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**Componente 4.**

**Número de Evaluaciones de Mecanismos y Redes de Transferencia de Tecnologías de  
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**Actividad 4.3**

**Evaluación técnica de tecnologías ambientalmente racionales.**

**Technical Assistance for the Development of the Agricultural and Agroforestry  
Technological Innovation Program (PITAG) in Haiti**

Diciembre de 2018

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Con el apoyo de las siguientes instituciones

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Elaborado  
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## GLOSSARY

|                   |   |
|-------------------|---|
| <b>CEI:</b>       | Call for Expression of Interest   |
| <b>CM:</b>        | Communication Manager   |
| <b>DDA:</b>       | Departmental Directions of Agriculture  |
| <b>EU:</b>        | Execution Unit  |
| <b>FONRED:</b>    | Fonds National de Recherche pour un Développement Durable (National Research Fund for Sustainable Development)  |
| <b>IDB:</b>       | Inter-American Development Bank   |
| <b>MARNDR-PO:</b> | MARNDR Procurement Office   |
| <b>MARNDR:</b>    | <i>Ministère de l'Agriculture, des Ressources Naturelles et du Développement Rural</i> (Ministry of Agriculture, Natural Resources and Rural Development) |
| <b>MARNDR-DI:</b> | MARNDR – Direction of Innovation  |
| <b>PITAG:</b>     | Programme d'Innovation Technologique en Agriculture et Agroforesterie (Technological Innovation Program in Agriculture and Agroforestry)                  |
| <b>RFP:</b>       | Request for Proposals   |
| <b>SC:</b>        | Scientific Committee  |
| <b>SP:</b>        | Subprogram  |
| <b>TD:</b>        | Technical Directions  |

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## EXECUTIVE SUMMARY

The present consultancy took place in the frame of the development of the Agricultural and Agroforestry Technological Innovation Program (Programme d'Innovation Technologique pour l'Agriculture et l'Agroforesterie, PITAG), supported by the Government of Haiti and the Inter-American Development Bank (IDB). The objective of the consultancy was to provide technical support to the Ministry of Agriculture, Natural Resources and Rural Development (Ministère de l'Agriculture, des Ressources Naturelles et du Développement Rural, MARNDR) of Haiti for the design and implementation of the program.

For this purpose, an extensive analysis of documents dealing with the problems and opportunities of agriculture in Haiti was done. Together with discussions with key actors of the research and development sector, it permitted to identify the main constraints affecting the production in the major cropping systems of Haiti.

Based on this information, the following recommendations for the structure of the program were provided and approved by the MARNDR: i) structuring of six subprograms corresponding to the main cropping systems (coffee based agroforestry, cocoa based agroforestry, market gardening, legumes-cereals systems, root and tuber crops and rice systems), ii) identification of target regions for each subprogram, and iii) creation, within the MARNDR, of an Execution Unit in charge of evaluating the progress of the subprograms composed by a technical advisor, a monitoring and support officer, three assistants, and a field technician for each of the departments involved in the program (all to be recruited).

It was agreed that each subprogram will be developed by a consortium constituted by at least one Haitian research for development entity and a foreign institution with strong expertise in the concerned field. It was also decided to launch, in addition to the subprograms, several “complementary projects” intending to address the most urgent problems affecting the Haitian agriculture. These projects will also have an important role in ensuring coordination between the subprograms.

We then prepared the documents required for the implementation of the subprograms, specifically: i) the call for expression of interest (to identify eligible consortia), ii) the request for proposals (to be sent to the eligible consortia and including the requirements to be met by research teams and projects and presenting the criteria and matrix to evaluate, rank and select the proposals), iii) the terms of reference of the consortia and iv) the terms of reference to select the members of the Execution Unit.

A communication strategy was also developed for the PITAG, that includes recommendations on the types of audience, media, resources and partnerships that could be part of the communication actions under the program. This communication strategy aims to ensure exchange of information and coordination between subprograms and inform the Haitian society about the problems and opportunities faced by farmers and the present efforts of the PITAG to address them. It also included the rules to be followed by the subprograms to acknowledge publically the support of the MARNDR and the IDB in the implementation of their research.

Training material focusing on the follow-up of the subprograms was prepared and a virtual training session was provided to MARNDR staff. The training material included methods and tools (socio-economic and agronomic survey and diagnosis, monitoring-evaluation, management and dissemination of research and communication products) that would help the MARNDR staff (particularly the newly recruited one) to follow and evaluate the progress of the subprograms.

Several additional activities not included in the contract but deemed essential to ensure the success of the implementation of the program were also carried out. An Information and Exchanges Workshop was organized with the participation of actors potentially interested in the constitution of

consortia and the subsequent development and submission of proposals. During this workshop we presented the PITAG, the process of selection of the consortia and proposals (with emphasis on the rules to be followed when preparing proposals) and the PITAG's communication strategy. Secondly, eight submitted proposals (corresponding to five subprograms) were evaluated based on the requirements previously defined, ranked and selected, and our comments and recommendations were sent to the MARNDR. Finally, key questions to be addressed by complementary projects were identified, namely: development of small mechanization initiatives, establishment of an integrated identification and management system for diseases and predators, development of simple and inexpensive methods of conservation and storage of agricultural products, development of sustainable methods to improve soil fertility under low input conditions.

In conclusion the consultancy, which achieved all its goals, contributed to the successful implementation of the PITAG and permitted a quick start of its activities. The subprograms already selected will begin, as expected, to develop their research activities at the beginning of 2019, with the support of the Execution Unit of the MARNDR.



# 1 CONTEXT OF THE CONSULTANCY

The Government of Haiti and the Inter-American Development Bank (IDB) have prepared an investment program to increase the agricultural productivity of small farmers in Haiti, called “Agricultural and Agroforestry Technological Innovation Program” (in French “Programme d'Innovation Technologique pour l'Agriculture et l'Agroforesterie”, PITAG). The IDB, in its capacity as legal representative and administrator of the Regional Fund for Agricultural Technology (FONTAGRO), has experience financing agricultural research initiatives, including those under the project on “Climate Technology Transfer Mechanisms and Networks in Latin America and the Caribbean” (RG-T2384), financed by the Global Environment Facility (GEF).

The PITAG, to be implemented from 2018 on, is organized around two main components:

- i. applied research and training on sustainable agricultural technologies (component 1)
- ii. promotion of sustainable agricultural technologies and practices (component 2)

The first component of the project will finance research activities for developing sustainable agricultural technologies suitable for adoption by small farmers in Haiti. The activities of this component should i) provide the building blocks for a strategic agriculture innovation program led by the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR) and ii) strengthen its innovation team.

The second component will support the adoption of innovative, profitable and sustainable agricultural technologies that will improve the long-term profitability of farms and generate positive environmental externalities.

The target regions of PITAG includes the North, Northeast, Artibonite, South and Grand’Anse departments (Fig. 1).



**Figure 1.** Target departments of the PITAG program.

## 2 OBJECTIVES AND EXPECTED DELIVERABLES OF THE CONSULTANCY

As part of the support to be provided to the MARNDR in setting-up the PITAG, the project on climate technology transfer (RG-T2384) funded the international consultancy, whose key objective was to provide technical back up to the MARNDR for the design and implementation of the agriculture innovation program under PITAG.

