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IMPLEMENTATION COMPLETION AND RESULTS REPORT
GRANTS H7410-HT, D2100-HT, and TF011396

ON AN IDA GRANT
IN THE AMOUNT OF SDR 25.1 MILLION (US\$40 MILLION EQUIVALENT)

AND A GRANT FROM THE GLOBAL AGRICULTURE AND FOOD SECURITY PROGRAM
(GAFSP)
IN THE AMOUNT OF US\$10 MILLION

AND AN IDA GRANT
IN THE AMOUNT OF SDR 25.6 MILLION (US\$ 35 MILLION EQUIVALENT)
FROM CRISIS RESPONSE WINDOW RESOURCES

TO THE
REPUBLIC OF HAITI

FOR THE
RELAUNCHING AGRICULTURE: STRENGTHENING AGRICULTURE PUBLIC
SERVICES II PROJECT (GAFSP - IDA)

November 22, 2022

Agriculture and Food Global Practice
Latin America And Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective at Project Closing on March 31, 2022)

Currency Unit = Haitian Gourdes (HTG)

HTG 106.13 = US\$1

US\$1.38 = SDR 1

FISCAL YEAR

October 1 - September 30

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ABBREVIATIONS AND ACRONYMS

ACCPAC	A Complete and Comprehensive Program for Accounting Control (accounting software)
AF	Additional Financing
BAC	Agriculture Communal Office (<i>Bureau Agricole Communale</i>)
CDC	(United States) Center for Disease Control
CERC	Contingency Emergency Response Component
CNSA	National Food Security Commission (Commission Nationale de Sécurité Alimentaire)
CPF	Country Partnership Framework
CRW	Crisis Response Window
CW	Civil Works
CS	Consulting Services
DDA	Departmental Agriculture Directorate (<i>Direction Départementale d'Agriculture</i>)
DFPEA	Department of Training and Promotion of Agricultural Entrepreneurship (<i>Direction Formation et Promotion de l'Entreprenariat Agricole</i>)
DI	Department of Innovation (<i>Direction de l'Innovation</i>)
DIME	Development Impact Evaluation
DPV/PS	Department of Plant Protection (<i>Direction de la Protection Végétale</i>)
DSA	Animal Health Department (<i>Direction de Santé Animale</i>)
DSE	Directorate of Monitoring and Evaluation (<i>Direction de Suivi et Évaluation</i>)
EFA	Economic and Financial Analysis
EIRR	Economic Internal Rate of Return
EMAVA	Agricultural Middle School of the Artibonite Valley (<i>Ecole Moyenne d'Agriculture de la Vallée de l'Artibonite</i>)
ERC	Emergency Response Contingency
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EX-ACT	Ex-Ante Carbon Balance Tool
FAO	Food and Agriculture Organization
FAO-CP	Food and Agriculture Organization - World Bank Cooperative Program
FFS	Farmer Field Schools
FM	Financial Management
FSS	Farmer Subsidy Scheme
FY	Fiscal Year
GAFSP	Global Agriculture and Food Security Program
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GO	Goods
GoH	Government of Haiti
GRM	Grievance Redress Mechanism
Ha	Hectares
HTG	Haitian Gourdes
ICR	Implementation Completion and Results Report

IDA	International Development Association
IDB	Inter-American Development Bank
IFR	Interim Financial Report
IMF	International Monetary Fund
IRR	Internal Rate of Return
ISDS	Integrated Safeguards Data Sheet
ISN	Interim Strategy Note
ISO	International Organization for Standardization
ISR	Implementation Status and Results Report
KPI	Key Performance Indicator
LAC	Latin America and the Caribbean Region
m	Million
M&E	Monitoring and Evaluation
MARNDR	Ministry of Agriculture, Natural Resources and Rural Development (<i>Ministère de l'Agriculture, des Ressources Naturelles et du Développement Rural</i>)
MG	Matching Grant
MS	Moderately Satisfactory
MSF	Market Support Facility
MTR	Mid-Term Review
MU	Moderately Unsatisfactory
NCS	Non-Consulting Services
NGO	Non-Governmental Organization
NPV	Net Present Value
OCC	Opportunity Cost of Capital
OP	Operating Costs
OPS	Private Service Providers (<i>Opérateurs Prestataires de Services</i>)
OP/BP	Operational Policy / Bank Procedure
PAD	Project Appraisal Document
PARSA	Emergency Resilient Agriculture for Food Security Project
PDNA	Post-Disaster Needs Assessment
PDVA	National Agriculture Extension Strategy (<i>Plan Directeur de Vulgarisation Agricole</i>)
PDO	Project Development Objective
PIU	Project Implementation Unit
PNIA	National Agricultural Investment Plan (<i>Plan National d'Investissement Agricole</i>)
PRECONIA	Avian and Human Influenza Project
PRODEP	Community Driven Development Project
RESEPAG II	Relaunching Agriculture: Strengthening Agriculture Public Services II Project
RF	Results Framework
RPF	Resettlement Policy Framework
RAP	Resettlement Action Plan
RPO	Rural Producers Organization
S	Satisfactory
SDR	Special Drawing Rights
SMS	Short Message Service
SPO	Service Providing Operator
SPS	Sanitary and Phytosanitary Services

STEP	Systematic Tracking and Exchange in Procurement
TA	Technical Assistance
tCO ₂ e	Tons of carbon dioxide equivalent
TF	Trust Fund
TOC	Theory of Change
TR	Training
TTL	Task Team Leader
U	Unsatisfactory
UPMP	Unified Procurement Unit (<i>Unité de Passation des Marchés Publics</i>)
UPS	Sanitary Protection Unit (<i>Unité de Protection Sanitaire</i>)
US\$	United States dollar
WB	World Bank
WBG	World Bank Group



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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P126744	Relaunching Agriculture: Strengthening Agriculture Public Services II Project (GAFSP - IDA)
Country	Financing Instrument
Haiti	Investment Project Financing
Original EA Category	Revised EA Category
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Republic of Haiti	Ministry of Agriculture, Natural Resources and Rural Development

Project Development Objective (PDO)

Original PDO

The PDOs are to strengthen the Ministry of Agriculture, Natural Resources and Rural Development's (MARNDR) capacity to define and implement the National Agriculture Extension Strategy, to increase access of small farmers to agriculture extension services and training on animal and plant health in priority regions, and to provide financial assistance in the case of an agriculture sector emergency.

Revised PDO

The new proposed PDO is: to (a) reinforce the capacity of the Ministry of Agriculture, Natural Resources and Rural Development to provide or facilitate access to services in the agricultural sector; (b) increase market access to small producers and food security in Selected Areas; (c) improve livelihood in areas affected by Hurricane Matthew and (d) enable the Government to respond promptly and effectively to an eligible emergency.



FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
World Bank Financing			
IDA-H7410	40,000,000	40,000,000	35,293,623
TF-11396	10,000,000	8,998,848	8,998,848
IDA-D2100	35,000,000	35,000,000	34,359,103
Total	85,000,000	83,998,848	78,651,574
Non-World Bank Financing			
Borrower/Recipient	0	0	0
Total	0	0	0
Total Project Cost	85,000,000	83,998,848	78,651,574

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
01-Dec-2011	03-Apr-2012	26-Jan-2015	30-Nov-2016	31-Mar-2022

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
02-Jul-2015	12.82	Change in Project Development Objectives Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Reallocation between Disbursement Categories Change in Financial Management Change in Procurement Change in Implementation Schedule Other Change(s)
14-Jun-2017	22.43	Additional Financing Change in Project Development Objectives Change in Results Framework Change in Components and Cost Reallocation between Disbursement Categories Change in Disbursements Arrangements Change in Safeguard Policies Triggered Change in Legal Covenants Change in Procurement Change in Implementation Schedule Other Change(s)
02-Jun-2019	43.38	Change in Results Framework Change in Loan Closing Date(s) Reallocation between Disbursement Categories Other Change(s)
21-Dec-2021	77.04	Change in Loan Closing Date(s) Change in Implementation Schedule

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Satisfactory	Satisfactory	Substantial

