season) that prevent getting produce to markets without damage. In the northern districts irrigation has become a requirement as drought periods are getting worse, whereas in other areas (Cayo District) drainage systems are needed as flooding resulting from heavy rainfall events are damaging crops.

21. Some farmers are loosely organized into cooperatives and associations, although most producers operate individually. In Stann Creek District, most farmers lease the land, and thus they are loosely organized in informal groups. In Belize District land tenure is a challenge as most of the land is privately owned by people not living in Belize and is being used by farmers in the area for production. Women are widely under-represented in formal and informal producers' groups. For example, in Valley of Peace the under-representation of women has mainly to do with land tenure, as only landowners are eligible as members of an organization and landowners are mostly the men. This, however, can be arranged through changes in the organizations' by-laws.

## **2.2 Natural resources**

### **2.2.1 Land use**

22. The total surface area of the country is 22,960 square kilometres (Table 2). Approximately 800,000 hectares or about 38% of Belize's total land area, is considered suitable for agriculture but only 9.7% (about 78,000 hectares) is used for crop and livestock production. About half of this area is under pasture, with the remainder in a variety of permanent and annual crops.

23. Privately-owned land comprises 54% (about 12,400 km<sup>2</sup>) of the total land area. More than 10,000 km<sup>2</sup> of these private lands are distributed as rural parcels of more than 40 ha, while small, private, urban parcels account for less than 0.1% of the total land area. Public lands make up 46% (approximately 10,560 km<sup>2</sup>) of the total area of Belize. Those lands are further divided in (a) protected areas and forest reserves that comprise more than 30% of the total land area; and (b) other "national lands" (16% of the total), which consist of both lands that are allocated under lease contracts from the State and unleased public lands. It is estimated that there are between 100,000 parcels in rural areas that could become part of the national land registry and contribute to a dynamic market of investments (ECLAC 2013).

### **2.2.2 Protected areas**

24. Belize is located in the Mesoamerican biodiversity hotspot and has a variety of terrestrial, marine and freshwater ecosystems. More specifically, 85 terrestrial ecosystems, 15 marine ecosystems, and 43 riverine ecosystems have been classified in the country. There are 103 protected

areas in Belize and these include all the statutory sites, private protected areas and archaeological reserves that are recognized as being part of the national system.

**Table 2 Belize Land use, 2009**

	Thousands of hectares	Percentages <sup>a</sup>
Total	2 297	
Land area	2 281	100.00
Agricultural area	152	6.66
Arable land and permanent crops	102	4.47
Arable land	70	3.07
Permanent crops	32	1.40
Permanent grasslands and pastures	50	2.19
Forest area	1 412	61.91
Other lands	717	31.42
Internal waters	16	0.70

Source: FAOSTAT.

<sup>a</sup> Percentages based on land area.

25. In Belize, communities and non-governmental organizations play an important role in working with the Government for the protection and conservation of the environment and biodiversity in protected areas. This situation has occurred because of the limitations being faced by the Government relating to insufficient human and financial resources for the management of terrestrial and marine protected areas (National Environmental Policy and Strategy 2014-2024).

### **2.2.3 Forest resources**

26. Belize has been able to maintain one of the highest percentages of forest covers in Latin America, approximately 62% of its total land mass (Cherrington et al., 2012). However, the forests of Belize over the past 30 years have undergone extensive change. At a deforestation rate of approximately 0.6 percent, the greatest driver of deforestation has been conversion into agricultural land. Other pressures arise from increasing demand for fuel-wood, fodder and timber; inadequacy of protection measures, and illegal logging.

27. Many of Belize's protected areas and forest reserves are recharge areas for groundwater and act as buffers against surface runoff during storm events. Moreover, forests maintain the most important natural resources used in agriculture: (i) clean and abundant water, (ii) diverse species of pollinators; and (iii) an ecological balance of beneficial organisms that control pests and diseases. De-reservation of sections of these sensitive forest reserves for agriculture expansion is unsustainable and should be discouraged (Belize National Environmental Policy and Strategy 2014-2024).

28. There is the urgent need for the GoB to develop an integrated policy framework that balances the conservation and the development agendas. This tension between them became apparent in the communities of Nago Bank and Maskall, in which small farmers who were allocated State lands for agricultural use are encroaching on the surrounding forest. In places like these, there is a clear need for environmental safeguards and/or incentives to promote sustainability (e.g., payments for environmental services) for production systems that go hand-in-hand with ecosystem conservation (e.g., agroforestry) .

29. At present, many of the existing instruments need to be aligned, coordinated and made more robust to ensure monitoring and enforcement of existing laws (Belize National Environmental Policy and Strategy 2014-2024), especially in villages neighbouring protected areas and forest reserves. Trio, for instance, is located between two Forest Reserves (Swasey Bladen and Deep River), both of which are under threat of agricultural encroachment and illegal logging.

30. Recognizing the need for integrated management of the forest ecosystems, the Forest Department is in the process of finalizing the National Forest Policy for Belize. Considerations are being made for forest-dependent people and their livelihoods, issues related to climate change impacts, hurricane damage, national security, indigenous peoples' rights, payments for environmental services schemes and increasing competitiveness of the forest sector through the manufacture of value-added products from forest resources.

#### **2.2.4 Water resources**

31. Belize is a country rich in surface water sources and aquifers found in calcareous rock. Due to its geographic location, low population, high level of forest cover, and 16 different water catchment areas, Belize has one of the highest volumes of freshwater availability *per capita* in Latin America (National Meteorological Service, 2010).

32. The demand for fresh water resources in Belize is 579 million m<sup>3</sup> and derives from the agricultural, industrial and domestic/residential sub-sectors (Figure 1). There is, however, an increased stress on these supplies due to population growth and increases in agricultural activities, as well as an increase in droughts (BEST 2009; CARIBSAVE 2012). Reduced availability of water also threatens the security of Belize's electricity supply which comes mainly from hydroelectric dams (hydropower supplies 47.5 MW to the nation). Any significant change in the hydrological cycle would lead to higher costs of electricity as the country would become increasingly reliant on diesel-burning thermal plants (National Climate Change Office, 2016).

33. In rural areas 95% of fresh water is extracted from ground-water sources. Where there is no access to piped water service, or no local provider, water is accessed using hand pumps (CARIBSAVE, 2012). The distribution of all wells drilled or hand-dug is unknown. The Irrigation Unit of the MoA promotes irrigation systems using underground water. However, no assessment of the underground water resources is done prior to the installation of the irrigation systems, so the knowledge of groundwater resources and quality is limited (BEST, 2009).

34. Key issues with water vulnerability in Belize relate to the fact that the distribution of water resources has not been well quantified and there is a lack of hydrological data and modelling. Especially for the central and northern regions (Orange Walk and Corozal Districts) with the largest populations and smaller water resources, hydrological modelling is of special importance.

35. There is a lack of coordination between the Belize Water Services (BWS), the agency responsible for water distribution in the country, and the local village water boards. The development of a mechanism to facilitate Integrated Water Resources Management (IWRM) in the form of a water management authority was formed in MoA in 2008, but the institution remains weak and in need of strengthening. The equitable management of water resources will be particularly important with declining water resources under climate change (CARIBSAVE, 2012).

## Water Demand

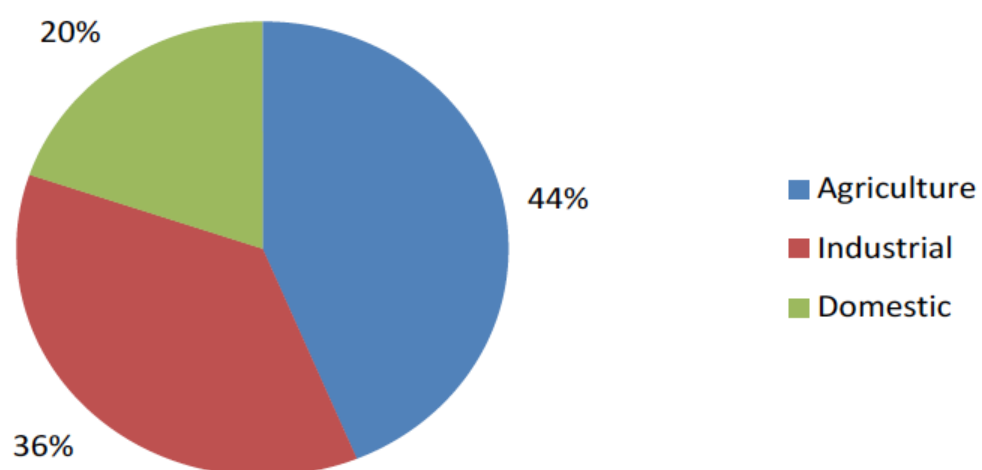


Figure 1 Water demand in Belize by sector. Source: Belize Third National Communication submitted to UNFCCC, 2016

### **3 Environmental and Social Management Plan**

36. The SECAP environmental and social management plan triggers a process equivalent to other multilateral organizations safeguard systems that carefully analyse programme, projects, loans and grants before undertaking the implementation stage. Therefore, an initial project screening that outlines the social, environmental and climate issues that are likely to be associated with an IFAD-supported project is done.

37. The purpose of this screening is to identify the main social, environmental and climate risks associated with a potential project and define the necessary steps for further analysis and propose relevant measures to minimize potential risks. For practical reasons the climate change assessment and later categorization has been presented in the following section so to focus this one in the ESMP.

38. This assessment exercise allows IFAD to identify and avoid activities that may cause harmful health impacts, involve any involuntary taking or restriction on the use of land that may result in physical or economic displacement, identify projects that may involve or affect indigenous peoples and identify programs and projects that may damage or destroy physical resources of historic, religious or cultural significance.

39. The exercise also screens against the International Finance Corporation Performance Standards with an added view on climate risks, this scoping exercise allows IFAD to highlight investments with a higher significance of greenhouse gas emissions and probability of losses and damages from climate-related events, which can also help IFAD make a case for the allocation of additional climate finance.

#### **3.1 Assessment of the applicable National Policies and Regulations**

40. Identification and assessment of the gaps between the requirements of the country's safeguards system and the AE's own safeguards, including measures to fill the gaps. In order to identify and assess potential gaps between national legislation and IFAD safeguards, a list of the main environmental regulations that will apply for the project, particularly for road and irrigation infrastructure works are listed below. Although the list is not exhaustive it represents the main country applicable safeguards. Once the project will finish with the identification of work sites a comprehensive exercise will be done to have an exhaustive list with details to be mainstreamed in the project design.

41. A list of the main environmental regulations that will apply for the project, particularly for road and irrigation infrastructure works are listed below:

- The Environmental Protection Act, Chapter 328, Revised Edition 2000
- Environmental Impact Assessment (Amendment Regulations, 2007)
- Mines and Minerals Act Chapter 226 Revised Edition 2000
- The Mines and Minerals (General) Regulations
- Mines and Minerals (Safety, Health and Environmental) Regulations
- National Integrated Water Resources Act 2011

42. The most comprehensive environmental legislation Belize is the Environmental Protection Act (EPA). The legislation lays out the commitment of the Government of Belize to protect and preserve Belize's natural heritage and ensure that the use of the resources is consistent with maintaining ecological balance. The EPA also provides guidance on the conduct of an Environmental Impact Assessments (EIA). The EPA requires that any project, programme or activity that may affect the environment shall submit an EIA prepared by a suitably qualified person to the Department of Environment (DoE) for evaluation and recommendation. The EPA identifies several environmental and

social aspects that will need to be assessed and include effects on humans, flora and fauna, water, soil, air, ecological balance, among others. The EIA is required to include (1) measures that should be undertaken to mitigate any adverse environmental effects, (2) analysis of alternatives and considerations, and (3) development of regulations and frameworks prescribing procedures, guidelines, and the types of projects for which an EIA may be required. The EPA also mandates stakeholder engagement during the EIA process. The EIA Regulations were adopted as subsidiary to the EPA. The EIA Regulations outline criteria for screening, identifying and assessing environmental impacts, defining significant environmental issues, and providing the minimum content of an EIA. Of major significance in the EIA Regulations are two schedules: one which categorizes projects for which EIA is mandatory and those for which EIA is not required, and the other that stipulates those projects that must undergo a screening process to determine whether an EIA is necessary.

43. The Environmental Impact Assessment is one of the most relevant regulations applicable to this project. According with the Department of the Environment (DOE) of the Ministry of Agriculture, Fisheries, Forestry, Environment and Sustainable Development (MOA) the EIA system in Belize establishes three categories or schedules (I, II and III), of proposed projects or activities, which may or may not require an Environmental Impact Assessment (EIA) of a Limited Level Environmental Study (LLES)

44. Information submitted is reviewed by the Project Evaluation/EIA Unit of the DOE. Review takes into consideration the Project Schedules of the Environmental Impact Assessment (Amendment) Regulations, 2007 as well as the criteria of the Environmental Impact Assessment (EIA) Procedural Manual (location, nature, magnitude, etc).

45. The project's environmental and social due diligence process followed on the ground consultations, an internal IFAD screening process as well as a thorough analysis of the Environmental Impact Assessment Regulation (2007) concluding that none of the infrastructure proposed on the Project would be considered as Schedule I, therefore not requiring a full EIA. The proposed project activities fall within Schedule II categorization, and it is also in line with IFAD category B projects; no activities qualifying above this categorization will be undertaken.

46. Some of the proposed activities by the project could be considered as Schedule II such as the improvement of roads less than 2000 meters in length, the canalization or flood relief, irrigation systems for areas smaller than 25 acres or the packing/canning of vegetable products – which may require a LLES. If a LLES is required, the nature and extent of such studies are determined by the DOE, in consultation with key agencies.

47. In fact, DOE establishes that some Schedule II projects differ from Schedule I projects only in scale - which is the case of the proposed project. Large irrigation and drainage projects are usually Schedule I while small-scale project of the same type fall into Schedule II. Also, in a Schedule II project, the impact may not be as serious as a Schedule I project depending on size, location and other considerations.

48. The institutional capacity building required for the PMU and the implementing partners involved in the Schedule II projects i.e. infrastructure construction as well as in the implementation of the management plans to undertake their responsibilities in relation to the implementation of the ESMP will be assessed on a need basis. The assessment will be done once the implementation areas are located. Supporting safeguard consultants (social, environmental and safety) will be tasked to provide technical support and the Safeguard Specialist to monitor and evaluate the capacity needs of the PMU throughout the project life.

49. Other important environmental laws in Belize are: Forest Fire Protection Act (Ch 212); Forest Act (Ch 213); National Park System Act (Ch 215) 2005; Pesticides Control Act (Ch 216); Water Resources Management Act 2006; and Wildlife Protection Act.

50. The Public Roads Act charges the Chief Engineer, subject to the Minister's consent, with the construction, alteration, maintenance and supervision of all public roads of Belize, and the Chief Engineer may delegate to any officers any or all powers conferred to the Chief Engineer under the Act. Under the Act the Minister may appoint in all or any of the districts of Belize, District Road Boards whose function is to advise on all such questions and matters concerning the public roads of their respective districts as may be referred to them by the Chief Engineer. All lands that are not built upon or cultivated which may be required for the purpose of opening any new public road or for diverting, turning, widening or enlarging any existing public road may be taken and appropriated without payment or compensation. Under the Act, the Chief Engineer has the power to enter upon any land adjacent or near to any existing or proposed public roads and take materials from uncultivated lands without payment to persons entitled. Materials taken from cultivated lands, under the Act require owner consent and due compensation. The Chief Engineer also has powers to serve notice to owners of land with trees overhanging the public road to cut such bush, shrub or other vegetation.

51. A standard approach to maintain biodiversity and ecological balance is maintaining a system of protected areas - those lands that are legally set aside for their significant natural qualities and value to the society at large. Belize is no exception, and in fact has a system of protected areas of international significance. Considered within the system of protected areas in Belize are areas declared under the National Parks System Act (Ch 215), Fisheries Act, Forest Act (Ch 213), and the Ancient Monuments and Antiquities Act.

52. The National Parks System Act is a comprehensive legislation for protected areas and allows for the designation of national parks, wildlife sanctuaries, natural monument, and nature reserves. Under the Forest Act, forest reserves can be declared. Marine reserves are declared under the Fisheries Act, while the Ancient Monument and Antiquities Act provide for the designation of archaeological reserves. The various categories of protected areas allow for varying uses of the different categories. In addition to the existing protected areas, a number of other areas have been proposed for declaration and for all practical purposes are considered within the system of protected areas. Of significant concern in protected areas management is the involvement of people who live in or near such areas. Global experiences and good practices have demonstrated that effective management of protected areas can only be achieved when local communities and other stakeholders are actively involved. Very often areas declared as protected have been in use by adjacent area residents according to traditional practices that bear little or no negative impact on the natural ecosystem. In order to protect and manage protected areas in Belize the Forest Department has adopted a co-management approach which seeks to include local people in the management of protected areas. A key criterion for determining whether an EIA may be required by the DoE under the EIA Regulations is the proximity of the project to protected areas.

53. Belize is signatory to various international environmental agreements focused on addressing the global and local human impact on the environment; conservation and appropriate use of wetlands and their resources; conservation, sustainability, and equally and fairly shared benefits of biological diversity; the formulation of pragmatic solutions to the most pressing environment and development challenges; climate change, protection of the world cultural and natural heritage; plant protection, regulation of whaling; law of the sea; and trade of endangered species. The agreements signed by Belize include the following:

- Agenda 21



- Ramsar Convention on Wetlands – signed April 22, 1998
- Convention on Biological Diversity (CBD) – signed June 13, 1992
- International Union for Conservation of Nature (IUCN)
- United Nations Framework Convention on Climate Change (FCCC) – signed June 30, 1992
- Convention Concerning the Protection of the World Cultural and Natural Heritage – signed February 6, 1991
- International Plant Protection Convention – signed May 14, 1987
- International Convention for the Regulation of Whaling – signed July 15, 1982
- United Nations Convention on the Law of the Sea – signed December 10, 1982
- Convention on International Trade in Endangered Species of Wild Fauna and Flora – signed September 21, 1981
- United Nations Declaration on the Rights of the Indigenous Peoples

### **3.2 Consistency of the assessment with IFADs safeguards**

54. The SECAP note is at the core of IFADs corporate mandate to design and implement sustainable projects avoiding or mitigating social and environmental damage. Therefore, projects are subject to a scrutiny and analysis to determine not only the category but also the potential triggering of safeguards measures. This SECAP note found that there will be no large-scale, significant or irreversible environmental impacts associated with the project. Nor there will be human populations negatively affected by the project aims. The potential impacts identified are mainly localized given the small-scale approach of the interventions, which can be effectively mitigated and are addressed with no risk of irreversible and or permanent damage over the project influence area.

55. The ESMP sets out actions to implement mitigation measures and monitoring and reporting measures on performance, institutional and organizational arrangements. It will address measures for information disclosure, grievance redress mechanism, and the process for continued consultation and participation of affected people during project implementation. Hence, it will be a living matrix and flexible, as its actions may be subject to change based on feedback received during project.

### **3.3 Consistency of the assessment with IFC Performance Standards (PS1-PS8)**

#### **3.3.1 Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.**

56. The project management team will be supporting the assessment and control potential risks. The ESMP presented here identifies the key risks at the design stage and is subject to continuous enhancement identified during the course of project implementation. As per IFAD and IFC processes the concept of continuous improvement will be an ongoing process throughout the life of the project, correcting and improving following a Plan-Do-Check-Act cycle (PDCA),

57. The ESMP provides measures to (1) avoid, minimise or mitigate adverse impacts and enhance opportunities, (2) address potential livelihood restoration, (3) improve working conditions and health and safety following good industry practices including ILO Labor Standards and to be evaluated by third parties for the small infrastructure, (4) ensure that stakeholder engagement plan is meaningful, with informed participation and disclosure via appropriate channels, and (5) ensure that any vulnerable groups including indigenous peoples participate and benefit from the project, and

58. The ESMP and relevant studies will be disclosed along with the stakeholder engagement plan and the appropriate grievance mechanism consistent with the GCF Information Disclosure Policy.

### **3.3.2 Performance Standard 2: Labour and Working Conditions**

59. This PS has been triggered because the project will have to have workers stakeholders as part of the Component 2.1 activities. All contractors will be required to follow Belizean national labour laws and occupational health and safety regulations. The project will be continuously assessed against the requirements of the Performance Standard 2, particularly at the implementation stage to determine if the planned small infrastructure activities will require adjustments to ensure that child or forced labour is avoided, and identify risks in the primary supply chain that are under the scope and responsibility of the project.

### **3.3.3 Performance Standard 3: Resource Efficiency and Pollution Prevention**

60. The project considers the implementation of boreholes for the irrigation of the planned interventions. However, such irrigation are for small-scale rural community-based projects, i.e. water supply under the project will also climate-resilient agriculture where parcels are less than 25 acres. The total irrigated area planned for the project is approximately 740 hectares, and no single irrigation scheme will be larger than 50 hectares. The project will promote resilient agriculture supporting the reduction or when possible the avoidance of pesticide use. During the implementation phase training to beneficiaries will include handling, management, storage and disposal of pesticides and agrochemicals.

61. Important to note is that still, the project will assess the elaboration of a local hydrological study to avoid potential overuse of the resource and prevent pollution prior to commencing any activities related to irrigation schemes.

### **3.3.4 Performance Standard 4: Community Health, Safety, and Security**

62. The project may potentially promote the use of agrochemicals directly, as a project component for increased crop productivity, or – more commonly – indirectly, by increasing the availability of short-term credit for farm inputs or water for irrigation, which may increase the use of agrochemicals. However careful selection of the type of agrochemicals and management of their use (timing, dosage, mode of application, etc.) can reduce to acceptable levels the environmental risks they pose while providing the needed benefits for increased production with lower financial and health risk costs.

63. There is a number of ancillary infrastructure proposed in the project. Connectivity infrastructure will be done over existing old deteriorated rural secondary roads, though there is a potential exposure of local communities to increased risks and adverse impacts related to worksite, increased traffic accidents, noise and dust, hazardous materials, spread of diseases, or interactions with private security personnel.

