

### Global Agriculture and Food Security Program (GAFSP) Public Sector Window 2019 Call for Proposals

**Proposal Document** 

**Country: Haiti** 

**Project Name: PITAG Additional Financing** 

#### DISCLAIMER

Successful proposal documentation, including this document, will be publicly disclosed. If the proposal documentation includes confidential or sensitive text or data that the government does not want disclosed publicly, this should be highlighted in the submission.

#### ACRONYMS

AFD	French Development Agency
AREA	Support for Research and Agricultural Development Project
AVANSE	Support to the Valorization of the Northern Agricultural Potential for
	Economic and Environmental Security project
CNSA	Coordination Nationale de la Sécurité Alimentaire
DRM	Disaster Risk Management
FAO	Food and Agriculture Organization
FFS	Farmer Field School
FBS	Farmer Business School
FNS	Food and Nutrition Security
GAFSP	Global Agriculture and Food Security Program
GASP	Groups of Artisanal Seeds Production
GoH	Government of Haiti
IDB	Inter-American Development Bank
IICA	Inter-American Institute for Cooperation in Agriculture
IFAD	International Agricultural Development Fund
IPC	Integrated Food Security Phase Classification
MARNDR	Ministry of Agriculture, Natural Resources and Rural Development
MFI	Micro Finance Institution
NAIP	National Agricultural Investment Plan
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
NSS	National Seed Service
OIE	World Organisation for Animal Health
OPR	Rural Producer Organizations
OPS	Operational Service Provider
PARDH	Action Plan for National Recovery and Development of Haiti
PDPA	Artisanal Fisheries Development Program
PEU	Program Executing Unit
PHL	Post-Harvest Losses
PITAG	Agricultural and Agroforestry Technological Innovation Program
PMDN II	Natural Disaster Mitigation Program 2
PROGEBA	Water Management in the Artibonite Basin
PSDH	Strategic Plan for the Development of Haiti
PSNSSANH	National Policy and Strategy for Sovereignty and Security of Food and
	Nutrition in Haiti
ΡΤΤΑ	Agricultural Technology Transfer Program
QDS	Quality Declared Seeds
SDG	Sustainable Development Goal
ТА	Technical Assistance
TIPs	Trials of Improved Practices
ТР	Technical Package
UEP	Studies and Programming Unit
UPMP	MARNDR's Procurement Unit
USAL	Agricultural Statistics and Informatics Unit
USAID	United States Agency for International Development

### **Proposal Document Preparation Team**

List names/titles/organizations of all individuals (including private consultants, producer organization and Supervising Entity staff, if any) who directly contributed to preparing the Proposal Document. Add lines as needed.

Name	Title	Organization
Pascal Pecos Lundy	Coordinator of STDG	MARNDR
Nolex Fontil	Coordinator UEP	MARNDR
Jean Robert Chery	Coordinator PITAG	MARNDR
Garry Augustin	Consultant PITAG	MARNDR
Hermann Agustin	Consultant PITAG	MARNDR
Dieuvet Michel	Director BCA	MARNDR
Harmel Cazeau	Coordinator	CNSA
Theresa Schneider	Consultant	IDB
Roble Sabri	Economist	FAO
Yerania Sanchez	Investment Support Officer	FAO
Ruth Charrondiere	Nutrition and Food System Officer	FAO
Mathieu Faujas	Value Chain Specialist	Consultant FAO
Aloys Nizigiyimana	Seed Specialist	FAO
Walter de Oliveira	FFS/FBS - Deputy FAOR	FAO

# Part 1: Summary of Overall Agriculture and Food Security Strategy and Associated Investment Plan

#### 1.1 Overall sector strategy and investment plan, and past performance

1) Overall agriculture and food security strategy objectives and how these respond to the country's fragility (economic, environmental, societal, security, climate, other).

The Haitian agricultural sector contributes to 66 percent of rural employment and to 75 percent of employment in low income rural households (World Bank, 2017). Strengthening the Haitian agricultural sector is therefore a key intervention to raise rural incomes and employment and it is particularly important to increase the availability of food for the rural population, particularly for the most vulnerable and poor.

Since 2017, Haiti has become the country with the highest prevalence of undernourished people worldwide (48% of the population are undernourished) (Primature d'Haiti, 2018). In a population of approx. 10.9 million, about 2.6 million Haitians are considered food insecure, of which at least 2 million live in "acute food and livelihood crisis" (Ladouceur, 2019). Food insecurity affects around 30 percent of the population in rural communities, who are often poorly connected to urban markets, lack access to

<sup>&</sup>lt;sup>1</sup> In the case of joint, multi-country submissions, please ensure provision of relevant information for *all* submitting countries.

<sup>&</sup>lt;sup>2</sup> As with the CAADP technical review, the independent review should include a review of eight aspects (see Annex 1 of the GAFSP Country Guidelines for more details): (i) Likelihood for the investment plan to realize growth and poverty reduction; (ii) technical realism (alignment of resources with results) and adequacy of institutional arrangements to implement; (iii) an inclusive review and consultation process; (iv) consistency of country budgetary and development assistance commitments with the country investment plan; (v) adequacy of institutional arrangements for effective and efficient delivery, including M&E; (vi) coherence or consistency between policies, implementation arrangements and delivery mechanisms, and investment areas, priorities or program objectives; (vii) appropriateness and feasibility of the indicators for impact and system for capacity improvement and accountability; and (viii) extent and quality of dialogue, (peer) review and mutual accountability system.

imported produce and are therefore dependent on local food production. In fact, self-subsistence farming is the primary means for rural food supply. Nearly two thirds of Haitians survive through subsistence farming (Meds & Food for Kids, 2019), and agricultural development is further an important means to foster resilience of Haitian rural communities against economic fragilities. Political instability, decline in foreign aid, climate change, among others, have resulted in stagnated economic growth since 1980, which has not surpassed 2 percent since 2014 (U.S. Department of State, 2019). This is reflected in weak domestic production, a chronic budget deficit, food price pressures, and the depreciation of the Haitian Gourdes against the USD (U.S. Department of State, 2018). In fact, within 6 months in 2018, the local currency depreciated by 23 percent, whereas at the same time, the price of the food basket increased by 11 percent (Ladouceur, 2019). The price of the food basket is 30 to 70 percent higher compared to other countries in the region that advocate agricultural protectionism. Furthermore, since the early 2000s Haiti's population is growing faster than its GDP (Primature d'Haiti, 2018), which, without the implementation of effective development policies and strategies, will further aggravate poverty and food insecurity in the country.

Investments in sustainable agricultural production further offers Haiti the opportunity to regenerate its natural resources (i.e. eroded soils, harvested forests, and depleted water resources), in order to increase resilience of the country's ecosystem services to the adverse effects of climate change, reducing the risks of landslides and flooding. Some studies argue that Haiti has lost up to 97% of its natural forest cover, usually pointing to unsustainable farming practices as one of the most significant underlying causes of this worrying outcome. In fact, the costs of climate change without any preventative measures were estimated at USD 1.8 billion in the period of 10 years between 2005 and 2015. The strategic measures and orientations adopted by the Haitian State to ensure food security, while responding to the multiple challenges outlined above, are defined in the different national policy frameworks, and in particular: (i) the National Food and Nutritional Security Plan, updated in 2016, which aims at eliminating food insecurity for all Haitians by the year 2025; and (ii) the Agricultural Development Policy Document for the 2010-2025 period. This policy, defined in 2010, establishes the general provisions and orientations for the development of the agricultural sector for the 15-year period, in order to contribute in a sustainable manner to the population's food needs and the country's economic and social development. Its specific objectives emphasize economic stability through the reduction of food-import dependence and increasing agricultural income. It also advocates environment-friendly farming.

#### Table 1. Specific Objectives of Agricultural Development Policy

- 1. Coverage of national consumption through local production increases from 45% to 70%.
- 2. The agricultural sector is composed of approximately 500,000 farms that provide a decent income to farmers.
- 3. The ratio of value of agricultural exports over imports increases from « 5% » (2009 figure) to 50% by 2025.
- 4. The proportion of land planted in annual crops on mountain slopes is strongly reduced.

Interest in agricultural sector development was raised in various government documents following the 2010 earthquake, specifically in the Action Plan for Economic Revival and Development of Haiti and in the Strategic Plan for the Development of Haiti in 2011 (PSDH, its French acronym). The agricultural sector is included in one of its four priority areas, « rebuilding the economy », as a central element for the country's stability and as a vital axis for its development.

These orientations were further developed by the Government of Haiti and its development partners in the **National Agricultural Investment Plan (NAIP)** for the period 2010-2016, and in the subsequent NAIP 2016-2021. These documents outline the framework for the operational planning of interventions in the agricultural sector.

They are built around the following strategic objectives: (i) increase local production of basic foodstuffs in order to provide food security for the population (in accordance with the National Food and Nutritional Security Plan); (ii) increase farm revenue; (iii) increase foreign exchange earnings; (iv) improve the health and nutritional situation of the Haitian population, particularly for vulnerable groups; and (v) reduce vulnerability to natural disasters.

## 2) Alignment of strategy objectives (as stated in "1" above) to Sustainable Development Goals (SDGs) 1 and 2.

Through the promotion of sustainable policy strategies to improve the agricultural sector competitiveness, the **Agricultural Development Policy Document** is aiming to improve the economic situation of rural communities directly, while also promoting economic stability for the entire country by improving the agricultural trade-balance. The strategic objectives of both **NAIPs** are strictly aligned to these priorities, while adapting complementary sustainable measures to achieve nationwide food and nutritional security. These policy documents contribute specifically to achieving the: **SDG1** - End poverty in all its forms everywhere; **SDG2** - End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

# 3) Description of the national strategy and investment plan to achieve the food security objectives (components, activities, and indicative costs), highlighting any dimensions relating to managing risks associated with fragility, conflict, or violence.

#### a) Previous NAIP (components, activities, indicative cost)

The 2010-2016 NAIP was prepared after the earthquake that struck Haiti in 2010 and includes both shortterm interventions aimed at responding directly to the impact of this catastrophic event, as well as midand long-term interventions. These activities are organized around three main axes:

- Development of rural infrastructure, including watershed management, forestry, and irrigation;
- Production and development of value chains, specifically animal husbandry, fishing and food crops;
- Agricultural services and institutional support, combining agricultural extension, land tenure, animal and plant health, quality control, product traceability, and institutional support for agricultural services.

The total planned investment for the 2010-2016 NAIP amounted to ca. USD 791 million (an average of USD 130 million per year).

The 2010-2016 NAIP expired in 2016. Following this term, an evaluation analyzed the Plan's implementation and fed into the elaboration of the follow-on 2016-2021 NAIP.

#### b) Current NAIP (components, activities, indicative cost)

The focus of the 2016-2021 NAIP is aligned with agricultural development policy guidelines and focuses on three areas:

- Agricultural infrastructure and watershed management, aimed at increasing availability and productive use of water in the plains as well as in the mountain areas;
- Development of crop production, animal husbandry and fisheries, including direct support for enhancing value chains and increasing production;
- Agricultural services, in order to create a favorable environment for investments, improve governance and ensure greater efficiency for public investments in the sector.

The funding requirements for the 2016-2021 NAIP, estimated at USD 796 million, are detailed in Table 2.

Area of Intervention	Total required funding ('000 USD)	%
1. Agricultural Infrastructure and Watershed Management		
1.1. Irrigation	283,500	36
1.2. Watershed management	140,706	18
2. Development of crop and animal production and fisheries		
2.1. Animal husbandry	51,500	6
2.2. Aquaculture and fisheries	30,647	4
2.3. Crop Production (including machinery and equipment)	120,328	15
2.4. Support for marketing facilities and agricultural processing	46,500	6
3. Development of agricultural public services		
3.1. Research, training and extension	67,644	8
3.2. Plant and animal health	24,821	3
3.3. Agricultural credit	25,000	3
3.4. Institutional Strengthening	5,625	1
Total	796,274	100

#### Table 2: Breakdown of costs for the 2016-2021 NAIP

<u>Irrigation</u> plays a major role in improving agricultural production and accounts for 36% of the funding needs. <u>Watershed management</u> will make use of various approaches and methods (agroforestry, reforestation, mechanical and biological structures) and absorbs approximately 18% of the NAIP budget. <u>Development of value chains</u> also represents an important share of the NAIP budget. Support for crop production accounts for 15% of the budget and will be used to supply farmers with the necessary inputs for agricultural intensification in the new or rehabilitated irrigated areas and other zones with high production potential. The budget for the <u>development of agricultural public services</u> amounts to 15% of the planned expenditures.

#### 4) Description of the monitorable framework and indicators reflected in the investment plan, if available.

Monitoring and evaluation activities will use impact and output indicators.

Main impact indicators include:

- Annual growth rate of Gross Agricultural Domestic Product;
- Prevalence of food insecurity;
- Ratio of agricultural exports/food imports;
- Land productivity;
- Growth rate of farm household income.

Main output indicators include:

- Area covered by newly constructed irrigation systems;
- Area with protective structures in the upper watersheds;
- Number of hectares under cultivation with improved technical packages;
- Number of private sector operators involved in sales of agricultural machinery and inputs;
- Number of fish-aggregating devices in operation;
- Number of fishponds;

- Number of regional service and agricultural innovation centers rehabilitated;
- Number of agricultural technical schools reopened.

#### 5) Evidence of past performance of related sectoral programs.

The 2010-2016 NAIP and the 2016-2021 NAIP were partially covered from funding from several projects aiming at strengthening agricultural productivity and income, domestic production, rural livelihoods and food security. These include, among others:

- Six projects of the IDB with a global budget of USD 221.61 million, namely:
  - The Natural Disaster Mitigation Program 2 (PMDN II) (2016-2021) to reduce rural economic losses through the improvement of climate risk management in selected watersheds.
  - The Agricultural and Agroforestry Technological Innovation Program (PITAG) (2018-2023) to increase agricultural income and food security through agricultural productivity growth and through the improved use of natural resources thanks to the adoption of sustainable technologies.
  - The Artisanal Fisheries Development Program (PDPA) (2015-2020) to improve the income of small fishers in the three southern regions of Haiti (South, South-East and Grande Anse), through the sustainable development of artisanal fisheries.
  - The Program for the Modernization of Agricultural Health Public Services (2014-2019) to increase agricultural productivity and improve the access of Haitian agricultural products to international markets.
  - The Water Management in the Artibonite Basin project (PROGEBA) (2013-2019), with the dual objective of i) decreasing crop, livestock and infrastructure losses due to floods, and ii) increasing agricultural productivity in the Artibonite basin.
  - The Agricultural Technology Transfer Program (PTTA) (2011-2019) to improve the levels of food security and the average farm income of smallholders, particularly in the northern regions of Haiti.
- The Food Security Project financed by the French Development Agency (AFD) (2013-2016), with a global budget of € 20.96 million, pursuing the objective of fighting food insecurity in the departments of the South, West and Artibonite.
- Four World Bank financed projects, namely:
  - The Strengthening of Public Agricultural Services project (2011-2019) and its additional follow-on project (2017-2019) to strengthen the capacity of the MARNDR to improve the accessibility of services in the agricultural sector, to improve market access and food security of smallholders, and to provide financial assistance in the event of natural disasters.
  - The Strengthening Hydro-Meteorological Services project (2015-2020) to strengthen Haiti's institutional capacity to provide hydro-meteorological and climate information services customized to the needs of the civil protection and agriculture sectors.
  - The Resilient Productive Landscape project with a global budget of USD 135 million.
- Seven projects of USAID with a global budget of USD 147.6 million, namely:
  - The Support to the Valorization of the Northern Agricultural Potential for Economic and Environmental Security project (AVANSE) (2013-2019) to build resilience to extreme weather events, to increase agricultural production and to improve livelihood opportunities.
  - The Improving Farmers Lives (*Chanje Lavi Plantè*) project (2015-2018) to improve agricultural revenues by sustaining agricultural productivity and competitiveness.

- The Technical Services for the Revitalization and Modernization of the Agricultural Sector Project (2015-2018) to improve the capacity of the MARDNR to provide key services for the agricultural sector (data, statistics, market price analyses, soil studies, etc.).
- The Support for Research and Agricultural Development project (AREA) (2015-2020) to strengthen the capacity of institutions to increase the availability of agricultural innovations to improve food security.
- The Smallholder Alliance for Sorghum in Haiti project (2014-2019) to improve revenues for smallholders through increased productivity of sorghum production and more efficient supply chain systems.
- The Mayi Plus project (2015-2019) to improve the quality of maize seed supply, test new varieties for local adaptation and support the development of the maize seed industry in Haiti.
- The REFERANS project (2015-2019) to improve working conditions and farm income of farmers in the communes of Croix-des-Bouquets and Ganthier.

Describing the implementation performance of every project is beyond the scope of this document. Monitoring and evaluation reports are available for each of them upon request.

## 6) Share of national strategy or investment plan being financed (by source), and the estimated financing gap.

The projected share of costs for the NAIP to be supported by different actors involved in the agricultural sector is presented in Table 3. The planned contributions for the implementation of the NAIP, for a total of USD 796 million, include contributions from the Government of Haiti for 22% of this amount, donors for 19% and 6% coming from the private sector. Approximately 53% of the NAIP budget is not yet covered by planned contributions and additional sources of funding will have to be identified. The estimate of the Government's contribution is based on budget allocations for previous years and on its current contribution to ongoing projects in the country.

Area of intervention	Total Budget	Government of Haiti (GoH)	Committed by Donors	Private Sector	Funding deficit
1. Agricultural infrastructure and watershed					
management					
1.1. Irrigation	283,500	30,769	44,930	0	207,801
1.2. Watershed management	140,706	42,307	56,361	0	42,038
2. Development of crop production, animal husbandry					
and fisheries					
2.1. Animal husbandry	51,500	7,692	4,500	30,000	9,308
2.2. Aquaculture and fisheries	30,647	7,350	14,701	3,000	5,596
2.3. Crop production (support for value chains)	120,328	53,846	30,358	10,620	25,504
2.4. Support for marketing and processing	46,500	13,846	1,500	0	31,154
III. Development of agricultural services and institutional					
strengthening					
3.1. Research, training and extension	67,644	11,538	19,232	0	36,874
3.2. Plant and animal health	24,821	1,518	8,555	0	14,750
3.3. Agricultural credit	25,000	7,692	350	0	16,958
3.4. Institutional strengthening	5,625	1,250	380	0	3,995
TOTAL	796,274	177,810	183,867	43,620	390,977
%	100	22	23	6	49

### Table 3: Projected share of 2016-2021 NAIP budget by source of funding ('000 USD) and estimated funding deficit.

Out of the USD 796 million projected investment, USD 495 million have been invested, which represents 62%.