**RATINGS OF PROJECT PERFORMANCE IN ISRs**

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	25-Dec-2011	Satisfactory	Satisfactory	0
02	29-Jun-2012	Satisfactory	Satisfactory	0
03	16-Jan-2013	Moderately Satisfactory	Moderately Satisfactory	5.00
04	26-Oct-2013	Moderately Unsatisfactory	Moderately Unsatisfactory	6.04
05	16-May-2014	Moderately Unsatisfactory	Moderately Unsatisfactory	7.16
06	19-Nov-2014	Moderately Unsatisfactory	Moderately Unsatisfactory	8.42
07	12-Jun-2015	Moderately Unsatisfactory	Moderately Unsatisfactory	11.82
08	11-Dec-2015	Moderately Satisfactory	Moderately Satisfactory	14.95
09	17-Jun-2016	Moderately Satisfactory	Moderately Satisfactory	16.53
10	21-Dec-2016	Moderately Satisfactory	Moderately Satisfactory	18.67
11	18-Jun-2017	Moderately Satisfactory	Moderately Satisfactory	22.43
12	24-Dec-2017	Moderately Satisfactory	Moderately Satisfactory	26.08
13	17-Jun-2018	Moderately Unsatisfactory	Moderately Unsatisfactory	36.94
14	14-Dec-2018	Moderately Unsatisfactory	Moderately Unsatisfactory	39.68
15	08-Apr-2019	Moderately Unsatisfactory	Moderately Satisfactory	43.38
16	28-Jun-2019	Moderately Satisfactory	Moderately Satisfactory	43.38
17	23-Dec-2019	Moderately Satisfactory	Moderately Satisfactory	53.65
18	28-Jun-2020	Satisfactory	Satisfactory	62.19
19	11-Dec-2020	Satisfactory	Satisfactory	69.60
20	19-Jun-2021	Satisfactory	Satisfactory	75.78



21	21-Dec-2021	Satisfactory	Satisfactory	77.04
22	08-Apr-2022	Satisfactory	Satisfactory	80.14

SECTORS AND THEMES

Sectors

Major Sector/Sector (%)

Agriculture, Fishing and Forestry 100

Agricultural Extension, Research, and Other Support Activities 89

Fisheries 2

Public Administration - Agriculture, Fishing & Forestry 7

Livestock 2

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3) (%)

Finance 3

Finance for Development 3

Agriculture Finance 3

Human Development and Gender 15

Gender 5

Nutrition and Food Security 10

Nutrition 5

Food Security 5

Urban and Rural Development 83

Rural Development 83

Rural Markets 3

Rural Infrastructure and service delivery 80



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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

1. **At the time of appraisal, Haiti was the poorest country in the Latin America and Caribbean (LAC) region, with 78 percent of the population living on less than US\$2 per day.** In rural areas, 88 percent of individuals lived below the poverty line, and as basic services were practically nonexistent, multidimensional poverty was widespread. Moreover, the devastating magnitude 7.0 earthquake that struck southern Haiti on January 12, 2010, had resulted in the death of around 220,000 people and destroyed the equivalent of 120 percent of gross domestic product (GDP). It was compounded the same year by Hurricane Thomas and by a cholera outbreak that struck over 820,000 Haitians, as well as by soaring food prices, so that Haiti's most vulnerable families spent 80 percent of their budgets on food.

2. **Agriculture played a dominant role in the economy, contributing 25 percent of GDP and accounting for around 50 percent of employment in Haiti, (66 percent in rural areas, rising to 75 percent among low-income households).** However, farmers lacked access to proper technologies and capacity building to increase production and productivity. The vast majority of Haitian farmers did not use improved planting materials, simply planting seeds saved from the previous crops in degraded soil without pest controls or inputs other than hand tools. Chronic under-investment in the rural economy (notably in infrastructure, public services and programs) and ineffective natural resource management had steadily depleted the rural productive base, leading to a high dependence on imports of grains to feed the Haitian population. Moreover, with small, fragmented average farm holdings (of less than 2 hectares), and high risks of shocks, farm households had to diversify incomes via non-agricultural sources and migrant remittances (cf. Annex 9, Box 1).

3. **Following the 2010 earthquake, the Government of Haiti (GoH) developed a National Agriculture Investment Plan (PNIA) for the period 2011-2016.**¹ The plan drew on existing National Agriculture Policy and the Post-Disaster Needs Assessment (PDNA)² prepared after the earthquake, and was aligned with the existing Poverty Reduction Strategy Paper.³ The PNIA set out three key components that focused on: (i) rural infrastructure; (ii) production and productivity of subsectors; and (iii) agriculture public services and institutional support. It emphasized priority regions selected according to: (i) post-earthquake migration patterns into rural areas; (ii) the location and competitiveness of agricultural supply chains; and (iii) priority watersheds. It also identified important financing gaps to be closed.⁴

4. **In this context, there was a strong rationale for Bank engagement to strengthen GoH's support for Haitian farmers, building on earlier engagements in the agricultural sector and coordinating closely with donor partners.** The challenge for GoH to improve agricultural productivity, food supplies, food security and health and nutrition (all objectives under the PNIA), especially in the post-earthquake context, without technical and financial support to strengthen its agricultural public services for farmers would have been enormous. Thus, US\$10 million in grant financing was received from the Global Agriculture and Food Security Program (GAFSP) to strengthen institutional capacity to provide agricultural public services. IDA grant financing of US\$40 million equivalent was added to provide and administer direct support to farmers, for a total of US\$50 million equivalent in financing for the "Relaunching

¹ Haiti - Plan National D'Investissement Agricole, May 2010. Available at: <http://extwprlegs1.fao.org/docs/pdf/hai146377.pdf>

² Haiti Earthquake PDNA: Assessment of Damage, losses, general and sectoral needs. March 2010. Available at: <https://documents1.worldbank.org/curated/en/355571468251125062/pdf/701020ESWOP1190R0HaitiOPDNA020100EN.pdf>

³ IMF Country Report No. 08/115, available at: <https://www.imf.org/external/pubs/ft/scr/2008/cr08115.pdf>

⁴ Cf. Table 1 of the Project Appraisal Document (PAD) for RESEPAG II (P126744), Report No: 64574-HT, October 31, 2011.



Agriculture: Strengthening Agriculture Public Services II Project" (RESEPAG II, P126744). In designing RESEPAG II, which was targeted towards small and medium producers in regions specified in the PNIA, the Bank built on the US\$5 million first-stage IDA grant for Strengthening of Agricultural Public Services Project (RESEPAG I).⁵ RESEPAG I focused on core institutional strengthening of managerial and agriculture policy formulation capacity, and it piloted enhanced local support via farmer and service provider registries, research and extension services, and incentive payments to farmers to adopt improved technologies. RESEPAG I also established the approach that was adopted and reinforced by RESEPAG II to place project coordination firmly under the leadership of the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR), and the same coordinating unit in MARNDR implemented both projects (see Section II.E on Institutional Strengthening and Annex 9 Box 2). The Bank also built on emerging lessons from RESEPAG I, notably the devastating earthquake of January 2010, by including an emergency response component that had not been envisaged under RESEPAG I, so as to be able to respond quickly and flexibly under RESEPAG II in the fragile context of Haiti. Moreover, the Bank drew on its experiences with the Avian Influenza Control and Human Pandemic Preparedness and Response Project - PRECONIA (US\$1.557 million equivalent IDA Grant)⁶ executed under the oversight of MARNDR, notably with regard to animal health preparedness and prevention activities, and the Bank-funded Community Driven Development (PRODEP) project (US\$38 million equivalent IDA Grant)⁷ executed under the oversight of the Ministry of Planning and External Cooperation, which included a community sub-project funds scheme that informed the design of the Market Support Facility (MSF) under RESEPAG II. The Bank also coordinated its support under RESEPAG II closely with the Inter-American Development Bank (IDB), which was also supporting GoH's PNIA via a new planned US\$40 million Small Farmer Agriculture Technology Transfer Project that would provide "smart subsidies" for the adoption of improved technologies to farmers in northern Haiti, building on and expanding the application of the farmer subsidy methodology piloted under RESEPAG I.