### **3.3.5 Performance Standard 5: Land Acquisition and Involuntary Resettlement**

64. The project will not acquire new land nor will it work over private lands. Also, no new land will be used and/or acquired for the implementation of packing or agro-processing facilities or any other facility promoted by the project. Instead, it will improve the land that is already being used for

agriculture and/or roads. Thus, there will be no relocation and/or loss of shelter or livelihoods for communities or individual households during the implementation stage.

65. Environmental and social screening will be used for activities involving small-scale rural infrastructure under Component 2 as well as any interventions under Component 1 to determine land requirements, status, availability and any encumbrances. Any activities that will require acquisition of land or that could lead to physical and economic displacement will not be supported by the project.

### **3.3.6 Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources**

66. As per IFADs policies the project will not have any intervention inside protected areas; (1) No natural area will be intervened or modified (2) no critical area will be part of the project.

67. The project will also exclude the implementation of activities in buffer zones that can adversely affect biodiversity and local habitats.

68. When in the nearby (and not inside) buffer zones the project will confront the planned activities with the national protected area classification and the IUCN category before proceeding to promote the contribution to areas adjacent to buffer zones.

### **3.3.7 Performance Standard 7: Indigenous Peoples**

69. The project does not anticipate adverse impacts on recognized or self-identified indigenous peoples or their lands and resources. Instead, the project is designed to improve food security and productivity across the value chain and strengthen climate resiliency of vulnerable groups including indigenous peoples. However, as the intervention areas are not completely decided, should the project select an area(s) where indigenous peoples or indigenous lands exist no works will be done without a previous information disclosure and consent to the potential affected populations according to national applicable legislation, and following IFAD SECAP Indigenous Peoples Plan, GCF ESS 7 on Indigenous Peoples, and GCF Indigenous Peoples Policy.

70. The ESMP incorporates an Indigenous Peoples Planning Framework (IPPF) that sets out the process for screening application of the GCF ESS 7, ensuring informed consultation and participation, obtaining free, prior and informed consent, and in developing Indigenous Peoples Plan.

### **3.3.8 Performance Standard 8: Cultural Heritage**

71. The project will not implement activities in recognized cultural heritage sites.

**Table 3 Equivalence of triggered IFAD and GCF safeguards.**

<b>Performance Standard</b>	<b>IFAD corresponding policy</b>	<b>Project applicability</b>
Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts	Environmental and Social Management Plan	The project will develop an ESMP
Performance Standard 2: Labour and Working Conditions	Environmental and Social Management Plan	The project will promote compliance with national employment and labour laws. It will also promote safe and healthy working conditions
Performance Standard 3: Resource Efficiency and Pollution Prevention	Guidance Statement 2 – Agrochemicals Guidance Statement 7 Water	Pest Management Plan and local hydrological studies under assessment pending the final decision on intervention areas
Performance Standard 4: Community Health, Safety, and Security	Guidance Statement 14 Community Health	The project will assess health and safety of potential affected communities during the project and ensure safeguarding of people such as avoiding hazmat exposure and exposure to risks
Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Guidance Statement 1 - Biodiversity	The project will exclude activities in protected areas as well as in buffer zones but instead promote the contribution to areas adjacent to buffer zones.
Performance Standard 7: Indigenous Peoples	Indigenous Peoples Plan	Indigenous Peoples Planning Framework prepared and ready to be used

### **3.4 Assessment of potential impacts**

72. Even though the project interventions will mainly promote the sustainable development and climate resilient agriculture with positive environmental and social externalities there may also be potential negative consequences during the implementation phase that need to be avoided or mitigated. In line with corporate policies and the commitments made as an AE special consideration to social and environmental issues included in the IFC performance standards will be taken into account.

#### **3.4.1 Positive impacts**

73. The project will have net positive effects on six thousands of household beneficiaries from which 3,500 will be in the project's five priority area communities, and 2,500 will be in non-priority areas (to be identified during implementation). A further 13,000 households will be indirect beneficiaries amounting approximately 95 thousand people in a country with an estimated population of about 385,766 inhabitants. The target group includes: i) poor rural families (indigent and poor, with incomes below the poverty line); and ii) vulnerable rural families (whose income is  $\leq 25\%$  above the poverty line, vulnerable to poverty). Additionally, households will have to have up to 25 acres of land, and be engaged part-time or full-time in farming to be included in the project.

74. The project main positive social and environmental effects will be to substantially improve decision-making among farmers as they become active stakeholders in developing climate resilient

agriculture. Their capacity will be improved through training and engaging in implementing activities while improving their understanding of value chains and market negotiations. There will also be an exchange of existing knowledge with other communities supporting the dissemination of good practices. Besides, collective decision-making and the climate information system will enable advances in social and inter-community communication improving resilience and sustainable agriculture.

75. A relevant social aspect of the project is the focus on institutional strengthening of producer's organizations that will target inclusion of women and young people. There are specific indicators for this purpose given priority to the gender mainstreaming in the decision-making process, to this end project indicators will be gender-disaggregated as appropriate, with an overall target of minimum 40% female participants in the project. For their similar reasons, youth will comprise 20% of project participants

76. One other important positive impact of the project will be the promotion of climate resilient agricultural practices improving ecosystem services and the provision of good practices in soil management and restoration, water management, waste management and pollution prevention and ultimately supporting sustainable agriculture. In fact, the project will finance no expansion of the agricultural frontier but providing instead tools for the increase of productivity. The project will also foster environmentally-sound pesticide and fertilizer management techniques, including the application of organic alternatives as applicable while reducing the use of agrochemicals. It will also have a modest impact in the area of affordable and clean energy; communities "off grid" will be encouraged to adopt photovoltaic panels and battery storage for domestic use.

77. The infrastructure investment will improve water usage and reduce loss of soils by erosion and flooding building a strong capacity in water management. Climate-resilient road rehabilitation will reduce interference with natural drainage and minimize erosion. In particular, any water harvesting and/or harvesting investment will be designed not to interfere with ecological water flows or natural drainage of water bodies.

**Table 4 Non exhaustive list of positive impacts in selected value chains**

<b>Value Chain</b>	<b>Positive impact</b>
Onions	Reduced pesticide use and disease problems
Tomatoes and Sweet peppers	From open field to drip irrigation Reduced use of agrochemicals and water
Cabbage	Reduced water use by drip irrigation
Carrots	Reduced water use by drip irrigation
Pineapple	Reduce land use by crop intensification
Hot Peppers	Reduced water use by irrigation system
Beekeeping	Improved ecosystem services

### **3.4.2 Negative impacts**

78. The initial assessment of each of the project sub-components has revealed a number of potential negative social and environmental impacts that are presented in the Table 4. The activities will be screened further and where needed, a more focused due diligence will be conducted once the specific locations and interventions are finalised. The results of the screening and focused assessments will inform the specific measures that will be developed or updated as part of the ESMP.

Table 5 Potential negative impacts

Project sub component	Degree of likelihood/Notes	Anticipated potential impact	Applicable Performance Standard
<b>Component 1: Climate Resilient Value Chains Development (CRVC)</b>			
<b>1.1: Infrastructure and Production Plans (IPP)</b>	None The IPP is a “master plan” broadly defining smallholder value chain climate resilient production practices to be adopted (individually or in a collective, methods, and technologies). It provides capacity, information and guidance. No activity is performed	Not applicable	--
<b>1.2 Strengthening of Producers’ Organizations</b>	None Activities under this sub-component will include i) management and governance training; ii) development of internal administrative processes; iii) creation of Organizational Development Plans; iv) national and international exchange visits; and, (v) youth (men and women) management/ leadership training	Not applicable	--
<b>1.3 Value Chains Development</b>			
<b>Backyard gardens (BYGs)</b>	Low Backyard gardens are small in size ranging from 1/8 to 1/4 acres Areas are located near owner’s home.	Inappropriate agro-chemical handling and excessive use, resulting in health problems  Agro-chemical runoff and contamination of water sources due to insufficient understanding of agro-chemical use	PS1, PS3, PS6
<b>Matching Grant Fund (MGF)</b>	Moderate A competitive MGF, partially funded by the GCF loan, will be structured to support climate resilient production and value chain development investments. Production areas size will be less than 25 acres	Risk of deforestation. Farmers prospering as a consequence of the Project might want to encroach on the forest to expand agricultural areas. This could be the case for the cooperative in Nago Bank  Waste management. Farmers may not implement a segregation plan and a safe storage and transportation plan for toxic waste from pesticides and fertilizers. This may	

<p><b>Development of value chain Business Plans (BPs)</b></p>	<p>None</p> <p>This activity will provide TA to support for the development and implementation of PO BPs consistent with and supportive of priority areas IPPs</p>	<p>result in ecosystems pollution (water and soil) as well as in human health problems waster from processing facilities may not be properly segregated (for recycling when applicable) and disposed</p>	
<p><b>Component 2: Climate Resilient Rural Infrastructure and Assets Development (CRRIA)</b></p>			
<p>2.1: Investment in Rural Roads Improvements (RRI)</p>	<p>Moderate</p> <p>Investments will be directed at improving existing rural roads and ancillary structures most vulnerable to climate variability, and those that complement the Component 1 objectives. Improved roads will largely be the “last mileage” of local or uncategorized feeder roads, and are often poorly made and maintained, rendered inaccessible to vehicular traffic in the rainy season</p>	<p>Labour conditions and workers safety might not comply with international standards</p> <p>Soil compaction, erosion and loss of microbiome in the areas surrounding the infrastructure works</p> <p>Noise and dust during the construction phase</p> <p>Pollution of soil and water table by spilling and percolation of chemical products during the construction phase</p> <p>Human health affected by increased traffic</p> <p>Animal crossings over roads affecting local fauna</p> <p>Risk of land speculation forcing poor farmers out of the project areas; this is especially the case for the communities in Trio</p> <p>Impacts of natural resource mining necessary to build the road (such as sands and rocks)</p> <p>The improvement of the feeder road in Nago Bank could contribute to further deforestation and encroachment of the surrounding forest</p>	<p>PS1, PS2, PS3, PS4, PS6</p>
<p>2.2: Investment in Small-scale Irrigation and Drainage (SSID)</p>	<p>Moderate</p> <p>Small-scale irrigation and drainage systems funded will include intake structures, pumping stations, rain harvesting ponds, main and secondary distribution networks, drainage networks and flood protection structures.</p> <p>On-farm irrigation/ drainage systems for connecting to main or secondary networks (e.g., drip, sprinkler, gravity ditches or field open drains) will be provided by the project, Irrigation plots will be &gt;25 acres</p>	<p>Wells drilling may be required posing a risk of water overuse and table depletion. Irrigation may ignore sufficient availability of groundwater due to lack of hydrological data that allow a correct assessment of available water for agricultural purposes</p> <p>Labour conditions and workers safety might not comply with international standards</p> <p>Soil compaction, erosion and loss of microbiome in the areas surrounding the infrastructure works</p> <p>Conflicts over the use of water</p> <p>Impacts over the environmental flows of water courses</p>	<p>PS2, PS3</p>

2.3: Climate Information System	<p>None</p> <p>The subcomponent will focus on the creation of the Climate Information System (CIS) which has the purpose of providing farmers with timely and accurate climate information, allowing them to plan production activities and minimize climate related production losses</p>	Not applicable	--
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### 3.5 Environmental and social category

79. As per IFCs Interpretation Note on Environmental and Social Categorization, IFAD uses a system of E&S categorization as part of its E&S due diligence (ESDD) process to convey a sense of the relative magnitude of potential risks and impacts associated with the investments it is considering for financial support.

80. The screening of the Resilient Rural Belize program has been conducted on a preliminary basis at the project concept stage for consideration at the Operational Strategy and Policy Guidance Committee (OSC) review stage (held June 15, 2017), and then finalized in advance of the quality enhancement review (held October 18, 2017). The screening process involves a quality assurance review (held 28 January, 2018), and finally a review and approval of project documentation by IFAD's Executive Board (held 16 April 2018) as part of the project cycle approval process. The Executive Board reviews the President's report and recommendations on the project proposal. In all of the steps there were a number of internal and external evaluators that provide inputs and peer review the process. A Social, Environmental and Climate Assessment Procedures (SECAP) Note was prepared and served as the project safeguard instrument.

81. Our assessment of the main environmental and social issues in the project area and identification of significant impacts (positive and negative) and social concerns likely to be associated with the project concluded in a Social and Environmental categorization B.

82. The categorization was confronted with IFAD social and environmental categorization criteria. Taking into account that any adverse social and environmental impacts would be short term, and would be remedied or mitigated through actions included in the Project's activities. The overview has been informed by an appraisal of environmental and, social issues to determine if an in-depth environmental and social impact assessment was needed. Guiding questions for environmental and social risk classification can be found in annex 1.

83. The Project does not envisage any adverse social impact and is not expected to generate impacts to Indigenous Peoples. However, a complete set of activities including free and prior informed consent will be part of the implementation process that will also ensure the informed consultation and participation are undertaken, adverse impacts on the indigenous peoples or their lands and resources are avoided, and benefits sharing scheme are established for the project. The ESMP incorporates an Indigenous Peoples Planning Framework. The project will not finance any activities that may pose significant environmental and social risks that are unprecedented, diverse and irreversible. Consequently, the following activities will not be considered under the project:

- Category A, where environmental and social risks may be significant, unprecedented, diverse, and irreversible;



- Projects with activities deemed illegal under host country laws or international conventions and agreements;
- Projects involving harmful and exploitative forms of forced labour or harmful child labour;
- Projects that involve land acquisition, involuntary resettlement, and economic displacement;
- Identified areas considered as ecologically sensitive or important such as protected areas and buffer zones, conservation set asides, and critical habitats;
- Areas considered as culturally or socially sensitive areas; and
- Projects that contravene and undermine indigenous peoples and communities' rights to land, natural resources, language and indigenous knowledge

### 3.6 Mitigation measures

84. The potential unintended consequences have been discussed with the Project's design team and relevant stakeholders. Based on IFAD's social and environmental guidelines as well as Belize's environmental policies, the following mitigation measures are proposed to reduce potential risks and maximize positive impacts on social, environmental and climatic attributes. Table 5 summarizes the possible mitigation measures that may be implemented in each of the project sub components.

#### 3.6.1 Risk associated with agrochemicals

85. The Project's specialized extension agents will investigate the options for using available safe pesticides and non-pesticide alternatives in line with national and international standards. Where the activities may promote use of agrochemicals, environmental analysis will need to be prepared and address the following issues:

86. *Identification of specific crops and their existing or potential pests requiring pest management:* Investigate the options for using available safe pesticides and non-pesticide alternatives such as natural deterrents.

87. *Identification of nationally approved and available pesticides,* and management and application techniques for their judicious and effective use to protect human and environment health.

88. *Assessment of local and national capacity for the safe handling, use, storage, disposal and monitoring of agrochemicals:* Identify training needs for regulatory institutions, agro-dealers, extension agents and farmers, and assess the needs for building community environmental awareness.

89. *Development of an IPM project* for minimizing/optimizing pesticide application, including – if possible – provisions for monitoring residues on crops and in the environment. The project should include IPM strategies for enhancing the resilience of vulnerable agroecosystems to climate variability and changes, and the adaption of IPM practices to deal with pests in different climatic conditions. A draft of a pest management outline is included in Annex 3.

90. *Reduction of GHG:* As fertilizers have a high carbon footprint, it is prudent to enhance the efficiency of nitrogen use (by minimizing losses caused by erosion, leaching and volatilization) and to identify alternative sources using integrated nutrient management strategies, such as biological nitrogen fixation, animal manure and the recycling of nutrients in crop residues.

91. The following paragraphs outline activities for the prevention of inappropriate or excessive agrochemical application.

92. Fertilizer management:

- Ensure that dressings do not exceed recommended doses.

- Reduce leaching through appropriate choice of fertilizer to suit soil conditions, split applications and fertilizer placement.
- Reduce run-off through incorporation of fertilizer into soil, timing of applications to avoid erosive rains, and soil and water conservation measures.
- Limit nitrate use in sensitive watersheds serving urban areas.
- Select non-ammonium sources of nitrogen such as urea.
- Carry out liming (usually to pH 5.5 for tropical crops).
- Explore the potential for increasing production without the use of chemical fertilizers, especially using indigenous technologies, including organic fertilizers, and supporting integrated soil fertility systems.
- Promote community education on improving indigenous practices to maximize production, avoiding chemical fertilizers in favour of local options that are available on farm.
- Support crop management practices that increase the nutrients available to crops, including by: (i) using more organic and less inorganic fertilizer; (ii) increasing the efficiency of fertilizer use through appropriate fertilizer selection, timing and split applications; (iii) increasing nutrient recycling using crop residues and livestock grazing after crop harvest (mixed farming); use of nitrogen fixing trees, where feasible (agroforestry); and (iv) improving rotations (e.g. inclusion of legumes, multicropping).
- Monitor receiving water courses and soil for fertility to avoid overapplication of agrochemicals. Pesticide management:
- The most important criteria for assessing the environmental impact of a pesticide are its toxicity level and the degree of biodegradability. Consideration should also be given to residue-level guidance for export crops. Unregistered, restricted-use or experimental-use pesticides should be avoided, unless their use in the project has been reviewed and approved by the Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO) Joint Meeting on Pesticide Residues.
- Pesticides in WHO Class Ia and Class Ib should generally be avoided.
- For general use, the formulated product should be at a low enough concentration to be in at most a WHO Class II. Low-toxicity formulations should be favoured: from least toxic to most toxic, the options are granule, dust, wettable powder, flowable, emulsifiable concentrate, ultra-low volume and fumigant.
- Low-concentration granulars, seed dressings, bait formulations and pheromone traps generally present the least hazard to users and are especially suitable for small-scale farmers unfamiliar with pesticide use; they cause minimal environmental contamination and minimal adverse effects on non-target organisms.

### **3.6.2 Labour and Working conditions**

93. Safe application equipment and servicing facilities should be promoted, along with correct calibration of equipment. Training should be provided for personnel and farmers applying the pesticides.

94. Protective clothing, including masks, gloves and boots, should be provided or promoted, especially for pesticides that are absorbed through the skin. However, improper use of protective clothing may be even more hazardous than doing without protection: unless it is washed, protective clothing can become saturated with pesticides – such as in the lining of boots and gloves – and can greatly increase pesticide absorption. Training should be provided.

95. Training is crucial to the safety, use and cost-effectiveness of pesticides, and is recommended for inclusion in any project that increases the availability or accessibility of pesticides. A range of actors will require education: users, operators, extension officers, retailers, health workers treating cases of poisoning, and legislators in pesticides law.

96. Application guidelines for pesticide use should be made clear and a legal document should be drawn up providing assurance that the guidelines will be followed. All the pesticides used in the project should be properly labelled, and all labels and application guidelines should be provided in the local language.

97. Monitor water courses, soil and community health on a regular basis to ensure that pesticide concentrations are within legal environmental and health limits.

### **3.6.3 Risks associated with rural infrastructure rehabilitation**

98. IFAD is committed to effective and environmentally sound design, construction and/or rehabilitation, operation and maintenance of rural infrastructure to the highest possible standards of safety for those involved in construction and those subsequently using the road, whether by motor vehicles, intermediate means of transport (IMTs) or by foot.

99. Some of the good industry practices include the following mitigation measures:

- Participatory and/or consultative design of infrastructure sites using local knowledge – consult local users to establish which tracks offer the best connections to travel safely (flooding, rock fall, animals), as it will be rehabilitation work only, it will increase local participation and ownership, locals demanded the improvement of the roads and bridges that are planned as part of the project.
- The materials and design will optimize the use of locally available human and material resources, including local enterprises, contractors, artisans and materials, for ease of maintenance and enhance the prospects for sustainability.
- Local materials such as aggregates will be sourced from approved and legal sources.
- The design for road safety will consider and accommodate all prospective users, including pedestrians; do not exceed the national standard design speed for rural roads; and provide speed bumps (with accompanying warning signs) in highly populated areas such as villages, schools, markets and other centres.
- Traffic safety measures will be installed, road signs to indicate speed restrictions, hazards (such as drifts), junctions.
- The infrastructure will also have installed drainage works and river crossings to avoid interruption of subsoil and surface drainage patterns, adequate works in place to minimize changes in surface flows and provide special drainage requirements.
- The construction will promote a simplified design of drainage by specifying well sign-posted drifts or “Irish” bridges rather than culverts and bridges, wherever possible.
- Erosion control measures will be carry-out during dry periods; protecting vulnerable soil surfaces with mulch; protecting drainage channels with berms, straw or fabric barriers to break flows; and establishing vegetative cover as early as possible.
- Crossing points will consider to include animal crossing points.
- During and after the construction prudently dealing with surplus materials, particularly in erosion-prone areas; collecting and recycling lubricants; avoiding spills; applying water or dust control chemicals to prevent water source contamination will be enforced.

- Occupational safety will comply with national health and safety regulations among the entire work force and ensure that regulations applying to the control of traffic and public use, both during and after construction, of the road are applied

### **3.6.4 Risks associated with water use and small-scale irrigation infrastructure**

100. The project will have an active involvement of rural communities, and the use of a multisectoral approach that considers many issues – gender, social, health, and new concerns such as energy sources and climate change – in both the planning and implementation stages contributing to: (i) prevention of potentially harmful design choices; (ii) optimum use of locally available materials; (iii) sustainability of service by involving a critical mass of users, operators and suppliers; and (iv) incorporation of locally adapted environmental measures.

101. Environmental impacts can occur at four main phases of water management and infrastructure development – siting, design, construction and operation – therefore the project focuses its mitigation measures taken into account each different phase to facilitate environmental assessment:

#### **3.6.5 Sitting phase**

102. *Water-use efficiency and sustainability:* The project is promoting water-efficient irrigation systems (e.g. drip irrigation) and will enhance water drainage on agricultural land. Optimize water use by selecting irrigated areas with suitable soils and corresponding crops and farming systems. Promote water harvesting practices including capture of run-off where feasible.