# If available and under implementation, provide a summary of the strategy or investment plan implementation performance and achievements to date. Overview of the 2010-2016 NAIP results.

Out of the USD 791 million planned investment for the 2010-2016 period, USD 593 million were disbursed, representing 75% of the total planned amount. The summary assessment acknowledges considerable progress in the areas of rural infrastructure development, enhancement of value chains and institutional strengthening. The NAIP has provided a basis to fund several projects that have been completed or are currently ongoing.

These projects have focused on several priorities, such as: watershed management, irrigation infrastructure, agricultural extension, and support for agricultural services. These projects are in large part financed by donors that have participated in validating the NAIP.

The Government has allocated funds for large-scale activities in the agricultural sector in order to create favorable conditions for private investment (irrigation infrastructure, feeder roads, animal and plant protection, etc.) Funds allocated to the MARNDR for programs and projects have increased in nominal value over the NAIP implementation period. However, they remain limited as compared to the needs of the sector. On the other hand, the measures established over the NAIP implementation period have encouraged several new investments by the private sector in crop production, animal husbandry and aquaculture.

The level of ownership of the 2010-2016 NAIP remains weak, especially within Non-Governmental Organizations and certain entities of the MARNDR at the departmental level, as well as within certain line ministries, whose focus is not entirely aligned with the NAIP's objectives and expected outcomes.

With respect to the NAIP execution, a major constraint has been the lack of appropriate resources allocated to the MARNDR and the timing of disbursements for implementing the activities. In addition, some donors have historically been defining their own priorities, at times without considering the basic needs of the sector or the priorities established by the State. Instability at the senior management level of the MARNDR, with frequent staff turnover, further complicates the implementation of the NAIP.

The implementation of the 2016-2021 NAIP should improve food security and nutrition and promote sustainable and environment-friendly agriculture. The 2016-2021 NAIP is the foundation of several new initiatives, including the Agricultural and Agroforestry Technological Innovation Program (PITAG), additional actions under the Strengthening of Agricultural Public Services Project (RESEPAG 2), the Resilient Productive Territories (TPR) project, and the USAID-funded Reforestation Project, among others.

These projects focus on the following priorities: the establishment of cost-effective, sustainable and climateresilient production systems, improved availability of irrigation water, agricultural extension and support for agricultural public services. They are funded respectively by the Inter-American Development Bank (IDB), the Global Agriculture and Food Security Program (GAFSP), the International Agricultural Development Fund (IFAD), the World Bank, and the United States Agency for International Development (USAID).

In addition, the damages caused by Cyclone Matthew in October 2016 required urgent actions, including the rehabilitation of irrigation infrastructure and the recapitalization of farms, which led to the implementation of several activities in the most affected production areas.

Of the planned USD 796 million, USD 245 million have been invested to date, representing 40% of the estimated funding needs of the 2016-2021 NAIP. New investments are in prospect within the framework of the Public Treasury and the financial partners of the agricultural sector.

Based on the data in the 2016/2017 and 2017/2018 annual balance sheet reports produced by the Studies and Programming Unit of the MARNDR, the actions implemented have prioritized flood control, hydroagricultural infrastructure and agricultural services, including the extension of productive technology packages, agricultural mechanization, access to agricultural inputs, prevention of pests and the modernization of a number of services. These activities were also aiming to create favorable conditions for private investment in the agricultural sector.

From an institutional point of view, measures have been taken to strengthen outreach services to producers, including the appointment of the Heads of the Communal Agricultural Offices.

Significant progress has been made in terms of increased agricultural productivity and production and better management of natural resources. However, economic instability largely driven by political and social turmoil, rising inflation (18% in 2019), in addition to extreme climate volatility (characterized by droughts and floods) have, among other factors, have had a strong negative impact on the overall performance of the agricultural sector in recent years. In addition, internal institutional constraints, including the forced retirement of staff (especially technical managers and senior executives), will likely affect MARNDR's ability to design and implement planned interventions. Instability at the senior management level of MARNDR persists and is an obstacle to the successful implementation of sectoral programs.

#### 1.2 Key elements of the policy environment

1) Describe <u>current</u> policies enhancing or constraining the sector strategy and/or returns to the planned investments in the agriculture sector (e.g., land and water rights, trade policies, subsidies, social inclusion policies, gender policies, environmental policies).

In Haiti, agricultural public policies fall into four main categories:

- Access to agricultural inputs. The Government of Haiti (GoH) facilitates access to fertilizers and seeds to agricultural producers. Government support for input supply is provided through the fertilizer subsidy program, the seed program and other donor-funded projects.
- **Development and rehabilitation of agricultural infrastructure**. The main intervention of the MARNDR in this area is the rehabilitation of irrigation infrastructure.
- **Agricultural services**. The provision of basic agricultural services, including knowledge generation and transfer, agricultural health services, and land administration.
- **Agricultural trade policy**. Since 1995, Haiti has become the most open country in the region by liberalizing its market by significantly reducing customs barriers. Customs duties range from 0 to 15%.

According to the IDB Agrimonitor database, total support to the agricultural sector represented, on average, 5.3% of GDP in the 2006-2012 period, but only 3.2% of these resources are allocated to financing public goods (the lowest level in the Latin America and Caribbean region), even though public spending generates higher economic return rates than expenditures directed to the financing of private goods (Anriquez et al., 2016). This underinvestment inhibits investment in and profitability of the agricultural sector through the following factors:

- Vulnerability to agricultural pests and diseases. The Haitian veterinary and phytosanitary services are the weakest in the region, with performance scores of 1.58/5 and 15%/100% respectively (rating by OIE 2010 and IICA 2011).
- Farmers' limited access to technologies. Most Haitian farmers are confined to non-profitable and environmentally unsustainable agricultural practices. Limited access to improved technologies are due to: (i) the insufficient availability of improved agricultural technologies, via the lack of effective applied agricultural research; (ii) unreliable supply of agricultural goods and services, due to the

absence of a competitive network of private providers, crowded out by the distribution of subsidized inputs; and (iii) lack of credit.

- **Inefficient use of water resources**. In the absence of a solid policy, institutional and legal framework that is inclusive of all stakeholders, public investments to improve water management cannot result in an effective and sustainable water service to farmers.
- Weak sector institutions. The MARNDR presents cross-cutting weaknesses, such as: difficulties to set priorities through sound sector policies; weak planning, programming and budgeting capacities; and limited results-based culture, accountability mechanisms and monitoring and evaluation skills.
- Land tenure insecurity. 60% of all privately-owned parcels lack a formal property title, which leads to land tenure insecurity. This situation results from costly procedures, obsolete laws, and the absence of coordination of the land administration services.

Comprehensive reforms in the key areas above-mentioned would improve agricultural productivity and competitiveness in Haiti. In recent years, the GoH has progressed in each of those components, as detailed below.

- **Public agricultural health services**. The first step was the approval of a results-based operational plan. The next challenges are to prepare the legal and regulatory framework, establish an appropriate institutional scheme, and design and implement a medium-term plan for the effective provision of agricultural health services, on par with international standards.
- Farmers' access to technologies. A two-fold strategic approach was proposed to address the limited access of farmers to improved technologies: (i) create a legal and policy framework for a modern agricultural research system in the country, capable of generating, validating and transferring technology; and (ii) expand progressively the incipient market-friendly system of smart subsidies for promoting the adoption of agricultural technologies, reducing the distribution of subsidized inputs to avoid the crowding out of private suppliers.
- Water resources and hydraulic infrastructures management. The GoH made substantial progress in improving the policy, institutional and legal framework for a better water resources management. The MARNDR (i) approved a new National Irrigation Policy; (ii) developed a programmatic plan to implement the new policy; (iii) prepared a draft bill. Remaining challenges include: (i) the modernization of the institutional and legal framework for an effective, efficient and sustainable management of water and infrastructures in the Artibonite Valley; (ii) the strengthening of the inter-institutional coordination mechanisms; and (iii) the adoption of the new legal framework by Parliament.
- Institutional reform of the Ministry of Agriculture. The MARDNR created a procurement unit to improve its capacity to absorb and administer financial resources. The "Studies and Programming Unit" (UEP) was staffed with high-level professionals, and launched the preparation of programmatic plans, with the objective to rationalize budget preparation. The MARNDR's challenge is to drive a comprehensive reform, aiming at orienting its human and financial resources to the effective and efficient provision of agricultural public services.
- Land administration. The GoH prepared a draft bill that includes, among other improvements, the right to use modern technologies to conduct land surveys and notary acts more efficiently. Remaining challenges include: (i) the approval of a comprehensive Land Administration Policy, to clarify new institutional arrangements and repartition of roles among the stakeholders involved in land administration; and (ii) additional modifications to the legal framework, that aims to provide legal force to the institutional arrangements defined in the new Policy; simplify land
- **Registration procedures**. Eliminating current notaries' and surveyors' rates, and give legal value to digital documents.

### 2) Where available, list <u>pending</u> policies or legislation envisaged to enhance planned investment returns in the sector (if any, provide description as well as status of policy reform).

The National Policy and Strategy for Sovereignty and Security of Food and Nutrition in Haiti (PSNSSANH) is the result of concerted efforts of multiple actors (11 Haitian ministries, 6 governmental agencies, 3 state universities, 5 bilateral partners, as well as 4 agencies of the United Nations). It is built around 4 fundamental strategic decisions:

- To strike a balance between free-trade policies and policies favoring food sovereignty, security and nutrition;
- To rely on family farming and agribusiness as a driving force for the revival of the Haitian economy and the elimination of hunger and malnutrition;
- To invest in social safety nets and in the availability and access to quality basic services for inclusive nutritional security;
- To strengthen the national capacities, particularly the human resources, necessary for the proper implementation of the PSNSSANH.

Its strategic actions are based on four main axes: (i) the creation of a favorable environment and protector of sovereignty, food security and nutrition, (ii) the provision of goods and services needed to achieve food sovereignty and security for the general population, in normal times and in emergency situations following a shock, (iii) the strengthening of national institutions and capacities so that they are able to finance, coordinate and manage deconcentrated and decentralized implementation of priority national measures and programs of the different implicated sectors with mechanisms capable of ensuring accountability investments, (iv) the application of a transverse approach to include aspects of human capital, spatial planning, gender and resilience.

The PSNSSANH follows a multi-sectorial approach to simultaneously address economy-wide deficiencies and risks. Its objectives are: (i) the reduction of chronic deficits in food security in rural and urban areas, (ii) the improvement of health and nutrition of the population, especially of those under 5 years of age and of pregnant or breastfeeding women; (iii) the strengthening of the resilience capacities of the most vulnerable parts of the population, including disadvantaged neighborhoods in urban areas; (iv) the consolidation of capacities to respond to recurrent shocks; and (v) the promotion of complementary actions to strengthen governance of food and nutritious security at the departmental level. To date, although the PSNSSANH have been technically approved, its political approval by the Government is still pending.

#### 1.3 Government commitment to agriculture and food and nutrition security <sup>3</sup>

### 1) Describe the level of secured public financial commitments to the country's agriculture sector and/or food security goals, showing domestic and international funding.

Between the fiscal years of 2012/2013 and 2017/2018, public financial commitments to agriculture represented a significant share of total public investment and ranged from 6% in 2016/2017 to 19% percent in 2015/2016. All in all, the committed resources appear insufficient to cover the financial needs of the sector. Moreover, constraints linked to existing institutional mechanisms usually translate to inefficient and ineffective use of budgetary allocations, which is reflected in budget executions at the MARNDR of only 60-70%.

<sup>&</sup>lt;sup>3</sup> Countries may wish to reference guidance such as the Committee on World Food Security (CFS) Principles for Responsible Investment in Agriculture and Food Systems (http://www.fao.org/3/a-au866e.pdf], the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests in the Context of National Food Security (http://www.fao.org/docrep/016/i2801e/i2801e.pdf), or other relevant guidelines.

The agricultural sector budget is highly dependent on external commitments (bilateral or multilateral resources), which accounted for the majority of resources between 2012/2013 and 2017/2018, and ranging from 58% in 2015/2016 to 84% in 2012/2013.

	Total Public	Allocations to	%	External	% External
Year	Investment	Agriculture	Agriculture	Resources to	Resources to
	Program (USD)	5	0	Agriculture	Agriculture
2012-2013	2,074,964,555	218,543,270	11%	184,395,772	84%
2013-2014	1,587,752,423	141,954,111	9%	116,008,259	82%
2014-2015	1,493,121,582	149,331,432	10%	118,627,711	79%
2015-2016	1,072,929,988	204,403,281	19%	119,519,929	58%
2016-2017	1,868,286,287	118,941,494	6%	80,472,234	68%
2017-2018	845,111,015	122,566,294	15%	74,875,028	61%
2018-2019	2,475,648,188	168,442,992	7%		

Table 4: Public Investments in Agriculture

### 2) Describe how poverty rates in different parts of the country are factored into agricultural spending decisions.

Haiti experiences strong regional disparities in social outcomes, in particular regarding poverty and food insecurity. The rural poverty rate is with 75%, considerably higher than the national average of 58.5%. 80% of the population affected by extreme poverty live in rural areas, where the extreme poverty rate stands at 38%. This rate is much higher than in urban and metropolitan areas, were 12% and 5% of the population is affected by extreme poverty. Poverty also varies strongly across rural areas and is most widespread in places isolated from the capital due to poor road infrastructure. The most affected areas are found in the North, North-East and Grand'Anse departments.

According to a recent analysis following the Integrated Food Security Phase Classification (IPC)<sup>4</sup>, which identifies 5 food insecurity severity levels (minimal/none, stressed, crisis, emergency, catastrophe/famine), the majority of the areas analyzed are classified as crisis zones, with the exception of the coastal zone of the South Department, lower North-West, and the rice production area of the Artibonite department, which are classified as stressed. The areas with the highest share of people in emergency (ca. 10% of the population) are in the Grand'Anse department, certain areas of the Artibonite department, and on the La Gonave Island.

Paired with Haiti's fragile economy, the El Niño phenomenon has caused extensive damage. Many parts of the country were affected by severe drought in 2018, turning into a major food security threat. Most drought-affected crops were cereals (maize and sorghum) and beans, leading to a considerable decline in agricultural production. The North-East and South departments saw the sharpest decline in agricultural production, and their population is at great risk of a severe increase in poverty levels and liable to become even more food insecure.

In fiscal year 2017/2018, the MARNDR operated on a global budget of HTG 4.8 billion (USD 50.6 million), most of which (88%) was funded by either multilateral or bilateral cooperation. All operations and programs which are supported through external funds are regulated under the official policy framework of the Haitian government, who regards the agricultural sector as the first pillar to support growth and poverty reduction in the country.

<sup>&</sup>lt;sup>4</sup> CNSA - Bulletin # 20 : Panier alimentaire et conditions de sécurité alimentaire Avril 2019

USAID is currently funding a total of 7 projects with a global budget of about USD 147.6 million, of which ADVANSE<sup>5</sup> alone (the largest by budget) takes up over 60% (87.8 million USD). The program targets smallholder farmers in the North and North-East departments to build resilience to extreme weather events, to increase agricultural production and to improve livelihood opportunities.

The IDB is currently supervising 5 programs at the MARNDR with a global budget of more than USD 181 million (including other co-financing and counterpart sources). Two of these 5 programs take up over 50% of the total budget; they are targeting regions that are most vulnerable in terms of food-insecurity and poverty. These two programs are the Artisanal Fishery Development Program (PDPA) aiming at strengthening the fishery sector in the departments of the South, South-East and Grand'Anse, and the Innovation for Agriculture and Agroforestry Program (PITAG) aiming at improving agricultural productivity to increase income and food security in the departments of the North, North-East, South, and Grand'Anse, as well as in some communities of the northern part of the Artibonite department. The other 3 programs, of which majority operate more on a nation-wide scale, also benefit vulnerable and poor communities, including those in the most deprived parts of the country.

The World Bank currently supports two programs at the MANRDR. Of these, one is the project for Strengthening Public Services (RESEPAG II), with a budget of 79.4 million USD. RESEPAG II has three main objectives: (i) to strengthen the capacity of the Ministry of Agriculture, Natural Resources and Rural Development to improve the accessibility of services in the agricultural sector, (ii) to improve market access and food security of small producers, and (iii) to provide financial assistance in the event of an emergency, something that has gained special relevance following the impact of Hurricane Matthew on the island in October 2016. The project targets the unprivileged regions of the departments of North, North-East, Centre, and South.

Other major bilateral and multilateral partners of Haiti's agricultural sector include the Food and Agricultural Organization (FAO), the French Agency for Development (AFD), the International Fund for Agricultural Development (FIDA), the Welthungerhilfe (WHH), the Taiwanese Cooperation, the Spanish Cooperation, as well as the Swiss Cooperation, all of whose projects are strongly concentrated on supporting agricultural development in the most vulnerable and poor communities of the country.

3) Provide a summary of agriculture sector and food security public expenditures (including current and most recent 5-year trends of public spending shares on agriculture and food security, composition of spending, share in total government spending, and budgeted compared to actual expenditures).

Agriculture and food security have consistently been considered as priorities for public sector interventions in Haiti, at both the national and sectorial level, as discussed in previous sections. The Government's financial commitments in favor of the agricultural sector for the past years are presented here below.





These figures show that the relative value of these commitments represent a significant share of total public investment for the past years. They appear insufficient however to cover the financial needs of the sector. Furthermore, other constraints linked to existing institutional mechanisms affect the timely disbursement of funds and have negative impacts on the effectiveness and the efficiency in the use of budgetary allocations. Budget execution at the MARNDR usually reaches 60-70%.

Poverty reduction is a policy priority and absorbs an important share of the three-year investment plans, the operational tool of the PSDH. Specific Government programs for poverty reduction are implemented through various Ministries and follow these main lines of action: (i) social safety nets aimed at improving access to food for the most vulnerable: school canteens; community restaurants; cash and food transfers targeting vulnerable families; management of contingency food stocks in the event of disasters; (ii) agricultural investment programs aimed at increasing national food production: improved access to basic agricultural inputs and services through subsidies to smallholders; (iii) the establishment of a crop insurance system to protect farmers against natural disaster risks.

- 1.4 <u>Process by which the strategy and investment plan were developed, or are being developed, and,</u> <u>where relevant, updated.</u>
- 1) Describe the process used to develop the agriculture and food security strategy and investment plan, including depth of consultation with domestic stakeholders, especially smallholders and women farmers, producer organizations, and vulnerable groups (youth, indigenous groups etc.). If a current investment plan has not yet been finalized, clearly describe the process that is being planned to develop one, in response to the points above.