5. **The Bank's support under RESEPAG II was designed to align closely with the World Bank Group's (WBG) Interim Strategy Note (ISN) for 2012,**⁸ which was presented to the Board on the same day as RESEPAG II, and especially with its pillars for reducing Haiti's vulnerability and increasing its resilience to shocks, building human capital, and revitalizing the economy, by: (i) building capacity at the sector level to respond to future crisis and emergencies; (ii) improving education at the vocational level in the agriculture sector; and (iii) improving the growth and competitiveness of Haitian agriculture and its role in the economy.

6. **At the time of the Additional Financing (AF) for RESEPAG II, approved in June 2017, the context was again dire, due to the devastation caused by Hurricane Matthew, the most severe hurricane to strike Haiti in more than 50 years.** The Category IV hurricane struck Haiti on October 4, 2016, caused losses and damages equivalent to 32 percent of GDP, resulted in the deaths of 500 people, and left almost 1.4 million people in need of life-saving assistance. The impact of Hurricane Matthew on the agricultural sector was estimated at US\$603 million. In response, the Board approved an AF grant of Special Drawing Rights (SDR) 25.6 million (US\$35 million equivalent) from Crisis Response Window (CRW) resources for RESEPAG II, whose scope was expanded significantly⁹ to relaunch and promote animal husbandry and invest in more resilient water management infrastructure, while scaling up subsidies in southern Haiti to relaunch agricultural production. RESEPAG II had been restructured in July 2015, following a Mid-Term Review (MTR) in January 2015, and was progressing moderately satisfactorily when Hurricane Matthew struck southern Haiti. The original project rationale remained valid at the time of the AF, although the AF increased the emphasis on climate

⁵ Cf. the PAD for RESEPAG I (P113623), Report No. 48775-HT, dated June 1, 2009. RESEPAG I was approved in June 2009, became effective in October 2009 and closed on August 31, 2014. It was, therefore, implemented conterminously with RESEPAG II.

⁶ Cf. the Project Paper for PRECONIA (P111667), Report No. 44348-HT, dated June 24, 2008.

⁷ Cf. the Project Appraisal Document for PRODEP (P093640), Report No. 32634-HT, dated July 6, 2005.

⁸ Cf. Report No. 65112-HT, dated November 1, 2011.

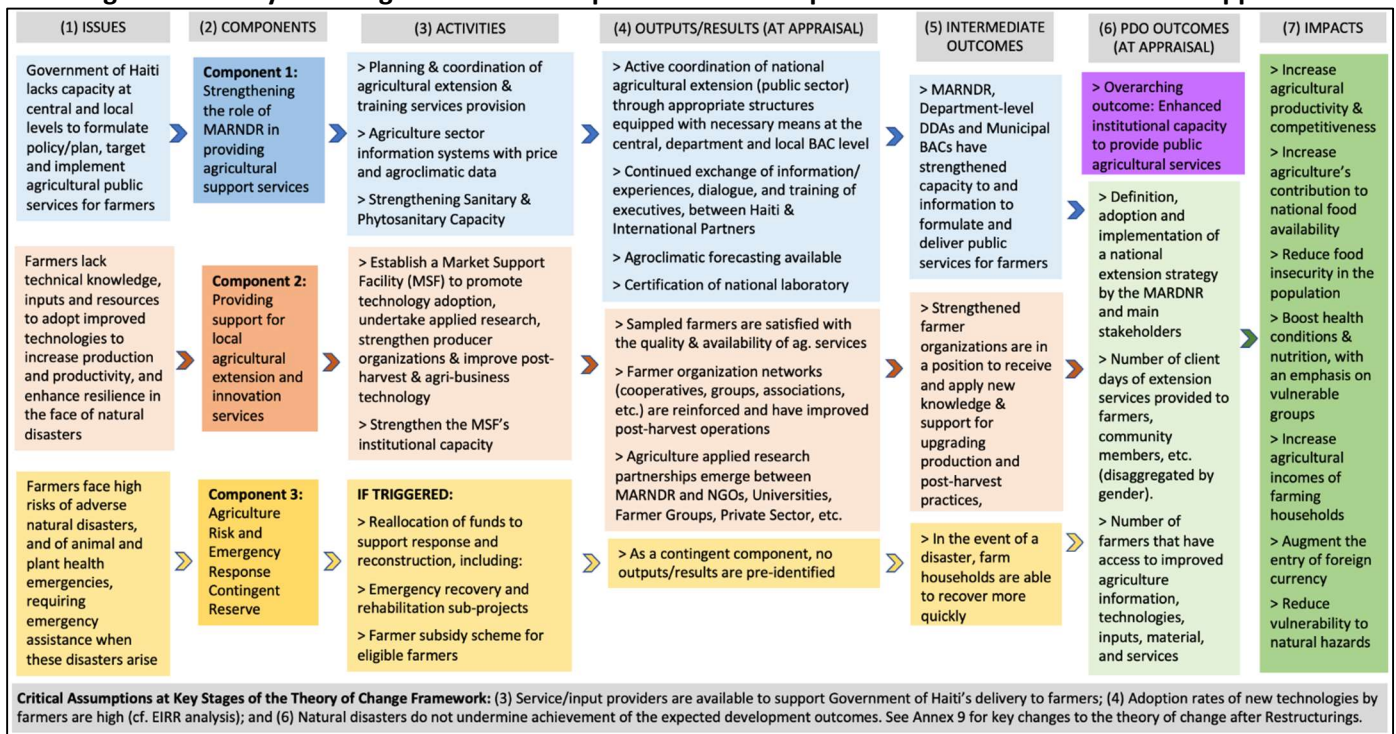
⁹ Cf. page 1 of the RESEPAG II Project Paper, Report No. PAD2331, dated June 1, 2017.

resilience and on support for agricultural recovery in disaster-affected areas.¹⁰ The AF was fully aligned with the WBG's 2015-2019 Country Partnership Framework (CPF),¹¹ contributing to the strategic objectives of promoting inclusive growth (via enhanced income opportunities) and resilience (via strengthened climate resilience), and the cross-cutting objective of strengthening governance (via improved capacity for delivering basic agricultural services).

Theory of Change (Results Chain)

7. RESEPA II was approved before presentation of a Theory of Change in the PAD and consequently, the PAD did not contain a diagrammatic representation. Figure 1 presents the Theory of Change implicit in the project description and results framework in the PAD, and notes key changes to the Project over time, which are discussed further in Section I.B, below (See Annex 9 for the final Results Framework (RF) after restructuring). In the fragile context of Haiti, RESEPA II was fundamentally about enhancing institutional capacity to provide public agricultural services in a context of fragility and vulnerability, requiring flexibility and possible emergency responses.¹²

Figure 1: Theory of Change Framework Implicit in the Description and Results Framework at Approval



Project Development Objectives (PDOs)

8. **The PDO at appraisal was to:** (a) strengthen MARNDR's capacity to define and implement the National Agriculture Extension Strategy; (b) increase access of small farmers to Agriculture Extension Services and training on animal and

¹⁰ Cf. *ibid.*, page 6.

¹¹ Report No. 98132-HT, discussed by the World Bank's Board of Directors on September 29, 2015.

¹² Annex 5 of the PAD on Implementation Support notes that: "The strategy for Implementation Support (IS) has been developed based on the nature of the project and its risk profile. It will aim at making implementation support to the client more flexible and efficient..."



plant health in the Priority Regions; and (c) provide financial assistance in the case of an Agriculture Sector Emergency.¹³

Key Expected Outcomes and Outcome Indicators

9. **The three Outcomes of the Project Development Objective, and their related indicators, as originally approved, were as follows:** (1) "strengthen MARNDR's capacity to define and implement the National Agriculture Extension Strategy" was to be measured by the "Definition, adoption and implementation of a national extension strategy by the MARDNR and main stakeholders"; (2) "increase access of small farmers to Agriculture Extension Services and training on animal and plant health in the Priority Regions" was to be measured by the "Number of farmers that have access to improved agriculture information, technologies, inputs, material, and services". In addition, the project's third PDO indicator, namely the "Number of client days of extension services provided to farmers, community members, etc. (disaggregated by gender)" would serve to measure progress on both the first and second parts of the PDO. Finally, the third outcome of the PDO, namely to "provide financial assistance in the case of an Agriculture Sector Emergency" was contingent, and while examples of possible activities were cited, no outcome indicators were specified at Appraisal.