103. *Water use conflict:* Infrastructure will be compatible with the physical resource base and complementary to upstream and downstream activities. It will take into account competing, gender-differentiated demands. Development plans will address issues regarding the current efficiency of (rainfed) water use or irrigation practices. The proposed water infrastructure will consider midterm and long-term, upstream and downstream, agricultural and non-agricultural developments.

#### **3.6.6 Design phase**

104. *Watershed protection:* Preservation of the surface water and underground water will be ensured by hydrological studies to improve water quality and supply to project areas and adjacent areas. The project will explore options for rewarding communities for watershed or ecosystem services (financially and non-financially) or benefit-sharing mechanisms.

105. *Participation of target groups and equitable distribution of benefits:* Consultations to all local water users will be done, and involvement of beneficiaries in all stages of the infrastructure development, from design through operation and management, to rehabilitation and reconstruction. Equitable, reliable and sustained access to, and use and control of, water addressing gender dimensions in all stages.

106. *Climate change:* climate change risk analysis is incorporated in the project projects via a vulnerability assessment; the potential impacts of climate change on water availability will be thoroughly examined – climate moisture index, local climate variability data, and projections information will be collected.

107. *Project design:* The project will prioritize the development of several small-scale irrigation schemes rather than one large system, the use of sprinkler or drip irrigation, and the combined use of surface water and groundwater. Groundwater will be used following hydrological studies recommendations. No water pumping for irrigation without water recharge activities will be done

### **3.6.7 Construction phase**

108. *Site selection:* project sites will be selected where social, environmental and climate change impacts are commensurate with the expected long-term benefits, the climate vulnerability assessment will be key. Rehabilitation and revegetation will be evaluated. Strict control of the disposal of construction waste (fuel, oil, chemical containers etc.), will be monitored.

### **3.6.8 Operation phase**

109. *Water-use efficiency and sustainability:* The use of sprinklers or drip irrigation to minimize soil degradation (salinization, waterlogging) will be implemented maintaining the level of irrigation in the fields. The surface run-off water and groundwater levels will be monitored for long-term effects, and regulate run-off.

110. *Institutions and pro-poor governance of land and water:* Given the need to strengthen national land and water governance systems in Belize, capacity-building in water management will be provided bringing traditional knowledge and local institutions with modern, state-level considerations on water use.

### **3.6.9 Risk of deforestation and land degradation.**

111. The project will not work in protected areas nor in buffer zones but will facilitate the means and encourage agroforestry practices in the nearby of buffer zones of protected areas and forest reserves. The project will work with communities and other stakeholders to promote measures to avoid or limit deforestation and degradation by:

- Encouraging zero-deforestation value chains and developing certification schemes
- Supporting landscape planning involving local communities and the strengthening of local governance capacity;
- Identifying areas that should not be cleared (e.g., streams and bodies of water) and limit the clearing of land to the areas that are most suitable for agricultural production and avoiding the use of fire as a land clearing method;
- Establishing multi-purpose forest areas such as grazing reserves;
- Increasing awareness and education on sustainable forest management;
- Promoting forest-based alternative livelihoods involving women; and
- Promoting research and disseminate local wild foods and non-timber forest products (NTFPs).

112. The Project should explore opportunities for tapping financial resources in carbon and ecosystem markets and invest in building the capacity of national and local institutions so they can obtain access to international financial mechanisms and benefit from these.

### **3.6.10 Agro-ecology and biodiversity conservation in agro-ecosystems.**

113. Component 1 and Cross Cutting Activities of the Project contemplates the hiring of specialized extension agents who will train in and encourage agricultural practices such as mixed cropping, agro-forestry and home gardens, which have proved beneficial for climate change adaptation while improving agricultural productivity. In parallel, the Project will carry out a feasibility study of a Payment for Environmental Services Scheme as a financial incentive to promote agro-forestry systems and conservation of riparian corridors.

114. The Project will complement Component 1 with the following activities:

- The promotion of value chains that offer opportunities to market products derived from diversified production systems (e.g., timber and non-timber forest products), in conjunction with the BMDC.
- The strengthening of research, exchange and documentation of agro-forestry experiences and promising multi-purpose tree species. Possible allies include the National Climate Change Office, Caribbean Community Climate Change Centre, University of Belize Central Farm and the National Coordinating Committee for Research and Development.
- The strengthening of the meristem facility of the University of Belize to advance on the production of propagules of selected tree and crop species with potential to be used in agro-forestry systems.

### 3.6.11 Capacity building.

115. Training is a long-term commitment. To maximize training activities during the Project, and to guarantee widespread dissemination of best practices after conclusion of the Project, training under the Project should: (i) focus on identifying pioneer farmers (who are already implementing innovative and sustainable farming technologies) in strategic locations; (ii) support and encourage these farmers; and (iii) establish a farmer-to-farmer training mechanism, allowing farmers themselves will serve as multipliers in their communities. The project will also support the development of training material for communities and drivers transporting the products in the area to avoid and minimize accidents as well as negative consequences to local fauna while crossing the roads

### 3.6.12 Women and youth involvement.

116. The Project will support the identification, development and diffusion of backyard gardens, a sustainable agricultural technology that fosters food security, while strengthening women's leadership and influence in decision-making in the household, and NRM in the community. In order to increase participation of youth and women, the Project's field extension agents should give priority to women and youth in training activities related to nursery implementation and management, food storage and processing, seed selection and breeding, marketing, organization and negotiation skills. Empowering women and youth can change overall gender inequality, safeguard food security and ensure long-term results of the Project by giving youth reasons to stay instead of migrating to cities. .

Table 6 Mitigation Measures

Project sub component	Anticipated potential negative impact	Mitigation measure
1.1: Infrastructure and Production Plans (IPP)	Not applicable	--
1.2 Strengthening of Producers' Organizations	Not applicable	--
1.3 Value Chains Development  <i>Backyard gardens (BYGs)</i>	<ul style="list-style-type: none"> <li>• Inappropriate agro-chemical handling and excessive use, resulting in health problems</li> </ul>	Careful selection of the type of agrochemicals and management of their use (timing, dosage, mode of application, etc.) can reduce to acceptable levels the environmental risks they

<p><i>Matching Grant Fund (MGF)</i></p> <p><i>Development of value chain Business Plans (BPs)</i></p>	<ul style="list-style-type: none"> <li>• Agro-chemical runoff and contamination of water sources due to insufficient understanding of agro-chemical use</li> <li>• Risk of deforestation. Farmers prospering as a consequence of the Project might want to encroach on the forest to expand agricultural areas.</li> <li>• Waste management. Farmers may not implement a segregation plan and a safe storage and transportation plan for toxic waste from pesticides and fertilizers.</li> <li>• Potential ecosystems damage; pest resistance, soil acidification, damage to non-target species and water pollution.</li> <li>• Human health intoxication, allergies and other long term health problems. Neurological health effects, such as memory loss, loss of coordination, reduced stimulus response, impacts on vision, altered or uncontrollable mood and behaviour, and reduced motor skills. Pesticides have also been linked to cancer, hormone disruption, and problems with reproductive and foetal development</li> <li>• Greenhouse gases emission from fertilizers</li> </ul>	<p>pose while providing the needed benefits for increased production with lower financial and health risk costs. Sufficient technical and managerial capacity-building is provided for the selection, application, storage, disposal and monitoring of pesticides, which are often hazardous if they are misused or handled improperly.</p> <p>Farmers will be capacitated in deforestation free agriculture and they will also be required to avoid encroaching in new areas to take part in the project.</p> <p>Live cycle management practices will be applied in processing facilities with recycling and/or waste to energy facilities implemented where necessary</p> <p>Reduction of synthetic pesticides in favour of bio pesticides</p> <p>Climate resilient agriculture will be implemented in favour of a sustainable production</p> <p>Law enforcement and compliance with international safety and security procedure will be required for all workers. Application of guidelines for pesticides and handle of toxic products. Training will also be provided to all stakeholders</p> <p>The project will reduce the use of synthetic fertilizer and also improve the production with sustainable agriculture.</p>
<p><b>2.1: Investment in Rural Roads Improvements (RRI)</b></p>	<ul style="list-style-type: none"> <li>• Labour conditions and workers safety might not comply with international standards</li> <li>• Soil compaction, erosion and loss of microbiome in the areas surrounding the infrastructure works</li> <li>• Noise and dust during the construction phase</li> <li>• Pollution of soil and water table by spilling and percolation of chemical products during the construction phase</li> <li>• Human health affected by increased traffic</li> <li>• Animal crossings over roads affecting local fauna</li> </ul>	<p>Training on safety and security will be provided for workers with international standards</p> <p>Avoidance of wheel traffic and tillage of wet soils, minimize tractor or heavy oversized instruments.</p> <p>Review machinery maintenance and mounted system, reduce vibration and harshness. Reduce the dust by watering the area, use EPA filters for workers when necessary</p> <p>Traffic safety capacitation in the project influence area to all residents. Signals and road safety design such as speed bumps.</p> <p>Animal corridors feasibility will be analysed and signals will be installed in the roads. Farmers registration will be required for the participation in the project to avoid land</p>

	<ul style="list-style-type: none"> <li>• Risk of land speculation forcing poor farmers out of the project areas;</li> <li>• Impacts of natural resource mining necessary to build the road (such as sands and rocks)</li> <li>• The improvement of the feeder road could contribute to further deforestation and encroachment of the surrounding forest</li> </ul>	<p>speculation. Farmers will be supported throughout the whole process</p> <p>Materials for infrastructure construction will be brought from the area when possible, the project will also support recycling of construction waste.</p> <p>Infrastructure specifications take into account the natural hazard risk and anticipated climate variability risk factors, and will therefore finance the engineering aspects of climate resilient rural roads identified: (i) slope stabilization structures such as dry stone or gabion wall dependent on the gradient of the road and road construction materials; (ii) paving of roads with durable materials; (iii) proper alignment of new roads to avoid vegetative loss; (iv) improved drainage systems (including cross drainage structures such as cascades, small check walls, culverts and causeway) to avoid erosion of road materials; (v) improved planning of roads with proper cross section and standard dimensions; and (vi) raising road level to adapt to climate change events, especially flooding.</p>
<b>2.2: Investment in Small-scale Irrigation and Drainage (SSID)</b>	<ul style="list-style-type: none"> <li>• Risk of overuse of water resources and table depletion. Irrigation may ignore sufficient availability of groundwater due to lack of hydrological data that allow a correct assessment of available water for agricultural purposes</li> <li>• Labour conditions and workers safety might not comply with international standards</li> <li>• Soil compaction, erosion and loss of microbiome in the areas surrounding the infrastructure works</li> <li>• Conflicts over the use of water</li> <li>• Impacts over the environmental flows of water courses</li> </ul>	<p>Should drilling wells be required, sound environmental practices will be respected to avoid cross contamination of aquifers and unsustainable extraction of groundwater.</p> <p>Hydrologic studies will be done to evaluate aquifer characteristics</p> <p>The project will support studies for the evaluation of environmental services, the environmental flow of the water courses and water table will be assessed.</p> <p>Water rights and stakeholders will be identified and organized as part of the project</p>
<b>2.3: Climate Information System</b>	Not applicable	

### 3.7 Multi-benefit approaches

117. By promoting agro-forestry systems and home gardens through Component 1, the Project will stimulate a long-term approach of multiple benefits for diversified and increased production, poverty reduction, enhanced risk management among small farmers, enhanced ecosystems services and biodiversity within agricultural landscapes, reduced deforestation and increased resilience.

118. Agro-forestry systems in San Jose (Toledo District) almost entirely meet a family's needs for food and wood, and generate at least 62% of family income. These systems can be considered a multi-benefit approach because they: (i) increase productivity in a sustainable way; (ii) diversify production in space and time - a fundamental risk management tool of the small farmer; (iii) conserve the natural



resource base through afforestation and reforestation while providing economic benefits to the farmer; (iv) act as a buffer against changing patterns of precipitation, temperature, and new pests and diseases, and thus are resilient to extreme weather events as well as market shocks; (v) sequester carbon and lower GHG emissions; (vi) prevent deforestation and forest degradation by providing firewood and timber products, reducing pressure on adjacent natural forests and improving the coexistence of small-scale agriculture with forest ecosystems; and (vii) contribute to the achievement of food security and the sustainable development goals.

119. Many circumstances in Belize make viable the promotion and scaling of agro-forestry systems:

120. Agro-forestry is an ancestral tradition that has been practised in the region for centuries. It is an existing technology used mainly by small farmers on farms averaging between 10 to 25 acres in order to have different products at different times of the year. In the southern-most District, Toledo, an increasing number of farmers are growing cacao and raising bees under the cover of the natural forest. In Stann Creek District, farmers are planting pineapples between the citrus trees. In north-west Belize, coffee is being planted within the natural forest. Combinations of corn, plantains, chickens, cattle and pigs might all be included in the mix.

121. Agro-forestry systems are one of the technologies prioritized by the GoB for climate change adaptation in the agricultural sector. As such, an Agro-forestry Land Management Section will be housed and coordinated within the Crop Research and Development Unit of the MoA with strong public and private sector support. The Section will possess the capacity to advise farmers on agroforestry and silvo-pastoral techniques, fallow, and green fertilizer, particularly as it relates to soil conservation and soil nutrient replenishment (National Climate Change Office, 2017).

122. Belize has simplified internal regulations and policies that allow small farmers to carry out the issuance of permits for the sustainable use of wood in agro-forestry systems without any cumbersome procedures (Detlefsen y Scheelje 2011).

123. Home gardens or backyard gardens are one of the oldest forms of managed land-use systems, and are considered to be an epitome of sustainability. They are given special consideration in the Project because it is an effective way to include women and youth while generating multiple benefits, including:

- As intimate, multi-story combinations of various trees and crops, sometimes in association with domestic animals, around homesteads, women traditionally use their backyards for a variety of needs such as food, energy, shelter and medicines.
- They reduce household expenditures on food, and add diversity to diet, promote more local foods and add to food security.
- Although interest in backyard gardens has been primarily focused on producing subsistence items, its role in generating additional cash income cannot be overlooked.
- Home gardens are an important reserve of local germplasm and biodiversity often having many species of trees, crops and varieties of the same crop. As such they play central roles in climate change adaptation (Kumar 2014, Nichols 2015).
- Farmers use backyard gardens for experimentation with new species and varieties and their management (Niñez 1987).
- They have a variety of outputs with both production and service values including aesthetic and ecological benefits (Kumar 2004).
- They are important for building strong social networks and social resilience, as plants are generously shared within the women and farmers of the community.

### 3.8 Incentives for good practices

124. Payments for Ecosystem services (PES) have been widely used as an economic incentive to stimulate agricultural systems that integrate biodiversity into the productive models. These payments also promote an incentive to maintain and restore native forests (mature, secondary, or riparian), which offer important environmental services but do not generate obvious revenue for most landowners. The feasibility study done by the Project will assess the interest of participation by landowners in a PES scheme, estimate payments per acre paid by the scheme, costs of the entire scheme, and potential partners and sources of funding (detailed information on the PES study can be found in Appendix 4).

125. Farms that are close to the main tourist sites in Belize and that also adopt good agricultural practices could have access to an important source of income through agro-tourism. Currently the Ministries of Tourism and Agriculture are advancing on a project that will support and advise farmers and villagers in the construction of “nature trails”, adaptation of infrastructure to offer home stay services, providing a space for a farmers market in the touristic villages. The Project could have a positive impact on this by improving public infrastructure, strengthening the farmers’ organizational skills, and promoting climate resilient agriculture practices, all key for the development of an agro-tourism industry.

126. Another economic incentive for adopting good farming practices has to do with access to high-end markets that pay a premium price for sustainable and clean products. By strengthening farmers’ capacity to access markets and by training farmers on climate resilient agricultural practices, the Project will bring farmers a step closer to access untapped green high-end markets. The Project could advocate for eco-labelling schemes that certify sustainable farming practices.

### 3.9 Stakeholder Engagement

#### 3.9.1 Stakeholder Identification

127. IFAD design process for the GCF Be-Resilient proposal commenced after receiving a no objection letter (signed January 30, 2018) by the Ministry of Economic Development, Petroleum, Investment Trade and Commerce as Designated National Authority of Belize.

128. Institutional Stakeholders including governmental agencies and academic institutions were defined, as well potential producer organizations and persons that could participate in the project. Additional stakeholders that will act as service suppliers will be identified through a competitive process.

**Table 7 Main stakeholders in Be-Resilient**

Stakeholder Name	Interest/Role in the project
International Fund for Agricultural Development (IFAD)	Accredited Entity
Ministry of Economic Development, Petroleum, Investment Trade and Commerce (MED)	Executing Agency Head of the Programme Oversight Committee
Ministry of Finance (MOF)	Executing Agency Member of the Programme Oversight Committee
Ministry of Agriculture (MOA)	Member of the Programme Oversight Committee

	Member of the ad hoc Technical Evaluation Committee
Ministry of Works (MOW)	Member of the Programme Oversight Committee
Ministry of Rural Development (MRD)	Member of the Programme Oversight Committee Member of the ad hoc Technical Evaluation Committee
Ministry of Natural Resources (MNR)	Member of the Programme Oversight Committee
The National Climate Change Office (NCCO)	Member of the Programme Oversight Committee Member of the ad hoc Technical Evaluation Committee
Project participants	6, 000 households with approximately 30,000 people of 40% are women, and 20% youth, from 23 communities in 5 districts of Belize.
University of Belize	Academic partner, supporting R&D and capacity building
Producer Organizations	Organizational groups supporting project participants
Belize Marketing and Development Corporation	Technical support and certification entity
Non-governmental organizations (TBD)	Services suppliers and organizational development opportunities

129. Institutional Stakeholders have been defined. Other stakeholders, such as the NGOs that will act as service suppliers will be identified through a competitive process. Beneficiaries have been identified through a participatory targeting approach developed jointly with the GOB for initial targeting. The Project's target group of poor and vulnerable farmers or agricultural workers, is scattered throughout the country and that IFAD together with the Ministry of Agriculture have made the effort of identifying their location, which has resulted in the first group of communities and villages that constitute the five priority areas. Any new community to be phased-in during project implementation will be identified by the PMU, in line with the targeting criteria, the GOB's priorities and the orientation from the Projects Oversight Committee (POC).

130. Participation of stakeholders is essential and mandatory during the design and during the execution of the project. During design, the consultations were carried out both with officials from previously identified institutions and with people at territorial level. A Stakeholder Engagement Plan will be developed (based on guide activities in sections 3.9.5 and 3.9.6) to be executed during project implementation.

### **3.9.2 The consultation process during design**

131. An interdisciplinary team (including specialists in Environment and Climate, Economic and Financial Analysis, Agricultural Value Chains, Gender and Social Inclusion, Productive Systems, Livelihoods) was organized on the basis of the thematic needs of the various consultations. The consultations were carried out both with officials from previously identified institutions and with people at territorial level.

132. The consultation process allowed an organized process of information exchange with all stakeholders identified. Throughout the process they expressed their views, expectations, concerns and ideas for the proposal during and beyond the life of the project.

### **3.9.3 Local Level Consultations**

133. Three field missions were developed, as well as one open consultation and two focus groups on gender and social inclusion aspects were organized with institutional and community level stakeholders at design stage. Participants included representatives from associations, governmental

and non-governmental institutions, producer organizations, community development associations, among others to collect information on agricultural practices, social and environmental vulnerabilities, access to value chains, socio-economic and gender activities, institutional and organizational capacities, environmental monitoring and information generation.

134. On Friday, December 7, 2017, a stakeholder consultation was organized to discuss the proposed design of the Resilient Rural Belize Project to be funded by the International Fund for Agricultural Development (IFAD), the Green Climate Fund (GCF) and the Government of Belize (GOB). The consultation was organized and facilitated by Mr. Lorne Solis, IFAD Consultant, as part of the requirements for the submission of the project and financial proposal for funding consideration by the GCF.

135. A total of thirty-eight (38) participants, representing a wide cross-section of stakeholders from both the public and private sectors as well as the NGO community, attended the consultation and included the Government of Belize (Ministry of Economic Development, Ministry of Agriculture, Ministry of Finance, Ministry of Works, Ministry of Rural Development), the Development Finance Corporation, the National Climate Change Office, the Belize Enterprise for Sustainable Technology and the Placencia Village Council, to name a few. A full list of participants is appended to this report.

136. The discussion began with a presentation of the RRB Project by Mr. Lorne Solis and included details on the project's target, proposed activities, the expected results and outcomes and the projected cost. The proposed project design was well received and all the comments received from the participants were positive. A few of these comments are paraphrased below:

- The inclusion of the Pilot Local Management Training was a particularly good feature as it provides an opportunity for young men and women to be incorporated in the activities of the producers' organizations and provides a way to ensure the sustainability of agriculture as a viable productive activity well into the future.
- The Climate Vulnerability Assessments provide an opportunity to collect information on the challenges faced by different communities throughout the country caused by climatic events that has otherwise been lacking, not only for agricultural purposes, but generally for disaster management and disaster recovery.
- The project provides a holistic approach to the development of the agricultural communities around the country, which bodes well for the successful development of the sector. It is the view that if implemented successfully, the project can be used as a model for the development of other areas around the country.

137. Some of the questions that were asked and answered during the course of the presentation included:

- What is in place to ensure the sustainability and upkeep of the assets provided to producers' organizations after the project has ended? This was addressed during the course of the presentation.
- What are the criteria to be used to determine which proposal gets financing from the Matching Grant Fund? This was addressed during the course of the presentation.
- The young people that will participate in the local management training, where are they expected to come from? This was addressed during the course of the presentation.
- How were the 8 commodities for value chain development selected? This was answered during the course of the presentation.