The 2010-2025 agricultural development policy document is the result of a participatory iterative process, based on the following principles: i) strong implication of the Ministry's senior staff and personnel; ii) participation of development partners (mainly FAO, IICA, World Bank, IDB, USAID, USDA) in the technical and financial discussions; iii) participatory consultations in Haiti with civil society groups, farmers' organizations, local authorities, private sector, and members of the international community. Workshops, meetings, consultations and information sharing sessions were organized to elaborate and validate the agricultural policy document.

The same approach was used to prepare the 2016-2021 National Agricultural Investment Plan. Its content is the result of a process involving collaboration, information sharing and discussions with the main partner institutions, the MARNDR's managers and technical personnel, both at the central and departmental level, as well as other stakeholders (technical and financial partners and farmers' organizations, among others).

The precise stages for the development of the 2010-2025 agricultural development policy were:

- Establishment of an 8-member commission by the highest authorities of the MARNDR (May 2009);
- Preparation of a working document based on available documentation (previous works) and discussions in meetings;
- Workshop bringing together the authorities and executives of the MARNDR;
- Development of an updated version considering the comments and suggestions made during this workshop;
- Validation sessions during sector tables bringing together the main technical and financial partners of the Haitian agricultural sector;

- Workshop with the directors of the regional agricultural departments and the managers of the technical directorates of the MARNDR;
- Workshop bringing together representatives of actors (non-governmental organizations, farmers' organizations, members of the private sector, etc.) from all the country's geographical departments.

The elaboration process of the National Agricultural Investment Plan involved: authorities of the MARNDR, development partners (national and international), the private sector, and civil society organizations. The consultants who supported the MARNDR in the development of these plans have conducted the following strategies:

- In-depth interviews with the managers of the MARNDR (Minister, Coordinator of the Technical Service of the Directorate General, Head of the Minister's Cabinet, Director of the Study and Programming Unit, etc.), with technical directors, with project managers, with technical and financial partners, and with various personnel of the ministry in charge of agricultural policy and agricultural development financing issues;
- Organized workshops and information sharing meetings with the main stakeholders: Ministries, Development Institutions, Farmers' Organizations, Technical and Financial Partners, Private Sector;
- Meetings with Agricultural Departmental Directorate officers and field officers to discuss the usefulness and content of the agricultural investment plan. Several major producer organizations have been involved in the debate as well.

#### 1.5 Implementation arrangements and capacity to implement

### 1) Describe institutional arrangements for implementation of the agriculture and food security investment plan (including inter-ministerial co-ordination if relevant).

Coordination of the NAIP is conducted at both the strategic and operational levels. At the strategic level, a Steering Committee presided by the Prime Minister is created with a role of **strategic piloting**. The MARNDR is responsible for its technical secretariat. The Committee is composed of all ministries involved in the execution of the NAIP, such as the Ministry of Economy and Finance, the Ministry of Planning, the Ministry of Public Works, the Ministry of Commerce and Industry, the Ministry of Public Health, the Ministry of Tourism, and the Ministry of Women's Affairs. The main technical and financial partners are also represented. **Technical piloting** of the NAIP is the responsibility of the Ministry of Agriculture's Strategic Orientation Council (COS).

At the operational level, coordination and monitoring of the NAIP is the responsibility of the Ministry of Agriculture's Programming Unit. This unit is best suited for this task due to its cross-sectional character, its assigned functions and its relationship with internal and external entities. Activities linked with operational functions are carried out by the specific Technical Directorates identified when the different programs were designed. At the Departmental Directorate level, an **Advisory Monitoring Committee** is established in all departments targeted for NAIP investments. This advisory committee is composed of members of the Departmental Sectoral Table for Agriculture which includes representatives of the MARNDR, of other sectoral ministries, NGOs, the private sector and farmers' organizations.

#### Describe human resources in place to implement the agriculture and food security investment plan (including agriculture researchers, extension services/officers, management and coordination functions – list staff numbers, gender, and qualifications).

The human resources diagnostic carried out by the MARNDR with the support of partner institutions estimated the staffing requirements for the implementation of envisaged interventions, in particular those included in the NAIP. In total, a target of 1.885 managers and professionals for the whole country

were identified. They were assigned to management positions, administrative, services, cross-functional positions and sector specialist positions.

3) Describe the roles of central and local governments, producer organizations and other private sector actors (particularly in public-private partnerships), civil society, and development partners in implementing the agriculture and food security investment plan.

The main projects and programs resulting from NAIP I and II (RESEPAG II, PTTA, PITAG, PMDN II, PROGEBA, PDPA, SPS, and others) cover all 3 areas of intervention defined in the policy documents, namely:

- rural infrastructure development;
- production and development of sectors;
- agricultural services and institutional support.

They enabled the achievement of the following:

- institutional strengthening of the MARNDR at different levels;
- development of programmatic plans for the Technical Directorates;
- revitalization of research and extension in the sector;
- reopening and partial rehabilitation of Agricultural Middle Schools.

The project/program planning was carried out by the Studies and Programming Unit (UEP) in consultation with the technical departments concerned. The monitoring of the implementation of these interventions is the responsibility of the technical departments and/or the project/program coordination units. NAIP technical management falls under the mandate of the technical directorates and the project coordination units.

The steering at the operational level is the responsibility of the UEP and the Agricultural Statistics and Informatics Unit (USAI). The human resources involved in the implementation are specialized in various fields.

In addition to the MARNDR and other sectoral ministries, several other stakeholders are involved in the implementation of the NAIP, including the following:

- Private and non-profit sectors. A public-private partnership established to improve linkages between production and markets and to promote information sharing. The private and non-profit sectors include: (i) producers, organized in cooperatives and non-profit associations. These organizations are involved in planning, funding, executing and evaluating program and project activities; (ii) Non-Governmental Organizations (NGOs), which play a key role in rural areas (provision of basic and technical services, community organization, etc.); (iii) engineering and consulting firms, which are private operators providing services and expertise in various fields; and (iv) financial institutions, with which the MARNDR establishes and strengthens partnerships to extend financial services to economic agents in the agricultural sector.
- Local authorities. According to their prerogatives and within the limits defined by the law, contribute to better governance, support local development initiatives and participate in monitoring and evaluation of projects.
- **Development partners**. Development partners continue to provide the technical and financial support that is essential for implementing programs and projects. The monitoring of the NAIP is carried out within a participatory framework involving all concerned stakeholders. The system provides appropriate decision-making tools, and facilitates information sharing at the national and departmental levels.
- 4) Describe the implementation performance of major agriculture and food security programs/projects over the past five years.

The 2016-2021 NAIP is serving as a facilitator for the funding of several new projects. Programs that were initiated under the 2016-2021 NAIP include, among others, PMDN II (2016-2021) and PITAG (2018-2023), both funded by GAFSP, IFAD and the IDB, and the World Bank-funded Resilient Productive Landscape project.

The 2010-2016 NAIP facilitated funding for several projects that were implemented or are ongoing in the country. These include the Food Security Project financed by the AFD (2013-2016), the Strengthening of Public Agricultural Services project funded by the World Bank (2011-2014), the second phase of the same project funded by the World Bank (2014-2020), the Artisanal Fisheries Program (2015-2020) and the Watershed Management Project (2014-2019) funded by the IDB and the Small-Scale Irrigation phase 3 project funded by IFAD.

Through these projects, it was possible to allocate financial resources to specific sub-sectors to increase agricultural production. They focused on watershed management, irrigation infrastructure improvements, agricultural extension, support for agricultural services, access to inputs, fisheries development and aquaculture, training, etc. These projects have resulted in the diversification of food production as well as in increased value-added and farm revenue.

Describing the implementation performance of every project is beyond the scope of this document. Monitoring and evaluation reports are available for each of them upon request.

Partner	Nr of programs	Total budget	Projects	Project budget	Project period	Objective		
AFD/FRANCE	1	€ 20.96 M	Food Security Project (SECAL)	€ 20.96 M	2013 - 2019	To fight food insecurity in the departments of the South, West and Artibonite		
FIDA	1	\$US 16.1 M	Project for Small Irrigation Development Phase 3	\$US 16.1 M	2012 - 2019	To support sustainable growth and securing of incomes and living conditions of poor rural households, especially those of the most vulnerable groups		
			Water Management in the Artibonite Basin (PROGEBA)	\$US 25 M	2013 - 2019	To decrease crop, livestock and infrastructures losses due to floods, and increasing agricultural productivity in the Artibonite basin.		
			Modernization of Agricultural Health Public Services (SPS)	\$US 16 M	2014 - 2019	To increase agricultural productivity and improve the access of Haitian agricultural products to international markets.		
IDB	5	\$US 181.61 M	Artisanal Fisheries Development Program (PDPA)	\$US 16.5 M	2015 - 2020	To improve the income of small fishers in three southern regions of Haiti (South, South-East and Grande Anse), through the sustainable development of artisanal fisheries.		
				Agricultural and Agroforestry Technological Innovation Program (PITAG)	\$US 76.86 M	2018 - 2023	To increase agricultural income and food security through agricultural productivity growth and the improvement of the use of natural capital as a result of the adoption of sustainable technologies.	
			Natural Disaster Mitigation Program II (PMDN II)	\$US 47.75 M	2015 - 2021	To reduce rural economic losses through the improvement of climate risk management in selected watersheds.		
		\$US 147.6 M			Support to the Valorization of the Northern Agricultural Potential for Economic and Environmental Security (AVANSE)	\$US 87.8 M	2013-2019	To build resilience to extreme weather events, to increase agricultural production and to improve livelihood opportunities.
					Improving Farmers Lives (Chanje Lavi Plantè)	\$US 24.9 M	2015-2018 (finished)	To improve agricultural revenues by improving agricultural productivity and competitiveness
USAID	7		Technical Services for the Revitalization and Modernization of the Agricultural Sector	\$US 16 M	2015-2018 (finished)	To improve the capacity of the MARDNR to provide key services for the agricultural sector (data, statistics, market price analyses, soil studies, etc.)		
			Support for Research and Agricultural Development (AREA)	\$US 13.7 M	2015-2020	To strengthen the capacity of institutions to increase the availability of agricultural innovations to improve food security		
			Project for Strengthening Public Services (RESEPAG II)	\$US 79.4 M	2012 - 2019	To strengthen the capacity of the MARNDR to improve the accessibility of services in the agricultural sector, to improve market access and food security of small producers, and to provide financial assistance in the event of an emergency.		
WB	3 3	\$US 99.4 M	Strengthening Hydro-Meteorological Services Project	\$US 5 M	2015 - 2020	To strengthen the Republic of Haiti's institutional capacity to provide hydro-meteorological and climate information services customized to the needs of the civil protection and agriculture sectors		
			Resilient Productive Landscape	\$US 15 M	2018-2023	to improve the adoption of resilience-enhancing agricultural and landscape management practices in selected sub-watersheds.		

\* Excluding projects supported through: Swiss Cooperation, Spanish Cooperation, Développement International Desjardins (DED) (*in English: International Development Desjardins*), Entraide Protestante Suisse (EPER) (*in English: Swiss Protestant Aid*), Food and Agricultural Organization (FAO), Fondation nouvelle Grand'Anse (*in English: New foundation of Grand'Anse*), Foundation Welthunger Hilfe (WHH) (*in English: Aid for World Hunger*).

### Part 2: Specific proposal for GAFSP financing

#### 2.1 Project objective(s), expected results, and target project participants

#### 1) Objectives of the project.

#### a) Objective(s) of the project.

The **general objective** of the program is to increase agricultural income and food security for smallholder farmers in selected areas of Haiti.

The **specific objectives** are to increase agricultural productivity and improve the use of natural resources through the adoption of sustainable production, post-harvest and processing technologies, as well as greater access to complementary value-chain services.

Sustainable production based on high-quality seeds, post-harvest and processing technologies enable a more efficient use of resources and provide higher outputs. Sustainable technologies, paired with improved capacities to access markets, will contribute to increase agricultural income. Higher food production and income, together with improved knowledge on nutritious diets and other best practices, will facilitate households' consumption decisions over goods and services that are relevant for food and nutrition security.

### b) Links with the overall sector strategy and investment plan (see Country Guidelines for specific requirements regarding sector strategy and investment plan).

The objectives, results and activities of this additional financing are in line with the National Food and Nutritional Security Plan (updated in 2010), aiming at eliminating food insecurity for all Haitians by the year 2025. It also responds to the Agriculture Policy Document for 2010-2025 and the 2016-2021 NAIP, which seeks to attain an agricultural sector that is modern, founded on the efficiency and effectiveness of family agriculture and agribusinesses, competitive in local and international markets, able to ensure food security for the population, environmentally sustainable and able of producing surpluses for value added processing.

Agricultural research and extension services have been identified as key sub-sectors to be supported for the promotion of sustainable agricultural technologies adoption, which would contribute to an improvement of agricultural income and climate change resilience of smallholders' farmers.

Regarding climate change, the National Determined Contribution of Haiti defines a conditional target of 31% greenhouse gas (GHG) emissions reduction and includes key agricultural adaptation and mitigation actions such as the strengthening of crops resilience to climate change, sustainable post-harvest technologies, sustainable farming practices and the conservation of agricultural genetic resources, soils, and water resources to attain its commitment. The program contributes to the Paris Agreements' National Determined Contributions (NDC) target through the development and promotion of sustainable and climate resilient technologies. The additional activities proposed will directly support Haiti's national development vision with a focus on post-harvest loss reduction, food safety, certified seed multiplication support and nutrition.

#### 2) Expected Results<sup>6</sup>

#### a) Project-level expected results (with indicative project log-frame provided in Appendix 1).

<u>Goal (GAFSP Programme – General Objectives)</u>: To increase agricultural income and food security for smallholder farmers in selected areas of Haiti.

<u>Project Development Objective (PITAG's specific objectives complemented by the Additional Financing proposal</u>): Increase agricultural productivity and improve the use of natural capital through the adoption of sustainable production and post-harvest technologies as well as greater access to complementary value chain services.

Outcome 1: Agricultural innovation services are improved

Outcome 2: The adoption of agricultural technologies is increased

#### b) Project-level indicators used to measure these results – disaggregated by gender.

The additional financing results and indicators are in line with PITAG. The additional financing will escalate and enhance PITAG's expected results.

#### Outreach:

Persons receiving services and products supported by the project Estimated corresponding total number of households' members Percentage of female beneficiaries Percentage of youth beneficiaries Percentage of beneficiaries supported to increase their capacity to cope with climate change

#### **Overall GAFSP Impact level Goals:**

Percentage of female-headed households who are severely food insecure using the Food Security Scale (ELCSA<sup>7</sup>)

Percentage of male-headed households who are severely food insecure using the Food Security Scale (ELCSA)

Annual agricultural female-headed household income

Annual agricultural male-headed household income

#### **Project Development Indicators:**

Annual value of household agricultural production Annual agricultural profits of female-headed households Annual agricultural profits of male-headed households Number of beneficiaries of improved management and sustainable use of natural capital Percentage of beneficiaries who adopt technologies contributing to the sustainable use of natural capital Hectares of land applying technologies that contribute to the sustainable use of natural capital.

#### **Component 1 Outcome Indicators:**

Research and development expenditure as percentage of Agricultural GDP Number of new technologies developed or adapted by new applied research projects Number of farmers who adopted the technologies developed with new applied research projects

#### **Component 2 Outcome Indicators:**

Percentage of beneficiary producers (farmers' households and MSMEs) who adopted agricultural technologies

Percentage of female beneficiary producers (farmers' households and MSMEs) who adopted agricultural technologies

<sup>&</sup>lt;sup>6</sup> Attach a project logframe (at Proposal stage) as an Appendix to this document (Appendix 1).

<sup>&</sup>lt;sup>7</sup> ELCSA - Escala Latinoamericana y Caribeña de Seguridad Alimentaria

Percentage of women benefiting from economic empowerment initiatives Percentage of households with limited/weak diversity, according to the Minimum Dietary Diversity Score for women for enhanced nutrition

#### 3) Target project participants

#### a) Participant number (in numbers of persons participating or otherwise benefiting).

The proposed activities will benefit a total of 17,250 rural households in Haiti: i) 16,500 households (farmers' households and members of Micro Small and Medium Enterprises) who will directly benefit from the matching grant mechanism promoting the adoption of post-harvest and processing technologies; and, ii) other 750 direct beneficiaries (farmers' households) of the agricultural applied research and training programs under the seeds' production activities.

The additional financing seeks to enhance the institutional capacities to escalate access to improved seeds as well as to post-harvest and processing technologies promoted by the project. Improved agricultural innovation services, farmer filed schools and targeted technical assistance will be relevant vehicles for all PITAG beneficiaries to have access to these technologies.

#### b) Expected female share of direct project participants (%).

Following PPTA and PITAG estimates, it is expected that women will represent at least 40% of these direct and indirect beneficiaries.

#### c) Other disaggregation of direct project participants (if applicable).

Besides gender, other categories of disaggregation are: groups of age (youth/adults); and, capacity to cope with climate change (%). Beneficiaries will be considered young if they are between 18 and 30 years old and the rate assumed by the project is 40%. The percentage of beneficiaries supported to increase their capacity to cope with climate change is assumed to be 75%.

#### 2.2 Justification for the overall approach

## 1) Description of overall approach chosen (combination and choice of components and activities), based on evidence of prior success or feasibility.

As described in section 1.2 Haiti has in the last decade been characterized by a high degree of political instability, social conflict and major natural disasters (like hurricane Matthew). The country's economy has yet to recover from these events, leaving it in a state of fragility.

Within this context, the agricultural sector remains strategic for the Haitian economy and to the Government's vision to reduce hunger and malnutrition. The country's current fragile situation is reflected in a combination of increasing inflation and the depreciation of the local currency (in particular with respect to the US Dollar), weakening the country's importing capacity of staple food. Rice (the main food import bill) and maize are, along with roots and tubers, the main products of the rural households' food basket in the areas of intervention.

Unavailability and inaccessibility of quality seeds and planting material is one of the main constraints to agricultural intensification identified by the Haitian government in consultation sessions organized by the MARNDR in the 5 PITAG beneficiary departments, prior to the design of this proposal. Because of the weaknesses inherent in the seed sector, the current national production of quality seeds and planting material covers only less than 20% of the national requirements. This unavailability of quality seeds is often observed in the aftermath of natural disasters (hurricane, drought), when humanitarian actors distribute local seeds of uncertain quality, or else foreign seeds of varieties that are not adapted to the local agro-ecological conditions. This gap is due to: (i) absence of a sustainable plant breeding program resulting in a lack of good genetic material and a low diversity of varieties; (ii) lack of seeds and planting materials of the first generations (pre-basic and basic); (iii) a non-performing seed packaging, storage and

distribution system, and (iv) an untrained and unsupervised private sector without regular quality control of commercial seeds.