Components

10. RESEPAG II was designed with the following four components and estimated costs at appraisal:¹⁴

- **Component 1, Strengthening the role of MARNDR in providing agricultural support services (US\$10 million, financed by GAFSP):** This component was designed to enhance MARNDR's capacity to define and implement the National Agriculture Extension Strategy (PDVA) through, inter alia, the carrying out of institutional and organizational reforms within MARNDR at the national, departmental and local level. This included planning and coordination of agricultural extension and training services; develop agriculture sector information systems so as to increase the availability and quality of price and agro-climatic data; and to strengthen Sanitary and Phytosanitary Services (SPS) capacity.
- **Providing support for local agricultural extension and innovation services (US\$36 million equivalent, financed by IDA):** This component was to strengthen the local provision of, and access to, agricultural support and extension services through: (i) the establishment of a Market Support Facility (MSF) to be managed by MARNDR, in coordination with *Tables de Concertation Agricole Departementale*,¹⁵ to co-finance, on a matching-grant basis, investments and/or activities for productive purposes, including for the adoption of priority technologies; applied research; strengthening of producer organizations; improvements in post-harvest and agribusiness technology; and strengthening of MSF's institutional capacity.
- **Agriculture Risk and Emergency Response Contingent Reserve (US\$1 million equivalent, financed by IDA):** This component was to provide support upon occurrence of an Agriculture Sector Emergency through: (i) the carrying out of Emergency Recovery and Rehabilitation Subprojects and/or (ii) the implementation of a Farmers Subsidy Scheme for Eligible Farmers.
- **Project Administration and Coordination (US\$3 million equivalent, financed by IDA):** This component was to support MARNDR in its day-to-day management of the project through, inter alia, the provision of technical assistance, the acquisition of equipment and vehicles and the financing of operating costs.

¹³ Schedule 1 of the Financing Agreement for Grant H741-0-HT, dated January 11, 2012.

¹⁴ Cf. pages 7-9 of the PAD for RESEPAG II. For the revised and actual costs by component and source of financing, see Annex 3.

¹⁵ These are Department-level Roundtables for Consultations on Agriculture, chaired by MARNDR and comprising Non-Governmental Organizations (NGOs), Farmer Organizations, and public and private organizations in Haiti's 10 Departments.



11. The total project cost at Appraisal was US\$50 million. This increased to US\$79.4 million with the 2017 AF, while the Actual Cost of RESEPAG II at Project Closing was US\$80.56 million (Cf. detailed cost tables in Annex 3).¹⁶

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION

Revised PDOs, Outcome Targets and PDO Indicators

12. With the formal restructuring of RESEPAG II on July 2, 2015, the PDO was broadened (beyond a focus on agricultural extension, to access to services and markets) as follows: The development objectives of the Project are to: (a) reinforce the capacity of the Ministry of Agriculture, Natural Resources and Rural Development to provide or facilitate access to services in the agricultural sector; (b) increase market access to small producers and food security in Selected Areas; and (c) provide financial assistance in the case of an Agriculture Sector Emergency.

13. When the AF was approved on June 14, 2017, the PDO was expanded from three to four expected outcomes, as follows: (a) reinforce the capacity of MARNDR to provide or facilitate access to services in the agricultural sector; (b) increase market access to small producers and food security in Selected Areas; (c) improve livelihood in areas affected by Hurricane Matthew; and (d) enable the Recipient to respond promptly and effectively to an Eligible Emergency.¹⁷

14. RESEPAG II was restructured two more times, on June 2, 2019, and on December 21, 2021, without requiring Board approval. The changes made in the course of the 2015 formal (Level 1) restructuring and the 2017 AF and in the two Level 2 restructurings are summarized in Annex 9 Table A9.1 and detailed in Annexes 7 and 8. At Project Closing, the PDO comprised four expected outcomes with their respective revised PDO Indicators, as shown in Table 1 below.

Table 1: PDO Objectives, Indicators and Targets at Project Closing for RESEPAG II

PDO Outcomes	Associated PDO Indicators	PDO Indicator Final Targets
(a) reinforce the capacity of MARNDR to provide or facilitate access to services in the agricultural sector;	<u>PDO indicator 1</u> : Key elements to strengthen the institutional capacity of MARNDR implemented:	80%
(b) increase market access to small producers and food security in Selected Areas;	<u>PDO Indicator 2</u> : Value of production generated by the farmer subsidy scheme program:	US\$24 million
	<u>PDO Indicator 3</u> : Increase in sales of the supported producer organizations:	50 percent
	<u>PDO indicator 4</u> : Direct project beneficiaries: <u>Of which (4.1)</u> : Female beneficiaries:	60,000 40%
(c) improve livelihood in areas affected by Hurricane Matthew;	<u>Of which (4.2)</u> : Households affected by Hurricane Matthew that received support from the Crisis Response Window:	28,000
	<u>Of which (4.3)</u> : Beneficiaries in the Southern region:	50,500
(d) enable the Recipient to respond promptly and effectively to an Eligible Emergency.	<u>PDO Indicator 5</u> : Time taken to disburse funds requested by the Government for an eligible emergency:	4 weeks

¹⁶ Although the AF was for US\$35 million equivalent, the total cost projected in the 2017 AF increased by only US\$29.4 million relative to the US\$50 million equivalent at appraisal, due to strengthening of the US dollar versus the SDR between 2011-17. The US dollar then weakened again slightly against the SDR before Project Closing, which allowed for total project costs to rise in US dollar terms, with the final Actual Cost at Project Closing equivalent to US\$80.56 million, with US\$2.4 million undisbursed.

¹⁷ Schedule 1 of the Financing Agreement for Grant D2100-HT, dated June 29, 2017.



Revised Components

15. At Project Closing, RESEPAG II had the same components as at appraisal, with revised/added sub-components:

- Component 1 maintained three sub-components throughout the project for extension and training, agricultural information, and SPS support. In the 2015 Restructuring, the component was renamed "Agricultural Support Services" and was revised to reduce the number of MARNDR's Technical Directorates involved, while shifting the emphasis from the agricultural extension and information sub-components towards the SPS sub-component in response to changing needs (cf. Section III on Key Factors and Annex 7). The June 2019 Restructuring dropped a few SPS activities that could not be completed by December 2019 for procurement or security reasons (see Section II.B), while consolidating achievements in epidemiological surveillance and vaccinations.
- Component 2 was renamed "Direct Support to Producers and Associations" in the 2015 Restructuring and was expanded significantly during implementation, with the addition of three sub-components to the original MSF support for matching grants and technical assistance (TA) for Rural Producer Organizations (RPOs). The first new sub-component was added in the 2015 Restructuring to support the expansion of the voucher-based Farmer Subsidy System (FSS), which subsidized the adoption of improved agricultural technologies by individual farmers (as piloted under RESEPAG I). The FSS was expanded further with the 2017 AF, especially in Southern Haiti after Hurricane Matthew, and included a new line of subsidies for agroforestry to enhance climate resilience. The AF also added two new sub-components under Component 2 for: (i) animal husbandry (to restock livestock following Hurricane Matthew) and (ii) irrigation rehabilitation and micro-catchment protection. This was done via contracts for works for more complex works and a cash-for-work program for small-scale, labor-intensive rehabilitation works, to improve local livelihoods.
- While Component 3 was renamed "Emergency Response Contingency" in the 2019 Level 2 Restructuring and its allocation was adjusted over the course of project implementation, its purpose remained that of enabling GoH to respond effectively in the event of an eligible emergency.
- The 2015 Restructuring greatly expanded the scope of Component 4 from "Project Administration and Coordination" to "Institutional Strengthening, Monitoring and Evaluation, Project Management and Studies", and an intermediate indicator, namely the "Number of agricultural producers registered in the MARNDR registry", was assigned to the component with the 2019 Level 2 Restructuring. Adjustments in project costs for the four components in light of the above revisions are shown in Annex 3.