Specific objectives were:

- i. compiling, from MARNDR and others, information on lessons learned from previous experiences in Research for Development projects in Haiti and validate those findings with key local informants;
- ii. providing recommendations for the design of the PITAG (e.g. incorporating climate change considerations) and draft procedures and documents relevant to the implementation of the program.

The expected deliverables were:

- i. documents to launch specific calls for proposals for research projects on agricultural technologies (with detailed terms of reference).
- ii. procedures for the evaluation and selection of research proposals received in the response to calls (definition of requirements to be met by research teams; criteria and matrix to evaluate, rank and select the submitted proposals).

- iii. a communication strategy for the PITAG including recommendations on the types of audience, media, resources and partnerships.
- iv. training sessions for MARNDR staff and relevant stakeholders, to present and discuss the procedures and documents prepared for the call for proposals.

### **3 DESCRIPTION OF ACTIVITIES**

#### **3.1 FIRST PHASE: GATHERING AND VALIDATING INFORMATION ON LESSONS LEARNED FROM PREVIOUS EXPERIENCES IN RESEARCH FOR DEVELOPMENT PROJECTS IN HAITI**

According to the agenda of activities prepared in November 2017 and endorsed by the MARNDR and the IDB, the first phase of the consultancy plan (from end of September to December 2017) consisted in i) compiling documents and gathering information dealing with research for agricultural development in Haiti and innovations in technologies for sustainable agriculture, and ii) discussing with research and development actors in Haiti.

The objective of these activities was to identify the main constraints limiting yield in the main cropping systems in Haiti, identify key issues to be addressed by the PITAG and take stock of the solutions proposed or brought by previous research projects and programs for development.

##### **3.1.1 GATHERING INFORMATION**

The gathering of information occurred during October and November 2017, before the first mission to Haiti. Documents provided by the MARNDR, and others accessed through a broad bibliographic research, were analysed with the objective of identifying the main constraints affecting the production of cocoa, coffee, legumes, maize and sorghum, vegetables, rice, and roots and tuber crops and solutions proposed or provided by previous development research projects. A list of the main documents analysed is given in Appendix 1.

##### **3.1.2 VALIDATING INFORMATION**

During the first mission, held from November 23rd to December 6th I had meetings with a large range of stakeholders: officials of the Ministry, researchers, development agents, and farmers.

An exploration trip in the South and Grand'Anse, two of the five target departments of the PITAG (Fig. 2), was undertaken from November 29 to December 2, with Garry Augustin, Head of the Direction of Innovation of the MARNDR (MARNDR-DI). We had the opportunity during this trip to meet farmers and research and development actors in both departments (Table 1.).



**Figure 2.** Map of Haiti with the itinerary of the trip.

**Table 1.** List of research and development actors of the South and Grand'Anse departments met during the visits

| Research and Development actor           | Institution  |
|--|--|
| Jean-Raymond Saintus                     | MARNDR farm of Levy  |
| Vladimir Potgony Jean                    | DDA Grande Anse  |
| Patricia Dufane and Ludger Jean Simon    | University of the Caribbean, Les Cayes                       |
| James Oriza and Junior Aristil           | Université Notre-Dame (UNDH), Les Cayes                      |
| Maxime Roumer and Jude Saint Gilles      | Université Nouvelle Grande Anse (UNOGA), Jérémie             |
| Guichard Zamor and Francillon Louissaint | Université de Jérémie  |
| Fresnel Germain                          | GRAMIR (Groupe de recherche et d'appui au milieu rural)      |
| Gaël Pressoir                            | Quisqueya University, Port-au-Prince                         |
| Pierre Jeune                             | Haiti-Taiwan Rice Project                                    |
| Eliassaint Magloire and Eberle Nazaire   | ORE (Organization for the rehabilitation of the environment) |

I confronted and adjusted with these local informants the assumptions resulting from the previous analysis of documents concerning production systems, and the solutions proposed by previous development research projects. This allowed to fine-tune the main constraints affecting cocoa, coffee, legumes, maize and sorghum, rice, and roots and tuber crops-based systems, and to define key issues to be addressed by the PITAG for these different crops (Table 2).

**Table 2.** Main constraints affecting priority crops in Haiti, key issues to be addressed by the PITAG and possible research questions.

| Main cropping systems                                    | Main constraints (and possible research questions)  | Key issues to be addressed by the PITAG and possible research questions  |
|--|---|--|
| <b>Coffee based agroforestry</b>                         | <ul style="list-style-type: none"> <li>• Old plantations</li> <li>• Maintenance work limited, use of fertilizers rare</li> <li>• Practices of gathering and drying beans leading to a poor quality of the final product</li> <li>• Varietal diversity reduced</li> <li>• Many trees affected by root rot (favored by excessive shading of plantations), bark beetle (<i>Hypothenemus hampei</i>) and orange rust (<i>Hemileia vastatrix</i>)</li> <li>• Important phenomenon of alternation of production (causes still unclear)</li> <li>• Low revenues generated by coffee production and need, for improving coffee production and quality, to derive income from the other components of the system</li> <li>• Absence of technically and economically sustainable production models and adequate technical references</li> </ul> | <ul style="list-style-type: none"> <li>• Increasing the productivity of the system through improvement of associations</li> <li>• Rehabilitation of coffee plantations</li> <li>• Effective fight against coffee pests</li> <li>• Innovative modes of valorization of the other elements of the system: enhancement of fruits (mango, avocado, bitter orange, sweet oranges, bananas, breadfruit) and their products</li> <li>• Targetting producers likely to enter a sustainable process of recovery of the coffee sector</li> <li>• Focus on the departments of Grand' Anse and North</li> </ul>  |
| <b>Cocoa based agroforestry</b>                          | <ul style="list-style-type: none"> <li>• Gradual loss of interest by producers who substitute cocoa, dependent on export prices, by other crops that provide better food security</li> <li>• Pre- and post-harvest losses significant (around one-third)</li> <li>• Other components of the system (fruits, bananas and yams) under-valued</li> <li>• Fruit trees affected by various diseases</li> <li>• Bananas attacked by weevils and black sigatoka</li> </ul>   | <ul style="list-style-type: none"> <li>• Innovative solutions to improve the overall functioning of the system</li> <li>• Replacement of cocoa and breadfruit trees destroyed by the Hurricane Matthew with varieties resistant to mealybugs and lethal yellowing, and early varieties of Jamaica, respectively</li> <li>• Technical packages to limit the effects of black sigatoka in bananas (drainage, spacing)</li> <li>• Add value to cocoa production (on-site processing, fair trade, organic products) and fruit production (production and marketing of pulp for the preparation of drinks, jams, fruit pastes, etc.).</li> <li>• Focus on the departments of Grand' Anse and North</li> </ul>   |
| <b>Vegetables</b>  | <ul style="list-style-type: none"> <li>• Little diversity and varietal rotation</li> <li>• Seedling preparation usually done in family nurseries at the farm level</li> <li>• Population densities often too low</li> <li>• Techniques to effectively control insects and diseases not mastered</li> <li>• Interesting export opportunities for some products (eg, green onions, melons, cantaloupe, Chinese vegetables, dried vegetables, dough vegetables, vinegar flavored, okra and hot sauces) not exploited</li> </ul>  | <ul style="list-style-type: none"> <li>• Development and dissemination of technical itineraries to increase production per unit area (optimal combinations, strip cultures)</li> <li>• Introduction of new varieties resistant to diseases and insects and of increased commercial value (eg, introduction of off-season varieties)</li> <li>• Opportunities for setting up crops in controlled environments (greenhouses, hydroponics, drip)</li> <li>• Innovative warning and information and training system</li> <li>• Training courses to farmers involved in seedling production</li> <li>• Focus on at least one lowland and one mountain region</li> </ul>   |
| <b>Legumes-cereals systems (rotation or association)</b> | <ul style="list-style-type: none"> <li>• Corn (the most widely grown cereal crop) confronted with drought problems</li> <li>• Sorghum (the second most important cereal) affected by aphids, stem borers and midge.</li> <li>• Bean yield limited by drought, strong winds, heavy rains at the end of the cycle (poor flowering, sprouting), and diseases such as mosaic</li> <li>• Peanut mainly consumed in the form of peanut butter (manba), whose aflatoxin content is much higher than international standards</li> <li>• Rapid degradation of soil fertility (long-fallow cropping systems mostly established on slash-and-burn systems and on the slopes, short fallow systems too intensively exploited)</li> <li>• Secondary legumes not valorized (eg, pigeon pea)</li> </ul>  | <ul style="list-style-type: none"> <li>• Introduction, evaluation and dissemination of open-tolerant (OPV) maize varieties that are drought tolerant or low-nitrogen, disease-resistant, and with high nutritional value (QPM or bio-fortified)</li> <li>• Introduction, evaluation and dissemination of aphids resistant sorghum varieties</li> <li>• Introduction of drought tolerant and mosaic resistant bean varieties</li> <li>• Reduction of the aflatoxin level of groundnuts and its derived products through the dissemination of technical packages and storage methods to reduce <i>Aspergillus</i> contamination</li> <li>• Valorization of pigeon peas (canning, research of valorization of its medicinal virtues)</li> <li>• Improvement of fertility and erosion control (cover crops, reduced tillage, associated crops, organic fertilization, contour cultivation, ridge cultivation) and their combinations</li> <li>• Focus on Artibonite and South departments</li> </ul> |
| <b>Sweet potato, cassava, yam and taro</b>               | <ul style="list-style-type: none"> <li>• Sweetpotato development largely motivated by the loss of soil fertility</li> <li>• Cassava mainly cultivated on marginal soils, and threatened in some areas by the multiplication of the crazy ant</li> <li>• Yams development hampered by limited availability of quality seed and disease and pest problems in vegetation and storage</li> <li>• Taros not really addressed by the research</li> </ul>  | <ul style="list-style-type: none"> <li>• Improvement of seed quality and reduction of degeneration (varieties more resistant to diseases that cause degeneration, technical routes limiting degeneration, and techniques for obtain healthier seeds on the farm as positive selection)</li> <li>• Introduction and participatory selection of productive and high nutritional quality sweet potato and cassava varieties (sweet potatoes rich in vit A, cassava rich in beta-carotene and less bitter)</li> <li>• Technical packages to reduce yield losses due to yam diseases and pests</li> <li>• Development of innovative warning and information systems, using various means of communication</li> <li>• Focus on Artibonite (sweet potato), Northeast (cassava), and South (taro)</li> </ul>   |