Within this fragile framework, the additional financing option to the existing PITAG project has been carefully discussed among stakeholders (government, project implementation unit, the supervision entity, among others) and has led to the development of the proposed complementary project activities, which are seen as an effective means to leverage the positive effects of PITAG in an effective and sustainable manner while enhancing a value chain approach.

The use of the existing program's structure will increase dramatically the implementation readiness of the proposed activities and simplify the overall activities on the ground. Therefore, the additional proposed activities will be implemented by PITAG's program executing unit (PEU), which has an excellent track-record of managing and implementing large and complex operations. The capacity building will be implemented through the Farmer Field School (FFS) methodology, including specific modules on nutrition which is considered a cross-cutting issue of the prospected interventions.

Post-harvest loss (PHL), quality seeds availability and nutrition concerns have been highlighted as the main issues by the beneficiaries during the extensive local public consultation held during the preparation of the present proposal. Geographically, the intervention area will be the same of the ongoing PITAG project where the production is supported with technological packages. The expected production increase will exacerbate the issues of post-harvest handling and losses threatening to undermine the expected results of PITAG, if not addressed.

The additional financing will be implemented through PITAG components, while adding specific activities, outcomes and indicators: **Component 1**: *Applied research and training* and; **Component 2**: *Promotion of sustainable agricultural technologies*. The following priorities have been identified and will be the focus of the additional financing.

#### **Component 1**

The additional financing will continue the support to the seed sector but under a different angle, namely the multiplication and certification of seeds. PTTA and PITAG, partially funded by the GAFSP, have started to support the implementation of the upstream part of the seed sector. Support to breeding activities does not go beyond the production of pre-basic seeds and/or planting material of the selected varieties (small quantity of the first generation of the seeds and planting materials for multiplication). However, the sustainability of a national seed sector requires the emergence of small seed companies supported by private professional producers, with knowledge of good agricultural and managerial practices. In turn, they will produce and supply family farmers with high-quality commercial seeds and planting materials of climate-resilient varieties certified by the National Seed Service (NSS) of the MARNDR.

The overall approach chosen will be based on:

- (i) capacity building of the private sector, including farmers and farmers' associations / groups, for the production, packaging, storage and marketing of quality seeds (certified seeds or Quality Declared Seeds) of the selected varieties; and
- (ii) technical support to the NSS to play its sovereign role of quality control and certification organism of the seeds produced by private sector, in collaboration with the DDAs in the PITAG intervention areas.

Under the same component, the additional financing will complement a number of applied research activities with the aim to continuously improve technical solutions promoted through the development and adoption of technical packages (TPs), and also expand the quantity and quality of technological options available to farmers for post-harvest activities.

Ad	ditional activities	Expected effects		
•	Capacity building of the private seed producers, including farmers and farmers' associations, to produce high quality, nutritious and climate resilient seeds	•	Certified seeds or Quality Declared Seeds of the selected nutritious and climate resilient varieties accessible to and cultivated by family farmers	
•	Technical support to the NSS	•	NSS plays its sovereign role of quality control and certification of the seeds produced by private sector	
•	Developing small storage and package facilities for seeds producers' associations	• :	Seed security improved and seed marketing done in time for the sowing window and at competitive prices	
•	FFS and targeted technical assistance to promote quality seed propagation	•	Sustainable propagation of high-quality, nutritious and climate resilient seeds	
•	PHL technologies test and process optimization / standardization	•	Adapted PHL technologies	

#### **Component 2**

The activities will focus on cereals (maize and rice), and roots and tubers (mainly cassava, yam and sweet potatoes), and will strengthen producers' and entrepreneurs' access to post-harvest technologies through the use of matching grants. Eligible beneficiaries will be presented with a list of pre-selected packages from which they can choose appropriate technologies to address storage, packaging or processing deficiencies depending on their needs and capacities.

	Additional activities		Expected effects	
•	Matching grants to implement PHL technologies and apply best practices (climate resilience and Food and Nutrition Security - FSN)	•	Producers' access to post-harvest technologies and best practices for climate resilience and FNS	
•	Targeted TA of farmers and farmers' organizations	Correct use and maintenance of technologies		
•	FFS and FBS	•	Promotion of technologies, along with best practices, and improved market access	

#### **Cross-cutting themes for both components**

- Capacity building of beneficiaries will be implemented through both the Farmer Field School and Farmer Business School approaches. It is an alternative agricultural extension approach that focus on strengthening farmers' and rural communities' capacity in analyzing their production cycle, their understanding of the quality of their produce, and in identifying their main constraints, as well as in testing possible solutions. The MARNDR, with the support of FAO, have developed a Methodological Guide for FFS for Haiti and implemented successfully already several FFS around the country.
- The components will be nutrition-sensitive or nutrition-specific, including high nutritional content of quality seeds (Component 1), improved nutritious content of agricultural produce through effective post-harvest practices,
- The components will also improve the knowledge and practices of the target population (Component 2).

### 2) Causal link between expected results and the combination of activities and components, including the expected pathways to reduce poverty and hunger and improve nutrition.

The additional financing integrates activities and outputs that reinforce the realization and sustainability of PITAG's expected results. Quality seeds and post-harvest technologies, together with value adding and marketing' capacities building, were identified as key elements that would complement PITAG's provision of agricultural innovation services and transfer of sustainable production technologies.

#### **Component 1**

During the last five years, the FAO and the NSS have trained and supervised for the production of Quality Declared Seeds (QDS), more than 150 seed producer groups – named "Groups of Artisanal Seeds Production (GASP)" distributed across 9 departments around the country, including the departments covered by PITAG. They have a production capacity of about 1,000 tons of QDS. This experience has shown that, of all relevant factors, the use of quality seeds contributes by more than 30% to crop yield levels. Unfortunately, GASPs do not have first-generation seed sources, their storage facilities are not suitable for seed storage and they do not have the necessary equipment for proper seed treatment, packaging and storage. In addition, varietal selection is very weak and the NSS does not yet have the capacity to inspect seed production plots and to control seed quality at the national level.

This project aims at the improvement of the operational capacity of the NSS for seed quality control and capacity building of seed producers; the promotion of private seed producers through the strengthening of the operational capacity for the production, marketing and securing quality seeds and planting material of climate-resilient varieties and varieties rich in micronutrients, and the promotion of markets of quality seeds through the FFS approach.

#### Component 2

Continuous applied research in post-harvest technologies is key to introduce adapted packages for smallholders. The additional financing will promote this process in order to be able to: adapt to changes in conditions on the ground; and pick-up new technologies from other countries and/or from country projects.

A major issue for the Haitian cereal production is embedded in poor grain quality. For a significant part of rice and maize production in Haiti today, processing is done in small workshops equipped with outdated and poorly maintained machines. Poor conditions of threshing, drying, storage and packaging lead to a high presence of impurities in grains including broken and downgraded black grains. A recent study from Laval University (2018) showed that, contrary to the idea that the price of imported rice weakens the competitiveness of local rice, the results support the idea that the low price of local rice compared to imported rice is explained more by the qualitative aspect of local rice and the poor presentation of the product to the consumers.

Also, Haiti faces a serious problem of aflatoxin in maize<sup>8</sup>. Aflatoxins are poisonous substances produced by the fungi Aspergillus flavus and A. Parasiticus which grow easily in high temperatures and humidity<sup>9</sup>. They can contaminate food crops and pose a serious health threat to humans and livestock (e.g. liver cancer, genotoxic, immunosuppression and increased stunting). Food crops can become contaminated both before and after harvesting under conditions that favor mold growth (warm and humid storage environments). Research conducted by Quisqueya University of Port-Au-Prince shows that weak post-harvest practices are directly linked to the development of aflatoxin along the value chain.

PITAG is already implementing a number of activities aiming at enhancing productivity of a number of crops in Haiti and increasing output for the food security and the economic development in rural areas.

<sup>&</sup>lt;sup>8</sup> Aflatoxins also pose a significant economic burden, causing an estimated 25% or more of the world's food crops to be destroyed annually.

<sup>&</sup>lt;sup>9</sup> https://www.who.int/foodsafety/FSDigest\_Aflatoxins\_EN.pdf and <u>http://www.fao.org/3/x5036e/x5036E0s.htm</u>

However, the proposed TPs are mainly geared towards primary production and very few offerings concern post-harvest activities: only some storage facilities and de-husking machines are included in the initial list of TPs. Also, the number of targeted producers for those post-harvest packages are much less than the total beneficiaries of PITAG. Just like for the former PTTA, the risk is to trigger a boost in productivity without providing solutions to fully add value to the increased output.

The PITAG additional financing is aiming at increasing the offer of TPs in post-harvest activities, comprising storage, access to market and processing solutions for targeted crops such as maize, rice, roots and tubers.

The component looks at supporting the creation of value to primary crops through:

- Reduction of post-harvest losses
- Improvement of produce quality and innocuity
- > Strengthening of competitiveness of local vs. imported products
- > Processing into products in high demand on local market.

Regarding **maize**, the expected impact is, first, an increasingly clean and higher-quality grain for safe consumption at farm level. Beyond food safety, the marketing of this grain would ensure a corresponding rise in revenues for farmers. Also, the increased capacity of new mills installed would offer an opportunity to produce greater volumes, reduce price for consumers and increase demand. The existing capacities, in particularly for winnowing and cleaning grain and flour, constitute the key bottleneck to access to market. The demand for local maize meal is strong and the market is supply-driven, meaning that its size would increase with the rise in supply. The adoption of TPs would boost the actors and resources in the value chain, and enable them to produce and absorb higher volumes.

Regarding **rice**, the perspective is to increase its competitiveness and marketability by reaching shelling throughput of 65% and, consequently, lower volumes of broken grains (maximum 10% of total rice milled). The small traditional mills that are currently in use would be targeted first and refurbished. Next, new mills would be supported to bridge capacity gaps where needed.

Regarding **roots and tubers**, the expected impact is an increase in the proportion of local output that is processed, and improved quality of cassava produced, with increased revenues perspective.

Smallholder farmers are expected to see their food security improve and their revenues increase, two factors contributing to combat poverty and promote economic development in Haiti. In a longer-term perspective, the PITAG extension looks at increasing technology adoption by Haitian smallholders in the respective crops' value chains and at unlocking an investment cycle that should ultimately and sustainably increase revenues.

The nutrition-sensitive approach of the PITAG extension will promote the awareness and innovative/practical solution all along the implementation of the activities. Improved drying and storage will increase food availability for self-consumption or trade (through an expected 10-20% decrease in crop loss and waste), will make consumption safer by driving down aflatoxin levels, especially for maize, and improving storage practices for better preservation of the nutritional contents. Greater food availability and higher produce quality will raise households' nutritional status. Additionally, thanks to the TPs, better processing and storage facilities, farmers will sell part of the agricultural produce during well into the dry season. During this window, as opposed to right after harvest, farmers can sell their produce for a better price on the market. The first to benefit from such innovations will be women and the youth, traditionally in charge of processing and marketing. In addition, the added market value of newly developed products, such as parboiled rice or moringa leaves, will also contribute to increment household income.

The FFS will ensure that the capacity building will be tailored to the needs of the farmers in relationship with their investment in TPs and other interventions.

### 3) Positioning of this project within the broader investment plan, including links with other projects and government programs.

Farmers' access to high-quality agricultural inputs at affordable prices is considered as priority, in the NAIP, to increase the productivity and income generation in the agricultural sector. The impact of PHL is well-known in Haiti. This is reflected in the NAIP which identifies the related investment in PHL action as key. Most of the projects in the country currently support primary agriculture production, while emphasis on PHL reduction and seed multiplication remains limited. The PITAG extension will pay attention to these important links in the agricultural value chain, in support to primary agriculture production.

### 4) Describe how the current policy environment helps or hinders project implementation and achievement of the targeted results.

The GoH, through the MARNDR, is aware of the weakness of the seed sector and its improvement is among its priorities. For this reason, it requested technical support of the FAO for the formulation of a Seed Policy document (validated in August 2016) which proposes strategic orientations to improve the seed sector. The vision of this Policy is to enable the State to (i) create a socio-economic environment conducive to strong involvement of socio-professional organizations and private investment in the development of a national seed industry and (ii) strengthen the institutional and legal framework of the seed subsector. In addition, its Action Plan allows stakeholders to have a common approach to strengthen the seed sector during the first 5 years of the Plan's implementation. In addition, a national seed laboratory, built and equipped in the framework of the former PTTA project, is in place to analyze the physical and sanitary quality of the seeds. NSS staff were trained and are ready to conduct seed quality controls and certification. However, the NSS does not have sufficient human resources to inspect seed plots at the national level. Therefore, two staff of each DDA were trained by FAO to do this activity.

The NAIP provide an excellent policy environment to promote project implementation and to support the achievements of the results, in line with the targets for reduction in PHL. MARNDR is being equipped through policies, budget allocations and different projects to implement these policies creating good basis for success, although instability in the country is putting these goals under considerable pressure.

### 5) Describe specific considerations or measures put in place to ensure that the overall approach chosen is within the actual implementation capacity of the executing agency.

The MARNDR has a proven track-record of implementing large agriculture projects. The choice of additional financing to the PITAG project has been carefully evaluated and approved by the MARDNR. The executing agency will be supported through this additional financing with specific human resources to deal with the increased size of the PITAG project and its focus on post-harvest technology promotion, seed multiplication, while retaining emphasis on the nutritional effects of these activities. The FAO will provide project implementation support with its specific knowledge in both FFS and seed-related activities.

### 6) Present clear evidence of past implementation performance and the impact of activities from previous GAFSP projects in the country.

Project / Program	Implementation entity	Supervising entity	Year	Budget	Financing sources	GAFSP rating
Technology Transfer to Small Farmers	Ministry of Agriculture	Inter-American	2011-2010		GAFSP: USD 25 M,	Satisfactory
Project (PTTA)	(MARNDR)	(IDB)	2011-2019	030 40 10	IDB: USD 15 million	Satislacioly
		later American			IFAD: USD 10.86 M,	
Agricultural and Agroforestry	Ministry of Agriculture	Inter-American	2019 2022		GAFSP: USD 10 M,	Moderately
(PITAG)	(MARNDR)		2010-2025	03D 70.80 W	IDB: USD 55 M,	satisfactory
(1173)		(100)			GoH: USD 1 M	
	Ministry of Agriculture				GAFSP: USD 10 M,	
Strengthening Public Agricultural Services Project (RESEPAG II) [1]	(MARNDR)	World Bank (WB)	2012-2019	USD 79.4 M	World Bank: USD 40 M	Unsatisfactory

Table 6: Project and Programs supported by GAFSP grants

[1] The GAFSP is financing component 1 only

During 2011-2017, the MARNDR implemented the **Technology Transfer to Small Farmers Project (PTTA)** through funding provided by the GAFSP and the IDB. This project targeted the North and Northeast departments and provided incentives (direct subsidies) to farmers through a voucher program. This mechanism allowed them to access agricultural inputs and services from selected providers and develop agricultural practices to increase farm revenues and resilience to climate change. The main results of the PTTA project are the following:

- 70.000 farmers registered in the National Farmer Registry for the North and Northeast departments and 35.000 in the Artibonite department;
- 500 local providers of agricultural inputs and services registered and provided services to farmers;
- 35.553 farmers (21.687 men and 13.865 women) benefited from incentives for rice, coffee, cocoa and vegetable production, and for the development of agroforestry systems in 20 communes of the North and Northeast;
- Total area covered: 15.579 hectares or an average of 0,44 ha per farmer;
- 180 providers were trained in quality standards for agricultural inputs;
- Construction of a seed quality control laboratory;
- Four beneficiaries of grants for master's level studies in the seed sub-sector are studying in Europe;
- A seed sub-sector policy was developed.

Before the closure of the PTTA, a rigorous impact evaluation using experimental and quasi-experimental designs was implemented to assess the impact of such subsidies on agricultural productivity and income. The results show that subsidized agroforestry packages led to a significant increase of the value of production (+38%) and to the generation of higher income (+63%). However, the findings also highlighted that the annual crop packages did not lead to any innovation and did not improve farming practices. Farmers were already using most of the proposed technologies. Moreover, some technological packages need a productive environment and some investments are crucial preconditions to increase the likelihood of additional income generation. Irrigation system deficiencies, for example, did not allow rice farmers to adopt innovative farming practices. Finally, some operational delays in voucher distribution might have limited the application of appropriate agricultural practices (seedling date), thus limiting improvements in yields. The lessons learned from PTTA fed into the design of PITAG.

In 2018, the MARNDR started the implementation of the **Agricultural and Agroforestry Technological Innovation Program (PITAG** in its French acronym), which is a *de facto* second phase of PTTA. PITAG is funded by IFAD (USD 10.86 million), GAFSP (USD 10 million), IDB (USD 55 million) and the GoH (USD 1 million). GAFSP also provided additional financial support for the impact evaluation of the program. The programs duration is set at 5 years. The main objective of PITAG is to increase agricultural incomes and food security through agricultural productivity growth and the improvement of the use of natural resources as a result of the adoption of profitable, climate-smart, and sustainable agricultural technologies that will improve farm profitability, generate positive environmental externalities, and facilitate the mitigation of and adaptation to climate change. Among the selected technologies are pre-harvest, harvest and post-harvest technologies, as well as sustainable soil recovery and conservation practices (i.e. agro-forestry systems, sustainable soil management techniques).

Technology provision is based on a Matching Grant System, in which interested farmers participate in a series of fairs that are organized to match demand and supply for various technologies. The project will cover the vast majority of the costs of the technologies (up to 90% depending on the technology) through a matching grant, while the rest is covered by the farmers. A total of more than 65.000 farmers are expected to benefit from this incentive mechanism and more than 44.000 farmers are targeted to receive additional technical assistance in support of their farming practices. The program also aims at improving agricultural research and training, through the support of 15 applied agricultural research projects for different value chains. The project targets the North, North-East, Artibonite, South and Grand'Anse departments.

The project created the necessary conditions for successful implementation of all envisaged activities:

- Recruitment of 6 consortia for applied agricultural research;
- Selection of a technical consultant and assistant for the identification of study programs and qualified scholars;
- Recruitment of an assistant responsible for project monitoring and rollout;
- Start of the registration of beneficiaries and suppliers of agricultural technologies across various project zones; at present more than 30.000 beneficiaries and 550 suppliers are registered.

To evaluate the effects of the Program, a rigorous impact evaluation, seeking to identify the impact of PITAG on agricultural productivity, household income, food security, and women's empowerment, is implemented. An experimental approach (Randomized Control Trial) will be applied to evaluate the impact based on a statistically representative sample of 3.200 observations.

The MARNDR is also in charge of the execution of the **Strengthening Public Agricultural Services Project** (**RESEPAG II**), with funding from GAFSP and the World Bank. The RESEPAG II objectives are (i) to strengthen the MARNDR's capacity to facilitate access to agricultural services; (ii) to improve market access and food security for smallholders in the target areas. The project is built around two main components: (1) General support services for agriculture (extension and training, market information, animal and plant health services); and (2) Direct support for producers and associations.