Other Changes

16. A number of other revisions were also made to RESEPAG II. These included triggering Operational Policy/Bank Procedure (OP/BP) 4.12 with the 2017 AF; changes in disbursement estimates and reallocations between disbursement categories; adjusted financial management covenants to reflect the expanded activities; new procurement covenants in the 2015 Restructuring to reflect the centralization of all procurement for donor-financed projects with MARNDR in its new centralized procurement unit (*Unité de Passation de Marchés Publics*, UPMP), and the application of the Project Procurement Strategy for Development (PPSD) and the application of the Systematic Tracking and Exchanges in Procurement (STEP) system with the 2017 AF; and changes in the implementation schedule associated with five extensions of the Project Closing Date, from November 30, 2016 to June 30, 2018, to December 31, 2019, to December 31, 2021, and finally to March 31, 2022, (although the GAFSP grant and the activities it financed under Component 1 were closed earlier, on December 31, 2019). The Board also approved a policy waiver with the 2017 AF to provide the SDR 25.6 million in CRW financing for the AF in the form of a grant, rather than on prevailing IDA terms for Haiti in Fiscal Year 2017 (FY17). Finally, changes were made to the Legal Covenants to reflect the other changes above. All the changes under the four Restructurings, together with the rationale for the changes, are detailed in Annex 7.



Rationale for Changes and Their Implication on the Original Theory of Change

17. **The 2015 Restructuring was undertaken to improve project performance, which had slipped to Moderately Unsatisfactory (MU).** The Restructuring streamlined the number of agencies engaged in Component 1 and refocused the component in response to changing circumstances by realigning the PDO, the Results Framework, components and project funds while providing more time for the PDO to be achieved. In particular, by 2015, GoH had already adopted and was implementing the new National Agriculture Extension Strategy that was at the heart of the original PDO, while the emergence of pest infestations in 2012-13 underscored the need to redefine and broaden the capacity reinforcement for MARNDR under Component 1 from a focus on extension to refer instead to "provide or facilitate access to services in the agriculture sector". The pest infestations, especially white mealybug (cochineal), but also coffee rust and the threat of a cross-border fruit fly infestation that could affect Haiti's exports of mangos to the United States, had led to the triggering of the emergency component and required the reallocation of resources to the SPS sub-component. Sub-component 1.b of Component 1 (on agricultural information systems) was also refocused to drop the hydro-meteorological work (taken up in 2015 in a separate IDA-financed Strengthening Hydromet Services Project - P148259) while expanding the focus on market information, with support from Haiti's National Coordination for Food Security (CNSA).¹⁸ In addition, Component 2 was expanded in response to a request from GoH to continue financing the FSS under RESEPAG II—following the closure of RESEPAG I in 2014—which led to the inclusion of a sub-component for FSS under Component 2. In light of the above, the results framework was completely revised and strengthened, with a revised PDO that not only broadened the public services objective supported by component 1 but that also increased ambition by emphasizing improved access to markets rather than just to training and extension via component 2 activities. Clearer Key Performance Indicators (KPIs) were also introduced that were more closely linked to the (revised) project activities and the number of PDO indicators was increased from three to five (see Annex 8). The changes in objectives and activities drove the financial management changes, reallocations and adjustments in disbursement categories, and the issuance of an updated Integrated Safeguards Data Sheet (ISDS). The Bank also began to work closely with and strengthen capacity in MARNDR's new UPMP. The Closing Date was extended, and the disbursement estimates and implementation schedule were adjusted to allow for more time to achieve the PDO.

18. **The 2017 AF and Board-approved Restructuring responded to the damage and losses produced by Hurricane Matthew in October 2016.** The project was advancing Moderately Satisfactorily following the 2015 Mid-Term Review and Restructuring, when the PDO, results framework and components (including the addition of two new sub-components) were revised and expanded in June 2017 to reflect RESEPAG II's response to the hurricane. Funding was increased for Component 2 and for project management in light of the AF. A key rationale for revising the activities under Component 2 was to place increased emphasis on longer-term climate resilience (e.g., via the agro-forestry and other technologies supported by the FSS and via the micro-catchment protection), even while meeting immediate livelihood needs (notably via the use of a cash-for-work program and expanded subsidies). In light of the possibility that the new irrigation rehabilitation activities could result in involuntary resettlement, OP/BP 4.12 was triggered, while the preparation of the Resettlement Policy Framework (RPF) was delayed in line with OP 10.00 (see Section IV.B below). The disbursement categories were rationalized to simplify disbursements, in line with emerging best practice, while disbursement amounts and the pace of disbursement were adjusted in line with the higher disbursements expected with the AF, and the PPSD and STEP system were applied in line with the Bank's updated procurement guidelines. The rationale for the adjusted implementation schedule and Closing Date extension was to accommodate the additional resources under the AF and to align the Closing Dates for the original GASFP and IDA funds and the AF's CRW funding.

¹⁸ The dropped hydro-meteorological work was taken up in 2015 in a separate IDA-financed Strengthening Hydromet Services Project (P148259) for US\$5 million. Cf. <https://projects.worldbank.org/en/projects-operations/project-detail/P148259>.



19. **The rationale for the 2019 Restructuring was to ensure full achievement of the PDO, especially the activities to restore the productive capacity lost because of Hurricane Matthew, and to improve the measurement of results in the Results Framework.** The extension of the Closing Date by two years was to allow the irrigation infrastructure rehabilitation works to be procured (following delays) and undertaken protecting around 2,000 hectares (ha) of agricultural land. In addition, the measurement of three PDO indicators was adjusted to better capture the outcomes, while a fourth was adjusted downwards to improve realism based on both analytical and ground-level information. Several indicators were also adjusted for reasons described in Annex 7.

20. **The rationale for the 2021 Restructuring was to extend the Closing Date by three more months to March 31, 2022, to allow for an orderly completion of the remaining project activities.**

21. **The refinements of the PDO and Results Framework as a result of the Restructurings greatly strengthened the (implicit) Theory of Change.** The original PDO and two of the three original PDO indicators were focused on extension strategy and implementation, but in order to respond flexibly to changing circumstances (notably pest infestations and Hurricane Matthew) the Bank revised the PDO and RF to reflect the new priorities. Importantly, the quality of the indicators, in terms of their linkages and alignment from activities to results and to outcomes improved with the refinements made during the life of the project (e.g., by indicators directly related to the FSS and MSF support), as did clarity with regard to the best way to measure them (e.g., by recognizing that before/after comparisons were better measured by the value than by the quantity of production, due to the large number of beneficiaries who changed what they produced as a result of the incentives and TA they received).

22. **Although RESEPAG II was restructured four times, including twice with Board-level approvals, one overall outcome rating for RESEPAG II is provided in Section II below, (rather than a split rating for the pre-post restructuring periods), due to the broadening of the scope and ambition of RESEPAG II over the life of the project.** The increasing ambition and scope described above also applies to its geographic coverage, which was broadened from the Nord/Nord-Est and Sud Departments to include the Centre and Grand'Anse Departments as well (cf. Annex 9 Figure A9.2).

II. OUTCOME

A. RELEVANCE OF PDOs

23. **The relevance of RESEPAG II throughout the life of the project is rated as High.** RESEPAG II was closely aligned with, and indeed presented to the Board of Directors on the same day as, the Bank's Interim Strategy Note for Haiti, and was drawn up to support the 2011-16 PNIA that MARNDR had prepared with Bank and donor partner support (see Section I.A above). Similarly, the 2017 AF was aligned with the 2015-19 CPF and with the 2018 Performance and Learning Review (PLR)¹⁹—with their areas of focus on inclusive growth, investment in human capital, and resilience—and reflects agriculture and food security priorities identified in the most recent Strategic Country Diagnostic Update for Haiti.²⁰ RESEPAG II also aligned perfectly with the three key axes of GoH's 2016-2021 PNIA, adopted shortly before the AF was approved and in place over the final five years of the project, namely: (i) agricultural infrastructure, especially for water management; (ii) increasing production along value chains, and (iii) strengthening agricultural services and institutional capacity.²¹ In the fragile context of Haiti, building institutional capacity was a core priority for RESEPAG II: its overarching objective to strengthen institutional capacity for providing agricultural public services directly addressed MARNDR's

¹⁹ Cf. the WBG's 2015-2019 Country Partnership Framework (CPF) for Haiti, Report No. 98132-HT, discussed by the Board on September 29, 2015, and the Performance and Learning Review of the Country Partnership Strategy for the Republic of Haiti for the period FY16-19, Report No. 124812-HT, dated May 31, 2018, which extended the CPF by two years to 2021.