- Since the deep south of the country has a lot of property, why was cacao not identified as a commodity for value chain development? This was addressed by the CEO of the MOA.
- Will the Village Water Boards be used for the maintenance and operations of the irrigation infrastructure? This question was addressed by the CEO of the MOA, who indicated that the mechanisms developed by the project are separate and distinct from the responsibilities of the water boards.
- There was concern expressed by one participant in relation to the structure of the PMU and the relationship with the Ministry of Agriculture. However, this was addressed by the CEOs for the MOA and the MED. The CEO for the MOA indicated that the PMU will be physically located on the grounds of the Ministry of Agriculture.

**Table 8 Organizations Represented at local consultations**

Government of Belize	Belize Marketing and Development Corporation
- Ministry of Agriculture	Development Finance Corporation
- Ministry of Economic Development	Belize Enterprise for Sustainable
- Ministry of Finance	Nago Bank Cooperative
- Ministry of Works	El Cricon Farmer Group
- Ministry of Rural Development	Valley of Peace Farmer Association
- National Climate Change Office	Agricultural Belsal Association
- Department of Cooperatives	Placencia Village Council
University of Belize	Humana People to People

138. Among the outcomes and information obtained from the above engagement process, stakeholders were asked to identify gaps in production systems, vulnerabilities and project requirements. A few suggestions were made during the course of the discussions and included in project design include:

- Increasing the ceiling amount for the backyard gardens for the Matching Grant Fund from USD 150 per participant to USD 250 per participant. This would allow participants to obtain the costly, higher quality seeds for starting their gardens, which would allow for more productive re-planting, which will in turn increase the chances for sustainability.
- The Climate Vulnerability Assessments should include in its scope, an activity to map the areas that are vulnerable to flooding. Some assessments have been done in the past, but this type of information has been lacking.

139. Participants were specifically asked if they had any reservations or concerns in relation to the proposed design of the project or any aspect of the proposed project implementation. Aside from the concern indicated above in relation to the PMU, there were no concerns raised, and as such, for all intents and purposes, the proposed design has received the general blessing of all stakeholders present at the consultation.



Resilient Rural Belize Consultation. Belmopan. Belize. December 7, 2017

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30	Bonifacio Lopez	Agricultural Belize Association		664-9063	<i>[Signature]</i>
31	Mario Blados	Agriculture Stakeholder	MarioBlados@agriculture.gov.bz	602-3233	<i>[Signature]</i>
32	Barry Blacio	Agri - OW	blacioibarry@gmail.com	6153410	<i>[Signature]</i>

### 3.9.4 Gender and Social Inclusion Focus Groups

140. With the intention of having inputs for the formulation of the project in terms of gender differences between the target population they were conducted focus groups in the districts of Cayo

and Belize during the 10th and 14th of January 2019. A total of ninety-two (92) participants, from different producer organizations participated, divided as follows:

Place of the Event	Male	Female	Total
Cayo	23	10	33
Belize	47	12	59

141. The main topics addressed were:

- Analysis of roles and tasks assumed by men and women during 24 hours a day.
- Access and control of resources.
- Needs and priorities in the framework of the project

142. According to the proposed methodology, 15 women and 15 men were invited to participate in the events, with the intention of working in separate groups that would produce comparative information to analyse gender differences in the aforementioned topics. However, the number of men present caused adjustments in the dynamics of the activities, compliance with the program and achievement of the expected results.

143. In spite of the above, the interest shown by the participants and the effort to complete the proposed tasks are recognized. The main points discussed follow:

144. **Distribution of roles and tasks during 24 hours a day:** Using the dynamics of the 24-hour clock, men and women per seated analyzed the tasks they perform during the day and the time they dedicate to each one.

145. From the analysis of the activities carried out by men and women during the 24 hours a day, the imbalance in the allocation of domestic and care activities was evidenced, which are carried out in their totality by the women who dedicate an average of 8 hours to the day to its execution, while the men do not dedicate time to them (there was only one case of a man who invests 1 hour a day in going to pick up his children to school). This imbalance mainly affects the hours of rest (about 6 hours for men and 4 hours for women) and the participation of women in productive activities (10 hours for men and 7 hours for women). On average, both sleep the same amount of hours (7 hours).

146. **Access and control of resources:** After making a list of available resources in the home, production and natural resources, each group defined access and control for men and women according to their experience.

147. According the results, women as well as men, consider that both have access resources or household assets, the production resources and resources natural. However, although most women equally they consider that the control of these resources is in hands of both, some They believe that men have exclusive control on the resources natural and in the case of men, although most think Like women in As for the shared control resources , some consider that they he has control of all the resources . Stresses that neither men and women giving control of resources so unique to women , as yes happens in the case of men.

148. **Needs and priorities:** Once informed on the objectives of the consultations and provided the central information of the project , the participants They analysed their needs and priorities . For this they concentrated in the activities they carry out in the agricultural value chains in which they participate. The needs priority common to men and women are: irrigation systems, road access to farm, cover structures, seeds to plant, chemicals and tools. Men prioritized also to process plant for

vegetables, machinery and equipment and women , supplies for the packaging of preserves , small machineries, a cold storage and nursery.

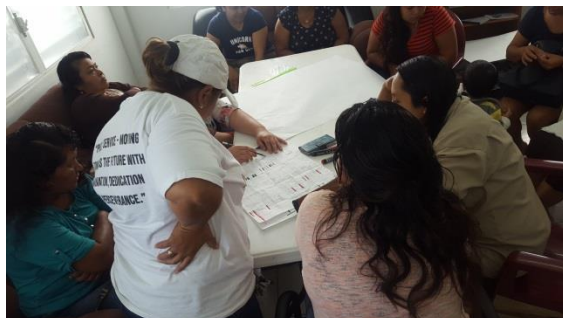
149. The project strategy is based at the confluence of chain approach agricultural value and resilience to change climate , which allow integrate the needs and priorities expressed by the people during the consultation . The project made available to producer organizations, Matching Grant Fund resources (FGM) to finance initiatives framed in value chains prioritized from the link of raw materials to the market and will assistance technique and training for your developing considering climate change. Additionally this background will allow to invest in affirmative actions that favour the participation of women in the initiatives that are financed.



Belize Women working on the 24-hour clock



Belize Men building the calendar of agricultural activities.



Cayo. Women prepare their calendar of agricultural and productive activities



Cayo. Men discuss needs and priorities in the framework of the project



No	Name	Sex F or M	Age	Name of your village	Contact number	Name of your group	Is your group registered? Y or N	Signature
24	Silvia Divas	F	38	Maskall Village	6056578	Maskall	NO	Silvia Divas
25	Francisco Neta Kaka	M	51	Nagobank		Nagobank	NO	
26	Escor Pineda	M	28	Nagobank	6220186	Nagobank	NO	
27	José A. Sanchez	M	70	Maskall	606 0512	individual	NO	José A. Sanchez
28	Josimo Gilbey	M	70	Conolito	6217405	individual	NO	Josimo Gilbey
29	Soila Sanchez	F	41	Maskall Village	6060512	individual	NO	Soila Sanchez
30	El Dis Guardado	M	42	Nagobank	6060512		NO	Eldis Guardado
31	Paul Celdron	M	74	NAGU	—	individual	NO	Paul Celdron
32	Esteban Ramirez	M	74	Maskall	666-0635	Maskall	SI	E.R.
33	Abraham Sany	M	34	Maskall	6076001	individual	NO	Abraham Sany
	José Rompilio	F	41	Maskall	6292405	individual	NO	
	Augusto Llanos-Tony	M	70	Bomba	—	individual	NO	ATF

No	Name	Sex F or M	Age	Name of your village	Contact number	Name of your group	Is your group registered? Y or N	Signature
34	Ismael Rodriguez	M	59	Shaluma	6282570	individual	NO	Ismael R.
35	Sal Plunjar	M	37	NABU	—	individual	NO	
36	Heraldo Pineda	M	28	NABU	6278590	group	✓	
37	José Pineda	M	33	NABU	6375702	group	✓	
38	Anna Maria Sany	F	20	Maskall	—	individual	NO	Anna Maria Sany
39	Felician Sany	F	60	Maskall	6090989	group	YES	Felician Sany
40	Elmer A. Cruz	M	34	NABU	—	individual	NO	Elmer A. Cruz
41	Alvaro Carlos Lindero	M	36	Maskall	6089451	individual	NO	
42	Jimmy White Ramos	M	19	NABU	6207013	individual	NO	
43	J. Ramirez	M	46	Maskall	636-3359	MAF COOP	YES	
44	Salvador Vazquez Vazquez	M	59	NABU	637-5385	individual	NO	
45	Salvador Rojas Muly	M	49	NABU	6068181	individual	NO	
46	Selva Ramos Palanco	M	66	Maskall	6052054	individual	NO	SILAS
47	William Celdron	M	34	Lucky Shita	6317204	individual	NO	
50	Fernando Xiri	M	52	Agua Bza	6254414	extension officer	NO	
51	José L. Llet	M	35	Agua Bza	627-6283	DAC	NO	
52	José Pineda	M	36	Nagobank	6054059	Nagobank	YES	
53	Abimael Rick	M	26	Agua Bza	6269840	Extension officer	-	AL

(54) Rene Toledo M 49 Belize 669-3020 Agri Envr — *[Signature]*

55) Nadia Vernon F RRB No —

56) Lorne Solis M RRB *[Signature]*

57) Nerie Sanz F RRB *[Signature]*

58) Alfred Seraw M RRB *[Signature]*

59) Javier Garcia m RRB *[Signature]*












### Consultation in Cayo District

No	Name	Sex F or M	Age	Name of your village	Contact number	Name of your group	Is your group registered? Y or N	Signature
1	Juan de la Rosa	M	26	Buena Vista	666-5435	Grupo Renovacion	NO	<i>[Signature]</i>
2	Lucia Castillo	F	17	Buena Vista	661-4950	Grupo Renovacion	NO	Lucia Castillo
3	Julio Baireza	M	39	Buena Vista	651-0250	Grupo Renovacion	NO	<i>[Signature]</i>
4	Rafael Garcia	M	58	Buena Vista	666-2552	Grupo Renovacion	NO	Rafael Garcia
5	Manel Cananza	M	61	Buena Vista	650-2521	Grupo Renovacion	NO	Manel -
6	Norma <sup>Medina</sup> Barcia	F	41	Buena Vista	631-1933	Grupo Renovacion	NO	Norma Medina
7	Carlos Serantes	M	41	valley of peace Ba	662-3379	Grupo <sup>valley of peace</sup> asociacion	YES	Carlos Serantes
8	Alfredo Cavitos	M	46	valley of peace	667-9417	Grupo <sup>valley of peace</sup> asociacion	YES	<i>[Signature]</i>
9	Dominico E. (Bail) R	M	25	valley of peace	662-4158	El Kinton	NO	<i>[Signature]</i>
10	Ismael Blandon	M	27	Valley of Peace	661-9494	El Cricon Area valley of Peace	NO	<i>[Signature]</i>
11	Ismael Hernandez	M	36	La Gracia	666-5337	la gracia.	NO	Ismael H.



No	Name	Sex F or M	Age	Name of your village	Contact number	Name of your group	Is your group registered? Y or N	Signature
12	Mario Fuentes	M	69	La gracia	661-4082	La Gracia	No	M. Fuentes
13	Mario Fuentes	M	30	Lugraria	661-4082	La Gracia	No	Mario Fuentes
14	Sergio Fuentes	M	26	La Gracia	631-3259	La Gracia	No	Sergio Fuentes
15	Karrianne Rosales	F	21	San Antonio Village	663-1156	Ox Mul Kah Bakery	Yes	K. Rosales
16	Alma Tzib	F	50	San Antonio Village	665-2263	Ox Mul Kah Bakery	Yes	A. Tzib
17	Juan Pablo Lara	M	32	Seven Miles	605-0532	Seven Miles Farmers Association	Yes	Juan P. Lara
18	Timotea Mesh	F	39	San Antonio Cayo	632-7076	San Antonio Women Coop	Yes	Timotea Mesh
19	Lorena Mendez	F	46	Lugraria	664-7897	Female Farmer network		Lorena Mendez
20	Erica Mesh	F	36	San Antonio	660-6411	Sayab farm	Yes	Erica Mesh
21	Lilia Mesh	F	62	San Antonio		Sayab farm	Yes	L. Mesh
22	Uselia Neal	F	42	7 miles	-	Women's in Agriculture	Yes	Uselia Neal
23	Opalaura Balan	F	58	7 miles	653-2594	Women in Agriculture	Yes	Opalaura Balan

No	Name	Sex F or M	Age	Name of your village	Contact number	Name of your group	Is your group registered? Y or N	Signature
24	Eddy Alva	M	35	San Antonio Cayo	651-4212	Maya Green Gower	Yes	E. Alva
25	Gary Conto	M	33	San Antonio Cayo	651-4212	Maya Green Gower	Yes	G. Conto
26	Guadalupe mungu	M	54	La gracia	663-9460	Individual Farmer	No	Guadalupe mungu
27	Natan Conto	M	38	San Antonio Cayo	651-5606	Sayab Farm	Yes	Natan Conto
28	Oscar Figueros	M	48	La Gracia	660-4216	Individual Farmer		Oscar Figueros
29	Oscar Martinez	M	51	La gracia	663-5978	Individual Farmer		Oscar Martinez
30	Nao Hume	M	57	Ague Pags	626-6054	Mano-hume@agriculture.gov.hk	Yes	Nao Hume
31	Rich Lopez	M	67	San Antonio	660-6638	Individual Farmer	-	Rich Lopez
32	Sothel m. Tzib	M	67	San Antonio	651-2103	Individual		Sothel m. Tzib
33	Juan Josue Tzib	M	34	San Antonio	669-8700	Individual		Juan Josue Tzib

No	Name	Sex F or M	Age	Name of your village	Contact number	Name of your group	Is your group registered? Y or N	Signature
34	Abdias Mesh	M	39	San Antonio	674-8064	Sayab Farm	Yes	
35	Arturo Mesh	M	65	San Antonio	665-3671	Sayab Farm	Yes	
36	Jesse Madin	M	30	-	668-1437	Agriculture Dept Cayo	-	
37	Melissa Balan	F	34	-	629-9785	Agriculture Dept Cayo	-	
38	Teresita Balan	F	39	C/Va/m	682-1875	M.A. Agriculture	Yes	
39	William La	M	30	Qam	625-6649	Man. Agriculture xcl-	-	
40	Amir Mido	M	-	C/Fam	671-7600	M.A.	-	
41	Nadia Varnon	F	-	<del>R.R.B</del>	636-9310	R.R.B	-	
42	Alfred Serrano	M	-	<del>R.R.B</del>	620-4626	R.R.B	-	
43	Javier Garcia	M	-	<del>R.R.B</del>	6127660	R.R.B	-	
44	Nerie Sanz	F	-	<del>R.R.B</del>	662-4866	R.R.B	-	
45								
46								

### 3.9.5 Stakeholder Engagement Strategy

150. A stakeholder engagement plan will be prepared by MoA-PMU at the beginning of the project that will identify and describe the mechanisms for ongoing stakeholder engagement, consultations, and external communication. The plan will twill also be used so that the stakeholders have the necessary and sufficient information for their active participation in decision-making and as beneficiaries of the services and products offered by the project. Likewise, it should define in more detail, if necessary, the spaces and mechanisms for stakeholder participation in each of the project's components. Furthermore, consultations must be developed ensuring a participatory approach as established in section 3.9.6 below. In developing the plan, the following will be considered:

- Identify institutional, governmental, non-governmental, commercial and community actors at the national, district and local levels that complement the identification already made during the design.
- Build capacities in the project teams (PMU and consultants) on the importance of stakeholder participation and how to promote it.
- Prepare a dissemination and information strategy that responds to the characteristics of the different types of institutional and community actors, including women and young people, including an analysis of their link with the available social media.
- Develop a strategy based on the study of the types of participation expected in relation to each outcome and specific activity of the project, identify the mechanisms and instruments necessary to involve stakeholders, including consultation on language, timetables, places and times in which activities must be carried out to guarantee the participation of all, especially in the case of women and young people.
- Identify the actors that should be strengthened in their leadership and capacity to make decisions within the framework of the project and in their communities.
- Define procedures for the establishment of formal or informal commitments between the project and the stakeholders, mainly beneficiaries, for their continued participation until the end of the activities, once they are involved.

- If the project extends to indigenous communities, it will be necessary for the Plan in its entirety to respond specifically to the socio-cultural particularities of this population.

151. This Plan, once formulated, will be shared with key actors, institutional and communities in order to receive feedback and agree on its application.

### **3.9.6 Participatory processes**

152. To improve farmers' production and resilience, the Project will perform a self-vulnerability assessment following a participatory approach, in which farmers will be able to identify the climate threats that they are exposed to and determine their response capacity and practices they need to improve in order to achieve resilience at the farm level.

153. Additionally, the Project will facilitate face-to-face meetings between buyers and producers, in which producers will be able to hear first-hand the market demands and requirements to access those markets. Similarly, buyers will have the opportunity to hear problems to meet those demands from producers themselves, and together will be able to devise win-win solutions. The most powerful feature of these participatory discussions is that the producers will have the opportunity to influence market demand as well, since they will be able to propose lesser-known products with good marketing potential.

154. Stakeholder engagement is built into the project design to ensure project buy in and response to beneficiary needs. The key stakeholder engagement processes are:

- Development of climate vulnerability assessments
- Development of value chain analyses and market assessments
- Development of investment and production plans
- Producer Organization Strengthening and women/youth economic empowerment
- Development and financing of climate resilient investment plans
- Development of public investment plans.

### **3.9.7 Gender Assessment**

155. Belize has taken important steps in fulfilling its international commitments in favour of gender equality and equity and has renewed its Gender Policy in 2013. The government and civil society participation was part of this renewal, which generated a consensual document, with important modifications in relation to the previous one. Compliance with the Gender Policy requires efforts on the part of different sectors and governmental, non-governmental and civil society entities, which are still incipient. However, the progress made in central issues such as health and education are a sign that it is on the right track.

156. The Government of Belize, recognizing that rural women are the most affected by poverty and lack of access to services and resources for personal development and for their contribution to the development of their communities and territories, participates in the framework of the Agricultural Council Central American (Council of Ministers of Agriculture of the Central American Integration System Region and the Dominican Republic) in the development of an Agenda for the Economic Empowerment of Rural Women and has a focal point in the Ministry of Agriculture and in the Women and Family Support Department (Ministry of Human Development) to implement this agenda at the national level and give a better response to these women. Human, material and financial resources

are currently insufficient and it will be necessary to strengthen the institutional ones in order to generate the expected results.

### **3.10 Indigenous Peoples Planning Framework**

#### **3.10.1 Rationale**

157. The project does not anticipate that its activities will be implemented in areas where indigenous peoples are present. However, as the specific locations have yet to be finalized, should there be activities that will cover areas where indigenous peoples live, there is a need to involve the indigenous peoples in the design and implementation of the activities. Their active involvement would ensure that their needs, interests and concerns are considered not only in the various plans and assessments but also in the design and final configuration of specific activities under Component 1 and 2. In addition, there is a need to avoid, mitigate and/or compensate any adverse effects on their communities caused by activities supported by the project. For these reasons, the project adopts this Indigenous Peoples Policy Framework (IPPF).

#### **3.10.2 IPPF objectives**

158. The main objectives of the IPPF are to ensure that the interests, needs and concerns of indigenous peoples are taken into consideration in the design and implementation of specific activities near or within their communities and/or lands. More specifically, this Framework will ensure that:

- Indigenous peoples in the sites where the activities will be carried out are able to meaningfully participate in the conduct of the activities, including the preparation of the various assessments and studies;
- The selection, screening and preparation of activities under Components 1 and 2 will be undertaken with the involvement and participation of the indigenous peoples communities in the target areas and in partnership with the executing entity and other stakeholders;
- Whenever the activities are located within or will directly impact on any indigenous peoples communities and their lands and resources, the requirements for free, prior and informed consent are complied with.

159. The IPPF sets out the processes for carrying out informed consultation and participation with potentially affected indigenous peoples at various stages of preparation and implementation of activities. The IPPF also provides for further social assessment of activities that will have likely impacts on the indigenous peoples and their communities including institutional arrangements for screening project supported activities, evaluating their effects on indigenous peoples, preparing Indigenous Peoples Plan, capacity building, disclosure arrangements, and addressing any grievances.

#### **3.10.3 Project requirements**

160. All activities shall be screened for any risks and impacts on indigenous peoples. Where screening indicates the presence of indigenous peoples or implemented in indigenous peoples lands, the following shall be required by the project:

- Further social assessment to generate understanding of any potential risks and impacts of the activities to the indigenous peoples communities. The insights obtained from the social assessments will be among the bases for designing specific assistance for the indigenous

peoples as well to orientate and sensitize other institutions working with indigenous peoples. The result of the assessment will inform the development of the indigenous peoples plan and the consultations that will be conducted.

- Indigenous peoples plan that will describe the specific measures to ensure participation of the indigenous peoples and incorporating their inputs to any mitigation measures and benefits sharing schemes.
- The agreed process for free, prior and informed consent that will need to be obtained prior to commencement of any activities and maintained throughout the implementation.

#### **3.10.4 Social assessment**

161. The social assessment is a critical step in the IPPF as the findings of the assessment will provide the elements needed to develop the project's Indigenous Peoples Plan. The social assessment will carry out the following tasks and include the corresponding information:

- Review the legal and institutional framework applicable to indigenous peoples and other potentially affected groups.
- Gather baseline information on the demographic, social, cultural, and political characteristics of the affected indigenous peoples' communities and other ethnic groups, the land and territories that they have traditionally owned or customarily used or occupied, customary land tenure system, and the natural resources on which they depend. This will include description of the resources and the socioeconomic profiles of the adjacent communities and a detailed description of the number of people living within the adjacent areas to be covered in the project, livelihood and their type of land tenure, and specific impacts of the activities will be on the indigenous peoples. Critical to the determination of potential adverse impacts is an analysis of the relative vulnerability of, and risks to, these communities given their distinct circumstances and close ties to land and natural resources, as well as their lack of access to opportunities relative to other social groups in the communities, regions, or national societies in which they live.
- Identify the key project stakeholders and prepare a culturally appropriate process for consulting with the indigenous peoples communities.