For RESEPAG II, the main results achieved so far are the following:

#### Component 1:

- Preparation and publishing of the summary of the Master Plan for Agricultural Extension (PDVA);
- Rehabilitation of the Artibonite Valley Technical School for Agriculture;
- Start of the construction of a new (national) veterinary and food quality control laboratory at Tamarinier);
- Support for the creation of an integrated data base of the UPS;
- Setting-up of a price inquiry system via SMS;
- Rabies vaccination for 370,184 dogs;
- Support for vaccination of 612,000 heads of cattle against anthrax;
- Support for tagging 151,300 cattle in different departments of the country;
- Redeployment of 500 veterinary agents in 10 departments of the country;
- Gathering and dissemination of market data.

#### Component 2:

The newly created Agricultural Extension Fund offers co-financing for certain projects, through a process of identification and selection of Rural Producer Organizations (OPR). Their proposals are analyzed by the Agricultural Concertation Tables at the departmental level, with the support of a specialized service provider.

- 136 sub-projects are being executed, of which 57 are in the North and Northeast departments and 79 in the South department;
- 52.400 farmers have been registered (24.000 planters in the Centre department, and 27.500 farmers in the South department);
- A total of 20.677 farmers have benefited from these projects (7.380 in the Centre department, 3.047 in the South department, 10.350 in the North and North-East department) (44% women and 56% men) amounting to a total<sup>10</sup> of approximately USD 3.6 million. 80% of these sub-projects include post-harvest and processing activities.
- 6.000 livestock holders were identified (of whom 87% are women), 3.000 in the South and 3.000 in Grand Anse, (of whom 87% are women), and more than 5.900 goats have been distributed to 1.478 beneficiary families;
- The activities aimed at improving irrigation infrastructures at community level conducted by irrigation associations is in its final phase.

#### 2.3 Activities to be financed and their justification

#### 1) Description of components and activities chosen to be financed<sup>11</sup>

The additional financing will be used to complement the activities of PITAG, by adding new activities to its two components:

**Component I**: Applied research and training; **Component II**: Promotion of sustainable agricultural technologies. Figure 1 below provides the proposed additional actions.

**Under Component 1** the additional financing will complement the actions of PITAG through downstream support of the seed sector. It will enable the different stakeholders (NSS, DDA and private sector), involved in the seed sector, to put into practice their knowledge by improving the availability and accessibility of quality seeds for smallholders. This will contribute to the implementation of a part of the Seed Policy Action Plan.

Furthermore, several applied research topics will be added to continuously improve technical solutions promoted through the TPs and to expand the number and diversity of technological options available to farmers related to post-harvest technologies. This will be done through a process of research-action carried out by selected national and international organizations. The research will focus on improving equipment, adapting technologies that proved to be effective in other countries or optimizing and standardizing processes, in line with market expectations and with the involvement of equipment manufacturers. Research findings will be used to update the menu of available TPs on a yearly basis.

**Under Component 2**, focusing on the 3 most important value chains for food security (maize, rice, roots and tubers, esp. cassava, yam and sweet potatoes), producers will have access to technologies and solutions that proved effective in Haiti and elsewhere for return on investment. After a selection process, including an assessment of beneficiary commitment to investment and potential for value creation, the additional financing will allow to equip farmers with the desired technology. The list of available TPs will be presented as a menu of different options to address storage, packaging or processing bottlenecks. While those solutions

<sup>&</sup>lt;sup>10</sup> «Total » investment includes a 30% contribution from farmer organizations and 70% co-financing through RESEPAG.

<sup>&</sup>lt;sup>11</sup> Applicants may wish to reference some of the following resources on fragility and agriculture: (i) State of Food and Nutrition Security in the World 2017 – conflict/resilience: <u>http://www.fao.org/3/a-17695e.pdf</u>; (ii) State of Food and Nutrition Security in the World 2018 – climate vulnerability: <u>www.fao.org/3/19553EN/i9553En.pdf</u>; (iii) Monitoring Food Security in Countries with Conflict Situations, January 2019: <u>http://www.fao.org/3/CA3113EN/ca3113en.pdf</u>

will be customized to meet beneficiaries' needs, they cover a broad array of diverse equipment designed to match every situation. With such a comprehensive list of solutions, PITAG will make sure to bring the appropriate technology to farmers, adapted to their capacities and constraints. Those technological solutions will be offered to either individual or grouped beneficiaries and will promote new activities as well as support existing ones. Farmers desiring to access the technologies as groups will benefit from economies of scale, for example by investing together in storage and drying facilities.



Given the lessons learnt from previous projects (e.g. PTTA, RESEPAG 2), farmers will receive additional technical assistance (TA) on technology use, maintenance, and best practices in quality assurance and marketing. The TA will be implemented through on-farm coaching for a number of months after the receipt of the TP.

#### Cross-cutting approach for the 2 components:

Under the cross-cutting activities focusing on nutrition, the project will:

i) Develop products, out of which 5 with high nutritional value, (e.g. parboiled rice, moringa leaf powder, cassava leaf powder, cassava meal, and flour of dark orange sweet potatoes). These products are expected to increase the availability and use of healthy food products throughout the year. Many of them are suitable for complementary feeding or as natural fortifiers of other products, such as the locally produced *Akmil*, a fortified flour of rice and beans.

- ii) Whenever possible, promote seeds with high nutritional contents, for example bio-fortified maize rich in vitamin A and B<sub>3</sub>, rice rich in zinc, dark-orange sweet potatoes (DOSP) rich in vitamin A, cassava rich in vitamin A, or sorghum rich in iron.
- iii) Promote nutritional education through FFS with the aim of improving knowledge, attitudes, beliefs and, ultimately, nutrition-related behavior for long-term impact.

In both components, the additional financing will promote and expand the FFS as a vehicle for the adoption of improved technology and for sustainable agricultural intensification practices aimed at improving yields, post-harvest, marketing and food and nutritional security. The project will also establish Farmer Business School (FBS) to take interested farmers through a series of practical applications of farm business management concepts, tools and practices, based on their local knowledge and skills.

#### For <u>each</u> project component/activity, describe:

#### a) Evidence of past performance and impact of activities and models being proposed:

**Component 1**: The implementation of an efficient seed chain follows a model that goes from the selection of varieties to their multiplication, through (i) the production of original seeds, (ii) followed by the production of pre-basic and basic seeds, and (iii) finally certified or commercial seeds used by farmers. According to FAO's experience in countries similar to Haiti, research institutions, supported by the State and its partners, are responsible for the first phases (from the selection of varieties to the production of pre-basic seeds). The private sector implements the phases of multiplication and marketing of basic seeds and certified seeds. In Haiti, all these phases are coordinated by the NSS of the MARNDR. Failure in one of these phases can affect the success of the entire seed sector.

The GASP project's interventions in capacity building for seed-quality multiplication have failed to put in place an efficient and sustainable seed sector, because the early stages of the chain remained weak: limited breeding research, lack of an NSS seed laboratory and no source of pre-basic seed. In addition, these interventions were largely financed by emergency projects that could not accompany GASP with technical support for more than 2 years and did not have enough funds to support infrastructure and equipment for packaging and storage. While PITAG already touches on the first two phases of the sector, the additional financing requested in this proposal would finance the implementation of the last two phases of the seed multiplication chain, implemented by the private sector, and the decentralization of NSS interventions. Thus, PITAG would link all phases of the seed sector and will enable private producers to access seed certification and to improve the added value of their production.

In an effort to avoid storage losses, Haitian farmers do not store seeds from the harvest; they prefer to consume or sell the harvest and then buy new seeds during the planting period. Unfortunately, traders of dubious quality seeds, often sell them at prices 2-3 times higher than the market prices.

The GASP, supervised by NSS and FAO, ensure that if they manage to save their seeds until the planting season, they can make a profit, in particular for cereals (maize, rice, sorghum) and pulses seeds (beans, lima beans, peanut and pigeon peas). The following table shows the ratio between total income and production costs per hectare calculated taking into account GASP yields and FAO seed purchase prices in year 2016<sup>12</sup>.

<sup>&</sup>lt;sup>12</sup> Seed Policy Action Plan (August 2016) and data from the FAO Procurement Unit

Сгор	Unit	Yield (tons or seedlings/ha)	Production Cost (HTG/ha)	Market Price (in HTG)	Total income (in HTG)	Ratio Total Income/Production Cost
Rice	Tons	4	126,000	120,000	480,000	381%
Sorghum	Tons	1.5	90,000	76,800	115,200	128%
Maize	Tons	2.5	63,000	86,500	216,250	343%
Beans	Tons	0.8	144,000	224,500	179,600	125%
Lima beans	Tons	0.8	162,000	236,800	189,440	117%
Cassava	Seedlings	125,000	90,000	1.3	160,000	178%
Igname	Seedlings	30,000	216,000	19	570,000	264%
Sweet potato	Seedlings	200,000	72,000	0.6	120,000	167%

Table 6: Seed Multiplication - Yields and Financial Performance

**Component 2**: An initial list of potential TPs has been prepared based on their economic relevance, their successful experiences reported by different institutions and development partners in Haiti and elsewhere. Each TP will be offered together with a training curriculum on best practices.

#### Table 7: Technological Packages

Crops	Technological packages	Models	Estimated Cost (USD)	Potential providers
TRADING				
Cereals	Individual silo (100 kg) / humidimetre	FAO Mozambique	100,00	твс
	Plastic drum in different capacities / humidimeter	Haiti	50,00	твс
	Prelart / humidimetre	Haiti	100,00	твс
	Aboveground solar dryer	West Africa	150,00	твс
	Conditionning / Aflatoxin testing kit	PICS / Purdue University / ICRISAT	20,00	ТВС
Tubers	Storage facilities	Swiss Cooperation in Haiti	ТВС	ТВС
PROCESSING				
Cassava	Mill	FAO Haiti	2 400,00	EMDH
	Press	FAO Haiti	900,00	AECP
	Cooking pan	FAO Haiti	400,00	AECP
	Improved efficient cookstove	FAO Haiti	100,00	AECP
Cereals	Parboiling	Japan Cooperation in Burkina Faso	100,00	AECP
	Threshing	Haiti	2 800,00	Murat Excellent
	Motorised Shelling	Haiti	900,00	Murat Excellent
	Manual Shelling	Haiti	500,00	AECP
	Winnowing, destoning, calibrating	West Africa / Haiti (CHPA)	ТВС	твс
	Dry dehusking	Haiti	3 000,00	Agroservice
	Dry mill	Haiti	4 500,00	Island Services
	Degerming	Haiti / Quisqueya University	ТВС	ТВС
	Extruder	Niger / Quisqueya University	твс	твс

- <u>TPs for marketing cereals</u>: the goal is to increase producer capacities to sell their grains in bigger quantities and at a higher price. To fix value chain failures and re-connect with the market, the proposed TP menu covers solutions for:
  - Individual storage facilities in different capacities using a variety of materials (brick and mortar silo, plastic drum);
  - Different types of solar dryer, including *kapay* which is the name used in Haiti for a specific tarpaulin that is giving good results in drying grains through spreading small amount to the sun. Each package will include equipment to measure moisture; and
  - Packaging the grains to protect them from fungi, insect and bacteria. The solution proposed is the use of PICS bags which are plastic and polyethylene triple-layer bags that preserves cereals in

anaerobic conditions. This bag was developed by the Purdue University in the US and is now widely in use in Africa for stocking grains<sup>13</sup>. Conclusive tests were conducted at *la Ferme de Levy*, in the South department, with already contaminated maize that was packed into PICS bags. After two days only, the grains without were pest-free. The bags would be delivered along with a low-cost aflatoxin testing kit developed by ICRISAT. The test is portable and simple to perform, and can detect contamination at levels of 10 parts per billion (ppb) in less than 15 minutes<sup>14</sup>.

- <u>TPs for tuber storage</u>: the Swiss cooperation agency conducted a promising pilot of a technical solution to store yam at the farm in the Grand'Anse department, using a simple elevated and well-ventilated store-shed. The model will be scaled up and suitability for sweet potatoes will be tested. PITAG will assess the performance of this pilot and possibly integrate this technology for sweet potatoes.
- <u>TPs for cassava processing</u>: in Haiti, cassava cake is very popular, and its consumption widespread. The processed product is easy to use and has a longer shelf life. FAO conducted recently an in-depth analysis on the conditions to improve the quality of the processed produce, increase the efficiency of the equipment and enhance its safety<sup>15</sup>. Through participative work sessions with manufacturers, FAO reviewed each step of the process to point out inefficiencies and possible solutions. Through the adoption of best practices, results showed that shelf life could be extended up to 6 months. Finally, the quality of the pressing is essential to remove the cyanhydric acid that can be found in cassava roots. This approach has the potential to increase the demand for cassava roots and their added value. The project demonstrated the added value of this enhanced processing activity, from +20% for a plain and small cassava, up to +60% for a large and flavored cassava.
- <u>TPs for processing cereals</u>: these TPs will promote the use of appropriate machines for primary processing (threshing, shelling, winnowing, de-husking) and for milling the grains. Different machine models exist in Haiti and the PITAG extension will support the continued enhancement of this equipment with the help of local manufacturers to meet smallholders' needs and capacities. The associated TA will also ensure that the machines are used and maintained in a cost-effective way. This will support better marketing of cereals through increased satisfaction of the demand for quality produce. Through proper maintenance of machines, the contamination of produce by fungi during processing will be mitigated. In addition, since humidity favors contamination, dry milling will be promoted as a solution to combat aflatoxin.

The matching grants approach has proven to be successful in Haiti to bridge the financial gap in rural areas and improve the penetration rate of agricultural technologies. Furthermore, PITAG is partnering with financial institutions (SOGEBANK and the mobile banking system "Mon Cash") to promote access to finance.

#### Cross-cutting approach for both components

FAO has been pioneering the Farmer Field School (FFS) approach for over 30 years to achieve sustainable and resilient food systems. The FFS approach has been implemented in over 90 countries with an estimated 20 million men and women farmers, pastoralists and fishers trained. FFS is an alternative agricultural extension approach focusing on strengthening farmers' and the rural communities' capacity to analyze their production cycle and to identify their main constraints, as well as to test possible solutions. Farmers identify and adopt the most suitable practices and technologies for their farming systems. As a result, farmers are well-placed to enhance their productivity, profitability and their responsiveness to changing market and climate conditions.

In several African countries, FFS have demonstrated positive impact on production and income generation among women, low-literacy, and smallholder farmers. For example, in Tanzania, participation in FFS

<sup>&</sup>lt;sup>13</sup> <u>https://www.researchgate.net/publication/260996752 PICS bags for post-harvest storage of maize grain in West Africa.</u> Conclusion

mentions for aflatoxin tests: "Samples from PICS bags tended to be less contaminated than those from woven bags".

<sup>&</sup>lt;sup>14</sup> The part per billion is a ratio to express a chemical concentration of an element present in very small quantity. It is equivalent for example to one microgram per kg. In Haiti, the legal norm is 20 ppb authorized for maize, based on the US Food and Drug Administration (FDA) recommendations.
<sup>15</sup> A tophical manual of good practices to reduce aflatevia prevalence will be released scop.

increased income by 61% due to improved overall crop productivity. In Mozambique, smallholders participating in FFS and receiving financial support through an Electronic Voucher Scheme, have increased their maize yields from an average of 0.82 ton/ha to an average of 2.6 ton/ha<sup>16</sup>. This implies that FFS, as a "bottom-up" approach to extension with a focus on participatory and reflective learning to improve farmers' problem-solving skills, is a valid approach to increase rural production and income, and that it is adapted to diverse profiles, including women and producers with limited literacy<sup>17</sup>.

The MARNDR, with support from FAO, developed a **Methodological Guide for FFS for Haiti**. This guide is the result of reflections and analyses developed by various FFS trainers and supplemented by field experts that have practiced FFS in Haiti. The majority of Haitian smallholders are characterized by a lack of proper involvement in identifying problems, evaluating and implementing possible solutions during the production and marketing cycle. In this context, the FFS is a dynamic approach to promote farmer's involvement in the decision-making process. The FFS approach is a possible way to introduce activities that simultaneously enhance productivity while reducing costs, build resilience to stress and strengthen farmer's capacity to access market and manage risks, can contribute to improve food and nutrition security as well as to boost farmer's income generating activities and increase resilience to climate change.

The MARNDR will use the guide to scale-up innovative technologies related to production, post-harvest and marketing activities as well as good agricultural practices. The guide is a working tool adapted to the social, cultural, environmental and economic reality of Haiti's agricultural areas. It gathers data from about 10 years of FFS experience and learning in Haiti.

<u>Furthermore, FAO<sup>18</sup> has demonstrated the effectiveness of the integrated agriculture-nutrition education</u> approach in Cambodia and Mozambique. It combines the diversification of food production (and strengthened market linkages, where appropriate) with nutrition education to promote behavior change to improve family diets. The Trials of Improved Practices (TIPs) method informs the design of the food security intervention (ensuring that agriculture addresses food gaps) and the nutrition education intervention (so that dietary recommendations are culturally acceptable, feasible and affordable). Emphasis is placed on women's empowerment, capacity development of existing agriculture and health extension services, community engagement, and monitoring and evaluation to help facilitate and capture change.

#### b) Links with the investment plan, and the scope of the GAFSP Framework Document.

The objectives, results and activities of this additional financing are in line with the Agriculture Policy Document for 2010-2025 and 2016-2021 NAIP. In these documents, the GoH, as well as the private sector, donors, and civil society have agreed on the importance of providing medium- and long-term support to the agriculture sector to address the structural problems and weaknesses surrounding public institutions. This vision aims to strengthen and modernize the agricultural sector, increase the efficiency and effectiveness of family agriculture and agribusinesses, and boost its competitiveness in local and international markets. Post-harvest activities and quality seeds promotion were identified as key sub-sectors to support through the promotion of sustainable agricultural technologies, which would contribute to improving agricultural incomes and smallholders' resilience to climate change.

The activities envisaged are perfectly consistent with the GAFSP framework document, since they aim to improve income and food security of Haitian smallholders, through more and better public and private sector investment in the agriculture and rural sectors focusing on areas with a current funding deficit. The program is aligned with national priorities and benefits from a strong sense of ownership by the GoH, thanks to the previous implementation of PTTA, RESEPAG, PITAG and other similar programs. The GoH aligned several donors around the program's investment axes, particularly the IDB, World Bank, USAID and the AFD.