|             |   |  |
|-------------|---|--|
| <b>Rice</b> | <ul style="list-style-type: none"> <li>• High yield variation (interannual, between plots and between regions)</li> <li>• Huge differences between yields in research stations and average yields in farmers fields</li> <li>• Stagnation and sometimes decline in yield in places where yields have been high for many years</li> <li>• Magnitude and determinants of these variations in yield still unclear, although the development of some diseases and parasites has been noted (black straw disease, bugs)</li> </ul> | <ul style="list-style-type: none"> <li>• Yield variation analysis through agronomic diagnostic methods and analysis of the social, economic, biophysical and technical context</li> <li>• Cultural practices favoring the sustainability of the system and the quality of harvested products</li> <li>• Participatory selection of varieties with high yields, resistant to lodging, adapted to the harvesting system used by the farmers and corresponding to the habits of consumers</li> <li>• Innovative warning and information system, using various means of communication</li> </ul> |
|-------------|---|--|

We also analyzed with research and development agents the main problems and constraints affecting research, development and extension efficiency. We had, during the visits, the opportunity to evaluate the capacity and expertise of the different actors of the research for development chain, particularly of the Universities. The main problem we identified was a huge diversity among universities concerning expertise, capacities, facilities, critical mass of researchers and contact with development actors. The field visits and the meetings contributed to define eligibility and selection criteria for drafting the research and development sub-programs.

### **3.2 PROVIDING RECOMMENDATIONS FOR THE DESIGN OF THE PITAG AND DRAFT PROCEDURES AND DOCUMENTS RELEVANT TO ITS IMPLEMENTATION**

During the second phase, I provided recommendations for the structure of the program and, in consultation with the MARNDR, drafted the necessary documents to launch the call for proposals for research projects on agricultural technologies by national and/or international organizations.

#### **3.2.1 RECOMMENDATIONS FOR THE DESIGN OF THE PITAG**

At the beginning of the first mission, and based on the information gathered and validated and, on the lessons, learned from previous experiences in Research for Development projects in Haiti (see 3.1.) we defined six subprograms within the PITAG, corresponding to the main cropping systems found in Haiti:

- i. coffee-based agroforestry
- ii. cocoa based agroforestry
- iii. market gardening (plain and mountain)
- iv. legumes-cereals systems
- v. sweet potato, cassava, yam and taro
- vi. rice systems

Target regions were also defined for each sub-program, considering the relative importance of the cropping systems in the different regions and department (Table 3).

**Table 3. Target regions for each sub-program**

| <b>Sub-program</b>                       | <b>Target regions</b>   |
|--|---|
| 1. Coffee based agroforestry             | Grand'Anse, North   |
| 2. Cocoa based agroforestry              | Grand'Anse, North   |
| 3. Market gardening (plain and mountain) | A plain and a mountain region (optional department in the area of intervention)                       |
| 4. Legumes-cereals systems               | Artibonite, South   |
| 5. Sweet potato, cassava, yam and taro   | Artibonite (sweet potato), North (cassava, yam), North-East (cassava), Grand'Anse (yam), South (taro) |
| 6. Rice systems                          | Artibonite, South   |

We agreed with the MARNDR that, for the implementation of Component 1, the DI should have at its disposal an Execution Unit (EU) including:

- i. a technical advisor
- ii. a monitoring and support officer for activities carried out under the subprograms
- iii. three assistants who will support the efforts of the technical adviser and the monitoring and support officer
- iv. a field technician for each of the departments involved in the program (North, Northeast, Artibonite, South and Grand'Anse), whose function will be to monitor the execution of the subprograms research projects, the dissemination of their products and their transfer to farmers.

The EU will be under the responsibility of the DI and its Director.

### **3.2.2 DRAFTING PROCEDURES AND DOCUMENTS**

During my first mission in Haiti, I had discussions with the MARNDR, about the procedures of evaluation and selection of the research proposals received. We agreed on the requirements to be met by research teams and projects, and the criteria and matrix to evaluate, rank and select the proposals submitted in response to the calls.

I drafted, in collaboration with the MARNDR-DI, all the documents necessary to launch the calls for proposals. These documents included detailed terms of reference, scope and duration of the research projects, eligibility criteria for research organizations, definition of the expected results and indicators. They also described the selection process, thus ensuring full transparency.