#### **3.10.5 Indigenous peoples plan (IPP)**

162. Based on the results of specific social assessments, an IPP may be prepared for each area or activities affecting indigenous communities. Elements of the IPP may be integrated into any development plans or management plans if the identified indigenous peoples in the activity area are determined to constitute the majority of the population. The plan will contain the following elements:

- A summary of the social assessment conducted, including the legal and institutional framework applicable to indigenous communities and other potentially vulnerable groups, baseline information on the demographic, social, cultural, and political characteristics of the indigenous communities, the land and territories that they have traditionally owned or customarily used or occupied, and the natural resources on which they depend;
- A summary of results of the informed consultations with the affected indigenous communities that was carried out during preparation of the activities and the free, prior informed consent for the activity;

- An action plan of measures to ensure that the indigenous peoples receive social and economic benefits that are culturally appropriate, including, if necessary, measures to enhance the capacity and participation. This also includes measures to avoid, minimize, mitigate or compensate for any adverse impacts on indigenous peoples;
- The cost estimates and financing plan for the indigenous peoples plan;
- Accessible procedures appropriate to the project to address grievances by the affected indigenous communities arising from project implementation. When designing the grievance procedures, the borrower takes into account the availability of judicial recourse and customary dispute settlement mechanisms among the indigenous peoples, and;
- Mechanisms and benchmarks appropriate to the project for monitoring, evaluating, and reporting on the implementation of the indigenous peoples plan.

### **3.10.6 Free, prior and informed consent**

163. IFAD's guidance document on "How to seek free, prior and informed consent in IFAD investment projects" indicates that the requirement for FPIC is promoted in three IFAD policies:

- Policy on Improving Access to Land and Tenure Security (2008): "Before supporting any development intervention that might affect the land access and use rights of communities, IFAD will ensure that their free, prior and informed consent has been solicited through inclusive consultations based on full disclosure of the intent and scope of the activities planned and their implications."
- Policy on Engagement with Indigenous Peoples (2009): "In working with Member States on projects targeting or affecting indigenous peoples, IFAD shall support the participation of indigenous peoples' communities in determining priorities and strategies for their own development. When appraising such projects proposed by Member States, in particular those that may affect the land and resources of indigenous peoples, the Fund shall examine whether the borrower or grant recipient consulted with the indigenous peoples to obtain their free, prior and informed consent. The Fund shall consider this consultation and consent as a criterion for project approval. In appraising such projects, the Fund shall verify whether they include measures to: (a) avoid potentially adverse effects on the indigenous peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate or compensate for such effects."
- Policy on Environment and Natural Resource Management (2011): "Respecting the principle of free, prior and informed consent, IFAD will support indigenous peoples in enhancing the resilience of the ecosystems in which they live and in developing innovative adaptation measures and emerging opportunities for indigenous peoples' engagement in carbon sequestration and the provision of other environmental services."

164. Consistent with the GCF Indigenous Peoples Policy, IFAD ensures that consent should be sought in a way that is "free, prior and informed":

- Free implies no coercion, intimidation or manipulation.
- Prior implies that consent has been sought sufficiently in advance of any decision point or commencement of activities and respect is shown to time requirements of indigenous consultation/consensus processes.
- Informed implies that information provided covers (at least) the following aspects:
  - The nature, size, place, duration, reversibility and scope of the proposed project/activity;



- The rationale or purpose of the project/activity;
  - The geographical areas that will be affected;
  - A preliminary assessment of the likely economic, social, cultural and environmental impact, including potential risks and fair and equitable benefit-sharing; o Personnel likely to be involved in the execution of the proposed project/activity; and
  - Procedures that the project or activity may entail.
- Consent is the expected outcome of the consultation, participation and collective decision-making process by the local communities. It is the mutual agreement reached, documented and recognized by all parties. Consultation and participation are crucial components of a consent process and require time and an effective system for communicating among interest holders. Consultation should be undertaken in good faith, and local communities must be able to participate through their own freely chosen representatives and customary or other institutions. In general, communities would first consent to discuss the idea of the project that will affect their land, territories and resources. They would further participate in the consultation process leading to consent by contributing to the design of the project, including its implementation and monitoring mechanisms. Depending on the nature of the project, consent may be required for: the overall project (e.g. the construction of an irrigation system); and component and specific activity of a project (e.g. if a project has one component on irrigation and one on microfinance, consent would be needed for the component that affects the land and use rights of the communities).

### **3.10.7 Consultations with indigenous communities**

165. The project recognizes that the identities and cultures of Indigenous Peoples are inextricably linked to the lands on which they live and the natural resources on which they depend. These distinct circumstances expose indigenous peoples to different types of risks and levels of impacts from development projects, including loss of identity, culture, and customary livelihoods. In considering the objectives, approach and potential impacts of the project, the consultation process will need to include and consider non-indigenous communities as well since the principles also apply to them. The consultations are to ensure that indigenous peoples and communities impacted by the project will have an opportunity to provide their views and feedback in a culturally appropriate manner during project implementation as well as to ensure access to appropriate project benefits.

166. The Mayan population are the original inhabitants of Belize. According to the Labor Force Survey of April 2018, there are currently 44,798 people representing 11% of the total population of the country. Which are mainly concentrated in Corozal (25%) and Toledo (55%), the latter district having the largest number of indigenous communities of the country, mainly Mayk Kekchi, while in the other districts the Mayans are dispersed, sharing spaces with other existing ethnic groups.

167. In the Mayan communities the consultations should ensure that there is dialogue with the Mayan leaders at various levels. These include several advocacy groups, cultural leaders and political/community leaders. Each of these should be taken into consideration when consulting with the Mayan people. The Maya Communities of southern Belize, the Toledo Alcaldes Association and the Maya Leaders Alliance adopted their Consultation Framework on June 13th, 2014 and should be referred when undertaking such consultations.

168. During the stakeholder engagement process, as the focus of the Be-Resilient program is mostly on poor and vulnerable (market oriented) farmers with the potential to improve productivity, and insertion in value chains rather than subsistence farming, the communities with poor subsistence (not

market oriented) farmers (most of whom are people of the Toledo district), have not been included in the priority areas, and therefore no consultation with indigenous peoples was held.

169. However, some new communities need to be identified and phased-in during program implementation. Therefore, some additional communities, particularly from Toledo might be considered.

170. Due to this possibility, the project will apply during its implementation, the "Policy of Action towards Indigenous Peoples of IFAD" (2009), the "IFAD Policy on Natural Resources and Environment Management (2011), its" Notes on how to apply free, prior and informed consent in IFAD's investment projects "(2016) and" Social, Environmental and Climate Assessment Procedures " (2017 Edition). In all these instruments, free, prior and informed consent (FPIC) is established as a participatory mechanism of Indigenous peoples, which are mandatory for projects to ensure the empowerment of indigenous communities in rural areas. The aim being to improve their well-being, resilience to climate change, income and food security through autonomous development based on the identity and culture of these peoples.

### **3.10.8 FPIC implementation plan**

171. This FPIC implementation plan details the minimum obligatory steps for conducting the participatory and consultative process through which consent will be obtained on the project in the communities, including the actions and investments that could be made:

- All potential project participants will be consulted if they are recognized or self-identify as indigenous people. If so, before development of any project interventions in the area and with the potential project participant, Free, Prior and Informed consent must be obtained.
- To organize the consent process, IFAD will ensure that the borrower or recipient of the donation through MoA-PMU consults indigenous peoples in order to obtain their FPIC once it is determined whether their communities and organizations will form part of the project's attention areas. In practice, IFAD and the borrowing government will design and supervise the FPIC Implementation Plan.
- MoA-PMU will previously carry out an identification of the main environmental and social issues that affect the communities of indigenous peoples that could participate of the project.
- In order to guarantee the legitimacy of the process, the institutions that are representative of the local communities will be identified. For this it will be necessary to know how decisions are made in the communities and to ensure that their representatives are directly elected by the peoples and communities involved. Special attention will be given to involving representatives of indigenous women and young people.
- The preparation of the process to obtain FPIC must be done with the participation of the Government (MoA-PMU) and indigenous representatives. Among them, agreements will be made about what will be the subjects on which the consent will be, how it will proceed, where it will take place and who will participate. It must also include the definition of the mechanisms to achieve a broad and democratic convocation, which includes women and young people from the communities in proportions close to those established as the project goal (40% women and 20% young people). These participants can be representatives of institutions (organizations) at the local level.
- As part of the consultation for the FPIC, the compatibility of the development objectives of the project with the rights and aspirations of the communities will be evaluated, the project

proposals will be socialized and the issues that are of concern to the communities and will be analyzed. This could imply adjustments or special considerations on the part of the project.

- In order to obtain a legitimate FPIC, it is necessary to guarantee procedures and standards defined with the affected communities and with the people who have the right to grant or deny consent. This process must be in harmony with their own governance systems and internal collective decision-making processes.
- The consent must be formalized (in writing), so that the decisions taken regarding the project and its execution in the indigenous communities are recorded. This document will be signed by the authorities or maximum representatives of the communities and will be accompanied by the detail of the process followed to obtain it, the consultations made and the people participating in the consultations (their qualities, their representation, place of residence and signatures).

### **3.10.9 Grievance and redress mechanism**

172. In the first instance, it will be the Government of Belize (MoA-PMU) who will attend the claims of the indigenous peoples. However, IFAD will be vigilant in the resolution of grievances raised by the indigenous people in relation to the results of the process of obtaining the FPIC. The complaints mechanism is explained in detail in section 3.12 below.

173. IFADs procedure allows affected complainants to have their concerns resolved in a fair and timely manner through an independent process. In addition, IFAD will require the borrower to provide an easily accessible grievance mechanism, process or procedure to facilitate resolution of concerns and grievances of project-affected parties arising in connection with the project (on a case-by-case basis for projects that pose special risks). Grievance redress will use existing formal and informal grievance mechanisms, strengthened or supplemented as needed with project-specific arrangements, and will be proportionate to the risks and of the project. Although IFAD normally addresses risks primarily through its quality enhancement / quality assurance process and by means of project implementation support, it remains committed to: (i) working proactively with the affected parties to resolve complaints; (ii) ensuring that the complaints procedure and project-level grievance mechanism are easily accessible to affected persons, culturally appropriate, responsive and operates effectively; and (iii) maintaining records of all complaints and their resolutions.

### **3.10.10 Validation of Information**

Throughout the engagement process, bilateral meetings were held with line ministries to confirm project alignment with national prioritization, institutional and local needs, as well as to confirm information collected and evaluate cooperation opportunities with those ministries and institutions that were particularly interested in the project.

### **3.11 Disclosure**

174. IFADs will disclose the relevant documentation developed through GCF design process (including this SECAP and the Gender Assessment and Action Plan) in a timely manner. Category B projects will be disclosed as minimum 30 days before expected date of GCF approval pursuant to the requirements of the GCF Information Disclosure Policy.

175. Disclosed documents must be presented in a way that is accessible and culturally appropriate, placing due attention to the specific needs of community groups which may be affected by project implementation (such as literacy, gender, differences in language or accessibility of technical information or connectivity).

176. IFAD will ensure the widest dissemination and disclosure of project information possible. Taking into account special needs and limited access to web content; in this regard, special attention will be placed on potential project participants: farmers, illiterate or technological illiterate people, people with hearing or visual disabilities, people with limited or no access to internet and other groups with special needs. The dissemination of information among these groups will be carried out by the GOB through the PMU. All accessible and locally available tools for disclosure will be utilized, including social media, local newspapers, flyers, brochures, radio, and television. Special attention will be placed on dissemination of project environmental and social safeguards, including the Grievance Redress Mechanism.

### **3.12 Grievance and Redress Mechanism**

177. IFAD's Grievance Redress Mechanism can be accessed when necessary to manage project-related grievances that cannot be resolved by the project's Executing Entity. IFAD Complaints Procedure for alleged non-compliance with its social and environmental policies and mandatory aspects of its Social, Environmental and Climate Assessment Procedures (SECAP).

178. IFAD-funded projects and programmes are designed in a participatory manner, taking into account the concerns of all stakeholders. IFAD requires that projects are carried out in compliance with its policies, standards and safeguards. Moreover, IFAD's Strategic Framework calls for ensuring that projects and programmes promote the sustainable use of natural resources, build resilience to climate change and are based upon ownership by rural women and men themselves in order to achieve sustainability.

179. The objective of the IFAD Complaints Procedure is to ensure that appropriate mechanisms are in place to allow individuals and communities to contact IFAD directly and file a complaint if they believe they are or might be adversely affected by an IFAD-funded project/programme not complying with IFAD's Social and Environmental Policies and mandatory aspects of SECAP.

180. Complaints must concern environmental, social and climate issues only and should not be accusations of fraudulent or corrupt activities in relation to project implementation – these are dealt with by IFAD's Office of Audit and Oversight.

#### **3.12.1 Eligibility criteria**

181. To file a complaint for alleged non-compliance with IFAD's social and environmental policies and mandatory aspects of its SECAP, IFAD will consider only complaints meeting the following criteria:

- The complainants claim that IFAD has failed to apply its social and environmental policies and/or the mandatory provisions set out in SECAP.
- The complainants claim that they have been or will be adversely affected by IFAD's failure to apply these policies.
- Complaints must be put forward by at least two people who are both nationals of the country concerned and/or living in the project area. Complaints from foreign locations or anonymous complaints will not be taken into account.

- Complaints must concern projects/programmes currently under design or implementation. Complaints concerning closed projects, or those that are more than 95 per cent disbursed, will not be considered.

### **3.12.2 The process**

182. The complainants should first bring the matter to the attention of the government or non-governmental organisation responsible for planning or executing the project or programme (the Lead Agency), or to any governmental body with the responsibility for overseeing the Lead Agency. If the Lead Agency does not adequately respond, then the matter may be brought to the attention of IFAD. The issue may be brought straight to IFAD if the complainants feel they might be subject to retaliation if they went to the Lead Agency directly.

183. The Regional Division will examine the complaint and, if necessary, will contact the Lead Agency, or the governmental body with the responsibility for overseeing the Lead Agency, to decide if the complaints are justified. If the complainants request that their identities be protected, IFAD will not disclose this information to the Lead Agency or anyone else in government.

184. If the complaint is not justified, the Regional Division will inform the complainants in writing.

185. If the Regional Division finds the complaint is justified and there is proof of actual or likely harm through IFAD's failure to follow its policies and procedures, IFAD will take action. This may consist of making changes to the project/programme, or requiring that the government observes its obligations under the Financing Agreement. IFAD's response will focus bringing the project/programme into compliance and no monetary damages will be available or paid in response to such complaints. The complainants will be informed of the outcome of the issue by the Regional Division.

186. In all cases, if the complainants disagree with IFAD's response, they may submit a request to [SECAPcomplaints@ifad.org](mailto:SECAPcomplaints@ifad.org) and request that an impartial review be carried out by the Office of the Vice-President.

187. The Office of the Vice-President will decide on the steps to be taken to examine such complaints, including, if necessary, contracting external experts to review the matter. The complainants will be informed of the results of the review.

188. IFAD will include in its Annual Report a list of received complaints and a summary of actions taken to address them.

### **3.12.3 How to submit a complaint**

189. A complaint relating to non-compliance with IFAD's Social and Environmental Policies and mandatory aspects of its SECAP can be submitted in any of the following ways:

- Download the complaints form (Word) available [here](#) and as annex 5 of this document.
- Send an email to [SECAPcomplaints@ifad.org](mailto:SECAPcomplaints@ifad.org) or mail to:

IFAD  
SECAP Complaints (PMD)  
Via Paolo di Dono 44  
00142 Rome, Italy

190. Complaints must include the following information:

- Name, address, telephone number and other contact information
- Whether the complainants wish to keep their identity confidential, and if so, why
- Name, location, and nature of the IFAD project/programme (if known)
- How the Complainants believe they have been, or are likely to be, adversely affected by the IFAD-supported project or programme

#### **3.12.4 The project-level Grievance Redress Mechanism**

191. The project will establish one or more grievance mechanisms at field level to file complaints. Contact information and information on the process to file a complaint will be disclosed in all meetings, workshops and other related events throughout the life of the project. The project will include in the capacity building program information on the GRM and will organize consultations to determine the most suitable way for beneficiaries and stakeholders to communicate their concerns and ideas.

192. The Grievance Redress Mechanism and guidelines will be developed for the project taking into account IFADs corporate Complaints Procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures.

193. The project will also be responsible for documenting and reporting as part of the safeguards performance monitoring on any grievances received and how they were addressed.

#### **3.12.5 How to submit a complaint at project level**

194. Complaints can be raised either orally or in writing, directly to the Project Management Unit (PMU) and can be sent by email to [beresilient.grievance@gmail.com](mailto:beresilient.grievance@gmail.com).

195. Complaints must include the following information:

- Name, address, telephone number and other contact information
- Whether the complainants wish to keep their identity confidential, and if so, why
- Name, location, and nature of the IFAD project/programme (if known)
- How the Complainants believe they have been, or are likely to be, adversely affected by the IFAD-supported project or programme

#### **3.12.6 The process at local level**

196. Submitted complaints will be sent to the Programme Manager and M&E officer to assess whether the complaint is eligible.

197. Eligible complaints will be addressed by the PMU. The PM with support from the M&E Officer will be responsible for recording the grievance and how it has been addressed if a resolution was agreed.

198. If the situation is too complex, or the complainer does not accept the resolution, the complaint must be sent to a higher level, until a solution or acceptance is reached:

- 1st level: At this level, received complaints will be registered, investigated and solved by the PMU.

- 2nd level: If the complaint has not been solved and could not be solved in level 1, the PMU must report it to the POC. Received complaints will be registered, investigated and solved by the POC.
- 3rd level: If the complaint has not been solved and could not be solved in level 2, the complaint must be submitted to IFAD following the procedure stipulated in section 3.12.3 above.

199. For every complaint received, a written proof will be sent within ten (10) working days; afterwards, a resolution proposal will be made within thirty (30) working days.

200. In compliance with the resolution, the person in charge of dealing with the complaint, may interact with the complainant, or may call for interviews and meetings, to better understand the reasons.

201. All complaint received, its response and resolutions, must be duly registered.

### **3.12.7 Resolution**

202. Upon acceptance a solution by the complainer, a document with the agreement should be signed with the agreement.

### **3.13 Monitoring and Evaluation Plan**

203. The ESMP will be monitored through the Project M&E system. The M&E specialist will lead the process and will be supported with technical support as required from specialists within the team or subcontracted technical expertise as necessary.

204. The M&E activities of the ESMP will employ a participatory approach in which Project participants (including IPs and representatives of producers' organizations) are fully engaged in the collection of field data, discussion and analysis of this data, and decision-making regarding changes that may be required for more effective Project implementation. This means that the IPs such as the MOA and the DC must play an active role in data collection and its submission to the PMU.

205. The M&E Officer is responsible for analyzing the data against the potential impacts identified and overall ESMP targets to monitor, assess Project implementation progress and effectiveness and reporting the results to the POC and IFAD.

206. The M&E Officer will ensure that information flow is multi-directional; information must flow upward to the POC and IFAD, horizontally to the IPs and downward to Project beneficiaries. The M&E Officer will be in close coordination with the Safeguards Specialist, the two will participate in data collection and the outputs from the M&E Systems must be beneficial to them to ensure their continued participation. At the governance level, the results of the analyses are used for discussion on implementation progress and to make decisions on improvements and/or corrective measures on project implementation strategies, where necessary.

207. At the implementation level, the information is used as a learning mechanism to guide the PMU in the management of the ESMP, the IPs and Project beneficiaries on the execution of Project activities for achieving optimal results avoiding and/or mitigating social and environmental impacts.

208. Although 3-5% of program budget is frequently suggested as a benchmark, actual spend on M&E should always be linked to purpose. So given the number of stakeholders of the project and the different areas in which the projects will be implemented the budget allocation for the ESMP M&E Plan will be 6%.

209. It is important to understand the right type of information that is needed to influence the right type of target audiences at the right times, therefore the amount allocation may vary during the design phase once project areas are identified and during the implementation phase depending on potential on the ground findings.



**Table 9 Proposed parameters to be monitored during project implementation as part of the ESMP:**

<b>Parameter</b>	<b>Activity</b>	<b>Performance Indicator</b>	<b>Target</b>	<b>Responsibility for monitoring during project implementation</b>	<b>Monitoring means</b>	<b>Recommended frequency of monitoring</b>	<b>Recommended Enhancement measures</b>
<b>Small scale processing and marketing of agricultural produce</b>	Prepare a waste disposal management plan	Existence of waste disposal management plan (Yes/No)	All processing facilities will have a plan	PMU in collaboration with MoA extension officers	As part of sub-project approval	Prior to sub project approval, one year after sub project implementation, and project end	Water management plans considering recycling and reutilisation of sub products  Promotion of composting
<b>Labour and safety</b>	Prepare a labour and safety plan as part of the Environmental and Social Management Plan	Labour and safety plan implemented	All infrastructure works have a labour and safety plan	PMU in collaboration with DoE officers	As part of works approval	Before and during construction phase	Implementation of international standards such as OHSAS 18001
<b>Capacity building to stakeholders</b>	Prepare training material adapted to the needs of each stakeholder	Stakeholders trained	All stakeholders are trained in sustainable practices	PMU in collaboration with local governments and Department of Environment	As part of project approval	Before implementation of activities	Include capacity building material for sustainable development practices as part of subcomponents training

Parameter	Activity	Performance Indicator	Target	Responsibility for monitoring during project implementation	Monitoring means	Recommended frequency of monitoring	Recommended Enhancement measures
<b>Indigenous peoples plan</b>	Prepare an IP Plan including GRM	Existence of the IPP and the GRM	To have the IPP and GRM fully mainstreamed in the programme operations	PMU in collaboration with local governments, IPs and Department of Environment	As part of the project approval	Before implementation of activities	Sensibilization plan to be shared with all stakeholders
<b>Natural resources extraction to renovate rural roads and for drainage networks</b>	<p>Review alignment with national and international legislation on intervention in buffer zones of ecological area when applicable.</p> <p>Request authorization of competent government entities with regard to the extraction of building material</p>	Existence of Environmental Clearance for the construction of rural roads and drainage systems (Yes/No)	All infrastructure works with Environmental Clearance	PMU and MoA Department of the Environment	As part of works approval	Before construction	Avoid the presence of potential impacts due to soil compaction to local population i.e. dust and noise produced during the construction of infrastructure.

