Inter-American Development Bank

Technologies Transfer to Small Farmers Project (PTTA)

(HA -L1059; 2562/GR -HA)

Project Completion Report (PCR)

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Electronic Links

1. Development Effectiveness Matrix (DEM)
2. Final version of the Progress Monitoring Report (PMR)
3. PCR Checklist

Optional Electronic Links

1. Ex post Cost-Analysis Report
2. Impact Evaluation Report
3. QRR Results and Procedures Report
4. Minutes of the project's Exit Workshop and/or written feedback from the Government (including the overall assessment of the Bank performance, if available)

Acronyms and Abbreviations

BAC	Bureau Agricole Communal
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária
FAO	Food and Agriculture Organization
GAFSP	Global Agriculture and Food Security Program
IADB	Inter-American Development Bank
IRAM	Institut de Recherches et d'Applications des Méthodes de développement
MARNDR	Ministry of Agriculture, Natural Resources and Rural Development
M&E	Monitoring and Evaluation
PITAG	Programme d'Innovation Technologique en Agriculture et Agroforesterie
PNIA	Plan National d'Investissement Agricole
PSM	Propensity Score Matching
PTTA	Projet de Transfert de Technologies aux Agriculteurs
RCT	Randomized Controlled Trials
RESEPAG	Renforcement des Services Publics Agricoles
SNS	Service National Semencier
UIS	Update to the Institutional Strategy
USAID	United States Agency for International Development
USD	United States Dollars

BASIC INFORMATION (US$ AMOUNT)

PROJECT NUMBER (S): HA-L1059
TITLE: TECHNOLOGIES TRANSFER TO SMALL FARMERS PROJECT (PTTA)
LENDING INSTRUMENT: GRANT
COUNTRY: HAITI
BORROWER: GOVERNMENT OF HAITI
GRANT (S): 2562/GR-HA
SECTOR/SUBSECTOR: AGRICULTURE AND RURAL

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1.4. The objective of the PTTA was to improve small farmers' agricultural income and food security in the northern region of Haiti. Two components were developed and implemented to reach this objective.

1.5. Component 1 focused on the promotion and adoption of improved and sustainable agricultural technologies. This adoption was supposed to generate better agricultural productivity in specific value chains: coffee, cocoa, citrus, c

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2.8. During its implementation, the project was also aligned with the evolution of the national strategies and the evolution of the Country Strategy of the IADB. Moreover, the project was also aligned with the new Country Strategy (2011-2015), in which agriculture continued to be a strategic sector. Finally, in 2013, the government published a three-year agricultural recovery program document (2013-2016). In this document, the MARNDR outlined the limited access to relevant agricultural practices (technological packages). The impacts expected by the program matched with two of the four objectives of this document, namely:

- Modernize the Ministry of Agriculture to ensure the governance of the sector;
- Improve agricultural productivity to increase food security and increase income from family farms.

2.9. In conclusion, the project objectives and design were completely aligned with the country development needs and priorities, at the time of approval, at the time of closure, and during the whole implementation of the project.

b. Vertical logic

2.10. The program was designed to improve the income of 30,000 small farmers in the North and Northeast departments. The target for the income increase was, at minimum, 25%. Among these 30,000 small farmers, the program aimed also at a reduction of the malnutrition rate (from 29.2% to 22% in the North and Northeast departments). In order to achieve these results, the program identified several barriers (as mentioned above in §

reformulations and two simplifications have been proposed. These five minor adjustments do not distort the logic of the intervention as the indicators remain similar and follow the same logic as the original ones did. The mentioned minor adjustments are reflected in Convergence.

Table 2: Changes to the Results' Matrix

Section of the Results Matrix where change took place	Name of the change	Type of change	Reasons for change	Date of change

Outputs

2.17. For Component 1, following the vertical logic of the intervention, the project was initially expecting to provide vouchers to 30,000 small farmers in the North and Northeast departments (Output 1 of Component 1). This initial quantitative objective was calculated based on the estimated cost of each technological package and the average areas farmers use. Based on the real prices and areas, the project exceeded the target, reaching 35,553

Outcomes

2.21. The MARNDR and the IDB carried out several evaluations in order to assess Outcome 1 and 2 and Impact 1 (See section “Analysis of the Results Attribution”).

2.22. In order to assess the outcomes and impacts of Component 1, the Final Evaluation considered four different impact evaluations that have been conducted for the project:

- Two Randomized Controlled Trials (2014-2015) testing the effectiveness of smart subsidies for rice and horticulture in the Northeast department and in Saint Raphaël (North department).

- Two Propensity Score Matching evaluations (2016) testing the effectiveness of smart subsidies on peanut production and agroforestry in the Northeast and Limbé (North department).