More specifically, I developed three types of documents during my first mission:

#### **3.2.2.1 Call for expressions of interest**

The purpose of the call for expressions of interest (CEI) – in French *Appel à manifestation d'intérêt ou AMI* - is to make PITAG and its subprograms known to the research entities interested in participating in these subprograms, to ask them to form a consortium (that will later submit proposals) and inform them of the conditions of eligibility. The CEI indicates that a consortium should include at least three parties: one national university, one national development actor working in the target regions and one foreign organization (International Centre, National Program or University), and described the conditions of eligibility and the services and products expected.

This document was sent on December 6 (at the end of my first mission) to the MARNDR Procurement Office (MARNDR – PO) which ensured its diffusion. After analysis of the expressions of interest, the list of the eligible consortium was elaborated (March 2018). Three consortia were eligible for SP1, three for SP2, one for SP3, two for SP4, two for SP5 and two for SP6. Given that the conditions of eligibility were not fulfilled in the case of SP3, a new call was agreed.

#### **3.2.2.2 Request for proposals**

The eligible consortia were invited to submit proposals. The request for proposals (RFP) – in French *Appel a propositions* -, described -for each subprogram- the importance of the crop system, the main problems and limitations, the previous actions addressing those problems and and the context in which the proposed activities should be developed. The key elements include:

- i. a brief diagnosis of the current situation of the sub-program highlighting the main problems existing within the target cropping system
- ii. innovative approaches and methods proposed to achieve the objectives
- iii. a description of the training activities
- iv. an explanation of how funds allocated will be used to strengthen the capacity of the teams participating in the consortium and the links of collaboration between them
- v. a list of expected key products

- vi. a description of how the dissemination of these products will be ensured
- vii. a presentation of a communication strategy and plan

We established a list of the main sections that should be included in the proposal, indicated the eligibility criteria for the teams and the format to be followed.

We agreed with the MARNDR-PO on a list of selection criteria and weighting coefficients to be affected to each one, considering its relative importance and aiming for project quality. These criteria included the expertise and experience of the consortium and its capacity to conduct the research, considering gender issues and climate change considerations. I brought some modifications to the evaluation factors initially proposed by the MARNDR-PO, in order to provide a better balance (50:50) between the expertise and experience of the consortium (and its teams) and the quality of the proposal.

This document was sent on December 6 (at the end of my first mission) to the MARNDR Procurement Office (MARNDR – PO) which ensured its diffusion.

### **3.2.2.3 Terms of reference of operators**

This document, sent together with the RPF to the eligible consortia, specified the expected profile, expertise and experience of the operator as well as the duration and, location of its mandate. It also highlighted other required information: detailed work plan and timeline, detailed plan of training activities and reporting agenda (start-up report, progress reports and final report).

This document was sent on December 6 (at the end of my first mission) to the MARNDR Procurement Office (MARNDR – PO) which ensured its diffusion.

### **3.2.2.4 Terms of reference for support staff**

I also proposed the terms of reference for members of the Execution Unit (EU):

- i. technical advisor
- ii. monitoring and support officer for activities carried out under the subprograms
- iii. three assistants to support the technical adviser and monitoring and support officer
- iv. field technicians to monitor the execution of research projects, the dissemination of their products and its transfer to farmers.

This document was sent on December 6 (at the end of my first mission) to the MARNDR Procurement Office (MARNDR – PO) which ensured its diffusion.

### **3.2.2.5 Communication strategy of the PITAG**

I developed a communication strategy of the PITAG including recommendations on audience, media, resources and partnerships that could be part of the communication actions under the program. It also aimed to ensure a close collaboration within the research for development community (particularly within the PITAG and the consortia) but also to inform the Haitian society about the problems faced by farmers, the efforts of the PITAG to address those problems. It also defined some rules for the research and development teams supported by the program to publically acknowledge the support of the MARNDR and the IDB in the implementation of their research experiments and their publications (see Appendix 2).

This document was sent in March 2018 (at the end of my second mission) to the MARNDR-DI.

## **3.3 TRAINING COURSES**

The main objective of the training sessions at the MARNDR was to present and discuss the procedures and documents prepared for the call for proposals and respond to questions related to the



implementation of these procedures. We also included in the training material methods and tools (socio-economic and agronomic survey and diagnosis, monitoring-evaluation, management and dissemination of research and communication products) that would help the MARNDR staff (particularly the newly recruited one) to follow and evaluate the progress of the subprograms and to interact with their operators (Table 4). Each session includes a general presentation and a group discussion around examples, a bibliography relating to the theme will also be distributed to the participants, allowing them to enhance their knowledge on the subject. As the staff was not yet fully recruited, a virtual training was organized on November 17, 2018.

**Table 4. Planning of the training sessions**

| Session | Contents  |
|---------|---|
| 1.      | General presentation of the PITAG: objectives, components 1 and 2, execution unit, sub-programs, call for projects and selection, monitoring and evaluation |
| 2.      | Socio-economic and agronomic diagnoses: principle, approaches and methods, bibliography   |
| 3.      | Innovation in research-development-training: importance, examples, bibliography   |
| 4.      | Monitoring and evaluation: indicators, results, and expected products Management and dissemination of research products                                     |
| 5.      | Communications  |

### 3.4 ADDITIONAL ACTIVITIES

I carried out additional activities, not included in the contract, but necessary to ensure the success of the implementation of the program, mainly: i) the organization of an Information and Exchanges Workshop with the participation of actors potentially interested in the constitution of consortia, ii) the evaluation of subprograms proposals and iii) the conception and design of four complementary projects (additional projects intending to address urgent problems affecting the Haitian agriculture).

#### 3.4.1 INFORMATION AND EXCHANGES WORKSHOP

On March 28<sup>th</sup>, 2018, I organized a meeting of potentially interested actors in the development and submission of a proposal. The objective was to improve the communication between actors (quite weak in some target regions) and contribute to the development of consortia based on complementary needs and capacities of the teams (see agenda in Table 5).

**Table 5. Agenda of the information and exchange workshop (IDB, Port-au-Prince, 28 March 2018)**

|  |               |
|--|---------------|
| <b>Brief presentation of the consortia (10 mn by consortium)</b>   | <b>9h-10h</b> |
| <b>General presentation of the PITAG program (context, general objective, specific objectives, submission and selection of proposals, budgets, cross-cutting and emergency projects)</b> | 10h-11h       |
| <b>Coffee break</b>  | 11h-11h30     |
| <b>Questions and answers</b>   | 11h30-12h30   |
| <b>Lunch</b>   | 12h30-13h15   |
| <b>Discussions</b>   | 13h15-15h     |
| <b>Coffee break</b>  | 15h-15h30     |
| <b>Presentation of the communication strategy and questions</b>  | 15h30-16h30   |

The participants (about fifteen) were invited to introduce themselves. A powerpoint presentation highlighted the context of the PITAG (including the sub-programs), the constraints affecting the main cropping systems, the priority research areas, and the selection process of the consortia and proposals (with emphasis on the rules to be followed when preparing proposals). The presentation was followed by a questions and answers session. The first part of the afternoon was devoted to a discussion on the problems of Haitian agriculture. The participants were invited to express their vision of sustainable development, and to give their opinion on key constraints and the type of research that would be

relevant to carry out in the context of "complementary projects". Issues such as pests and diseases control, the nutritional quality of products and their processing were mentioned several times. The day ended with a presentation of PITAG's communication strategy. The transparency of the process and the accuracy of the guidelines for editing the proposals were highly appreciated by the participants, as indicated by several feedback messages.