Parameter	Activity	Performance Indicator	Target	Responsibility for monitoring during project implementation	Monitoring means	Recommended frequency of monitoring	Recommended Enhancement measures
Use and discharge of agrochemicals	Ensure agrochemical application plan is based on soil test (to avoid overuse) and that discharge of agrochemicals is acceptable to avoid soil degradation and water pollution.	Soil test has been done to define use of agrochemicals (Yes/No)	All PO's test representative soil samples of production sites	PMU in collaboration with MoA extension officers	As part of sub-project approval	Before sub-project approval	Review the protected area IUCN category (and or UNESCO MAB) for alignment with international regulations/commitments
		Discharge of agrochemicals is acceptable (Yes/No)	All PO's develop and implement agrochemical discharge procedures	PMU in collaboration with MoA extension officers	As part of project environmental monitoring by PMU	Annual	Prepare/review and action plan for any implementing activity ongoing/to be developed in buffer zones
	Develop and apply organic pesticide alternative.	Is the organic alternative being applied (Yes/No)	All PO's apply organic alternative	PMU in collaboration with MoA extension officers	As part of project environmental monitoring by PMU	Annual reports, mid-term report, closing	Review the possible presence of red list species in the project area
Sustainable use of water resources	Request authorization of water use for irrigation and drainage	Existence of Environmental Clearance and Water	All Irrigation/Drainage with Environmental Clearance and Water	PMU and MOA Department of Environment	As part of works approval	Before construction	Prepare/review a mitigation plan to respond with the findings
							Where Management plan do not exists, the project will support the development of the management plans (waste management/pest management plans)
							Prepare an scoping evaluation of the number of boreholes to be made, the number of hectares to

Parameter	Activity	Performance Indicator	Target	Responsibility for monitoring during project implementation	Monitoring means	Recommended frequency of monitoring	Recommended Enhancement measures
		Abstraction Licence (Yes/No)	Abstraction Licence (Yes/No)				be irrigated and the frequency of the irrigation to determine if a more deep evaluation is needed i.e. soil pits to measure the water table
	Monitor access, quality and usage of water for agriculture and agro-processing	Quality of water effluent from supported farms	Acceptable levels of nutrients, chemical residues, and sediments from irrigation and drainage works	PMU in collaboration with MoA extension officers	As part of project environmental monitoring by PMU	Annual in each priority area	Prepare/review a detailed list of the communities and the status of their lands  Promote community participatory and evaluation in the process
<b>Renewable energy</b>	Monitor the quantity of renewable energy installed	KW of renewable power installed in the targeted communities	At least 80% of new energy installed is a renewable	PMU	M&E system and completion study	Annual reports, mid-term report, closing	Measure carbon tons avoided during the project life

## 4 Climate Change

210. A major objective of the Project is to reduce the vulnerability of beneficiaries to the impact of climate change. Belize is classified as a SIDS; the United Nations Framework Convention on Climate Change recognizes the particularly high vulnerability to climate change of SIDSs and supports actions to address the special needs of these states. Two detailed measurements of individual countries' vulnerability to climate threats have been made: (a) the University of Notre Dame's Global Adaptation Index (GAI) rates Belize's adaptive capacity at 114 out of 181 countries; and (b) over the twenty-year period 1996-2015, Belize was ranked 26th out of 181 countries in the Global Climate Risk Index (CRI) prepared by the NGO Germanwatch in Bonn. The index calculates the level of exposure and vulnerability to extreme climate-related events. Germanwatch estimates that Belize suffers up to 3% losses in GDP in any one year due to extreme weather-related events.

211. Over the past 50 years, global temperatures have been rising steadily, with a measured average increase of 0.6° C, and are projected to continue along this trend. In Belize, rainfall variability has increased and will likely become more pronounced in the future. While overall total rainfall is expected to increase marginally, it is likely to be less predictable and concentrated in more intense events, thus leading to both extended dry periods and higher flooding potential. Belize is particularly vulnerable to hurricanes and tropical storms, which are expected to increase in both frequency and magnitude in the Caribbean.

### 4.1 Current Situation

212. Situated at latitude of 16-18°N, Belize has a typically moist tropical climate with little seasonal variation in temperature, but with distinct wet and dry seasons. The rainy season occurs from June to November and brings approximately 60 inches of rain in the north to 160 inches of rain in the south. Rainfall varies from year to year in many areas, except in the Southern parts of the country where annual rainfall average is consistent. The heaviest amount of rainfall is usually expected in June or early July and is punctuated by a break in late July or August while the dry season occurs from November to May. The change from dry to wet seasons is gradual with a cool transition from November to February and a warm transition from March to May.

213. The mean temperature in Belize ranges from 27°C (maximum 30.1°C, minimum 22.6°C) along the coast to 21°C (maximum 25.3°C, minimum 17.7°C) at higher elevations, with the coldest month being January and the warmest May. The winds blow at an average of five knots from east to south-east all year long. The country is also affected by tropical storms, tropical waves and hurricanes that move westward through the Caribbean from June to November. Belize is affected by a major hurricane or storm every 2½ years with damages usually predominant in the northern portion of the country.

214. Inter-annual variations in climate in southern Central America are caused by the El Niño Southern Oscillation (ENSO). El Niño events bring relatively warm and dry conditions between June and August, and decreased frequencies of Atlantic tropical cyclones, whilst La Niña episodes bring colder and wetter conditions at that time of year and more frequent tropical cyclones (McSweeney et al., 2010).

## 4.2 Variability

215. Over the last few years, extreme weather events have intensified causing social, environmental and economic losses. Losses associated to extreme weather events as a percentage of GDP stand at 2.87%, the highest in Central America<sup>2</sup>.

216. In the last few decades, the average annual temperature in Belize has shown a slight tendency to increase. The annual accumulated amount of precipitation has varied greatly from year to year (Figure 2).

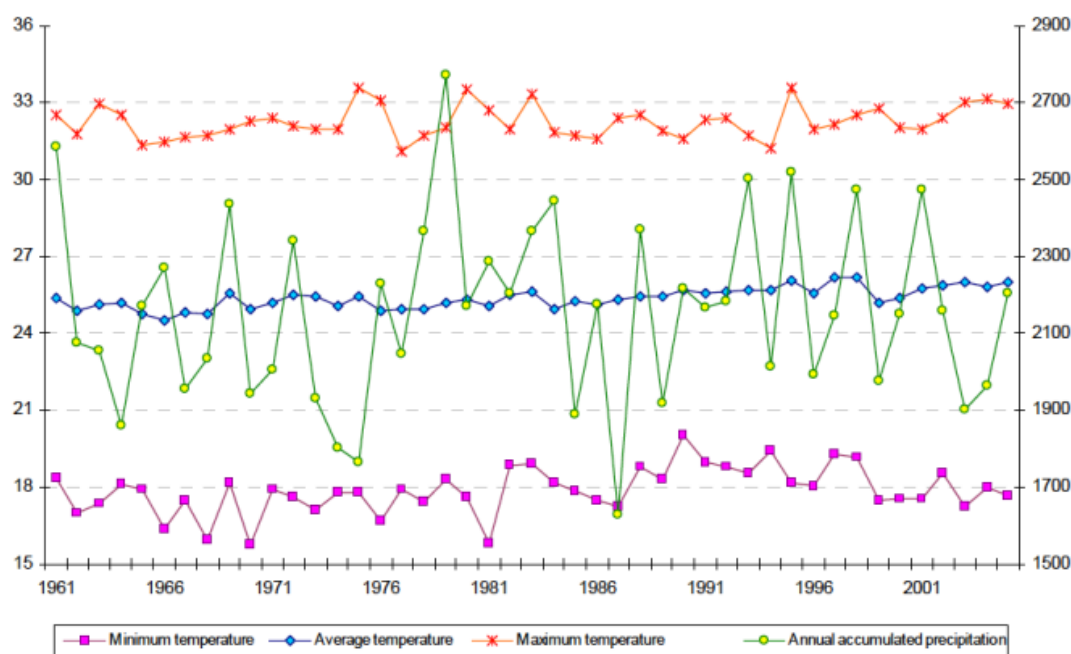


Figure 2 Belize Temperature and Precipitation, 1961-2001. Source: ECLAC Report, 2013

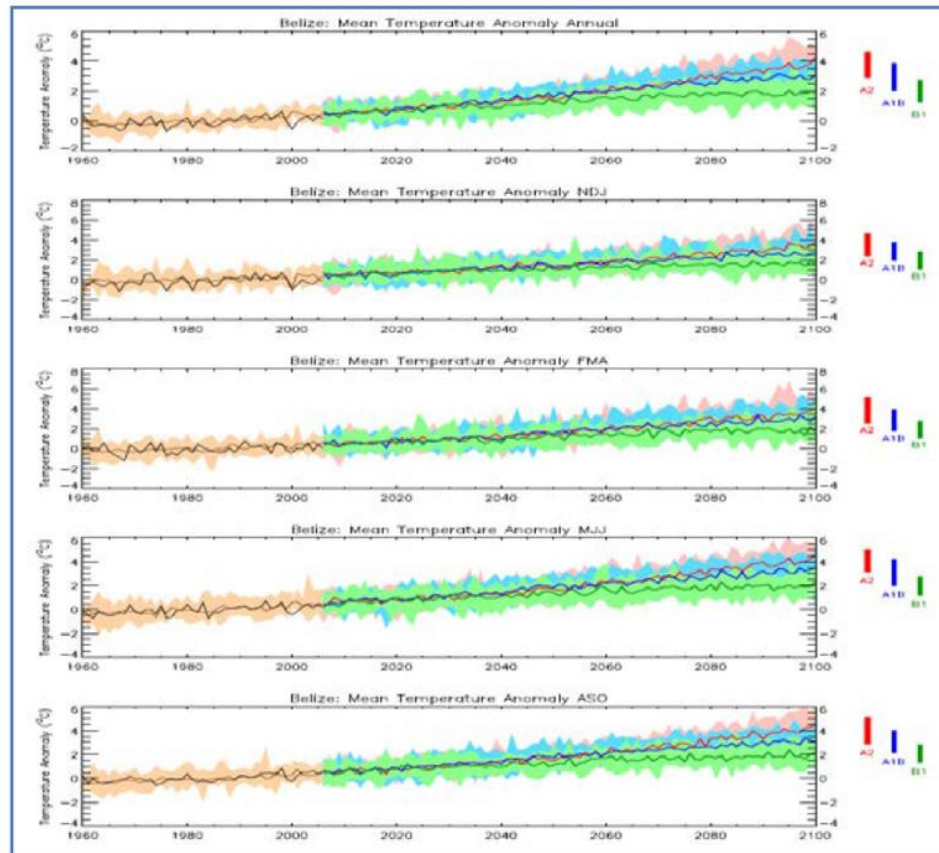
217. The economic effects of climate variability and extremes are already noticeable, as seen in recent incidents of flooding and drought (BEST, 2009). Changes in climate are already affecting the agriculture sector. Increased temperatures and unpredictable rainfall patterns are altering agricultural productivity in the form of increased incidence of weeds, pests and diseases, widespread perturbation of the growing season, variability in harvests, problems of soil drainage and erosion, salt water intrusion in drought prone areas, and damage of protective cropping structures (greenhouses) of smallholder vegetable farmers. To respond to reduced yields, farmers are increasing irrigation, using more agrochemicals and fertilizers, and changing the choice and mix of crops, all of which increase the costs of agricultural production, cause negative environmental impacts and threaten overall food security.

218. The future climate will likely be characterized by increasing temperatures and declining levels of precipitation, but with significant fluctuations, with an increased number of extreme precipitation events (likely owing to variability commonly attributed to ENSO, which occurs at irregular intervals).

<sup>2</sup> Germanwatch 2017 available at: <https://germanwatch.org/de/download/16411.pdf>

### 4.3 Air Temperature

219. According to future climate scenarios from the UNDP Country Profiles for Belize, mean annual air temperature is projected to increase by a minimum of 0.4 °C to a maximum of 1.7 °C in the 2030s depending on the emissions scenario used (high emissions (A2), low emissions (B1) and medium emissions (A1B) from the IPCC Fourth Assessment Report (2007)). Similarly, in the 2060s, the mean annual air temperature is projected to increase by 0.8 °C to 2.9 °C, and in the 2090s, by 1.3 °C to 4.6 °C (Figure 3) (McSweeney et al., 2010).



**Figure 3** Observed (1960-2006) and projected (to 2100) annual and seasonal air temperature anomalies for Belize (referenced to 1970-1999) Source: Singh et al., 2014

220. As for the climate models ECHAM5 and HadCM3Q11 consistently project an increase in temperature that ranges from 2°C to 4°C (°C) for all districts of Belize and for all seasons (2060-2069) when compared to the present (1961-1990). On account of the marine influence, the temperature increases are lower in coastal areas (< 2.0 °C) (Figures 4 and 5) (Singh et al., 2014).

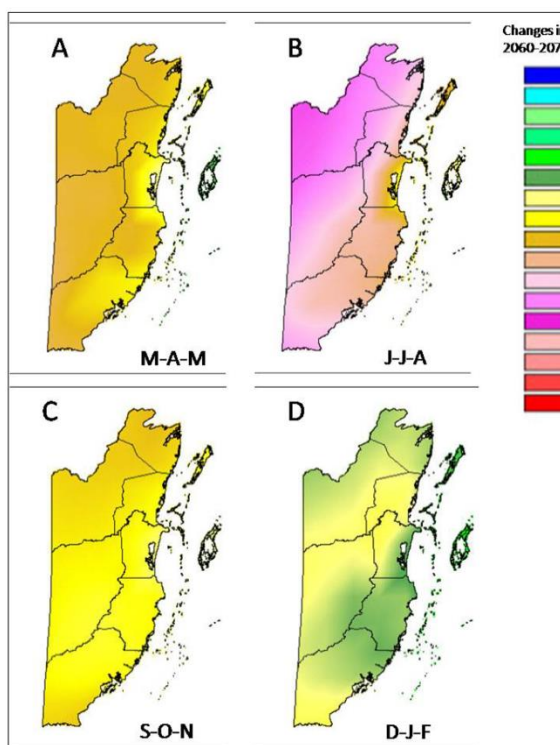


Figure 4 Changes in mean seasonal air temperature (°C) (2060-2070 vs 1961-1990 ) for the March-April-May (A), June-July-August (B), September-October-November (C), and December-January-February (D) season according to the ECHAM5 climate model. Source: Singh et al, 2014

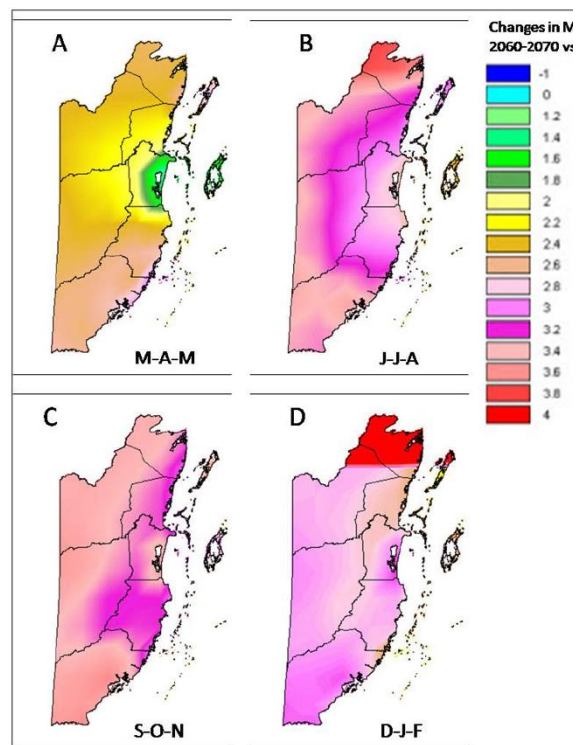


Figure 5 Changes in mean seasonal air temperature (°C) (2060-2070 vs 1961-1990 ) for the March-April-May (A), June-July-August (B), September-October-November (C), and December-January-February (D) season according to the HadCM3Q11 climate model. Source: Singh et al, 2014

#### 4.4 Precipitation/Rainfall

221. Atmosphere-Ocean General Circulation Models (A-OGCMs) projections of mean annual rainfall project a wide range of changes in precipitation for Belize. Ensemble minimum and median values of rainfall changes (mm/month) by the 2030s, 2060s and 2090s, however, are generally and consistently negative for all seasons and emissions scenarios. Overall, ensemble A-OGCM projections of mean annual rainfall decreases more and more from the 2030s to the 2090s. Furthermore, mean seasonal rainfall vary between a reduction of -26 % (FMA- February March April) to an increase of +55 % (ASO- August September October) by the 2090s, but with median values overall reductions of between -1 % (NDJ) and -26 % (FMA) (Figure 6) (McSweeney et al., 2010).



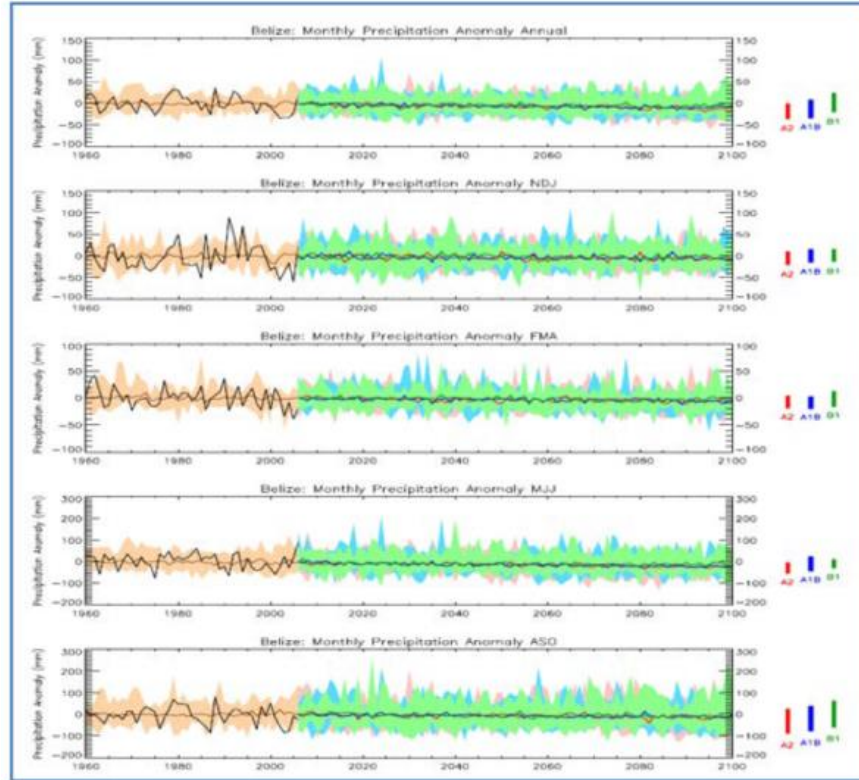


Figure 6 Observed (1960-2006) and projected (to 2100) annual and seasonal air precipitation anomalies (mm) for Belize (referenced to 1970-1999). Source: Singh et al., 2014

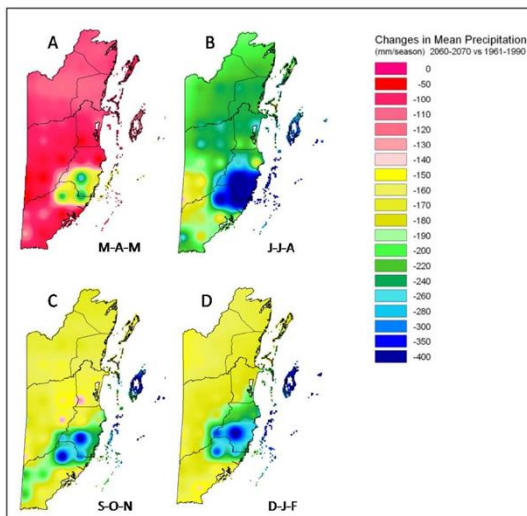


Figure 7 Changes in mean seasonal rainfall (mm/season) (2060-2070 vs 1961-1990) for the March-April-May (A), June-July-August (B), September-October-November (C), and December-January-February (D) season according to the ECHAM5 climate model. Source: Singh et al., 2014

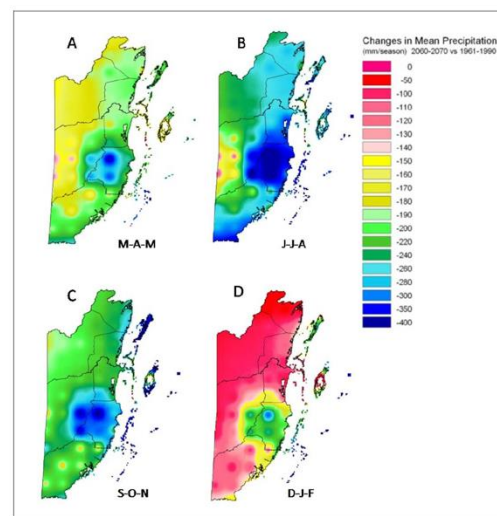


Figure 8 Changes in mean seasonal rainfall (mm/season) (2060-2070 vs 1961-1990) for the March-April-May (A), June-July-August (B), September-October-November (C), and December-January-February (D) season according to the HadCM3Q11 climate model. Source: Singh et al., 2014

222. The ECHAM5 and HadCM3Q11 climate models (Figure 7 and 8) generally project an overall decrease in seasonal rainfall in all seasons in the future (2060-2069) when compared to the present (1961-1990), especially in the June-July-August rainy season. Furthermore, wide temporal and spatial variations in seasonal rainfall are projected for Belize. In a zone centred over Stann Creek District and parts of Cayo, Toledo and Belize Districts including the offshore Cayes and atolls, the decreases in seasonal rainfall are most significant.