²⁰ Haiti - Responding to recurrent crises and chronic fragility. Systematic Country Diagnostic Update. January 2022.

²¹ Haiti - Plan National d'Investissement Agricole (PNIA 2016-2021), dated November 2016 (cf. the strategic approach on p.17).



constrained ability to support farmers in accessing proper technologies and capacity building so as to increase production, productivity, livelihoods and resilience. RESEPAG II maintained its high relevance during implementation by responding flexibly to changing circumstances, notably via restructurings to address more resources in response to pest infestations and Hurricane Matthew, and by providing emergency responses in times of crisis: not only was the emergency component triggered three times (in the last case following the August 2021 earthquake), but RESEPAG II also redirected resources beyond Component 3 to strengthen support in disaster-affected areas (e.g., via the significant expansion of the SPS sub-component in 2015, and via the allocation, in September 2021, of US\$2.24 million under Component 2 to support areas affected by the earthquake and cyclone Grace in August 2021). RESEPAG II can be seen as the core of a long-term Bank engagement that began with precursors such as PRODEP, PRECONIA and RESEPAG I, was complemented by the Resilient Productive Landscapes (RPL) Project approved in March 2018,²² and has continued under the Emergency Resilient Agriculture for Food Security (PARSA) Project approved in March 2022.²³ In particular, PARSA's continued provision of farmer incentives and capacity building for the adoption of climate-smart agricultural technologies, drawing on experiences under RESEPAG II, and PARSA's adoption of RESEPAG II's institutional arrangements, with MARNDR leading PARSA's coordination and implementation, attest to the continuing high relevance of RESEPAG II at this time. **Therefore, the relevance of RESEPAG II is rated as High.**

B. ACHIEVEMENT OF PDO (EFFICACY)

24. This section assesses the efficacy of the project in achieving RESEPAG II's four PDO outcomes, namely: (1) reinforce the capacity of MARNDR to provide or facilitate access to services in the agricultural sector; (2) increase market access to small producers and food security in Selected Areas; (3) improve livelihood in areas affected by Hurricane Matthew, and (4) enable the Recipient to respond promptly and effectively to an Eligible Emergency. The data for assessing the outcomes is drawn from RESEPAG II's M&E system (using the Kobo Toolbox²⁴). This data is reflected in the Borrower's Completion Report and in the Bank's 22 ISRs for RESEPAG II, which, together with the findings of the June 2020 Interim Project Completion Report for GASFP, all inform the assessment of the efficacy of RESEPAG II. In addition, surveys of farm-level outcomes with and without the project were conducted in October/November 2021 (cf. Annex 4) for the Borrower's Final Impact Evaluation Report, dated November 2021,²⁵ and the findings of the survey data and impact evaluation report inform this ICR's assessments of both the efficacy and the efficiency (see below) of RESEPAG II. It is important to note that, following earlier challenges with data collection (cf. Section IV.A), the Bank's ISR 20 (dated June 2021) reports that: "The M&E team has continued to collect data with Kobo Toolbox on potential beneficiaries of emergency activities. It has also continued to use this tool for monitoring and evaluation. The results framework has also been updated regularly", while ISR 21 (dated December 2021) notes that: "The effective use of the Kobo Toolbox has been particularly useful to enhance the monitoring of the emergency campaigns and to closely monitor the progress achieved in all indicators", suggesting that, having invested significant effort in strengthening M&E under RESEPAG II (cf. Section IV.A), the Bank's team was satisfied with the data collection on the project's key performance indicators.

25. The Efficacy of RESEPAG II is rated as Substantial, having achieved or exceeded all of its PDO indicators and almost all of its intermediate KPIs. This can be seen in the Results Framework (Table A) and in the Key Outputs by Component (Table B) of Annex 1. Following the 2017 AF, the PDO was expanded to comprise the following four objectives:

²² Cf. the PAD for the Resilient Productive Landscapes Project (P162908), Report No. PAD2329, dated January 31, 2018.

²³ Cf. the Project Appraisal Document for the PARSA project (P177072), Report No. PAD4673, dated March 4, 2022.

²⁴ KoboToolbox is a free and open source platform for the collection, management, and visualization of data that is used by thousands of organizations around the world, including development actors, education and research organizations and NGOs.

²⁵ Cf. the *Rapport de L'Évaluation d'Impact du Projet RESEPAG II, Version Finale*, prepared for MARNDR by Jean Edgard Jeanniton, consultant.



26. The first PDO Outcome, namely to "reinforce the capacity of MARNDR to provide or facilitate access to services in the agricultural sector" was achieved. This outcome was measured by PDO Indicator 1: "Key elements to strengthen the institutional capacity of MARNDR implemented". This in turn was to be measured by the completion of 16 sub-elements (each with their respective targets, see Annex 9 Table A9.2) that ranged from the development of key strategies, such as the quarantine strategy and the strategy to fight the mealybug infestation, to the enhancement of capacity, via the training of facilitators in extension techniques and the training of private and public officials in animal health surveillance and vaccination, to farm-level outcomes such as the application of fruit fly traps by farmers and the protection of animals against rabies and anthrax. The target for PDO Indicator was to achieve 80 percent of the 16 elements, and the final value achieved under RESEPAG II was 81.25 percent, (corresponding to the achievement of 13 out of the 16 targeted sub-elements), equivalent to 102 percent of the 80 percent target. Seven intermediate indicators were directly linked to this PDO indicator (see Annex 1, Table B), two of which were greatly exceeded (training days for epidemiological volunteers and private veterinarians by 221 percent and registration of cattle in the information system by 127 percent), three were 100 percent achieved (namely, collection and dissemination of market price information, and completion of the UPS Central Building), one was 90 percent achieved (18 out of 20 didactic materials were prepared for agricultural extension) and one was not achieved because the corresponding activity, i.e., the upgrading of the Agriculture Middle School, was dropped due to long-lasting insecurity at the site that did not allow project staff or contractors to visit the site during more than two years.

27. In line with the Results Framework (Annex 9 Figure 9.1), the outputs that led directly to the achievement of the PDO Indicator and most of the Intermediate Results Indicators for this objective included: (i) Under sub-component 1.1, development, adoption and dissemination of the agriculture strategy and master plan; establishment of 115 farmer field schools and training of facilitators in agricultural extension techniques (including international training for two staff), as well as training of farmers and municipal staff; (ii) Under sub-component 1.2, CNSA collected price information and disseminated it via SMSs to requesting farmers, and more than 876,000 requests for price information via SMSs were received.²⁶ Information was also disseminated via district and municipal branches of MARNDR and via websites; (iii) Under sub-component 3, UPS' strategy and procedures were strengthened, its quarantine strategy was finalized; 3,368 private and public sector staff were trained in surveillance and vaccination; 1,208,015 animals were vaccinated against rabies; and 2,430,000 vaccinations were administered against anthrax (primarily for bovines). In addition, 30 "trappers" (farmers) were trained on collecting specimens; 500 farmers were trained to use fruit fly traps, with 40,000 traps purchased under RESEPAG II with the training and installation implemented by the IDB; and 578 farmers were trained in mealybugs control in the Northeast.²⁷

28. The second PDO Outcome, namely to "increase market access to small producers and food security in Selected Areas" was achieved. This was to be measured via the following three PDO indicators and one PDO sub-indicator, with targets for all four indicators greatly exceeded: (i) the value of production generated by the farmer subsidy scheme program had a target of US\$24 million and an actual final value of US\$32.5 million, equal to 136 percent of the target; moreover, data from the October/November 2021 survey of beneficiaries and non-beneficiaries provide strong evidence of substantial increases in gross margins in the with-project situation and, therefore, that the increases in the value of production are directly attributable to RESEPAG II (cf. Annex 4, Table A4.2) (ii) the target increase in sales of the supported producer organizations was 50 percent while the actual final increase was 172 percent, equivalent to 344 percent of the target (and, as highlighted in Annex 4, Table A4.3, farm-level survey data points to substantial farm-level returns on a range of investments supported by the project); (iii) The number of direct project beneficiaries targeted was 60,000, as revised in the 2017 AF, while the actual number was 78,242, equivalent to 130 percent of the target.