### **3.4.2 EVALUATION OF SUBPROGRAMS PROPOSALS**

I participated, from May until now, in the evaluation of eight proposals (three for SP1, one for SP2, two for SP4, one for Sp5 and one for SP6). In order to avoid delaying the selection process and further implementation of the subprograms, I assigned myself a one-week deadline for the selection of each proposal.

### **3.4.3 STARTING THE IMPLEMENTATION OF COMPLEMENTARY PROJECTS**

The PITAG will finance, in addition to the research-development-training sub-programs several "complementary projects", intended to answer questions asked by development actors (farmers, processors, etc.) and/or to address urgent problems (effects of natural disasters, emerging diseases and predators).

We discussed with the MARNDR-DI the process to define and select the research themes. It was decided that the selection of research topics would be based on:

- i. a bibliographic analysis (research bases, reports)
- ii. an analysis of the conclusions of the Information and Exchange Workshop
- iii. an analysis of the demand, from field visits conversations with Departmental Directorates of Agriculture (DDA) and Technical Directorates (DT) of the MARNDR
- iv. a gap analysis of the proposed sub program proposals

In this case, the selection process will not include a call for expression of interest (CEI), but will maintain an identical approach to the one used for the sub programs.

We finally agreed, after considering the conclusions of the Information and Exchange Workshop of March 28, 2018 and the analysis of the demand done by the MARNDR-DI, to start with a list of four projects (see Appendix 3). I have already collected information about potential international experts who could participate in these projects.

## CONCLUSION

All the objectives stipulated in the consultancy contract have been achieved. All activities, except the training course (postponed because of the delay in the recruitment of the EU staff by the MARNDR) were completed in due time (Table 6).

Moreover, some activities not planned by the contract were successfully carried out.

The implementation of PITAG is therefore on track and some subprograms will start to work very soon, in conformity with the agenda planned by the IDB.

**Table 6.** Summary of achievements and delivered products (in blue, those corresponding to task not initially planned in the contract).

| Achievements  | Corresponding product (date of delivering)   | Remarks  |
|---|--|--|
| Information about the constraints faced by the main crops gathered                              | Tentative list of potential constraints defined for each crop (November 2017)  | Analysis of documents provided by the MARNDR, and others accessed through a broad bibliographic research   |
| Information about the constraints faced by the main crops validated                             | List of constraints validated for each crop (December 2017)  | Validation in collaboration with potential actors of PITAG<br>Product used in the definition of the structure of PITAG and in the request for proposals  |
| Structure of the program defined  | <ul style="list-style-type: none"> <li>Six sub-programs identified</li> <li>Five target regions identified</li> <li>Execution Unit composition defined</li> <li>Concept of complementary projects</li> </ul> (December 2017) | Structure in six subprograms (corresponding to the main cropping systems) and complementary projects to address urgent problems and ensure collaborations between subprograms                                  |
| Call for expression of interest drafted and validated by MARNDR                                 | Call for expression of interest (December 2017)  | After the response of potential candidates, establishment by the MARNDR Procurement Office of a short list of eligible consortia (March 2018)  |
| Request for proposals drafted and validated by MARNDR   | Request for proposals (December 2017)  | Sent by the MARNDR to the eligible consortia (May 2018)  |
| Terms of reference of operators drafted and validated by MARNDR                                 | Terms of reference of operators (December 2017)  | Sent by the MARNDR to the eligible consortia (May 2018)  |
| Terms of reference of the members of the Execution Unit drafted and validated by MARNDR         | Terms of reference of the members of the Execution Unit (March 2018)   | Used by the MARNDR for the recruitment call to the eligible consortia (starting in September 2018)   |
| Communication strategy of the PITAG developed   | Communication Plan and Communication chart of PITAG (March 2018)   | <ul style="list-style-type: none"> <li>Presented during the Information and Exchanges Workshop (March 2018)</li> <li>Draft communication chart of PITAG to be signed by the subprogram coordinators</li> </ul> |
| Training course prepared and a first virtual presentation done                                  | Four powerpoint presentations (November 2018)  | Sent to the MARNDR and the participants of the training session  |
| Organization of an Information and Exchanges Workshop   | <ul style="list-style-type: none"> <li>One general presentation of the PITAG and subprograms</li> <li>One presentation of the communication strategy</li> </ul> (March 2018)   | Sent to the MARNDR and the participants of the workshop  |
| Subprograms proposals evaluated   | <ul style="list-style-type: none"> <li>8 subprograms evaluated</li> <li>4 proposed for implementation (SP1, SP2, SP4, SP6)</li> </ul>  | Detailed comments and recommendations sent to the MARNDR   |
| Definition of the process of setting up the complementary projects and identification of topics | Four complementary projects defined (September 2018)   | Selection process discussed (October 2018)<br>Some international experts identified  |



Some of the problems observed during the trip: from above to below and from left to right, effects of the Matthew hurricane on coconut trees, old traditional cocoa plantations and attacks of black sigatoka on banana and aphids on sorghum.



Meetings with research and development actors: from above to below and from left to right: University Notre-Dame, the American University of the Caribbean, the Levy farm (all in Les Cayes), and the Haiti-Taiwan rice project (in Jérémie).



Meetings and field visits with farmers in the cocoa agroforestry systems in Dame-Marie (Grand'Anse department)





Information and exchange workshop (March 28, 2018)

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## **APPENDIX 2. COMMUNICATION STRATEGY OF THE TECHNOLOGICAL INNOVATION PROGRAM FOR AGRICULTURE AND AGROFORESTRY (PITAG)**

### **INTRODUCTION: WHY A COMMUNICATION STRATEGY FOR PITAG?**

The Ministry of Agriculture, Natural Resources and Rural Development (MARNDR) of Haiti has been implementing since November 2017, with the financial support of the Inter-American Development Bank (IDB), the Technological Innovation Program for the Agriculture and Agroforestry (PITAG) whose general objective is to increase agricultural productivity.

The program, which has an initial duration of 5 years, is organized around two major technical components, one applied research and training for development (Component 1) and the other promoting agricultural technologies to farmers. (Component 2).

The MARNDR has decided to create, within the framework of component 1, six agricultural research-training-development subprogrammes designed to tackle the major problems that arise in the main cropping systems:

- i. predominantly coffee agroforestry
- ii. agroforestry predominantly cocoa
- iii. market gardening (plain and mountain)
- iv. legume-grain systems
- v. sweet potato, cassava, yams and taro
- vi. rice systems

Each subprogramme will be set up and facilitated by a research operator, consisting of a consortium that will include at least one Haitian entity (university, local development team, producer group, non-governmental organization or sector company concerned), and at least one foreign entity (international center, university or national program of a foreign country).

With a view to better concentration of efforts, target regions have been defined for each sub-program within the PITAG intervention zone; they are presented in the table below:

| Subprogram                                   | Target regions  |
|--|---|
| <b>Coffee based agroforestry</b>             | Grand'Anse, North   |
| <b>Cocoa based agroforestry</b>              | Grand'Anse, North   |
| <b>Market gardening (plain and mountain)</b> | A plain and a mountain region<br>(optional department in the area of intervention)                    |
| <b>Legumes-cereals systems</b>               | Artibonite, South   |
| <b>Sweet potato, cassava, yam and taro</b>   | Artibonite (sweet potato), North (cassava, yam), North-East (cassava), Grand'Anse (yam), South (taro) |
| <b>Rice systems</b>                          | Artibonite, South   |

The activities of the operator include: i) the development of innovative agricultural techniques to increase agricultural productivity and adaptation to climate change, ii) their dissemination (through scientific publications, field schools, plots experimental) and implementation (in the form of technological packages and data sheets) and iii) the evaluation of their impact on the farm.