<sup>&</sup>lt;sup>16</sup> https://www.linkedin.com/pulse/using-technological-solutions-improve-smallholder-walter-de-oliveira/

<sup>&</sup>lt;sup>17</sup> Beyond the Field: The Impact of Farmer Field Schools on Food Security and Poverty Alleviation by Anna Folke Larsen and Helene Biel Lilleor

<sup>&</sup>lt;sup>18</sup> https://onlinelibrary.wiley.com/doi/full/10.1111/mcn.12411

PITAG is aligned with the components 1, 2, 3 and 5 of the GAFSP framework document on the following areas: i) adoption of higher yielding technologies; ii) technology generation; iii) post-harvest management; iv) resilience and adaptation to climate change; v) capacity-building for sector strategy; investments and implementation; and vi) enhancing design, monitoring and evaluation.

PITAG is directly linked with GAFSP scope through its Component 2 "Linking Farmers to Markets", whose rationale is to promote produce marketability and added value. These will benefit: i) farmers through an increased demand and ii) youth and woman entrepreneurs through the promotion of processing MSMEs.

Analyses show that marketability is limited by the inferior quality of crops with high rate of impurities, coarsely prepared and pest-infested. As demand is directly linked to cleanliness, standardization and safety, Component 2 provides farmers with technologies and TA to enhance post-harvest practices to match market expectations. Besides, poor post-harvest practices lead to losses, which impact farmer revenues.

Also, while demand for processed food has increased (parboiled rice, maize meal, cassava cake, etc.), the lack of quality offer locally has led to higher imports. An increase of high-quality and competitive processed produce would substitute imports and increase market size. Component 2 will equip and train potential entrepreneur to enter the market.

#### c) Links with other projects and government programs and activities.

The PITAG additional financing aims at increasing the offer of TPs in post-harvest activities, comprising storage, access to market and processing solutions for targeted crops: maize, rice and roots and tubers. As such, the target beneficiaries will be smallholders living in selected areas of the North, North East, Artibonite, South, and Grand'Anse Departments, thus maximizing synergies with other donor-funded programs in the same areas, particularly those related to land tenure (grant agreement 2720/GR-HA) and watershed management and natural protected areas (3622/GR-HA, GRT/FM-11803-HA). In addition, to complement PITAG, the project will be coordinate with other MARNDR initiatives (e.g. the WB/GAFSP-funded program RESEPAG II) providing agricultural incentives for technological innovation using the same modus operandi of the Project Executing Unit of the MARNDR. Finally, the program will develop synergies with other initiatives related to agricultural research and extension in the country financed by other donors (USAID, European Union, Swiss Cooperation, AFD, etc.)

#### d) Approach to gender equality and women's empowerment.

In the context of PTTA, a gender gap analysis was conducted. This study combined qualitative data from focus groups and quantitative data from a baseline survey. The main conclusions are the following: (i) women household heads have less time to allocate to agricultural activities and incur higher labor expenditures than men (310 HTG vs. 280 HTG); (ii) women household heads have smaller plots and less access to land; (iii) women sell a lower proportion of their produce and allocate more of their revenues to home consumption compared to men (52% vs. 64% in the case of rice); (iv) more female-headed households face severe food insecurity (86% vs 71%); (v) women household heads are less educated than men (55% never attended school vs. 30%); and (vi) female-headed households have lower annual income (USD 176 vs. USD 347). Nonetheless, value adding and marketing are activities that attract higher women participation.

PITAG's gender strategy is elaborated on the basis of PTTA's gender gap assessment. It includes the development of TPs for systems/crops traditionally grown by women (creole gardens, horticulture, agroforestry and restoration); a quota system in the South Department to reserve 50% of the TPs to women and 20% to youth; gender-sensitive communication campaigns to ensure that information about the program effectively reaches women and youth; and the provision of daycare services and nutritious meals for children during training sessions and meetings. When implementing the proposed additional financing, gender equality will be also a crosscutting principle. At least 40% of women will be beneficiaries of this additional

financing. The choice of the activities has been carefully selected to include women and empower them through access to knowledge, assets and income. In line with PITAG's gender strategy, an information campaign targeting women will be included as a start-up activity; financial resources will be allocated to applied research projects with the objective of developing seed varieties, post-harvest technologies and FNS practices that are directly targeted towards women's needs; matching grants and capacity building initiatives will take into consideration productive activities and technologies usually conducted by women (i.e. mills and moisture meters); and, the program will be monitored and evaluated using sex-disaggregated indicators.

#### e) Approach to environmental sustainability.

<u>Component 1:</u> The environmental protection and the sustainable use of natural resources, particularly water and soil, will be among the training themes for seed producers. In their plots, they will apply climate and environment-friendly farming practices such as the development of erosion control structures, conservation agriculture, agroforestry and the promotion of climate-resilient crops / varieties.

<u>Component 2</u>: No particular risks for natural resources were identified to date, since the component has a focus on post-harvest activities. Better storage and marketing of crops may have a positive impact on farmers revenue in the mid- to long term, which may prompt them to invest further and to produce more. However, the impact of the production activities will be monitored by PITAG, while IFAD has already prepared a detailed review of possible environmental risks, including recommendations for mitigation. The additional financing activities will benefit from this set-up.

#### f) Approach to risk and resilience in a fragile context.

Haiti is highly exposed to natural hazards, such as hurricanes, floods and earthquakes. Over 93% of its surface and more than 96% of the population are exposed to 2 or more hazards. The Great South (Grand Sud), which includes the Grand'Anse, Nippes and Sud Departments, is greatly exposed to hurricanes and related flood hazards, while the Nord and Nord Ouest Departments are highly exposed to drought, floods and tsunamis. Climate change is expected to increase the frequency and severity of hydro-meteorological hazards. Climate projections for the Caribbean estimate that temperatures could rise from between 0.5 to 2.3°C by 2060, possibly leading to cyclonic events of increased duration and intensity. According to the climate change simulations of the U.S. Climate Change Science Program, for each 1°C increase in sea surface temperatures, rainfall caused by hurricanes may rise by 6 to 17% and surface wind speeds of the strongest hurricanes by 1% to 8%. In addition, the dry season will likely intensify.

The human and economic impacts of natural disasters have been extremely severe. Between 1961 and 2012, the country experienced more than 180 natural disasters. The 2010 earthquake destroyed an equivalent of about 120% of GDP and Hurricane Matthew resulted in estimated damages and losses equivalent to around 32% of GDP. In the aftermath of these devastating events, political instability has slowed the pace of private and public investments and deteriorating macro-economic indicators including inflation and exchange rate. Following the 2010 earthquake, the GoH identified Disaster Risk Management (DRM) as a key cross-cutting and multi-sectoral priority. The 2010 Action Plan for National Recovery and Development of Haiti (PARDH) outlines "preparation for the hurricane season and DRM" as a priority. The Government's 2012 PSDH prioritizes the improvement of DRM through better land-use planning under its first pillar. Haiti's Nationally Determined Contribution (NDC), submitted to the UNFCCC in September 2015, focuses on both adaptation to climate change and mitigation actions for the 2016-2030 period. The NDC includes food and nutrition security as a national adaptation priority. Haiti is committed to contribute to enhance FNS in the context of climate change, through the application of climate smart agriculture approaches and sustainable development alternatives, such as the bio-economy.

Rural areas and family farmers are particularly vulnerable as they have less capacities to cope with extreme events and crises. The social instability that the country is experiencing is fuelled by soaring food prices and

the prospected GAFSP intervention will help in holding this price dynamic with a focus on rice, maize and roots and tubers. The additional GAFSP intervention will support the country's efforts directed to fight this fragility in the intervention area, as well as to strengthen the country's food security as a whole.

Experiences in developing countries, including Haiti, have shown that the adoption and diversification of climate-resilient crops/varieties are among the factors that mitigate the negative impact of climate change on farmers and improve their resilience by stabilizing their agricultural production.

Based on the experiences of developing countries, including the experience of FAO and NSS with Haitian GASPs, this system of quality seeds production near family farms, combined with the FFS approach, is one of the best routes for rapid dissemination of climate-resilient and/or micronutrient-rich crops/varieties. It is also adapted to the rapid dissemination of some local climate-resilient varieties usually cultivated at small-scale in isolated and enclosed micro-climates. For example, farmers who are members of FFS facilitated by FAO and its partners, living in drought-affected Haitian communes (in Southeast, Grande Anse and Northeast), have doubled their yields by replacing vulnerable local varieties of beans with the drought-tolerant local variety of Lima beans (Béséba normally grown in Northwest). Similarly, the introduction of an early and drought-tolerant local sweet potato variety (Mizé Maléré) in the North West Department has been successful by quickly improving the food security of rural populations affected by drought, in 2015.

High post-harvest losses (PHL) due to poor post-harvest handling and processing practices have been historical problems in the country and in the project's intervention area. National data on PHL shows an average loss of 30%<sup>19</sup>. The experience of the recent natural disasters in Haiti (hurricanes and drought) showed that the resilience of rural populations requires the development of new coping mechanisms. By diversifying income sources and improving the shelf life of food, the additional financing activities which focus on post-harvest technologies promotion and techniques with dedicated intervention on the 3 selected value chains (rice, maize, roots & tubers) is one of the adaptation mechanisms to climate hazards.

Under this additional financing, priority will be given to farmers' coping mechanisms, such as the adoption of profitable, climate smart, and sustainable agricultural technologies. FFS will be a platform to mainstream risk management and climate resilience. Investing in new enhanced storage and conservation technologies and practices will increase food availability for smallholders and improve their resilience to external shocks. Going forward, new processing technologies will boost their ability to manage quality and to expand their market access, yielding positive effects on revenue generation. Removing uncertainty as one of their key constraints, farmers may engage in a self-sustaining virtuous cycle of investment and increased productivity on their plots, doing away with non-profitable and environmentally unsustainable agricultural practices. Besides, promoting post-harvest technologies is directly linked to the development of agricultural value chains with a long-term perspective, as the proposed activities have the potential to induce better relationships between actors. This would lead to strengthening the country's food system as a whole.

The proposed additional financing will also take into account PITAG's risk assessment and mitigation measures in the Haitian context. PITAG's risk management approach goes beyond climatic and market risks to cover social, technical, operational and institutional risks. Some of the risks and mitigation measures are also relevant for the additional financing, namely:

- Insufficient number of good quality technologies and input suppliers: strengthened selection process of
  potential providers, including quality and quantity control; trainings; updated quality standards for
  technologies; possibility to exclude providers who do not follow the rules; technology transfer to
  providers through the research component.
- Suppliers' cash constraints: strengthened selection process of potential providers, including quality and quantity control; links with microfinance institutions, including programs financed by IDB and Ministry of Trade; good planning of the campaigns in terms of areas and quantities of matching grants.

<sup>&</sup>lt;sup>19</sup> E.g. maize FEWS NET 2018

- Complexity of grant management process: updated operational procedures; improvement of information systems.
- Demand for matching grants largely exceeds resources: transparency and communication reinforced at the local level and targeted to specific areas; possibility to apply for several campaigns, if not selected previously.
- Technological packages are not constantly updated and improved in order to better fit with demand: lists of technologies updated once a year, based on demand, research results, and a monitoring of the research activities conducted in the country.
- The selected technologies are not adequate for and adopted by women: studies to develop gender-smart technologies; tailored communication campaigns; specific monitoring on gender.
- Political instability and related changes of policy priorities of the Ministry: maximum level of delegation of authority to the Project Coordinator.
- g) Only for activities involving subsidies, grants, or asset distribution: provide rationale for public financing and a clear description of the program (including objectives, intended recipients, approximate subsidy rates, transfer modality, mechanism to eventual exit, other aspects contributing to sustainability).

#### **Component 1**

The role of government in quality seed certification is paramount. However, lack of financing to the relevant public agencies due to the country's social and economic crisis has dwarfed the capacity of the GoH.

Small seed storage facilities (storage capacity of around 20 tons/association) will be built by the project for 15 associations composed of well-organized private actors for the production and marketing of quality seeds by prioritizing women's and youth associations. This will improve seed security and the availability of quality seed in local markets at the time of sowing. A contract will be signed between the beneficiary associations and the NSS. It will specify the methods of management and maintenance of these facilities, under the supervision of the DDA, as well as the amortization modalities of the equipment donated by the project.

PITAG will set up a subsidized voucher system, implemented by local operators, through which it will promote climate-resilient and/or micronutrient-rich seed varieties and improve farmers' access to such seeds. Farmers' monetary contributions will be collected by the operators, and the subsidy will be transferred to the technology producers through local microfinance institutions. The subsidy rate for this innovative technology will be determined according to the analysis of the socio-economic situation of the beneficiaries.

As stipulated in the Seed Policy Action Plan, the 3 regional seed laboratories will be managed by the NSS, which will assign a seed analyst to each laboratory.

A project vehicle will be assigned to each seed analyst, while each of the 10 seed plot inspectors allocated by the DDAs (2/DDA) will receive a motorcycle. These laboratories, vehicles and motorcycles will become the property of the MARNDR at the end of the project.

#### **Component 2**

The participation in the program is demand-driven: to become a beneficiary, interested farmers participate in a series of information sessions organized to present the different TPs and collect applications. Once candidates apply, the operational service provider (OPS) will advise them on the best solutions to match their needs and constraints. As part of the selection process, the OPS will also apply a number of criteria to assess the feasibility and consistency of the sub-project. These criteria include:

- Availability of electricity to power machines.
- The adequacy between TP and level of production to focus interventions where the need exists.

- Presence of equivalent facilities/equipment in the premises to avoid direct or indirect negative effects affecting beneficiaries or other individuals, and to ensure that the equipment/facilities at full capacity. This is particularly important for processing MSMEs: the project wants to avoid creating competition that would negatively affect existing processors.
- The existence of other supporting programs in the same areas to prevent overlap (e.g. RESEPAG in the South department, Resilient Productive Landscapes in Nippes department).

The target areas of PITAG's extension will be the very same as PITAG's original locations, to ensure complementarity. Across the 5 departments concerned, the beneficiaries will be 2 distinct groups:

- For storage, drying, cleaning and packaging activities, the beneficiaries will be the same smallholders as
  those receiving support from PITAG to boost productivity in cereals, roots and tubers. They will be
  equipped to reduce losses and increase marketability of their produce toward meeting buyer's
  expectations in terms of cleanliness and safety requirements, in a strategic move to ensure they will reap
  the greatest benefits from increased productivity.
- For the processing activities, the additional financing will target groups of local youth and women lacking economic opportunities. They will be supported to take on responsibilities to manage processing MSMEs, as entrepreneurs or as facility managers on behalf of local producer organizations. Over the course of the project, 500 MSMEs will be supported to develop or expand their business. In strengthening processing capacities, the PITAG extension expects to increase local demand for farmers' output. The entrepreneurs to-be will be reached initially through the connection with local youth associations. Interestingly, in the North, the Canadian NGO CECI has been working with the *Jeunes Entrepreneurs Agricoles* association who received support from the World Bank-funded RESEPAG. Alternatively, the Farmer Business School which will be held through the Component 2 could be used to engage young candidates.

A specific focus will be on raising women's involvement in processing activities. The cost of the packages will be financed through a matching grant scheme, with farmers giving a partial contribution. The proposed rate for such contributions is 10%, based on the previous experience of PTTA and PITAG.

The packages have been designed to make sure the required contribution would not exceed beneficiary's capacity to finance it. For the <u>marketing</u> packages, the maximum cost is set to USD 100, with USD 10 as the contribution from the farmer. For the <u>processing</u> packages, the maximum cost is USD 4,500, or USD 450 as farmer/group contribution. Because in the case of the processing packages the cost to the farmer is high, PITAG will require the beneficiaries to pool so as to reduce the unitary cost per head. However, it is expected that the processing packages will demanded mostly by collective enterprises Applications for multiple packages will be considered; as part of the selection process, PITAG will assess applicants' ability to finance their contribution.

- h) Only for value chain projects: provide market diagnostics (references to associated market studies) and anticipated returns. Not applicable.
- i) Only for activities involving public-private partnerships: clarify public and private roles, and how the partnership is intended to be structured. Not applicable.
- 2) Rationale for public financing of components and activities chosen to be financed<sup>20</sup>.

For <u>each</u> component and activity, answer the following:

<sup>&</sup>lt;sup>20</sup> For a reference document on optimizing public financing for agricultural development, see "Future of Food: Maximizing Finance for Development for Agricultural Value Chains" (World Bank, 2018), which can be accessed at: https://openknowledge.worldbank.org/handle/10986/29686

### a) Does the private sector currently fund similar activities in the country? If yes, explain why public financing is needed for the proposed activities.

**Component 1**. Some large seed companies are run by private traders and are based in Port au Prince. However, the seed market is still not structured in a way to supply the rural areas. Some private companies are investing in the purchase and marketing of dubious quality seeds originated from grain purchased from farmers. Their main motivation seems to be the market demand by NGOs and projects that buy seeds to distribute in the framework of emergency operations.

Faced with this situation, since 1995, in order to bring producers of quality seeds closer to family farmers, with technical support from FAO, the MARNDR has organized the farmers in Groups of Artisanal Seed Producers (GASP). Unfortunately, due to a lack of capacity building in quality seeds production and of a source of pre-basic seeds, some groups have initiated other income-generating activities while others have become suppliers of private seed marketing companies, located in Port au Prince. Public funding is needed to strengthen the seed production capacity of small private companies largely managed by rural youth trained and supervised by specialists. This will improve the quality of seeds purchased and used by family farmers and increase their agricultural production. At the same time, FFS will be run in rural areas by the private seed companies, to show family farmers the added value of climate-resilient varieties compared to the inferior quality seeds that they currently sow. Public funding is needed to provide NSS and DDA services to seed producers in the departments.

The experience of FAO and NSS has shown that these GASPs can be a basis to establish an effective system for the multiplication and distribution of quality seeds in rural areas, without excluding private producers. Maps<sup>21</sup> showing the GASPs trained and supervised by FAO and NSS for Quality Declared Seed production are available

**Component 2.** The private sector finances few similar activities scattered in the country, but well below the optimum level. Some large companies are active in the trading of agricultural products (either raw or processed) across the country. However, these companies are located only in urban areas and most of them source their material (raw or processed) from abroad and very few are engaged with local farmers. Exception is made for CLEFS, a company distributing Haitian rice under its own brand name, and ACCESO that support farmers for groundnut production.

Inefficient financing continues to be a major constraint to business development in Haiti. Inadequate access to financial services is stunting economic growth by preventing investors from responding to investment opportunities; undermining the technology adoption and; limiting the development potential of MSMEs.