2.23. Randomized Controlled Trials (RCTs) allow for the identification of the causal impact of a program on the variables of interest. The two RCTs conducted on the PTTA (Gignoux et al., 2017) focused on annual crops that were covered early in the project (rice and horticulture). They were designed to measure three main indicators: (a) agricultural yields, production values and profits, (b) technology adoption, and (c) food security. The Propensity Score Matching (PSM) evaluations focused on similar variables: (a) agricultural yields, production values and profits, (b) technology adoption, and (c) food security. Unlike the RCTs, however, the PSMs allowed for the estimation of the impacts of the Program on perennial crops (agroforestry packages).

2.24. According to the final evaluation and based on the impact evaluations, only the agroforestry packages led to a significant increase of the value of production (+38%). The other packages did not. Since 74% of the packages were focused on agroforestry, the weight of these packages was significant enough to allow the project to have a positive impact. Considering that the 74% of packages led to a 38% increase whereas the remaining 26% led to no increase, the average increase in the value of production was about 28% (outcome 1). The adjusted target was a 30% increase; thanks to the agroforestry packages only, the project achieved 93.33% of its adjusted target.

2.25. Different reasons can explain the disappointing results for the annual crops packages (rice, horticulture, and peanuts). The annual crops packages did not transfer any innovation: the farmers were already applying the annual crops packages provided. There was not any significant innovation and therefore no significant production increase. Moreover, the project based its expected results on improved seeds which were supposed to be controlled by a laboratory (outcome 3) which was not launched on time (see below). This might have allowed poor quality seeds reaching the fields, limiting the potential production increase. Moreover, the irrigation issues in different areas might have also impacted the yield for the annual crops. Finally, the delays for many vouchers distribution might also have impacted appropriate agricultural practices (seedling date) and therefore the yields.

2.26. The number of beneficiary farmers that have adopted new selected technologies (19,375 farmers - Outcome 2) exceeded the expectation (18,000). This good result is only due to the agroforestry packages (table 1). Considering that the beneficiaries who have received agroforestry packages (26,408 farmers) adopted them with a rate of 73.3% (according to

the Final Evaluation), it is calculated that 19,357 farmers have adopted the provided package. The annual crops packages have not been considered for this Outcome 2 because they did not lead to any value of production increase. The final evaluation did not consider any package adoption for these annual crop packages.

2.27. For Component 2, despite the completion of the five outputs, Outcome 3 (percentage of seed providers controlled) was not achieved because of the important delays experienced for Output 2 (laboratory), which was completed at the very end of the project. There was therefore not enough remaining time to start any seeds' providers inspection. It has to be said, though, that the laboratory is now functional and will offer support to the MARNDR and to the agricultural sector in the future. This represents a positive inheritance of the PTTA.

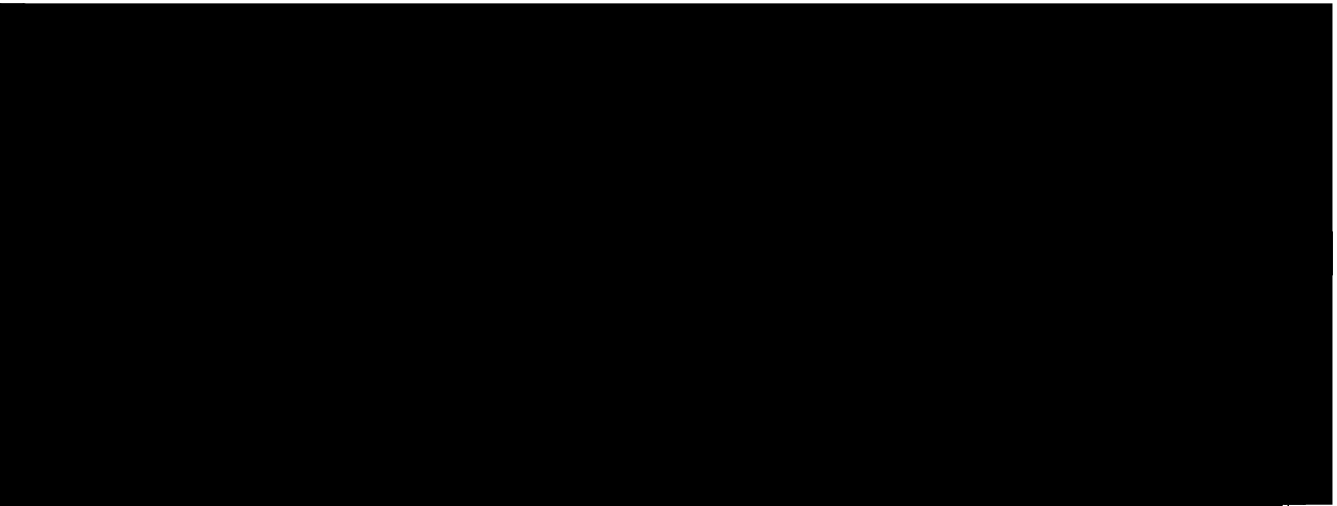
Impacts

2.28. Only Impact 1 has been measured by the impact evaluations. The farmers who have received an agroforestry package have increased their income by 63%. The others (annual crops packages) did not have any income increase. Since