²⁶ Cf. Aide Memoire issued in September 2019, page 3.

²⁷ Cf. GAFSP Interim PCR, page 4.



Finally, the sub-indicator for the number of direct female beneficiaries had a target share of 40 percent, while the actual number of female beneficiaries, 36,774, was equivalent to 47 percent of total beneficiaries, i.e., 118 percent of the 40 percent target. In addition, all eight of the intermediate results indicators associated with the above PDO indicators were greatly exceeded, with final values ranging from 107 percent to 241 percent of the respective targets (see Annex 1 Table B). While most of these results were achieved with activities under Component 2, a further intermediate result that is directly relevant to this PDO objective was achieved with support under Component 4, namely that 224,905 agricultural producers were registered in the MARNDR Registry, equal to 150 percent of the target of 150,000, representing a critical contribution to RESEPAG II's success with the project administration component.

29. The key outputs achieved with Component 2 activities that led directly to all PDO and Intermediate Results Indicators being exceeded for the second project outcome included the following: (i) under sub-component 2.1, incentives were provided via the FSS to 21,739 farmers (44 percent of whom were women) covering an agricultural area of 11,113 hectares; the incentives included financing improved seed varieties, motorized pumps, and the establishment of creole gardens, *inter alia*; (ii) under sub-component 2.2, the MSF provided direct support to 132 RPOs for sub-projects benefitting 7,452 households; to this end, activities financed by RESEPAG II included support for improved agricultural inputs and compost production, for applied research on high-potential value chains and for increasing post-harvest value addition (including improved storage and processing); (iii) under sub-component 2.3, 7,452 people (85 percent women) in the South and Grand'Anse Departments benefitted from technical packages for goats and poultry (18,180 goats, 21,000 poultry), including animals, forage and enclosures, so as to recapitalize producers who had experienced losses due to natural disasters, with further support provided to 280 beekeepers, including beehives and protective equipment.²⁸ The "*pasé cado*" (i.e., pass on the gift) scheme extended benefits to several hundred more families by passing on kids generated from the goat packages to additional households; (iv) under sub-component 2.4, 3,800 farmers benefitted from irrigation rehabilitation in four irrigated perimeters (Dory, Dubreuil, Les Anglais and Melon), which had been damaged as a result of Hurricane Matthew, thereby allowing producers to recover and expand irrigated production. These outputs, with those of Component 1, led to significant advances in technology adoptions, e.g. in conservation agriculture (e.g., soil mulching and no till); improved breeds of livestock (goats and chicken) and improved pasture management; the production of nutrient dense foods through use of biofortified seeds, improved biodiversity and zinc based fertilizers; upgraded food harvesting and storage techniques to reduce aflatoxin; adjustment of cropping calendars and the promotion of new crop varieties better suited to local conditions, and improved irrigation/water management practices.

30. The third PDO Outcome, namely to "improve livelihood in areas affected by Hurricane Matthew", which was added with the 2017 AF, was achieved. There were two PDO sub-indicators associated with this outcome, with a view to capturing the response with CRW resources and the broader response with all project resources: (i) the actual number of households affected by Hurricane Matthew that received support from the Crisis Response Window was 27,958, or 99.9 percent of the target of 28,000, and (ii) the total actual number of beneficiaries in the Southern Region from all financing sources under RESEPAG II was 50,888, versus a target of 50,500 (i.e., 101 percent of the target). The intermediate results indicators and key outputs for these PDO sub-indicators are subsumed under those described above for the second PDO objective and were supported by Component 2 activities. As indicated above for Component 2, project-supported activities increased the value of sales and of production, as well as the value of gross margins for project beneficiaries both in absolute terms and in comparison, to non-beneficiaries of RESEPAG II (cf. Annex 4), and in the case of beneficiaries in southern Haiti affected by Hurricane Matthew, their livelihoods were thus improved.

²⁸ The data on with-project and without-project outcomes for sub-components 2.1 and 2.3 gathered in the October/November 2021 farm surveys provide strong evidence that the with-project outcomes were substantially higher than the without-project outcomes, so that the with-project incremental returns are attributable to the activities supported by RESEPAG II (cf. Annex 4).



31. **The fourth PDO Outcome, namely to "enable the Recipient to respond promptly and effectively to an Eligible Emergency", was achieved.** The PDO indicator for this objective, namely the "Time taken to disburse funds requested by the Government for an eligible emergency", was added with the 2017 AF, with a target of 4 weeks. In practice, the actual response time after the emergency component was triggered following the August 2021 earthquake and Tropical Storm Grace, was under one week (see Annex 1, Table A). There were no Intermediate Results Indicators for this objective. The key outputs associated with this objective were the repair and dredging of irrigation channels in the irrigated perimeters supported under the project (Dory, Dubreuil, Les Anglais and Melon), as well as repairs to infrastructure and equipment of RPOs supported with the MSF.

32. **Bearing in mind the overarching objective of RESEPAG II to build institutional capacity to provide public agricultural services, and the extremely fragile context in Haiti in which the project was implemented, the substantial institutional development that RESEPAG II brought about deserves recognition as part of the Efficacy of RESEPAG II.** The institutional development achieved is described in detail in Section II.E.

33. **As RESEPAG II met or exceeded all five of its applicable PDO indicators and three PDO sub-indicators while achieving substantial institutional development, and as the project met or exceeded 13 of the 15 Intermediate Results Indicators, RESEPAG II's Efficacy is rated as Substantial.**

C. EFFICIENCY

34. **RESEPAG II invested significantly in building institutional capacity over time in a fragile context and in responding flexibly to a series of shocks and emergencies (see Section III.B).** The project began slowly, due to the need to build institutional capacity within MARNDR and faced a series of major diverse external shocks beyond the control of GoH or the Bank that led to the need for emergency responses requiring additional resources and time. Thus, while RESEPAG II was originally designed to be implemented over five years to November 2016, in practice, with the AF, it was closed after ten years and four months. Moreover, with the large expansion in financing and in the range of activities financed—including three additional sub-components involving direct support to farmers and expanded capacity building activities within the project management component²⁹—the Actual Cost for Component 4 (US\$14.23 million) was substantially higher (374 percent) than at Approval, yet close to (104 percent of) the revised cost at the time of the AF (cf. Annex 3).

35. **The AF did not fund cost overruns, but rather provided more funding for a broader range of activities and a larger number of beneficiaries, and costs per beneficiary ended close to original values.** The original projection of 50,000 beneficiaries was reduced to 19,000 at the time of the 2015 Restructuring, due to project performance and adverse SDR-US dollar rates at the time, but with the 2017 AF the target was raised to 60,000 (with more beneficiaries of FSS incentives, including for agroforestry; livestock restocking; restoration of irrigated perimeters, and water conservation measures). In practice, RESEPAG II closed with 78,242 beneficiaries, i.e., 130 percent of the AF target and 156 percent of the target at Approval. This 156 percent increase compares favorably with the 161 percent increase in costs in the very fragile context in which RESEPAG II was implemented. Moreover, the share of funding received by direct farm-level beneficiaries (Components 2 and 3) at closing was 71 percent, which is close to the 74 percent projected at Approval.