Access to finance in Haiti is characterized by low and unequal access to credit, high transaction costs and limited availability of appropriate financial products. Microfinance is the main channel for financing rural operators. Despite a large number of institutions, the penetration rate remains very low at 10% maximum, due to stringent credit terms. Only a few better-off farmers can afford to meet the credit conditions. The dominant model is the individual credit as opposed to the model of collective credit usually favored by microfinance institutions (MFIs). For agricultural operators, financing needs are mostly to purchase of production inputs, while traders are in need of working capital. Most producers do not have access to credit and remain trapped in a low productivity-low investment capacity cycle.

In this scenario, public co-financing of investments is justified by positive externalities and spillover effects. The approach will trigger the generation and introduction of innovations, smart technologies with low risks

Type of seeds produced by each GASP (I): https://www.google.com/maps/d/edit?mid=zMe2ozUs0gcA.kc5dsoGJqd4s&usp=sharing Type of seeds and planting material produced by each GASP (II):

<sup>&</sup>lt;sup>21</sup> GASP per Department: https://www.google.com/maps/d/edit?mid=zMe2ozUs0gcA.k3ilFJm9bpl0&usp=sharing

https://www.google.com/maps/d/edit?mid=zMe2ozUs0gcA.k3Jo4U7Uswq8&usp=sharing

Percentage of women by GASP: https://www.google.com/maps/d/edit?mid=zMe2ozUs0gcA.kUepk4l6kjVo&usp=sharing

and high profit levels and start-up enterprises by young graduates. The main advantage of matching grants is that they allow for relatively quick results kick-starting local economic development, while promoting access to finance in the long run. This approach will not crowd out financial services and other businesses already active in the area. A situational assessment will precede any intervention and ensure long-term impact.

## b) If the answer to the above ("a") is yes, describe the nature of the private sector entities (i.e., size, type of organization, ownership).

In a recent study (2019), the World Bank showed that very few agribusinesses play a role in the provision of financing solutions or services to farmers. In most cases, private companies providing support to producers are (or have been) linked to agricultural development projects.

Regarding rice, CLEFS is a social business providing support to its members for paddy production. The objective is to promote the development of rice cultivation by offering producers a range of services enabling them to increase and secure their production. CLEFS collect the rice produced, market it and generate margins to finance part of the service costs. Presently, CLEFS is collecting and processing roughly 2,000 MT of paddy annually from some 2,000 small producers in the North-East part of the country.

Regarding maize, large- and medium-scale processing and packing is done by a few major companies such as Les Moulins d'Haïti, Céréales d'Haïti, Compagnie Haïtienne de Promotion Agricole and CETAI that further distribute the product to wholesalers and retailers. They also represent most grain imports, with STANCO accounting for about 50% of ground maize (meal) imports. However, the bulk of the production is traded through informal channels by intermediaries.

Regarding roots and tubers, many small processing facilities producing cassava cake exist in the cassava growing areas. They are mainly informal processing structures with limited capacities and mostly depending on the projects that helped the processing units to start (See FAO Haiti work on cassava)

- c) If the answer to question "a" is no, then explain why that is the case. Not applicable.
- d) Describe tangible efforts made to date to attract private investment to finance similar activities in the country, as well as their outcomes. These may include public-private dialogue on constraints to private investment and how these are being addressed, including through policy improvements.

**Component 1.** Pillar 9 of the Seed Policy concerns the promotion and support of private initiative and the use of quality seeds. It specifies that all state interventions in the production and marketing of seeds will be transferred to associations, groups and private operators able to meet the requirements of the seed regulations in force. It also stipulated that to encourage private investment in the seed sector, the public sector will give fiscal, customs and financial incentives for private seed producers such as (i) the exemption from commercial taxes on the purchase of original seeds and (ii) the exemption from import taxes of equipment and materials necessary to improve the operational capacities of seed establishments. The public and private sector actors will also contribute to improving the packaging, drying and storage systems of the associations/producer groups with which they have seed production contracts. The public authorities will prioritize the construction and rehabilitation of seed storage facilities near farmers and the terms of their transfer to private operators will be set in accordance with the terms defined in the contractual texts.

**Component 2.** The first step to attract private investments into Haitian value chains is to improve quality and reliability of the national output. Today, the predominant strategy is to provide farmers with the financing, the technologies and the knowledge they need to invest in enhanced capacities and equipment. Besides, efforts are made also to support the creation of local MSMEs that would provide market access for farmer output and possibly ensure value creation by processing crops.

### e) Related to the question above ("d"), describe what kind of private investments (i.e., size, type of organization, ownership) the country is attempting to attract.

The government is attempting to attract private investments to improve production, packaging, drying, storage and to supply local markets with quality seeds and planting materials. The country needs to attract private companies to support farmers with inputs, equipment, technologies and financing while ensuring a regular offtake for their output.

### f) Describe what is needed to contribute to increasing private investments to finance similar activities in the country and whether this project will help to put this in place.

The major constraints faced by private actors in the seed sector are the lack of capacity building and technical support for the establishment of profitable and sustainable seed companies coupled with the lack of sources of pre-basic seeds and the poor seed conditioning and storage infrastructures. In addition, the fact that most farmers do not know how to distinguish quality seeds from seeds of unknown quality questions the profitability of the seed production business in Haiti. This project proposal proposes solutions to address these constraints by complementing PITAG actions to strengthen all steps of the seed value chain.

The PITAG additional financing will trigger an investment cycle for farmers in post-harvest technologies. New practices to preserve and process products will increase economy of scale, reduce transaction costs and improve farmer capacities; this will improve the cost-benefit ratio on investing in the selected value chains and boost local economies.

#### 2.4 Implementation Arrangements

#### 1) Institutional arrangements and inter-ministerial coordination (if any).

The executing agency will be the MARNDR, through the PITAG Program Executing Unit (PEU) which has been executing PITAG, PTTA, RESEPAG 1 and 2 and SECAL since 2011. The PEU will be responsible for the administration, supervision and evaluation of the program. The Directorate of Innovation will oversee Component 1. The Ministry's Procurement Unit (UPMP) will oversee the procurement of works, goods and services.

The PEU is composed of a full technical and administrative team with demonstrated capacities to implement similar programs. The PEU will also involve the decentralized MARNDR's services at departmental and municipal level in the overall program implementation and supervision.

A steering committee is in place, composed by representatives of the MARNDR, the Ministry of Economy and Finance, representatives of farmer organizations and the private sector. The steering committee will provide strategic guidance and approve the annual working plan.

Component 1 is expected to strengthen the capacities of the Directorate of Innovation in re-launching the financing of applied agricultural research and training. This component will also contribute to strengthening the procedures and capacities of the entities involved in the modernization of the agricultural research system supported by IDB since 2012.

It is expected that FAO will be supporting the implementation of activities related to FFS and seeds multiplication. FAO has an excellent track-record of collaboration with MARNDR in Haiti.

### 2) Role of non-government stakeholders (e.g., civil society groups, producer organizations and private sector)<sup>22</sup>.

Producers' organization and private sector actors played an important role in preparing this proposal document during the consultation process. It is expected that their role will continue through the implementation period and specific activities have been budgeted to strengthen their role.

The implementation of PITAG's extension will leverage existing partnerships with PITAG's OPS which are already at work to carry out project activities. The OPS are made up of a number of international and national/local institutions and NGOs, competitively selected and spread over the 5 departments. The OPS have an intimate knowledge of the area and have had at least one prior intervention in any field or have experience in agricultural coaching/training in the area. In addition, the OPS have human resources capable of carrying out technical and facilitation activities, one agricultural technician level and at least one higher level facilitator who can supervise technicians for the technology adoption contracts.

### 3) Describe how the project plans to strengthen the capacity of implementing parties so that this capacity extends beyond the life of the project.

Project implementation will be closely monitored and periodically assessed to detect problems early on. Solutions will be elaborated together with the supervision entities. The supervising entity aims to support the implementation of the proposed activities using the capacities of the PEU in the MARNDR and will only outsource activities that go beyond their ToR. Furthermore, PITAG and the proposed additional financing, integrate activities that relate directly with institutional strengthening (e.g. of the NSS) and capacity development (e.g. through the FFS).

The main vehicle to strengthen capacity of farmers and farmers' organizations will be the FFS approach focusing on strengthening farmer's capacity in analyzing their production cycle and in identifying their main constraints, as well as in testing possible solutions. As a result, farmers are well-positioned to become more productive, profitable and more responsive to changing market and climate conditions. The combined approach of agriculture and nutrition education through FFS has proven to be more efficient in terms of improved nutritional indicators compared to agriculture interventions without a nutrition component.

The NSS will be trained and equipped at central and decentralized level to ensure its capacity beyond the project's implementation period. It will play the key role of coordination of all seed sector support activities under PITAG. The implementation of the project will be guided by a participatory approach that involves and empowers all stakeholders in the seed sector (NSS, DDA, BAC, GASP and private producers). The decentralization of NSS services in different country regions will put it in direct contact with private seed producers working in remote communes and will allow it to master the approach developed by the project to continue his interventions after its closure.

<sup>&</sup>lt;sup>22</sup> See Annex 2 of the GAFSP Country Guidelines for a list of verifiable criteria about these roles that will be included in the assessment of implementation by the Technical Advisory Committee.

#### 2.5 Amount of Financing Requested and Time Frame for Implementation

#### 1) Financing requested from GAFSP

- a) Requested grant amount for the project: US\$ 20 million
- b) Requested amount for a GAFSP project preparation grant: US\$ [0] million
- c) Total Requested grant amount (sum of "a" and "b" above): US\$ 20 million
- d) *Minimum necessary amount*. GAFSP funds are very competitive with demand typically exceeding available funds to finance eligible proposals. Thus, countries are asked to also indicate the minimum amount to enable the proposed project (as described in this document) to be viable and have a development impact (in case GAFSP cannot allocate the full requested amount): **US\$ 10 million**
- e) Modifications that would need to be made to the proposed project (as described in this document) if only the minimum amount was awarded (e.g., specify reduction in geographical areas, elimination of certain sub-components, reduction in number of project participants).

The modification will be based on a mix of reduction of geographical scope and number of project participants. This will be based on further public consultations.

#### 2) Project Financing Table

	Cost (USD million)	Share (%)
Project implementation		
GAFSP	20	95%
Government	0.238	1%
Local project participants	0.762	4%
[Other co-financier], specify		
[Other co-financier], specify		
Project Implementation Total	21	100%
Project preparation		
GAFSP		
Government		
[Other co-financier], specify		
Project Preparation Total		100%

Note: Add lines as needed. Spell out organization names. For example, write "International Development Association (IDA)."

#### 3) Project Cost Table

	GAFSP (million USD)	Local (million USD)	TOTAL (million USD)
Component I. Applied research and training	3.80		3.80
Component II. Promotion of sustainable agricultural technologies	14.50	0.76	15.26
Administration	1.45	0.24	1.69
Audits	0.05		0.05
Monitoring & Evaluation	0.20		0.20
TOTAL	20.00	1.00	21.00

It assumes a 10% co-financing from beneficiaries of matching grants. Government contribution is linked to inkind resources invested in NSS to support the activities proposed by PITAG's additional financing.

#### a) Explanation of indicative unit costs for each major investment (e.g., irrigation costs per hectare).

The total project cost per beneficiary (household) is USD 1,217. If we only consider GAFSP financing, the cost per beneficiary is USD 1,159. These estimates are in line with PITAG cost estimates (USD 1,182 /beneficiary).

As in the case of PITAG, most of the money will be invested in matching grants to support the adoption of post-harvest and processing technologies (about 40% of total additional financing investment, including targeted TA and coaching to ensure the correct application and maintenance of technologies), to complement PITAG matching grants on production technologies. The ranges and limits of grant amounts per beneficiary, as well as the proportion of co-financing, are fully aligned with PITAG.

Partner	Nr of programs	Total budget	Projects	Project budget	Project period	Objective				
AFD/FRANCE	1	€ 20.96 M	Food Security Project (SECAL)	€ 20.96 M	2013 - 2019	To fight food insecurity in the departments of the South, West and Artibonite				
FIDA	1	\$US 16.1 M	Project for Small Irrigation Development Phase 3	\$US 16.1 M	2012 - 2019	To support sustainable growth and securing of incomes and living conditions of poor rural households, especially those of the most vulnerable groups				
			Water Management in the Artibonite Basin (PROGEBA)	\$US 25 M	2013 – 2019	To decrease crop, livestock and infrastructures losses due to floods, and increasing agricultural productivity in the Artibonite basin.				
			Modernization of Agricultural Health Public Services (SPS)	\$US 16 M	2014 - 2019	To increase agricultural productivity and improve the access of Haitian agricultural products to international markets.				
IDB	5	\$US 181.61 M	Artisanal Fisheries Development Program (PDPA)	\$US 16.5 M	2015 - 2020	To improve the income of small fishers in three southern regions of Haiti (South, South-East and Grande Anse), through the sustainable development of artisanal fisheries.				
			Agricultural and Agroforestry Technological Innovation Program (PITAG)	\$US 76.86 M	2018 - 2023	To increase agricultural income and food security through agricultural productivity growth and the improvement of the use of natural capital as a result of the adoption of sustainable technologies.				
			Natural Disaster Mitigation Program II (PMDN II)	\$US 47.75 M	2015 - 2021	To reduce rural economic losses through the improvement of climate risk management in selected watersheds.				
			Support to the Valorization of the Northern Agricultural Potential for Economic and Environmental Security (AVANSE)	\$US 87.8 M	2013-2019	To build resilience to extreme weather events, to increase agricultural production and to improve livelihood opportunities.				
			\$US 147.6 M	Improving Farmers Lives (Chanje Lavi Plantè)	\$US 24.9 M	2015-2018 (finished)	To improve agricultural revenues by improving agricultural productivity and competitiveness			
USAID	USAID 7	7		\$US 147.6 M	\$US 147.6 M	\$US 147.6 M	\$US 147.6 M	Technical Services for the Revitalization and Modernization of the Agricultural Sector	\$US 16 M	2015-2018 (finished)
			Support for Research and Agricultural Development (AREA)	\$US 13.7 M	2015-2020	To strengthen the capacity of institutions to increase the availability of agricultural innovations to improve food security				
WB 3				Project for Strengthening Public Services (RESEPAG II)	\$US 79.4 M	2012 - 2019	To strengthen the capacity of the MARNDR to improve the accessibility of services in the agricultural sector, to improve market access and food security of small producers, and to provide financial assistance in the event of an emergency.			
	3	\$US 99.4 M	Strengthening Hydro-Meteorological Services Project	\$US 5 M	2015 - 2020	To strengthen the Republic of Haiti's institutional capacity to provide hydro-meteorological and climate information services customized to the needs of the civil protection and agriculture sectors				
			Resilient Productive Landscape	\$US 15 M	2018-2023	to improve the adoption of resilience-enhancing agricultural and landscape management practices in selected sub-watersheds.				

#### 4) Other donor funded agriculture and food security projects.

5) **Preferred Supervising Entity.** The choice of Supervising Entity is *not* scored in the assessment of the proposal.

#### Click on the name(s) of the preferred Supervising Entity(-ies)

#### Supervising Entities for Investments and Technical Assistance (Select only one) ⊠ Inter-American Development Bank

#### Supervising Entities for Technical Assistance only (Optional)

 $\boxtimes$  Food and Agriculture Organization (FAO)

□World Food Programme (WFP)

#### Reasons for selecting the preferred Supervising Entity(ies).

The expected supervising entity is the Inter-American Development Bank (IDB). The IDB Group Country Strategy with Haiti for the 2017-2021 period seeks to contribute to higher, more inclusive and more sustainable growth that supports a reduction in poverty and inequalities. The Strategy has 3 strategic priorities guiding sovereign and non-sovereign guaranteed operations in Haiti: (i) improve the business climate to enhance productivity; (ii) render key public services more accessible to enhance human development; and (iii) strengthen government capacity to increase fiscal sustainability. The IDB support will incorporate cross-cutting themes that are key to Haiti's overall stability and poverty reduction, particularly climate change resilience, protection of the environment, and gender equality.

The IDB has a long-standing and strong relationship with the MARNDR and is currently supervising 5 ongoing operations at the MARNDR. It has an active loan portfolio of over USD 151 mln in Haiti's agricultural sector and is therefore a key institution to support local agricultural development. The design and implementation of IDB projects follow strong environmental and social safeguard policies and strictly follow the principles of efficiency, effectiveness, sustainability and impact at all project levels. The IDB is already the supervising entity of the PITAG program and previously supervised the PTTA program. Both programs were co-financed and were rated satisfactory by the GAFSP.

#### 2.6 Post project sustainability and exit strategies

#### 1) For project asset and services.

Main assets (technologies) will be provided to individual farmers and will be maintained by them. In order to optimize the beneficiary targeting according to need and maintenance capacity, the project will apply a matching grant scheme, whose co-payment structure will be defined through a rigorous and innovative behavioral approach that will unveil farmers' willingness to pay o the various technologies. The exit strategy of the matching grant mechanism is therefore based on the following principles: i) the adoption of improved technology will improve farmers' income, and they will in turn invest in the same technology with part of the added value generated, ii) the financial contribution by the farmers will ensure the willingness to pay for the technologies and the commitment to maintain it, iii) most technologies are a one-shot investment and do not need recurrent financing, iv) the program will establish synergies with other programs financed by IDB and other donors related to agricultural credit and private sector development, v) the technical assistance provided during project implementation will ensure that the technologies are maintained in the long run.

#### 2) For institutions and management structures.

Tailored capacity building will be developed during the project implementation based on the institutional assessment of MARNDR to ensure that the support to the beneficiaries will continue beyond the project.

#### 3) Social access and inclusion.

PITAG intervention regions are some of the poorest in Haiti. The additional financing targets the poorest and most vulnerable segments of the population, with emphasis on female-headed households, women farmers and the rural youth. The additional financing will facilitate access to critical inputs (high-quality seeds supplied by local farmers) and innovation services to escalate the adoption of post-harvest and processing technologies, in support of primary production activities. A value chain diagnostic and food and nutrition security analysis will be conducted for the food systems and regions targeted by the additional financing; these studies will include a risk analysis (with a focus on climate change) and provide insights to sustainability and resilience approaches to be mainstreamed within key project activities.

Enhancing social capital is at the core of PITAG. Haiti has been suffering from a series of natural and climatic disasters, including hurricanes and earthquakes, and several political and economic shocks, affecting especially its rural population. Building social capital in areas and communities that are highly vulnerable to

climate and other external shocks is critical for their resilience and coping capacity. Thus, PITAG puts in place methodologies, such as FFS, to help farmers and community members build trust and improve their knowledge and capacities about technological, environmental and socio-economic topics (including gender and generational considerations).

Besides matching grants, targeting farmers' households with investments to produce/use improved seeds and adopt post-harvest technologies along with FNS practices, the project will also provide incentives for MSMEs to support linkages between improved production and post-harvest activities with processing and commercialization. All investments will include various types of technical assistance to fine-tune the beneficiaries' skills-mix that would support the sustained use and maintenance of technologies as well as the enhancement of social and commercial networks.