Table 4: Results Achieved Matrix

Impact/Indicator

Output/Indicator	Unit of Measure	Baseline value	Baseline year	Targets and Actual Achievement	% achieved	Means of verification
Component #1: Extension of direct payment system						
Farmers received vouchers for the technologies being promoted	Producers	0	2011	P 30,000	118%	Monitoring report



Target crop (Eval. Method)	Yield	Value of production	Profits[8]	Imputs use	Food security
Horticulture (RCT)	No difference	Overall, no difference. A significant decrease in the production value for Buenabite	Overall, no difference. Significantly negative impact for Buenabite	Increase in fertilizer use was only significant in Buenabite, while treatment and control farmers in Merlene used similar amounts of fertilizer. Significant decrease in pesticide use	No difference
Peanut (PSM)	No difference	No difference	No difference	Inputs use was significantly higher among treated households	No difference
Agroforestry (PSM)	N/A	Positive and significant impact. The total value of crop production (including actual and expected crop production) was 38%			

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of the farmers suggests that they

Table 7: Costs of the Project

2.4 Sustainability

2.50. The timeframe for this sustainability assessment is the long-term, as the production increase associated to agroforestry packages is supposed to start after a few years and continue for many more. Considering

III. Non-Core Criteria

3.1 Strategic Alignment

3.1. The project design was consistent with the Update to the Institutional Strategy (UIS). The project was aligned with the challenges of Social Exclusion and Inequality as it was working with small holder famers, one of the most vulnerable population in Haiti. Moreover, through the distribution of technological packages', the project was also associated to the low productivity and lack of innovation. The program was aligned with the cross-cutting theme "climate change and environmental sustainability", as it provided adapted technologies (in particular the agroforestry packages) for sustainable farming activities.

3.2. The project contributed to the Regional Development Goals "Protecting the environment, responding to climate change, promoting renewable energy, and enhancing food security", and particularly to the indicators "Annual growth rate of agricultural GDP". The project contributed to the product "Farmers given access to improved agricultural services and investments," as defined in the Results Framework.

3.3. Targeting small farmers in Haiti through the distribution of environmentally adapted technologies, the project contributed also to the following lending program priorities of the GCI-9 (AB-2764): (i) support to small and vulnerable countries; (ii) poverty reduction and equity enhancement, as benefico (c9c.005( )]TJ 0.(r)-5.9 (i)0.7 (r)-6 (ei)0.7 (r)-6 (ei 4 (i)2.6 (h r)-6 6 (h

3.6. However, for the outcomes, even if a baseline had been scheduled since the beginning, the initial results matrix and monitoring and evaluation plan did not clearly define the methods to monitor the outcomes of Component 1. The plan did not take into account any corrective measure to mitigate external aspects impacting outcomes. Taking into account these challenges, the M&E design has been adjusted. The result matrix has been partially reviewed during the Project in order to better define the outcomes of Component 1. This review has allowed the implementation of the four impact evaluations during the project. The adjustments used the control group approach and avoided the ex-ante project baseline which was not assessed at the beginning.

b. M&E Implementation

3.7. The M&E system was implemented using several tools. To monitor the outputs of the project, the Monitoring and Information System (SIGI) was designed. Unfortunately, the SIGI experimented several technical and conceptual issues which forced stakeholders to use Microsoft Excel as a complement.

3.8. For the outcomes and impacts assessments, he beouhh10.5 (r)-5.9 (2.239 Td (3 (or)6 (h10.5 Td (6

suggested that agroforestry packages (74% of the total) mitigate erosion, increase soil fertility and water retention and contribute to capture carbon.

IV. FINDINGS AND RECOMMENDATIONS

Table 8: Findings and Recommendations

Findings	Recommendations
Dimension 1: **Technical-sectorial dimension**	
Some technological packages did not generate extra income (because not adapted and/or not a real innovation for beneficiaries).	A dedicated unit research has to be created in order to generate and test technologies. The package selection should be done through iterative and participative field test. This approach could limit the fact that practices were already used in some locations. Some technological packages (e.g. rice) need a productive natural environment and some investments might be a crucial

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	External and independent evaluations have to be conducted on a regularly basis in order to identify challenges and propose adjustments.
	The complaints system has to be improved in order to make faster the treatment and so identify potential challenges and then design efficient answers.
Dimension 3: **Dimensions related to public processes and actors**	
The most vulnerable beneficiaries (e.g. women) might not keep the technological packages without any financial support.	An exit strategy via rural microfinance can be designed. The microfinance institutions (MFI) can be involved in the vouchers' distribution in order to create a first business link between vulnerable farmers and MFI.
Dimension 4: **Fiduciary dimensions**	
An efficient Procurement Unit is key for project execution (particularly for component 2)	The procurement unit has to be assessed and then reinforced in a relevant way with a more effective organization and capacity strengthening.
Dimension 5: **Risk management**	