The subprogrammes will also be supported by an Execution Unit (EU), attached to the General Directorate of MARNDR, which is responsible for the administration, supervision and overall evaluation of the program.

To effectively support the program, a communication strategy is put in place, with two main goals:

- i. contribute to the coherence and cohesion of the program

- ii. Help local, national and international audiences better understand PITAG's ambitions and the challenges it faces.

The principles and proposals for action set out in this document necessarily have, to the extent that PITAG is now in place, a still general character. The content of the communication strategy and plan should be clarified as the program progresses, its activities are developed, its initial results are obtained, and the visibility of the impact of the program becomes apparent. his actions.

## **MAIN COMPONENTS OF COMMUNICATION**

The implementation of the PITAG strategy and communication plan goes through:

- i. a definition of communication objectives
- ii. an identification of the targets to which the communication will be addressed
- iii. a definition of the message to be transmitted to the different targets (which allows to give an adequate form to the message, according to its content and targets)
- iv. a definition of the appropriate media and communication channels
- v. a choice of partners likely to relay the communication
- vi. the definition of a simple method for evaluating the effectiveness of communication

## **DEFINITION OF COMMUNICATION OBJECTIVES**

The quality of PITAG's communication strategy begins with a correct definition of the objectives of this communication. The general objectives of the PITAG communication are:

- i. Assist in the establishment of a real "program team": program cohesion will depend on its performance and ultimately on its results; constant information flow and exchange must therefore be ensured between coordinators and researchers in the subprogrammes and the execution unit (EU), and between coordinators and researchers within and between subprogrammes;
- ii. Help local, national and global audiences to better understand the challenges of increasing agricultural production, improving farmers' living conditions and protecting the environment in Haiti and PITAG's ambitions in these areas;
- iii. Inform these audiences about progress in implementing the program, the results achieved in developing, disseminating and adopting more efficient and resilient technologies by farmers, and impacting the lives of Haitian farmers. country's economy and the protection of the environment.

More specific objectives may, however, be distinguished according to the particular audience and its particular interests or areas of expertise. It is therefore important to distinguish the different targets to which the different messages will be addressed.

## **TARGETS TO BE ADDRESSED BY THE COMMUNICATION**

The objective here is to define precisely the different types of audiences in order to define the communication channels that allow them to be touched as efficiently as possible and to adapt the message according to their nature.

We will distinguish among the different types of audience:

- i. primary donors (IDB, MARNDR)
- ii. the media (national and foreign)

- iii. the entities of governance and management of the program (MARNDR-DI, CS, BID-Haiti)
- iv. the farming communities concerned by the program
- v. the institutions to which the consortium teams belong
- vi. key partners (NGOs, private companies)
- vii. opinion leaders (politicians, journalists, public figures)
- viii. the research community (national and foreign) concerned by the research and development themes of PITAG

## **NATURE OF THE MESSAGE TO BE TRANSMITTED TO THE DIFFERENT TARGETS**

A major imperative for the success of communication is a correct definition of the nature of the message, both in its content and in its form. The content of the message must be credible and must include results already obtained and "success stories". The form may vary depending on the audience, but the message should generally be expressed in an easily understandable manner. In short, it is about developing a simple and clear message conveying some strong ideas.

Each of the messages distributed by the PITAG will contain a general part referring to the objectives and the innovative way of working. To develop this general part of the message, we propose ourselves,

- i. Extract documents about the implementation of PITAG from a number of powerful ideas, then keywords summarizing the ambitions, and the innovative way of working.
- ii. to prepare a short text using these keywords and intended to present the PITAG to the public, from which the more specific messages subsequently disseminated can be inspired.

## **MEDIA AND COMMUNICATION CHANNELS**

The message can be transmitted by many communication channels. The choice of the communication channel will depend on the type of audience and the type of message broadcast. In general, we will distinguish:

- i. Face to face and virtual personal contacts
- ii. demonstration fields and school gardens
- iii. intermediate and final reports
- iv. contacts with opinion leaders (politicians, journalists, public figures)
- v. websites,
- vi. social networks (facebook, twitter, instagram)
- vii. event channels (opportunities to be seized during events related to rural development)
- viii. communication relays (partners, communities of practice)
- ix. multicast e-mails (mels)
- x. the national and foreign press
- xi. radio and television
- xii. extension leaflets (characterized by simple language and wide dissemination)
- xiii. scientific conferences
- xiv. scientific articles

It should be noted that the optimal use of certain channels may require some expertise and require special training efforts from the PITAG (eg construction of websites).

## PARTNERS LIKELY TO RELAY THE COMMUNICATION

Messages are particularly valuable when conveyed or transmitted by agents who are not directly involved in the actions. The message thus acquires a value of objectivity which tends to increase its credibility. Hence the importance of considering a certain number of relays in the communication plan. These may be the institutions to which the teams, the partners, or any other actor intervening in the field of research for agricultural development belong.

## EVALUATION OF THE EFFECTIVENESS OF COMMUNICATION

In the first analysis, the impact and effectiveness of the communication can be evaluated by the diversity and quantity of targets affected (quantitative evaluation). A more precise measurement, however, implies feedback messages from the targets (quantitative evaluation), with a view to continuously adjusting the strategy and messages. Communication plan listing the actions to be developed, their periodicity, their duration, the resource persons to be mobilized. and the budget associated with each action. The type of feedback depends on the channel used.

This evaluation must be one of the essential tasks of the PITAG communication officer. It will maintain an impact file (see below) that will be distributed periodically to all actors involved in the communication.

| Channel   | Quantitative evaluation   | Qualitative evaluation  |
|---|---|---|
| <b>face to face and virtual personal contacts</b>     | number of people contacted  | reactions and criticisms  |
| <b>demonstration fields</b>                           | number of demonstration fields, number of presentation days, number of visitors                                 | reactions and criticisms, echoes in the press, impact on farmers' technical itineraries |
| <b>intermediary and final reports</b>                 | number of reports   | report evaluation   |
| <b>contacts with opinion leaders</b>                  | number of opinion leaders contacted   | complementary support (scientific, financial, political) to the program                 |
| <b>websites</b>                                       | number of visitors  |   |
| <b>social networks (facebook, twitter, instagram)</b> | number of visitors  | comments of the visitors  |
| <b>event channels</b>                                 | number of opportunities, number of people contacted   | reactions and criticisms from the event organizers                                      |
| <b>communication relays</b>                           | number of relays, estimation of the multiplication effect   | reactions and criticism from people secondarily contacted                               |
| <b>multicast email messages</b>                       | number of mails, number of responses  | reactions and criticisms  |
| <b>national and foreign press</b>                     | number of newspapers  | written reactions and criticisms  |
| <b>radio and television</b>                           | number of programs, listening rate  | expressed reactions and criticisms  |
| <b>extension brochures</b>                            | number of brochures distributed   | reactions and criticisms, estimated effects of their diffusion                          |
| <b>scientific conferences</b>                         | number of conferences, number of participants   | scientific reactions and criticisms   |
| <b>scientific articles</b>                            | number of articles, proportion of peer-reviewed articles, journal impact factor, number of open access articles | quotes from articles  |