Capacity building activities (for the government, project staff and beneficiaries) will also make sure that women and youth are considered and fully integrated in the project interventions.

#### 2.7 Risk and risk management

#### 1) Describe the process used for the risk analysis, including who participated and their roles.

Risk identification and management meetings were held in May and June, to identify program risks and mitigation measures. All main counterparts (IDB, IFAD, MARNDR, FAO, private sector, development partners and beneficiaries) were consulted for the definition of the risk matrix, whose summary is presented below. In particular, the experience of PITAG's PEU was critical for the elaboration of the matrix. While the risks identified for the PITAG project remains valid, the below matrix highlights the ones identified during the preparation of the present proposal.

2) Describe in the table below major risks to the achievement of the specific objectives, and to each component (activity), and identify mitigation measures for each risk. These risks could include, among others, political, economic, institutional, environmental, social inclusion, gender, or market risks.

Component	Risks	Mitigation measures	Is the mitigation measure included in the project budget (Yes/No)?
Component 1	PITAG's research operators are unable to quickly select new varieties and produce pre-basic seeds.	It is also planned to multiply seeds of climate-resilient and / or micronutrient- rich varieties already selected before.	Yes
	Political instability and high level of insecurity	Participatory approach involving communities and local technical and administrative authorities. Respect of the security principles required by the United Nations.	No
	Private seed producers do not find a seed market and are discouraged.	Farmer Field Schools to demonstrate the benefits of using quality seeds to farmers are included in the project. In addition, PITAG plans to give subsidized vouchers to farmers for the purchase of new technologies, including quality seeds.	Yes: there is a FFS sub- component in the project.
	The National Seed Service does not have enough human resources to control the seed quality of all private producers.	Agronomists of the Departmental Directorate of Agriculture (DDA) will participate in inspections of seed production plots. The quality of most of the seeds will be analyzed in regional seed quality control laboratories.	Yes

Component	Risks	Mitigation measures	Is the mitigation measure included in the project budget (Yes/No)?
	Lack of infrastructures locally (energy, road, water) may impair the efficient use of the equipment and the access to market.	Existence of needed infrastructures and related constraints will be assessed over the review of proposals, ensuring this aspect won't put the sub-project at risk of failure.	No
	Making sure targeted farmers have the <b>capacities to produce surplus</b> beyond ensuring their food security.	Capacities will be evaluated over the selection process to ensure creation of adding value is feasible.	Yes
Component 2	<b>Need for extra funding</b> to finance for example the working capital needed to initiate sub-projects.	The need will be assessed early in the selecting process. Financing solution would be proposed through partnership with FI (example: <i>Bureau de Crédit Agricole</i> ) or other supporting projects, e.g. SYFAAH.	No
	Need for building to shelter equipment.	Building won't be financed by the project. For equipment like machines that needs to be sheltered, the project will target beneficiaries that have available building, cooperatives and associations in particular.	No
	<b>OPS weak capabilities</b> may impact the implementation of PITAG additional activities and reduce its chance of success.	PITAG extension will benefit from the PITAG experience which conducted in- depth assessment of OPS candidates and has started working with them.	No
	Possible difficulties in mobilizing FFS Facilitators	Good coordination and communication with PITAG and other ongoing projects. Strengthen the capacity of PITAG's Implementation Team	Yes
	Delays in availability of technological packages from PITAG	Use of existing and tested technological packages	Yes
	Political instability and high level of insecurity	Increase participation of local communities and authorities at Commune level	No
	Major natural hazards	Revision of the project work plan as necessary	No

#### 2.8 <u>Consultation with local stakeholders and development partners</u>

# 1) Describe the process and extent of consultation with stakeholders (e.g., central and local government, private sector, farmer groups, individuals, development partners), providing in Appendix 2 a full list of stakeholders consulted.

Despite the country's political instability and security concerns, extensive consultations were held during the past few months to support the preparation of the GAFSP proposal document. The main counterparts that participated in the consultations include the MARNDR, local agricultural authorities (DDAs, BACs), farmers and farmers' organizations (past or current participants of the PTTA/RESEPAG 2 and PITAG projects), development partners executing similar interventions in other areas (World Bank), local NGOs and the private sector (including inputs suppliers).

Extensive discussion was engaged with Government, especially with the Coordination Nationale de la Sécurité Alimentaire (CNSA), which helped defining the geographical coverage and the choice of focus crops to reach the most vulnerable and fragile zones and support the main crops in the country's food basket.

Focus groups with beneficiaries were conducted, particularly in the context of an evaluation of previous development projects, on how to orient future interventions. The consultation process was extensive and has benefited from continuous exchange of information and experiences among the different partners, leading to the improvement of the project design and to the inclusion of lessons learned from previous interventions. While conducting the focus groups, special attention was devoted to the gender aspect of the intervention. Studies will be conducted in order to further tailor the proposed technologies to female farmers and female household heads.

Over 200 persons participated in the consultations from four target Departments: North, North-East, South and Grande Anse. Insert percentages, and check the organisation that participated.

Finally, the preparation team consulted with NGOs and service providers working and/or and implementing similar projects in the country. A complete list of consulted entities and grassroots organisations is available in appendix 2, while the full consultation report is available in French.

#### 2) Describe how traditionally marginalized groups (e.g., women, landless, youth, pastoralists, pregnant and lactating women, ethnic or social minorities) were involved and any special measures that were put in place to engage their participation.

The consultation process paid special attention to women and youths. The timing and location of the consultations suited their family commitments, resulting in turnout. Almost 25% of consultation participants were women, and ca. 50% were young women. Youth are expected to be beneficiaries of the future project and were involved in the consultation process to give their views, solutions and explain the main bottlenecks and difficulties they face to enter the post-harvest sector for the target crops. Participants showed a high degree of knowledge identifying the areas where the project could focus its intervention unlocking the youth's potential in the area and promoting gender equality.

The consultation process ensured the participation and active intervention of women and youth during the discussion and their views were recorded in the detailed report.

#### 3) Describe ways in which the consultation added value or enhanced the project design.

The consultation process provided the preparation team with a clear view from the perspectives of the future beneficiaries and different actors that will be involved in the implementation of the future activities. Consultation with farmers allowed shaping the proposed post-harvest intervention in a tailored way that suits the real needs of the producers (e.g. small-scale stocking infrastructures at household level).

The consultation with CNSA helped to choose and validate the target groups, geographical areas and value chains to have the maximum impact in terms of food security and nutrition. Its management guidance provided insight and helped in shaping the crosscutting nutrition interventions foreseen by the future intervention in the various components.

The consultation process with the NSS helped in designing the seed multiplication interventions providing guidance on the real needs, best practices and how to contribute to the national seed national strategy through the foreseen interventions.

Overall MARNDR extensive discussions with all the concerned Departments helped in the overall preparation and in ensuring the project alignment with national agriculture and food security policies and contribution to the NAIP.

The consultations with other development partners and service providers guided: a) the choices of best practices and success stories to be scaled-up (processing units, nutrition intervention, seed multiplication) and; b) the implementation modalities to ensure a smooth and quick start of the activities on the ground.

#### 2.9 Detailed plan for preparation (in the event of a successful proposal)

#### **Assessment points:**

- Clarity and realism of proposed preparation plan
- 1) Planned responsible person: Name and current title of full-time national government administration team member who is expected to be the key liaison person with the Supervising Entity (ies) and lead the preparation of the project with the Supervising Entity(ies) if the proposal is selected.

Name	Current Title	Role
Pascal Pecos Lundy	Ing-Agro, Coordinator of STDG	Lead Government preparation team
Jean Robert Chery	General Coordinator of the PITAG at the MARNDR	Lead Government preparation team
Garry Augustin	Director of Innovation at the MARNDR	Lead Government preparation team
Hermann Agustin	Consultant PITAG	Lead Government preparation team
Nolex Fontil	Coordonnateur de l'Unite d'Etudes et de Programmation (MARNDR)	Lead Government preparation team
Dakson Sanon	Director of Vegetable production	Lead Government preparation team

- 2) Expected project preparation time (including time needed for reviews and any subsequent clearances needed from bodies such as government committees and parliament).
  - Presentation of the Proposal: September 2019;
  - Decision from GAFSP: November/December 2019;
  - Negotiations between IDB and GOH: January 2020;
  - Approval by the Haitian Minister of Agriculture: March 2020;
  - IDB Board Approval: April 2020;
  - Execution Start Date: May 2020.
- 3) Sources and amounts of funding for project preparation (e.g., for feasibility studies, environmental safeguard analysis, private sector engagement assessment, operational manuals). Add lines as needed. If the source of funding is still unknown, write "to be decided (TBD)."

No additional funding is needed. The funding for project preparation will be provided by the IDB.

### Part 3: Supporting Documentation and Appendices

Appendix 1: Project Logframe/Results Framework at proposal stage. This should include indicators for the project as a whole as well as for all components. End of project and yearly target values are optional. Please see <u>GAFSP M&E Plan</u> for requirements to be followed for any approved proposals.

Results Hierarchy	Indicators Name	Baseline	Additional Financing Target	Source	Frequency	Responsibility	Additional notes, Assumptions (A) and Risks (R)
	Persons receiving services and products supported by the project	0	17,250				Disaggregated data will be presented in this indicator - by gender and age groups (youth/adults).
	Estimated corresponding total number of households' members	0	79,350				(A) Household size in rural Haiti is estimated at 4.6 persons per household
Outreach	Percentage of female beneficiaries	0	40				Estimate based on PITAG
	Percentage of youth	0	40				To be reviewed.
	Percentage of beneficiaries supported to increase their capacity to cope with climate change	0	75				Estimate based on PITAG
	Percentage of male-headed households who are severely food insecure using the Food Security Scale (ELCSA)	71%	35%	Agricultural Household Surveys for baseline and follow-up	Impact survey	MARNDR/ IDB/IFAD	The baseline number will be updated with surveys to be collected prior to program implementation. The baseline values correspond to baseline values of PTTA and PITAG
	Percentage of female-headed households who are severely food insecure using the Food Security Scale (ELCSA)	86%	50%	Agricultural Household Surveys for baseline and follow-up	lmpact survey	MARNDR/ IDB/IFAD	The baseline number will be updated with surveys to be collected prior to program implementation. The baseline values correspond to baseline values of PTTA and PITAG
Goal: To increase agricultural income and food security for smallholder farmers in selected areas of Haiti	Annual agricultural household income	USD 170	USD 268	Agricultural Household Surveys for baseline and follow-up	Impact survey	MARNDR/ IDB/IFAD	The baseline number will be updated with surveys to be collected prior to program implementation. The baseline values correspond to baseline values of PTTA and PITAG. R) Low adoption rates; poor climatic conditions; insufficient market demand or lower prices
	Annual agricultural female-headed household income	USD 170	USD 268	Agricultural Household Surveys for baseline and follow-up	Impact survey	MARNDR/ IDB/IFAD	The baseline number will be updated with surveys to be collected prior to program implementation. The baseline values correspond to baseline values of PTTA and PITAG. R) Low adoption rates; poor climatic conditions; insufficient market demand or lower prices
	Annual agricultural male-headed household income	USD 197	USD 311	Agricultural Household Surveys for baseline and follow-up	Impact survey	MARNDR/ IDB/IFAD	The baseline number will be updated with surveys to be collected prior to program implementation. The baseline values correspond to baseline values of PTTA and PITAG. R) Low adoption rates; poor climatic conditions; insufficient market demand or lower prices

Results Hierarchy	Indicators Name	Baseline	Additional Financing Target	Source	Frequency	Responsibility	Additional notes, Assumptions (A) and Risks (R)
Development Objective: Increase agricultural productivity and improve the use of natural capital through the adoption of sustainable production and post-harvest technologies as well as greater access to complementary value chain services	Annual value of household agricultural production	USD 347	USD 478	Agricultural Household Surveys for baseline and follow-up	lmpact survey	MARNDR/ IDB/IFAD	This corresponds to an increase of 38% in the value of production. This target corresponds to the results obtained in the impact evaluation of PTTA and PITAG. Targets apply to program beneficiaries. (R) Low adoption rates; poor climatic conditions, insufficient market demand or lower prices. (A) Technological packages effectively respond to needs expressed in each region
	Annual agricultural profits		USD 160	PEU/ MARNDR	lmpact survey	MARNDR/ IDB/IFAD	The baseline number will be updated through surveys to be conducted prior to program implementation. The baseline and target values are obtained from the impact evaluation of the PTTA. The profit increase corresponds to 63%. Profits correspond to the agricultural revenues minus the cost of variable inputs and transportation for crop activities.
	Annual agricultural profits of female- headed households	USD 30	USD 49	PEU/ MARNDR	lmpact survey	MARNDR/ IDB/IFAD	The baseline number will be updated through surveys to be conducted prior to program implementation. The baseline and target values are obtained from the impact evaluation of the PTTA and PITAG.
	Annual agricultural profits of male- headed households	USD 116	USD 189	PEU/ MARNDR	Impact survey	MARNDR/ IDB/IFAD	The baseline number will be updated through surveys to be conducted prior to program implementation. The baseline and target values are obtained from the impact evaluation of the PTTA and PITAG.
	Number of beneficiaries of improved management and sustainable use of natural capital	0	3750	PEU/ MARNDR	Impact survey	MARNDR/ IDB/IFAD	This number corresponds to beneficiaries from agroforestry technologies as well as other climate-smart agriculture technologies for production and post-harvest activities.
	Percentage of beneficiaries who adopt technologies contributing to the sustainable use of natural capital	0	75	PEU/ MARNDR	Impact survey	MARNDR/ IDB/IFAD	(A) 75% of adoption in line with PITAG
	Hectares of land applying technologies that contribute to the sustainable use of natural capital	0	1500	PEU/ MARNDR	Impact survey	MARNDR/ IDB/IFAD	Estimate based on PITAG

Results Hierarchy	Indicators Name	Baseline	Additional Financing Target	Source	Frequency	Responsibility	Additional notes, Assumptions (A) and Risks (R)
	Research and development expenditure as percentage of Agricultural GDP	0.12%	0.30%	MARNDR's executed budget	Annual	MARNDR	(A) Baseline is taken from IDB Agrimonitor estimations for the average of the period 2008-2012. End Target corresponds to PITAG full project intervention.
Outcome 1: Improve agricultural innovation services	Number of new technologies developed or adapted by new applied research projects	0	2	MARNDR	Annual	MARNDR	These new technologies correspond solely to those developed by the MARNDR. (R) Limited number of actors that can execute quality research. (A) Program will support and strengthen the capacity of MARNDR
	Number of farmers who adopted the technologies developed with new applied research projects	0	2100	MARNDR	Annual	MARNDR	These new technologies correspond solely to those developed by the MARNDR. ( Program will support and strengthen the capacity of MARNDR
Outputs	Applied agricultural research projects implemented for the development/ adaptation or improvement of new agricultural technologies	0	2	PITAG progress reports	Annual	MARNDR	PITAG lines of research include: rice/cereals and tubers. (R) Limited number of actors that can execute quality research. (A) Lines of research correspond to crops with high demand and well adapted to local conditions
	Applied agricultural research projects implemented for the development/ adaptation or improvement of agricultural technologies that specifically target female farmers	0	1	PITAG progress reports	Annual	MARNDR	Research on sweet potato seeds production, post-harvest handling and processing to enrich food produce. (R) Limited number of actors that can execute quality research. (A) Lines of research correspond to crops with high demand among women farmers
	Applied agricultural research projects implemented for the development /adaptation or improvement of agricultural technologies that specifically target climate change adaptation or mitigation	0	1	PITAG progress reports	Annual	MARNDR	Drought tolerant rice/maize seeds production and post-harvest handling. (R) Limited number of actors that can execute quality research. (A) Lines of research correspond to crops with high demand among women farmers

Results Hierarchy	Indicators Name	Baseline	Additional Financing Target	Source	Frequency	Responsibility	Additional notes, Assumptions (A) and Risks (R)
Outcome 2: Increase adoption of agricultural technologies	Percentage of beneficiary producers (farmers' households and MSMEs) who adopted agricultural technologies.	0	75	Agricultural Household Surveys for baseline and follow-up	Annual	MARNDR	(A) The target represents the percentage of adopters compared with similar projects in the region
	Percentage of female beneficiary producers (farmers' households and MSMEs) who adopted agricultural technologies.	0	75	Agricultural Household Surveys for baseline and follow-up	Annual	MARNDR	(R) Women are not adequately reached or incentivized by the program
	Percentage of women benefiting from economic empowerment initiatives.	0	40	PITAG report	Annual	PEU / MARNDR	Based on PITAG
	Percentage of households with limited/weak diversity, according to the Minimum Dietary Diversity Score for women for enhanced nutrition.	20	15	Agricultural Household Surveys and PITAG progress reports	Impact Survey	PEU / MARNDR	To be reviewed.
Outputs	Number of beneficiaries (farmers' households and MSMEs) who received technological packages.	0	17,250	PITAG progress reports	Annual	PEU/MARNDR	(R) insufficient quality and quantity of technology providers
	Number of beneficiary (farmers' households and MSMEs) who received technological packages for climate change adaptation and mitigation.	0	15,750	PITAG progress reports	Annual	PEU/MARNDR	This number corresponds to beneficiaries receiving agroforestry and other CSA technologies.
	Number of beneficiary (farmers' households and MSMEs) who received technical assistance.	0	17,250	PITAG progress reports	Annual	PEU/MARNDR	(R) insufficient quality and quantity of service providers
	Number of beneficiary farmers' households who participate in farmer field schools	0	3750	PITAG progress reports	Annual	PEU/MARNDR	(R) Inadequate quality of services provided by FFS. TA provided to design, implement and follow-up FFS
	Households receiving improved nutrition services and products	0	15000	PITAG progress reports	Annual	PEU/MARNDR	To be reviewed.

Appendix 2: Full list of stakeholders engaged in consultation process during proposal preparation.

Stakeholders	Men	Women	Total
Staff PITAG (Department)	8	1	9
DDA – Departmental Agricultural Directorate	6	0	6
BAC – Communal Agricultural Office	18	1	19
OPS – Service Provider	6	0	6
Suppliers	23	3	26
Young Farmers	56	7	63
Representatives of organizations involved in the processing of agricultural products	11	7	18
Rice Farmers	3	0	3
Representatives of Youth Associations	14	8	22
Representatives of Women's Organizations	0	20	20
Representatives of NGOs	5	0	5
Representative of the Minister for Women's Affairs and Women's Rights	0	4	4
Representative of the Minister of Planning and External	2	0	2
Community Leaders	17	4	21
Representatives of the Universities	9	2	11
Total	178	57	235
%		24.3%	