#### 4.5 Sea-level Rise

223. According to global climate model projections SRES (IPCC, 2013) and historic trends (Figure 9), the coastal lowlands of Belize will be vulnerable to sea-level rise. By the 2090s, sea-level will rise between 0.18 to 0.56 m relative to 1980-1999. However, recent reports have claimed these sea level changes to be rather conservative, estimating that sea level will rise more than 1 meter by 2100, at least double the IPCC (2007) estimates and even more than previously thought, largely due to increased mass loss from the ice sheets mainly in the Arctic regions (Rahmstorf, 2010; Horton et al., 2008; Vermeer and Rahmstorf, 2009; Grinsted et al., 2009). Low-lying coastal areas of the coastal zone of Belize would therefore be particularly at risk from storm surges and increased saline intrusion into ground and surface water, which will reduce fresh water availability for domestic and agricultural use.

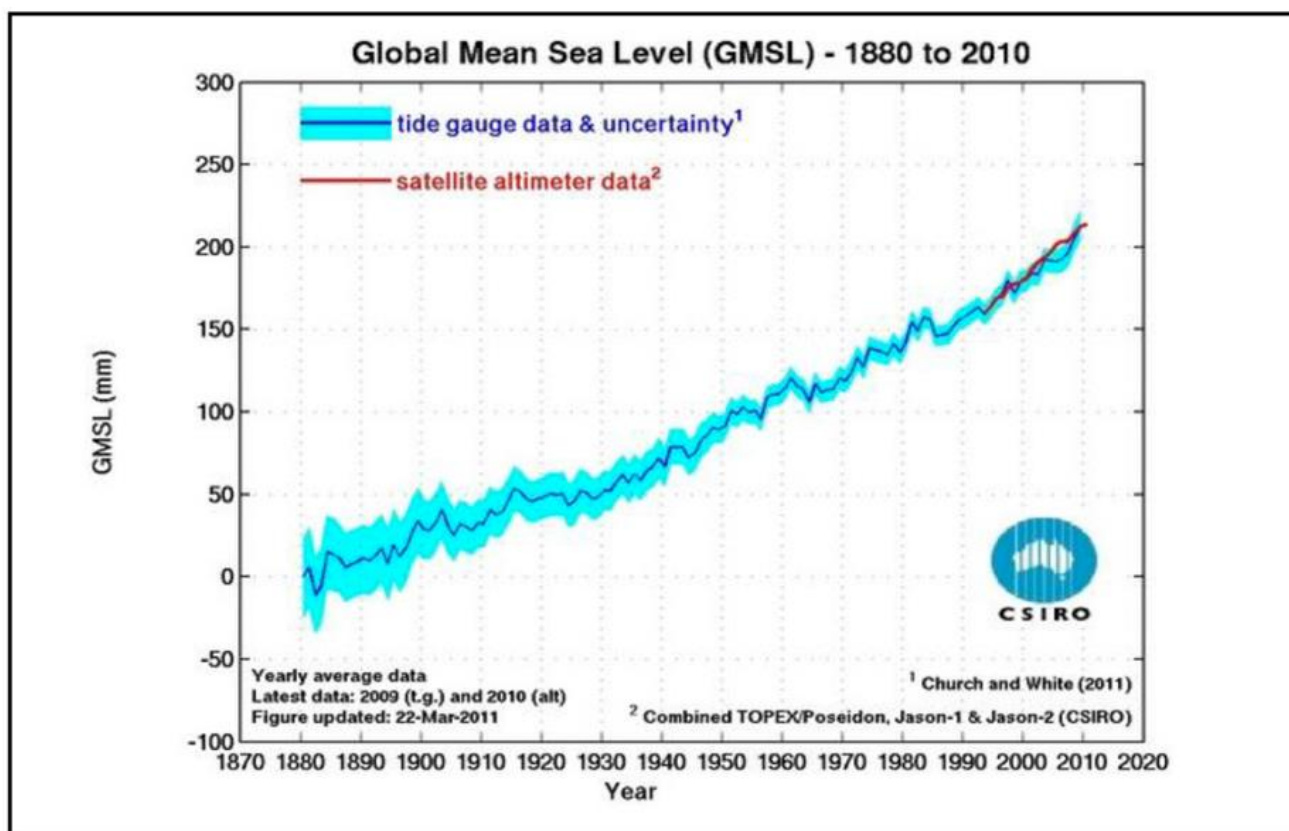


Figure 9 Global Sea level rise - historic Trend from 1880 to 2010. Source: CSIRO, 2011

#### **4.6 Sea Surface Temperature (SST)**

224. Belize is strongly affected by hurricanes and tropical storms. Projected increases in sea surface temperatures (SST) range from +0.7 °C to +2.7 °C by the 2080s. This trend of warmer SST will energize the hydrological cycle and will likely favour more intense hurricanes. (Belize's Third National Communication to the United Nations Framework Convention on Climate Change, 2016). Storm surges are also expected to increase in intensity (Climate Change Risk Atlas, CARIBSAVE, 2009-2011).

225. Other risks attributed to climate change are increased droughts and heat waves, and intense rainfall events (IPCC, 2007; UNDP, 2009; GOB, 2nd National Communication to the UNFCCC, 2010). These changes will have significant impacts on Belize, especially the coastal zone and the major socio-economic sectors of Belize, namely water resources, agriculture, tourism, fisheries and human health.

#### **4.7 Effects of climate change in the agricultural sector**

226. It is expected that climate change will have severe impacts on the agriculture sector of Belize. The threats of climate change and sea-level rise, hurricanes and storm surges are particularly acute along the lowlands and coastal belt of Belize, where soils are most suitable for cultivation and where a large percentage of the population of Belize resides. Thus, climate change will cause both human and material losses as well as serious damage to infrastructure.

227. Decreasing rainfall amounts and increased variability of rainfall will make it more difficult to plan for agricultural production. Due to changes in temperature and precipitation, evaporation will increase and plant transpiration will accelerate (Nicholls et al., 2015). Increased potential evapo-transpiration is likely to intensify drought stress, and sea-level rise is likely to intensify saline water intrusion into the groundwater, especially in the semi-arid districts (Belize and Orange Walk Districts). This means that rain-fed agricultural production systems will require a transition towards irrigation, leading to increased production costs and conflicts over access to water. Lower water-table levels and the consequent increase in energy needed to pump water would make irrigation more expensive, particularly when drier conditions require more water per hectare. In the case where there will be excess water in the soil due to higher rainfall during extreme climate events, production costs will also likely increase because new drainage infrastructure will be necessary (IPCC, 2007; UNDP, 2009; GOB, 2nd National Communication to the UNFCCC, 2010).

228. Yields of the major crops (which are already grown near their limits of temperature tolerance), namely sugarcane, rice, bananas, citrus, maize and beans, are all expected to decrease. These decreases in crop yields would result from increased temperatures and variable rainfall that reduces plant resistance to pests and diseases, increases water stress, increases respiration rate which stunts growth and development, shortens growth periods, and inhibits grain filling (IPCC, 2007).

229. Production models project reductions in yields of 17-22% for maize, 10-14% for rice, and 14-19% for beans, staple crops important for Belize's food security as well as for export income. Reductions in yield for these crops alone would represent BZ\$13-18 million in lost revenue (UNDP 2009).

230. Smallholder and subsistence farmers are particularly vulnerable to any type of climatic or economic shock owing to their high dependence on local natural resources for their livelihoods, their chronic food insecurity, physical isolation and lack of access to formal safety nets (e.g., insurance). Small farmers in Belize are more exposed to pest and disease outbreaks, droughts and extreme weather events (particularly

hurricanes), which cause significant crop and income losses and exacerbate food insecurity (detailed information on food insecurity can be found in Annex 2 of PDR). Although small farmers use a variety of informal risk-coping strategies (storing water, seeds and food, replanting crops, rebuilding homes with local materials, finding temporary work), these are insufficient to prevent them from remaining food insecure and reduce their vulnerability. Due to the limited resources and technical capacity of the MoA, few farmers have adjusted their farming strategies in response to climate change. Thus, urgent technical, financial and institutional support is needed to improve the agricultural production and food security of small farmers in Belize and make their livelihoods resilient to climate change.

## **4.8 Adaptation**

231. Climate change places a high demand on management techniques for agricultural production and extra inputs (e.g., irrigation, drainage, protective covered structures, and climate proof facilities) into agriculture thereby resulting in an increase in cost of production. However, the costs of reconstruction after disasters are proven to be far more expensive than the costs of adaptation and risk reduction (UNDP 2009). Proactive adaptation responses could reduce the vulnerability of farmers and agriculture sector-dependent communities while saving important social and economic costs. Climate change only exacerbates problems that already exist. Furthermore, the adaptive capacities of local communities to cope with the effects of severe climate impacts decline if there is a lack of physical, economic and institutional resources

232. Below is a discussion of specific adaptation measures recommended for both government and small farmer beneficiaries of the Project, disaggregated by stage in the value chain.

## **4.9 Production**

### **4.9.1 At farmer level**

233. Use locally-adapted technologies where farming can be practised without altering the local ecosystem; avoid importing foreign technologies and produce inputs from local resources; adjust planting dates to match rainfall patterns; install efficient irrigation systems and improve drainage; plant local crop varieties (heat, pest and flood-resilient); introduce IPM; build climate-proof crop cover structures; implement integrated soil fertility systems (e.g., fertigation from tilapia ponds); conserve native fruit trees and other varieties of locally-adapted crops; maintain genetic diversity in fields and herds; create both temporal and spatial diversity in fields (with multi- and inter-cropping, agro-forestry and livestock-crop systems); practice fallow and no-tillage to cope with soil moisture and nutrient deficiencies; maintain and promote backyard gardens; replace poultry with climate-adapted fowl (ducks).

### **4.9.2 At government level:**

234. Farmers from the drought-prone districts in the north cultivating vegetables (of high water intake) should be encouraged to slowly transit to high value, drought adapted crops.

235. Safeguard the knowledge, practices and benefits of regional ancestral agricultural techniques, which form the basis for current and future agricultural innovations and improved technologies. Promote a diversified use of the landscape.
236. Develop a **climate information systems** that allow farmers to plan the timing of operations.
237. Study the implementation of an **index-based crop insurance** and **Payments for Environmental Services Schemes**.
238. **Storage.** Promote skills and technologies of food preservation and storage among women and youth. Maintain strategic local food and seed reserves, through Community Seedbanks. Build climate-proof storage facilities.
239. **Processing.** Build climate-proof agro-processing facilities; conserve water, and ensure correct disposal of wastewater. Run facilities with autonomous energy systems
240. **Marketing.** Advocate for local agricultural production from sustainable family farmers. Maximize selling of value-added products.
241. **Consumption.** Encourage a local and diversified diet.
242. **Transversal.** Strengthen formal and informal farmers' associations. A strong sense of community and ownership is vital for quick recovery from extreme climate events and effective dissemination of climate adapted technologies and farming practices.
243. These adaptation options may face a variety of challenges and barriers in Belize including: economic resources, technical knowledge and adaptive capacity in the agriculture sector. Climate change may, therefore, present possible opportunities and priorities for the modernization of agriculture in Belize by enabling effective and proactive adaptation to climate change

#### 4.10 Climate risk category

244. The screening of Belize historical climate related disasters and the scenarios projected provide a good understanding of future potential impacts. Changes in temperature and rainfall are having significant impacts on Belize, especially in the poorest communities of smallholder and subsistence farmers. Risk and exposure are high in the agriculture sector, therefore the project is considered to be of high climate risk and it will be necessary to conduct an in-depth analysis. The approach taken is determined by the CPMT (with support from regional climate and environmental specialists) based on the results of the screening exercise. The climate risk analysis is undertaken in parallel with the full design of a project or project in order to inform the design and decision-making processes.
245. The design has been enhanced in its focus on climate change by mainstreaming climate resilience across all its components and activities. Financing from the GCF will be sought for this purpose, recognizing the higher costs that climate change imposes on the development efforts and investments by vulnerable developing countries. With the risk mitigation measures incorporated in the project, the climate risk is reduced to medium.

## **4.11 Key Issues**

### **4.11.1 Access to markets.**

246. Among marketing constraints identified by small farmers interviewed during Project design were: (a) poor feeder roads and high transport costs that impedes access to markets, exacerbated during extreme climate events; (b) poor bargaining power in the main markets and with local processing plants; (c) low prices paid by middlemen; and (d) flooding of the markets from legal and illegal imports from Mexico.

### **4.11.2 Agricultural production.**

247. Among production constraints identified by small farmers interviewed during Project design were: (a) climate-induced crop losses, (b) weak farmers' organizations and associations (c) high taxes and duties on inputs and equipment; (d) limited access to finance; and (e) limited access to production technology, such as irrigation and greenhouses.

### **4.11.3 Institutional capacity.**

248. The ratio of trained and equipped agriculture personnel to farmers is critically small. There is also a need to improve the technical capacity of agricultural personnel. Specifically, there exists a need for more trained personnel in climate resilient agriculture practices, integrated crop/pest management, food processing, hydrology, monitoring and documentation, research methods, Information Technology (IT) and Geographic Information Systems (GIS). This expertise must be established in the MoA so that these critical services can be available at the national level and for the benefit of all farmers (Caribbean Community Climate Change Centre, 2014)

## **5 Institutional analysis**

### **5.1 Institutional framework**

249. The MED will be the LPA with overall responsibility for project implementation, based on the following considerations: (i) the long-standing successful partnership between IFAD and the MED; and (ii) the multi-sectorial cross-cutting nature of the Project. Project Coordination and Administration, Implementation and M&E will be under the direct responsibility of an autonomous PMU established within the MED. The PMU's physical location will be identified by the GoB, outside sectorial institutions.

250. Strategic direction and oversight will be provided by a POC that will be chaired by the MED, and will include one representative from each of the MoF, the MoA, the Ministry of Works, the Ministry of Rural Development, the Ministry of Natural Resources and the National Climate Change Office.

### **5.2 Capacity building**

251. Aiming for a long transformation that will enhance the communities' resilience and coping capacities, the following capacity-building needs among farmers, villagers and government staff have been identified during Project design:

- Production planning in relation to market demand.
- Training on agroforestry, and climate-smart agricultural practices.
- Networking, leadership, cooperativism, conflict resolution, negotiation, procurement of goods.
- Skills for disaster response, for economic use of excess produce and for adding value to produce such as: non-refrigerated storage of food (which includes fresh and preserved fruit, meat, meat products, vegetables, jams, jellies, and cooked products). This is especially important for communities without reliable supplies of electrical power and/or vulnerable to loss of power due to climate disasters.
- Production skills, like carpentry, logging, and silviculture that contribute to the development of well-rounded young individuals who could actively participate in different economic activities in the community and any disaster recovery effort.
- Monitoring, documentation and analysis of Climate Change impacts.
- Management of watersheds, vegetation, wetlands and biological refuges to inform their decision-making in such a way that it becomes a normal part of their everyday farming activities.

### **5.3 Implementation arrangements**

252. The Ministry of Economic Development (MED) will be designated as Lead Programme Agency (LPA) with overall responsibility for the project implementation given the successful experience of the project execution model in the last IFAD project in Belize; and the GCF's clear position on their mandate to finance climate resilience projects.

253. The GOB, and especially the MED, has experience in the implementation of externally financed projects and is knowledgeable of the Categories of Expenditure for organizing disbursements and applying the percentages of financing according to the different funding sources. The MED will ensure proper financial management and implementation of the project through the creation of a dedicated Project Management Unit (PMU). The PMU will carry out the overall programming and budgeting taking the lead

for overall project implementation, which will include working with service providers, Government Ministries and Departments, individual project participants and the municipalities of the Project's target areas. Therefore, will host the specialists as well as the know-how related to the SECAP implementation i.e. climate change adaptation and ESMP safeguards triggering.

254. The PMU will comprise a total of 11 staff members from which the Monitoring and Evaluation Specialist, Climate Agriculture Specialist, Rural Infrastructure Engineer, Rural Organization Development Specialist and Safeguards Specialist will be dedicated to implement the SECAP. The PMU will also lead the hiring of dedicated consultants or consulting firms for the program's SECAP follow up and M&E.

255. The implementation of the components will be managed by the PMU. The main tasks of the PMU include: (i) disseminating relevant information in the project area villages and communities; (ii) conducting technical analyses of received proposals for public infrastructure investment; (iii) screening and selecting proposals to be funded under the CRRIA Component; (iv) development of TORs for selected proposals design; (v) procurement, review and approval of engineering designs; (vi) procurement and supervision of civil works; (vii) providing support in institutional development for sustainable management, operation and maintenance of small/scale irrigation and drainage systems.

256. Specific PM staff involved in the implementation of the Components are the Rural Infrastructure Engineer and the Institutional Development Officer. Coordination of the Component activities will be the responsibility of the PMU Rural Infrastructure Engineer with the collaboration of the Safeguards specialist

257. Safeguards specialist with the climate agriculture specialist will be leading the ESMP work managing and overseeing the development of the social, environmental and safety consultants that will produce the risk assessments, initial assessments and elaborate the mitigation measures on the ground.

258. The main tasks of the PMU are:

- To publicize the availability of the competitive funding for infrastructure rehabilitation support;
- To undertake technical and climate vulnerability analysis of investment proposals;
- Based on technical and climate vulnerability analysis, evaluate and rank proposed applications in accordance with the guidelines and mechanisms described;
- To submit recommendations for infrastructure funding award with required supporting documents for POC and IFAD approval;
- To develop TORs for development of engineering designs for approved proposals;
- To conduct procurement of services for development of engineering designs and submit evaluation reports to IFAD for review and written no-objection;
- To conduct independent technical review and environmental assessment of design solutions and approve the designs;
- To conduct procurement of civil works and submit evaluation reports to IFAD for review and written no-objection;
- To monitor and carry out supervision of civil works implementation of investment projects by contractors;
- Development of TORs for International Technical Assistance, procurement of an individual international consultant for support in establishment of Water Users' Associations (WUAs) and capacity building for management, operations and maintenance of small-scale irrigation and drainage systems to be constructed in the framework of the project;
- To conduct training and capacity building of relevant staff from the Extension Unit of the Ministry of Agriculture and WUAs;



259. Development of engineering designs, independent technical review, construction and daily supervision of the construction works are to be carried out by the PMU through the private sector consultants and contractors selected on a competitive basis.

260. Environmental Assessment of the proposed design solutions, as per the applicable laws of Belize, are to be carried out by the Environment Department of the Ministry of Agriculture, Fisheries, Forestry, Environment and Sustainable Development (MOA). In addition, the MOA will undertake the operations and maintenance of irrigation and drainage systems through the Water Users' Associations and these will be financed through the Irrigation Service Fee to be developed and applied. The Ministry of Works will undertake the operations and maintenance of the roads over the life of the project and these will be financed from the state budget.

#### **5.4 Supervision of Civil Works**

261. Supervision of civil works shall be carried out by the consultant/firm responsible for the development of the respective design documents and under the direct guidance of the PMU Rural Infrastructure Engineer. The Rural Infrastructure Engineer and Supervisor (design company) shall verify bill of completed quantities, cumulative bill of quantities, and requests for interim payments, and completion certificates prepared by contractors. The safeguards specialist will provide technical support and timely assistance. Representatives of relevant village councils and cooperatives/associations/clusters will be members of the acceptance committee issuing the Certificate of Final Completion on the works. The detailed formats of works supervision as well as the TORs for consultancy services will be discussed and included in the PIM during the project start up workshop.

**Table 10 Cost estimate of SECAPs dedicated staff**

<b>Staff</b>	<b>Work share</b>	<b>Cost per month in US\$</b>	<b>Total in US\$</b>
Monitoring and Evaluation Specialist	15%	300	10800
Climate Agriculture Specialist	100%	1000	72000
Rural Infrastructure Engineer	10%	200	14000
Rural Organization Development Specialist	30%	450	32400
Safeguards Specialist	50%	750	54000
Environmental safeguards consultant	10%	100	7200
Social safeguards consultant	10%	100	7200
Safety and Health Consultant	10%	100	7200
<b>Total</b>			<b>205200</b>

**Table 11 Budget allocations and responsibilities for the ESMP**

<b>Project sub component</b>	<b>Budget allocated for ESMP implementation in US\$</b>	<b>Responsible</b>
<b>1.1: Infrastructure and Production Plans (IPP)</b>	Not applicable	NA
<b>1.2 Strengthening of Producers' Organizations</b>	Not applicable	NA
<b>1.3 Value Chains Development</b>		PMU Climate Agriculture Specialist and Safeguard Specialist, Social Safeguards consultant
<i>Backyard gardens (BYGs)</i>	10 000	
<i>Matching Grant Fund (MGF)</i>	5000	
<b>2.1: Investment in Rural Roads Improvements (RRI)</b>	15 000	PMU Rural Infrastructure Engineer, Safeguards Specialist, Environmental and Safety Consultants
<b>2.2: Investment in Small-scale Irrigation and Drainage (SSID)</b>	10 000	
<b>2.3: Climate Information System</b>	Not applicable	NA

## 5.5 Additional funding

262. The Project is estimated to cost US\$20.0 million. It will be financed by an IFAD US\$4.98 million ordinary term loan, with a financing gap of US\$3.0 million. The financing gap will be filled through IFAD11 PBAS resources or alternative financing. Beneficiaries' contribution for on-farm investments will be approximately 15%, in cash or in-kind. The Government's counterpart contribution will be 20% of the total Project cost, including taxes. The residual Government contribution after deduction of the tax element will be allocated as contribution to public infrastructure.