## COMPLEMENTARY ACTIONS

In order to develop an active and dynamic communication, we propose the following actions:

- i. setting up and distributing a file of contact information (name, address, phone, email, short biography indicating areas of expertise and include the five most outstanding or representative publications) of all team members participating in the PITAG program. This file will be available to all teams, then broadcast more widely (web)
- ii. organization, by the MARNDR, of annual scientific days in which all teams participating in the PITAG program will participate

- iii. creation of a logo for the PITAG, facilitating the visibility of its actions, which will be present on all the visual messages (information panels in the experimental plots, brochures, etc ...), alongside those of the MARNDR and IDB
- iv. setting up an image library (available on the web) managed by the communication manager and including several sections: farmer plots (informing about the systems and technical itineraries practiced, the damage affecting the crops, etc ...), communication report (visitors, meetings, scientific conferences, etc ...)
- v. reception and selection by the Scientific Committee of manuscripts of articles by researchers (first Haitian author) wishing to publish in open access (open-access), and cover the cost of publication of the best articles (one per year)
- vi. reception and selection by the Scientific Committee of requests for participation in international conferences (Haitian researchers) and payment of registration fees and transport-accommodation
- vii. development of a communication chart, inserted in the contract signed by MARNDR with the operators and stipulating their communication obligations (see below);
- viii. Establishment of a communication committee, including the Director of the MARNDR-DI, the communication manager, the project monitoring officer, a member of the scientific committee, and the sub-program coordinators, responsible for the periodic review of the project. communication, to ensure the evolution of the communication plan according to the progress of the program, and to propose general orientations and new initiatives, meeting at least twice a year (physically or virtually)
- ix. Establishment of a PITAG communication platform (under the responsibility of the communication manager) to collect, manage and disseminate the information generated throughout the program's life cycle (in particular the main results of the research, proposed technology packages, adoption examples, etc ...)

## COMMUNICATION BUDGET

When establishing the program budget, it will be necessary to allocate a specific budget to the communication, which takes into consideration the following costs:

- i. setting up the website
- ii. extension brochures
- iii. contact with decision makers (travel)
- iv. setting up the image library (displacements)
- v. participation of the communication manager in events or conferences (travel, registration)
- vi. cost of publication in open access
- vii. cost of participation of Haitian researchers in international conferences

| Target Audiences   | Need of communication   | Communication channels |                      |         |                          |          |                 |        |        |                                      |                       |                   |                           | Main person (s) in charge |             |                     |   |
|--|---|------------------------|----------------------|---------|--------------------------|----------|-----------------|--------|--------|--------------------------------------|-----------------------|-------------------|---------------------------|---------------------------|-------------|---------------------|---|
|  |   | Face to face & virtual | Demonstration fields | Reports | Contacts decision makers | Site web | Social networks | Events | Relays | Electronic messages multimediataires | National & int. Press | Radio, television | Broad diffusion brochures |                           | Conferences | Scientific articles |   |
| SP coordinators (and their assistants), Execution Unit members | Help to build a strong team, leading to better program performance                |                        |                      |         |                          |          |                 |        |        |                                      |                       |                   |                           |                           |             |                     | SP Coordinators, Monitoring and support officer, <sup>1</sup> |
| SP coordinators (and their assistants)                         | Help to build a strong team, leading to better program performance                |                        |                      |         |                          |          |                 |        |        |                                      |                       |                   |                           |                           |             |                     | SP coordinators <sup>2</sup>                                  |
| SP coordinators (and their assistants)                         | Help to build a strong team, leading to better program performance <sup>3</sup>   |                        |                      |         |                          |          |                 |        |        |                                      |                       |                   |                           |                           |             |                     | SP coordinators <sup>4</sup>                                  |
| Primary donors (IDB, FONTAGRO, MARNDR)                         | Understanding the challenges, results and progress in the implementation of PITAG |                        |                      |         |                          |          |                 |        |        |                                      |                       |                   |                           |                           |             |                     | RC-PITAG, MARNDR-DI, UE and SP                                |

<sup>1</sup> The terms of reference of the SP Monitoring and Support Officer who assists the DI in setting up the monitoring and evaluation system for the activities of the SP, provide that the latter should « promote a smooth flow of information within the team, and particularly with the sub-program managers", and "ensure that a good dynamic of collaboration and advice emerges".

<sup>2</sup> Celui-ci s'efforcera d'assurer une communication optimale avec les équipes haïtiennes et étrangères de son consortium, à travers des rencontres en face-à-face ou virtuelles.

<sup>3</sup> La subdivision du programme PITAG en six sous-programmes permet de concentrer les efforts sur les systèmes de cultures ayant une importance majeure dans l'économie agricole d'Haïti. Elle a toutefois quelque chose d'arbitraire, l'interaction entre systèmes de culture étant très forte dans la réalité agricole du pays. Il est donc essentiel de « corriger » la fragmentation introduite par la création de sous-programmes par une étroite communication entre ceux-ci.

<sup>4</sup> Ceux-ci auront un rôle stimulateur important en organisant chaque fois que nécessaire des échanges entre sous-programmes sur des thèmes d'intérêt commun.



### **Communication chart of PITAG**

The communication charter will be inserted in the operators' contract and signed by the sub-program coordinators. It is therefore a strong commitment on their part to participate actively in the communication actions of PITAG, respecting the actions stipulated below.

"I, the undersigned sub-program coordinator of the PITAG program, agree to actively participate in all communication activities that will help local, national and global audiences to better understand the challenges faced by PITAG with respect to increase agricultural production, improve farmers' living conditions and protect the environment and inform them of ambitions, results and progress in the implementation of this program.

I commit myself in particular:

- 1) to show, in any brochure or document prepared and disseminated by the sub-program that I coordinate, as well as on the information boards set up in front of the experimental plots, the logo of PITAG as well as that of the institutions who support this program (MARNDR, IDB)
- 2) to mention, in any article or document of a scientific nature publishing results obtained within the framework of PITAG, a mention of thanks to PITAG as well as to the institutions that support this program (MARNDR, IDB).
- 3) to send each year to the communication officer of PITAG at least two notes (minimum 200 words each), one referring to an important research result, the other telling a notable success obtained in a peasant environment, in terms of production of or protection of the environment. "



## **APPENDIX 3. COMPLEMENTARY PROJECTS**

### **PROJECT 1. DEVELOPMENT OF SMALL MECHANIZATION**

Agricultural mechanization, whatever the level of technology (from the simplest manual tools to the most sophisticated motorized equipment) facilitates and reduces the hardness of the work, makes up for the lack of personnel, improves the productivity and the calendar of agricultural operations, allows better use of resources, facilitates market access and helps mitigate climate hazards. However, sustainable mechanization must consider the natural, socio-economic and cultural context. The mechanization of agriculture, for example, must be considered with caution where the labour force is abundant, as well as in very small farms and with fragmented parcels.

In Haiti, the main agricultural work (plowing, weeding, harvesting) is typically done by hand and requires a lot of manpower. More than 60% of households use non-farm labour for rainfed agricultural activities. In recent years, however, there has been a massive exodus of young rural Haitians to cities or abroad. According to the IPPMD survey (Interactions between public policies, migration and development), agriculture is, at a rate of 17%, the sector most affected by this emigration. In some regions, therefore, there is a shortage of agricultural labour which contributes to weakening the productive potential. This situation justifies the development of a small agricultural mechanization adapted to the needs and means of the farmers.