263. The Government has requested IFAD to access GCF grant resources for US\$8.0 million. GCF grant financing is mainstreamed throughout the Project proposal with a strong emphasis on climate-proof public infrastructure, investment in climate-resilient value chains, and promotion of climate resilient practices and technologies. Preliminary discussions with the GCF indicate that the Project is well aligned with the Fund's programming guidelines. However, in order to apply for GCF funds, feasibility assessments for each of the activities proposed by the Project in Components 1 and 2 will need to be completed.

## **5.6 Record of consultations with beneficiaries, civil society, general public etc.**

264. Field trips and interviews were held with people from the communities targeted by the project including farmers, village council, and women. Meetings were held in Belmopan with key actors from government institutions, which are listed below:

Men and women from the following villages: Trio, Valley of Peace, Maskal, Nago Bank, San Carlos  
Ministry of Agriculture  
Ministry of Economic Development  
Ministry of Finance  
Ministry of Works  
Ministry of Rural Development  
National Climate Change Office  
Department of Cooperatives  
Field extension agents,  
Backyard garden program Coordinator,  
UNDP Country Director  
University of Belize Central Farm  
University of Belize  
Belize Marketing and Development Corporation  
Development Finance Corporation  
Belize Enterprise for Sustainable  
Nago Bank Cooperative  
El Cricon Farmer Group  
Valley of Peace Farmer Association  
Agricultural Belsal Association  
Placencia Village Council  
Humana People to People

## 6 Annexes

### ANNEX 1: SECAP Risk Categorization Screening Questionnaire

<b>Project title:</b>	Be-Resilient		
<b>IFAD project no.:</b>	2000001247	<b>Version of checklist:</b>	2
<b>Country:</b>	Belize	<b>Date of this version:</b>	10/06/2018
<b>Checklist prepared by (name, title and)</b>	Oliver Page, Climate and Environment Specialist, IFAD		

Guiding Questions for environment and social screening	Yes/No	Comments/explanation
<b>Category A - the following may have significant and often irreversible or not readily remedied adverse environmental and/or social implications.</b>		
<b>Project location</b>		
Would the project develop any wetlands? (Guidance statement 1)	No	
Would the project cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. conversion of more than 50 hectares of natural forest, loss of habitat, erosion/other form of land degradation, fragmentation and hydrological changes)? (Guidance statements 1, 2 and 5)	No	
Does the proposed project target area include ecologically sensitive areas, <sup>3</sup> areas of global/national significance for biodiversity conservation, and/or biodiversity-rich areas and habitats depended on by endangered species? (Guidance statement 1)	No	
Is the project location subjected to major destruction as a result of geophysical hazards (tsunamis, landslides, earthquakes, volcanic eruptions)?	No	

<sup>3</sup> "Sensitive areas" include: protected areas (national parks, wildlife/nature reserves, biosphere reserves) and their buffer zones; areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation, areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance), and areas with high social vulnerability.

<b>Natural resources</b>		
Would the project lead to unsustainable natural resource management practices (fisheries, forestry, livestock) and/or result in exceeding carrying capacity. For example, is the development happening in areas where little up-to-date information exists on sustainable yield/carrying capacity? (Guidance statements 4, 5 and 6)	No	
Would the project develop large-scale <sup>4</sup> aquaculture or mariculture projects, or where their development involves significant alteration of ecologically sensitive areas?	No	
Would the project result in significant use of agrochemicals which may lead to life-threatening illness and long-term public health and safety concerns? (Guidance statement 14)	No	
Does the project rely on water-based (groundwater and/or surface water) development where there is reason to believe that significant depletion and/or reduced flow has occurred from the effects of climate change or from overutilization? (Guidance statement 7)	No	
Does the project pose a risk of introducing potentially invasive species or genetically modified organisms which might alter genetic traits of indigenous species or have an adverse effect on local biodiversity? (Guidance statement 1)	No	

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<sup>4</sup> The size threshold to trigger an Environmental and Social Impact Assessment (ESIA) may vary based on the country context and fragility of specific locations. Some countries have regulations on minimum size (usually ranging from a unit area of 10 to 50 hectares) and these will be adopted where they exist. However, where there are no standards, it is proposed to use 25 hectares as an aquaculture unit size to trigger an ESIA.

Does the project make use of wastewater (e.g. industrial, mining, sewage effluent)? (Guidance statement 7)	No	
<b>Infrastructure development</b>		
Does the project include the construction/ rehabilitation/upgrade of dam(s) and/or reservoir(s) meeting at least one of the following criteria? more than 15 metre high wall; more than 500 metre long crest; more than 3 million m <sup>3</sup> reservoir capacity; or - incoming flood of more than 2,000 m <sup>3</sup> /s (Guidance statement 7)	No	
Does the project involve large-scale irrigation schemes rehabilitation and/or development (more than 100 hectares per scheme)? <sup>5</sup> (Guidance statement 7)	No	
Does the project include construction/ rehabilitation/upgrade of roads that entail a total area being cleared above 10 km long, or any farmer with more than 10 per cent of his or her private land taken? (Guidance statement 10)	No	
Does the project include drainage or correction of natural waterbodies (e.g. river training)? (Guidance statement 7)	No	
Does the project involve significant extraction/diversion/containment of surface water, leaving the river flow below 20 per cent environmental flow plus downstream user requirements?	No	

<sup>5</sup> The size threshold to trigger an Environmental and Social Impact Assessment (ESIA) may vary based on the country context and fragility of specific locations. Some countries have regulations determining size of irrigation development requiring a full ESIA and these will be adopted where they exist. However, where there are no standards, it is proposed to use 100 hectares as an irrigation development unit size to trigger an ESIA.

<b>Social</b>		
Would the project result in economic displacement <sup>6</sup> or physical resettlement of more than 20 people, or impacting more than 10 per cent of an individual household's assets? (Guidance statement 13)	No	
Would the project result in conversion and/or loss of physical cultural resources? (Guidance statement 9)	No	
Would the project generate significant social adverse impacts to local communities (including disadvantaged and vulnerable groups and indigenous people) or other project-affected parties? (Guidance statement 13)	No	
<b>Other</b>		
Does the project include the manufacture and transportation of hazardous and toxic materials which may affect the environment? (Guidance statement 2)	No	
Does the project include the construction of a large or medium-scale industrial plant?	No	
Does the project include the development of large-scale production forestry? (Guidance statement 5)	No	
<b>Rural finance</b>		
Does the project support any of the above (Question 1 to Question 21) through the provision of a line of credit to financial service providers? (Guidance statement 12)	No	
<b>Category B - the following may have some adverse environmental and/or social implications which can be readily remedied.</b>		
<b>Location</b>		
Does the project involve agricultural intensification and/or expansion of cropping area in non-sensitive areas that may have adverse impacts on habitats, ecosystems and/or livelihoods? (Guidance statements 1, 2 and 12)	No	

<sup>6</sup> 64 Economic displacement implies the loss of land, assets, access to assets, income sources, or means of livelihoods (guidance statement 13).

<b>Natural resource management</b>		
Do the project activities include rangeland and livestock development? (Guidance statement 6)	No	
Does the project involve fisheries where there is information on stocks, fishing effort and sustainable yield? Is there any risk of overfishing, habitat damage and knowledge of fishing zones and seasons? (Guidance statement 4)	No	
Would the project activities include aquaculture and/or agriculture in newly introduced or intensively practiced areas? Do project activities include conversion of wetlands and clearing of coastal vegetation, change in hydrology or introduction of exotic species? (Guidance statement 4)	No	
Do the project activities include natural resource-based value chain development? (Guidance statements 1, 6 and 12)	Yes	This activity is related to the development of agro-ecological practices.
Do the project activities include watershed management or rehabilitation?	Yes	At a small scale: micro watershed management, through reforestation and the adoption of sustainable water management techniques.
Does the project include large-scale soil and water conservation measures? (Guidance statements 1 and 5)	No	
<b>Infrastructure</b>		



Does the project include small-scale irrigation and drainage, and small and medium dam subprojects (capacity < 3 million m <sup>3</sup> )? (Guidance statements 7 and 8)	Yes	Small scale irrigation adapted to small parcels (1 to 20 hectares).
Does the project include small and microenterprise development subprojects? (Guidance statements 12 and 13)	Yes	Producer's organizations will be supported to enhance their market access
Does the project include the development of agro-processing facilities? (Guidance statements 2, 6 and 12)	Yes	Small-scale at local communities organizations.
Would the construction or operation of the project cause an increase in traffic on rural roads? (Guidance statement 10)	No	
<b>Social</b>		
Would any of the project activities have minor adverse impacts on physical cultural resources? (Guidance statement 9)	No	
Would the project result in physical resettlement of 20 people or less, or impacting less than 10 per cent of an individual household's assets (Guidance statement 13)?	No	
Would the project result in short-term public health and safety concerns? (Guidance statement 14)	No	
Would the project require a migrant workforce or seasonal workers (for construction, planting and/or harvesting)? (Guidance statement 13)	No	
<b>Rural finance</b>		
Does the project support any of the above (Question 23 to Question 37) through the provision of a line of credit to financial service providers? (Guidance statement 12)	No	

### Guidance for categorization

<p>“Yes” response to any questions between 1 and 22</p>	<p>Environmental and social category is A</p>	<p>Environmental and Social Impact Assessment or an Environmental and Social Management Framework (full or specific) is required depending on availability of information.</p> <p>Also, some specific questions would require the below specific actions:</p> <p>Yes to question 16 – A Resettlement Action Plan or a Resettlement Action Framework is required depending on availability of information.</p> <p>Yes to question 17 – A Physical Cultural Resources Management Plan is required that includes provisions for managing chance finds at implementation.</p> <p>Yes to question 18 – Free, prior and informed consent should be obtained/Free, Prior and Informed Consent Implementation Plan is required depending on whether the affected communities are identifiable. In instances where indigenous peoples are affected an Indigenous Peoples Plan is required. A Social Impact Assessment is required.</p> <p>Yes to question 8 and/or question 15 – A water resources management plan for the project is required.</p> <p>• Yes to question 7, question 9 and/or question 19 – A pest management plan is required.</p>
<p>“No” response to all questions between 1 and 22 and “Yes” response to any questions between 23 and 38</p>	<p>Environmental and social category is B</p>	<p>An environmental and social analysis to develop an Environmental and Social Management Plan (ESMP) is required.</p>

“No” response to all questions between 1 and 38	Environmental and social category is C	No further analysis is required.
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In case projects fall under both category A and B, the highest category will be taken as reference. The determination of the project category and classification will depend on the magnitude of impacts and would depend on the scale of such activities; a cautious approach to the concern of cumulative impacts is considered essential. In such cases, the necessary environmental and social analysis and associated budget should be incorporated into project design. Such projects may be considered for category B.

Determining the environmental and social category A, including the extent of assessments and studies to be conducted, will also take into account available information, i.e. recent studies and assessments, including other initiatives in the country, to the extent these are relevant to the proposed project.

Declassification (from A to B or from B to C) may also be possible in case negative externalities are being addressed by other projects or activities implemented by third parties. For this project, no Category A projects will be supported.

## ANNEX 2: Guiding questions for climate risk screening

	Yes	No	Additional Explanation of “yes” response
Is the project area subject to extreme climatic events, such as flooding, drought, tropical storms or heat waves?	X		Project is designed to reduce impact of such events of rural smallholders.
Do climate scenarios for the project foresee changes in temperature, rainfall or extreme weather that will adversely affect the project impact, sustainability or cost over its lifetime?	X		Project integrates such climate scenarios in its design to minimize such adverse effects
Would the project make investments in low-lying coastal areas/zones exposed to tropical storms?	X		Belize is considered a SIDS precisely due to the prevalence of such conditions.
Would the project make investments in glacial areas and mountain zones?		X	
Would the project promote agricultural activity in marginal and/or highly degraded areas that have increased sensitivity to climatic events (such as on hillsides, deforested slopes or floodplains)?		X	
Is the project located in areas where rural development projects have experienced significant weather-related losses and damages in the past?	X		As described in the project design Belize is highly vulnerable to climate and weather related losses and the project is designed to reduce such impacts.
Would the project develop/install infrastructure in areas with a track record of extreme weather events?	X		Yes, as described above. Therefore, climate proofing of all infrastructure developed under the project is planned and budgeted.
Is the project target group entirely dependent on natural resources (such as seasonal crops, rain-fed agricultural plots, migratory fish stocks) that have been affected by in the last decade by climate trends or specific climatic events?	X		As rural smallholders, project beneficiaries rely partially or entirely on agricultural production that has been severely affected by changing climatic patterns. The project is designed to counteract such effects.
Would climate variability likely affect agricultural productivity (crops/livestock/fisheries), access to markets and/or the associated	X		Productivity and access to markets are directly affected by climate variability and are directly addressed by the project.

incidence of pests and diseases for the project target groups?			
Would weather-related risks or climatic extremes likely adversely impact upon key stages of identified value chains in the project (from production to markets)?	X		Climate proofing of value chains is an essential aspect of the project design.
Is the project investing in climate-sensitive livelihoods that are diversified?	X		The project will strengthen production and market access, including diversification of crops.
Is the project investing in infrastructure that is exposed to infrequent extreme weather events?	X		Climate proofing of all infrastructure developed under the project is planned and budgeted.
Is the project investing in institutional development and capacity-building for rural institutions (such as farmer groups, cooperatives) in climatically heterogeneous areas?	X		The project invests intensely in rural development in climate sensitive areas, with a climate vulnerability analysis being a central guiding aspect to shape the intervention strategy at a local level.
Does the project have the potential to become more resilient through the adoption of green technologies at a reasonable cost?	X		Such technologies have been assessed and are being adopted.
Does the project intervention have opportunities to strengthen indigenous climate risk management capabilities?	X		The concept of conducting a participative climate vulnerability assessment is precisely to improve national and local risk management capacities, as is the strengthening of climate information systems.
Does the project have opportunities to integrate climate resilience aspects through policy dialogue to improve agricultural sector strategies and policies?	X		The project strategy mainstreams climate resilient agriculture into the Ministry of Agriculture's extension services to ensure integration and sustainability of the newly adopted practices and services.
Does the project have potential to integrate climate resilience measures without extensive additional costs (e.g. improved building codes, capacity- building, or including climate risk issues in policy processes)?	X		While several of the climate resilience measures included in the project have an additional cost, the project also promotes a paradigm shift towards climate resilient agriculture that will promote more stable production and improved market access. These measures will have a positive economic return.

Based on the information available would the project benefit from a more thorough climate risk and vulnerability analysis to identify the most vulnerable rural population, improve targeting and identify additional complementary investment actions to manage climate risks?	X		The project will develop local, participatory climate vulnerability assessments that will guide the project strategy and intervention at the local level.
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#### Guidance for classification

“Yes” response to any of the questions 1 to 7	The climate risk classification is high	A detailed analysis is required
“Yes” response to any of the questions 8 to 17	The climate risk classification is moderate	A basic analysis is required
“Yes” response to question 18	GHG assessment	For example, EX-ACT tool
“No” response to almost all questions	The climate risk classification is low	No further analysis is required, but voluntary measures can be incorporated

## **ANNEX 3: Pest management plan outline**

Table of contents

Acronyms and abbreviations

Executive summary

### **1. Introduction**

- 1.1. Pest and pesticides management implications of programme/project activities
- 1.2. Environmental consequences of pest management practices

### **2. Pest management approaches in Belize**

- 2.1. Overview of crops cultivated and pest problems
- 2.2. Current pest management approaches
- 2.3. Integrated pest management (IPM) experience and status

### **3. Pesticide use and management**

- 3.1. Pesticide usage in Belize
- 3.2. Circumstances of pesticide use and competence to handle pesticides
- 3.3. Assessment of risks
- 3.4. Promoting IPM in the context of current pest control practices

### **4. Policy, regulatory framework and institutional capacity**

- 4.1. Plant protection policy
- 4.2. National capacity to develop and implement IPM
- 4.3. Control of the importation, storage, distribution, use, disposal of pesticides

### **5. Implementing the pest management plan**

- 5.1. Pest management activities
- 5.2. Institutional arrangements
- 5.3. Activities to strengthen national capacity
- 5.4. Phasing plan

### **6. Monitoring and evaluation**

### **7. Cost estimates**

## **ANNEX 4: Indigenous Peoples Plan Outline**

### **Purpose**

To ensure that development projects that impact directly or indirectly on Indigenous Peoples lives, respect their rights.

### **IPP Key elements**

The IPP should contain the following key elements:

1. Summarise project information;
2. Summarise the social assessment highlighting the projects positive and negative aspects;
3. Summarise the FPIC results with affected indigenous peoples' communities that led them to support the project;
4. A framework for ensuring FPIC with the affected Indigenous People's communities during project implementation;
5. An action plan of appropriate measures to ensure that the affected Indigenous Peoples receive social and economic benefits that are culturally appropriate;
6. Where appropriate, include measures to enhance the capacity to cater for indigenous people's needs;
7. Where adverse effects have been identified, clear measures (adopted in consultation with the Indigenous Peoples) to avoid, minimize, mitigate or compensate for these effects;
8. Appropriate grievance procedures drafted and adopted in consultation with the affected Indigenous Peoples;
9. The cost estimates and financing plan for the IPP;
10. Mechanisms and benchmarks for project monitoring, evaluation, and reporting on the IPP implementation; and
11. Undertake IPP appraisal whose depth will depend on the project nature, complexity and project components.



**ANNEX 5: IFAD COMPLAINTS SUBMISSION FORM:**



Investing in rural people

## IFAD COMPLAINTS SUBMISSION FORM

### FOR ALLEGED NON-COMPLIANCE WITH ITS SOCIAL AND ENVIRONMENTAL POLICIES AND MANDATORY ASPECTS OF ITS SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES (SECAP)

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#### **i) NATURE OF THE COMPLAINT**

What complaint are you making to IFAD? (Choose the one(s) applicable to your complaint)

- ☐ Complaint relating to individuals/communities believing they are or may be adversely affected by an IFAD funded project
- ☐ Complaint relating to IFAD's failure to apply its Social and Environmental Policies
- ☐ Complaint relating to IFAD's failure to apply the Mandatory Aspects of SECAP
- ☐ Initiate the Impartial Review conducted by the Office of the Vice-President (OPV) if unsatisfied by the response from the IFAD Regional Division

#### **ii) COMPLAINANTS' INFORMATION**

a) How many Complainants are you? (You must be 2 in order for the Complaint to be admissible)

b) Are you nationals of the concerned country or living in the area? (Complainants must both be nationals of the country concerned and/or living in the project area)

☐ YES ☐ NO

#### **iii) CONFIDENTIALITY**

a) The identity of complainants will be kept confidential if they request so of IFAD.

b) Do you want your identity to be kept confidential?

☐ YES ☐ NO

c) If YES, Please state why. If NO, please avail your details below:

#### **iv) COMPLAINANTS' INFORMATION**

##### **a) COMPLAINANT 1**

FULL NAME:

TITLE:

ORGANISATION:

PHONE NUMBER (WITH COUNTRY CODE):

EMAIL:

##### **LOCATION**

YOUR ADDRESS/ LOCATION:

MAILING ADDRESS (IF DIFFERENT):  
ADDITIONAL GUIDANCE ON HOW TO LOCATE YOU (IF APPLICABLE):

**b) COMPLAINANT 2**

FULL NAME:  
TITLE:  
ORGANISATION:  
PHONE NUMBER (WITH COUNTRY CODE):  
EMAIL:

**LOCATION**

YOUR ADDRESS/ LOCATION:  
MAILING ADDRESS (IF DIFFERENT):  
ADDITIONAL GUIDANCE ON HOW TO LOCATE YOU (IF APPLICABLE):

Please provide the names and/or description of other individuals or groups that support the complaint (If any):

First Name	Last Name	Title/Affiliation	Signature	Contact Information

If the space provided above is not enough, attach a separate document with a list of other individuals or groups (with their signatures) who support the complaint.

**v) IFAD PROJECT/PROGRAMME OF CONCERN AND NATURE OF CONCERN**

a) Which IFAD-supported project/programme are you concerned about? (if known):

b) Project/Programme name (if known):

c) Please provide a short description of your concerns about the project/programme. Please describe, as well, the types of Environmental and Social impacts that may occur, or have occurred, as a result.

d) When did the situation that raised your concerns start developing? (Complaints must concern projects/programmes currently under design/implementation. Complaints concerning projects/programmes that preceded the operationalization of SECAP in 1/1/2015, closed projects or those that are more than 95 per cent disbursed will not be considered)

**vi) PROJECT LEVEL**

a) Have you raised your complaint with government representatives or NGO(s) responsible for planning or executing the project or programme or the Lead Agency or any governmental body with the responsibility of overseeing the Lead Agency? (The complaint should first be brought to the above authorities. If they don't respond then the matter may be brought to IFAD's attention. The issue may be brought straight to IFAD if the complainants feel they may be subject to retaliation)

☐ YES

☐ NO

If YES,

First Name	Last Name	Title/Affiliation	Estimated Date of Contact	Nature of Communication	Response from the Individual

b) Please explain why, if the response or actions taken are not satisfactory.

c) How do you wish to see the complaint resolved? Do you have any other matters, evidence or facts (including supporting documents) that you would like to share?

**vii) IMPARTIAL REVIEW BY THE OFFICE OF THE VICE PRESIDENT**

a) Do you disagree with the response from the IFAD Regional Division in relation to your complaint?

☐ YES

☐ NO

b) Please provide the details of the response from the IFAD Regional Division in relation to your complaint

c) Please explain why, if the response or actions taken are not satisfactory.

d) How do you wish to see the complaint resolved?

e) Do you have any other matters or facts (including supporting documents) that you would like to share?

**Signature and Date (1<sup>st</sup> Complainant)**

**Signature and Date (2<sup>nd</sup> Complainant)**

The filled in form shall be returned to [SECAPcomplaints@ifad.org](mailto:SECAPcomplaints@ifad.org)