The project will focus on the development and dissemination of tools for the most labour-intensive operations, such as plowing, sowing, weeding and harvesting. It will be implemented by a consortium of one (or more) Haitian entity (ies) in collaboration with a foreign entity with recognized experience in the field of small agricultural mechanization.

It will target farms of more than 4 ha with high potential for intensification and will include both Artibonite rice farms and holdings devoted to annual crops on the Central Plateau.

During a preliminary "targeting" phase of a few months, the consortium will identify, in collaboration with local development actors, a small number of regions and farms where the need for mechanization and the impact expected from it are the most obvious. It will then implement a project that will include the following steps:

- 1) identification, in collaboration with farmers in the target region, of the most needed tools and a precise description of their specifications.
- 2) the realization of the tools in Haiti, considering the facilities of maintenance and repair.
- 3) field validation, in collaboration with farmers in the target area, followed by possible rectifications.
- 4) Dissemination of tools developed in the target region and in regions with natural and socio-economic characteristics like this, thanks to diversified awareness tools (educational games, videos, radio broadcasts -televised, posters and technical sheets).

The project will work closely with the subprograms (SP3, SP4 and SP6) and will endeavour to consider any existing conservation agriculture initiative to develop and disseminate, in collaboration with stakeholders. minimum soil working and direct seeding tools, adapted to this type of agriculture.

It will also aim, in its approach and approaches, to integrate gender factors and stimulate Konbit and the joint use of materials developed.

## **PROJECT 2. ESTABLISHMENT OF AN INTEGRATED IDENTIFICATION AND MANAGEMENT SYSTEM FOR DISEASES AND PREDATORS**

Haitian agricultural production is strongly affected by predators and diseases. Statistics on yield losses due to these agents are not very precise. However, they are estimated to vary between 10% and 100%, depending on cultures and environments. The main current enemies of crops in Haiti are root rot, bark beetle and orange rust of coffee, black Sigatoka of banana, greening of citrus (bacterium transmitted by African psylla), aphids, stemborers and midge of cereals, bean mosaic, and black straw disease and bugs in rice. Climate change is causing the emergence and / or development of new insects and diseases. Many farmers use pesticides improperly and / or inappropriately. This has negative consequences for the environment (particularly affecting beneficial insects) and human health, and frequently causes resistance among plant pests.

Faced with this situation, the present project has the strategic objective of setting up, in a target region including the main crops grown in Haiti, a system of identification and integrated management of diseases and predators.

The specific objectives of this project are:

- 1) Establishment of a list of diseases and predators affecting agricultural production, (based on the one achieved by the Pest and Pesticide Management Plan for the Nippes Region), with emphasis on those with the most important impact on production as well as on "emerging" species. Illustrative disease pest and disease symptom sheets and related training materials will be developed and distributed to farmers and development agents in the target region, enabling these actors to quickly report the presence of these diseases and predators and the importance of their damage.
- 2) A description of the current control system that will provide a better understanding of the current situation and serve as a baseline for the project.
- 3) The establishment of an integrated management system including the prevention of the proliferation of pests, the use of cultural methods (crop rotation, varietal resistance), the use of healthy or certified seeds, the development of biological control methods (using natural enemies of pests and moderate application of natural pesticides) and ultimately the application of synthetic pesticides, used in a targeted way.
- 4) Training in the concepts and practices of integrated management of the various stakeholders (MARNDR agents and farmers).
- 5) Monitoring and evaluation of proposed techniques and approaches in the management system, carried out in collaboration with the MARNDR.

The project will be led by a Haitian research and development entity with experience in the field of phytopathology and entomology. This entity will work with an international expert with recognized expertise and experience in integrated control and participatory research. It will work closely with all existing subprograms.

### **PROJECT 3. DEVELOPMENT OF SIMPLE AND INEXPENSIVE METHODS OF CONSERVATION AND STORAGE OF AGRICULTURAL PRODUCTS**

In Haiti, significant losses (of the order of 50-60% of production) are reported in the distribution chain because of the lack of adequate infrastructure to facilitate access to the market, but also the lack of infrastructure storage. The lack of conservation methods for agricultural products obliges farmers to sell their produce immediately after harvesting to private intermediaries (sara). This leads to strong price fluctuations during the year, the introduction of low-quality products (especially fruit and vegetables) into the market, and especially a shortfall for producers.

Adequate conservation makes it possible to have products to consume for a longer period of time and to develop a more rational management of stocks (consumption, sales, etc.) while limiting the losses related to predators and post harvest diseases. It therefore represents, for the majority of farmers, a way to ensure better food security and better value for money. The methods of conservation and storage of agricultural products must, however, be adapted to the needs and capacities of family farming.

The project will therefore aim to develop simple and inexpensive methods of conservation and storage of agricultural products. It will include:

- 1) a grain component (maize, rice, sorghum) and legume seeds
- 2) a fruit and vegetables section

It will be led by a Haitian team to which will join a team of experts with recognized experience in conservation and storage of agricultural products in the context of small family farming. It will target the establishment of storage units at the farm level, producer groups, and local markets. It will consider, when conditions arise, the establishment of primary processing workshops, especially for fruits and some vegetables (drying, making jams and juices), which can facilitate conservation while adding value to product.

The project will work in close collaboration with the subprogrammes concerned, seek to integrate gender factors and common use of the materials developed and disseminate its results and products through the implementation of awareness raising tools (games). pedagogical material, videos, broadcasts in the broadcast media, posters and fact sheets).

### **PROJECT 4. DEVELOPMENT OF SUSTAINABLE METHODS TO IMPROVE SOIL FERTILITY UNDER LOW INPUT CONDITIONS**

Most Haiti's soils have a neutral to moderately alkaline pH, the rest being acidic. Most are poor in organic matter. Nitrogen is the main limiting macro-element of crop production, followed by phosphorus. Mineral fertilizers are rarely available to farmers. An alternative is to use organic fertilizers, such as manure or compost.

The objective of this project will therefore be to improve soil organic matter and nitrogen content, particularly in the context of annual cropping systems, by implementing agroecological techniques that are robust over the long term. term. It will have three specific objectives:

- 1) the development of manure utilization in livestock areas.
- 2) the development and dissemination of compost preparation methods adapted to the conditions of small-scale agriculture, through an identification of existing initiatives and support for their extension, through a participatory approach.

3) the development, in collaboration with the existing sub-programs, of technical itineraries and cropping systems favoring the improvement of soil fertility: it will aim, with SP4, an improvement of nitrogen fixation by the rotational associations, crop residue and livestock effluent recycling, and the preferential use of legume species and varieties and rhizobia strains with high binding capacity.

The project will be led by a team of Haitian agronomists and will ensure the collaboration of foreign experts having achieved tangible successes in the field of improving soil fertility in low input systems, and the agriculture-livestock integration in the tropics. Collaboration with the concerned SPs (SP4 in particular) will result in regular coordination meetings, and common research and development actions and sites (experimental plots, farm fields). The project will include the setting up of training devices and the dissemination of techniques developed through different vectors (schools, field schools, brochures, radio and television missions, etc.).



**Este documento fue preparado por**  
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**para la Secretaría de FONTAGRO**

**Con el apoyo de sus patrocinadores:**



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