36. **The Financial Internal Rate of Return (IRR) at Project Closing on RESEPAG II investments point to strong value for money from RESEPAG II.** Since data on farm-level financial impacts were not collected as part of RESEPAG II's routine Monitoring and Evaluation (M&E) data collection, a rapid financial impact survey was carried out via 559 questionnaires of beneficiaries that were filled out in the field by MARNDR surveyors during October-November 2021, including 410 for activities under sub-component 2.1 (with 339 project beneficiaries and 71 non-beneficiaries); 134 for activities under

²⁹ At Approval, Component 4 was destined for "Project Administration and Coordination", but at Project Closing, Component 4 had been expanded to "Institutional Strengthening, Monitoring and Evaluation, Project Management and Studies".



sub-component 2.3 (with 111 project beneficiaries and 23 non-beneficiaries); and 15 for beneficiary RPOs under sub-component 2.2. While this methodology entails certain caveats with regard to data quality (cf. Annex 4, paragraph 8), the ICR was able to construct eight models for sub-component 2.1, two for sub-component 2.3 and eight models for the RPOs supported under sub-component 2.2 (see Annex 4). The ex-post analysis point to substantial increases in gross margins in the "with-project" situation for all 8 models under sub-component 2.1, ranging from 23 percent for bananas to 343 percent for congo pea, and ranging from 688 to 756 percent for the two livestock models. Moreover, all eight sub-project models supported under sub-component 2.3 were found to be profitable to varying degrees, ranging from 7 percent for coffee or maize processing to 367 percent for milk processing.

37. RESEPAG II also generated substantial quantifiable economic benefits, with an Economic Internal Rate of Return (EIRR) of 15 percent over a 25-year period and an Economic Net Present Value (NPV) of US\$25 million.³⁰ The economic IRR was estimated at slightly over 40 percent at Appraisal, drawing on farm model estimates in an IDB-funded value chain study and applying overly optimistic assumptions on both the pace over time and the overall rates of adoption (cf. Section III of Annex 4). The estimated economic IRR was adjusted downwards significantly to 23-25 percent by the AF Project Paper in 2017, although with few details on the revisions in the assumptions. However, relying on more conservative assumptions on adoption rates and on actual farm-level survey data, this ICR calculates a final economic IRR of 15 percent (see Annex 4 for details on the economic data gathered and the assumptions applied). This 15 percent economic IRR represents a robust outcome in the extremely fragile context in which the project was implemented, and where the opportunity cost of capital is assessed at 5 percent. Moreover, various important economic benefits could not be quantified, including those deriving from the rehabilitation of 2,244 hectares of irrigation schemes for smallholders under sub-component 4 (which only began to yield benefits after the October/November 2021 surveys were conducted); the emergency support provided to farmers hit by the 2021 earthquake in the South; and the project's climate co-benefits, especially those associated with improved agro-forestry practices supported with FSS resources. In addition, sensitivity analysis suggests that the project's EIRR is resilient to large reductions in the long-term adoption rate of improved agricultural practices and animal husbandry packages (under sub-components 2.1 and 2.3) and to higher failure rates of sub-projects for RPOs (under sub-component 2.2), (see Table 2 and Annex 4, including the rationales for the assumptions in the base case scenarios).

Table 2: Economic Internal Rate of Return and Sensitivity Analysis

	Base case*	Change in adoption rate of agricultural and animal							Change in failure rates of sub-projects				
		20%	30%	40%	50%	60%	75%	100%	10%	20%	33%	40%	50%
EIRR	15%	1%	5%	9%	12%	15%	18%	24%	16%	15%	15%	14%	13%
NPV (US\$ million)	25	-8	0	9	17	25	37	58	29	28	25	24	22

38. Taking into consideration the close alignment between increased costs and increased numbers of beneficiaries under the project, the robustly positive financial and economic returns generated by RESEPAG II, and the extremely fragile context in which those returns were achieved, (even without considering important institutional capacity gains and non-quantified benefits generated over the life of the project), RESEPAG II's Efficiency is rated as Substantial.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

39. Considering the High relevance rating of RESEPAG II and of its Substantial efficacy and efficiency ratings (see Table 3), RESEPAG II's overall outcome is rated as Satisfactory.

³⁰ The base EIRR calculation excludes costs of Component 1, sub-component 2.4 and Component 3 (for which benefits were not calculated) and the related share (14 percent) of Component 4 costs. Adding these costs, the EIRR remains a robust 9 percent. For the NPV, a discount rate of 5 percent was applied, reflecting the long-term opportunity cost of capital. The full set of assumptions, e.g., with regard to conversion factors, technology adoption rates and other parameters, is described in Annex 4.



Table 3: The Overall Outcome of RESEPAG II is Rated as Satisfactory

Relevance of PDO	Efficacy	Efficiency	Overall Outcome
High	Substantial	Substantial	Satisfactory

E. OTHER OUTCOMES AND IMPACTS

Gender

40. **RESEPAG II explicitly targeted and measured opportunities created for women, and the benefits for women exceeded projections at Approval.** It supported collaboration between MARNDR and the Ministry for the Status of Women and Women’s Rights in order to mainstream gender in RESEPAG II activities. This included: hiring a gender consultant to support the project’s Coordinating Unit; ensuring reporting to the Bank on gender issues; collecting, gender-disaggregated data on project beneficiaries and on users of the Grievance Redress Mechanism (GRM); targeting women specifically by supporting women farmers’ small gardens, a financial literacy program for women in agriculture, and training sessions at times and locations that were convenient for women; selecting women as farmers field facilitators; lower in-kind and financial contributions from women for matching grants; social capital formation through women farmers’ organizations; and building sensitivity to gender, environment and nutrition into the criteria for the selection of sub-projects under the MSF, with 82.8 percent of sub-projects judged to have met the criteria, relative to the target of 60 percent. At Project Closing, 47 percent of direct project beneficiaries were women, compared to a target of 20 percent at Approval and an increased target of 40 percent at the time of the Additional Financing.

Institutional Strengthening

41. **The strengthening of institutional capacity—including policy, practices and systems—under RESEPAG II, especially in the fragile context of Haiti, is one of the project’s most significant achievements.** Capacity was strengthened at multiple levels, beginning with the decision that MARNDR staff would lead the coordination and implementation of the project—which was significant in the Haitian context—and the establishment of a pole of excellence in the coordination unit that has been maintained over time (cf. Annex 9, Box 2). However, the strengthening of capacity went well beyond this, by ensuring that MARNDR’s respective Departments, e.g. for Extension and for SPS, (or the CNSA for market information), were directly responsible for oversight of the project’s support in areas under their purview, with training and technical support from RESEPAG II. Capacity was built, among others, in the Directorates for extension, training, SPS, agricultural innovation, and in the areas of M&E, Financial Management (FM) and Procurement, (notably in the latter case with the establishment of a significantly strengthened central unified procurement unit that handled all procurement for the Ministry), as well as in a cross-cutting way on gender and safeguards issues. For example, 300 extension officers received training on extension techniques, while 3,068 veterinary agents and epidemiological surveillance agents (both public and private) received training on preventing and treating illnesses, which enabled them to vaccinate more than 2.4 million animals (mostly bovine) in 2019 against anthrax, while procurement processes were conducted much more swiftly and effectively by the end of the project. In addition to MARNDR, capacity was strengthened at the CNSA in terms of data gathering, monitoring and distribution of market price information to rural producers. Beyond the central level, capacity was built in the Departmental Agriculture Directorates (DDAs), Agriculture Communal Offices (BACs) and Farmer Field Schools, as well as among Operators and Service Providers, and participants in Technical Agricultural Roundtables, Irrigators’ Associations, RPOs, and individual farmers, with technical support and extension provided together with matching grants and vouchers. For example, the irrigators’ associations for the irrigated areas supported under sub-component 2.4 received technical and administrative tools to ensure an effective administration of their perimeters, including legal registration and the elaboration of their statutes and operating rules, and capacity building to ensure the social engagement that is a critical factor for their long-term success. In addition, policies and procedures were strengthened in the areas of agricultural extension (with the adoption of a national



strategy and plan), SPS, as well as fiduciary, safeguards and M&E policies and procedures. Moreover, systems were greatly strengthened via the adoption of the Kobo Toolbox for M&E, ACCPAC for financial management,³¹ and the creation of a registry for tagged cattle as well as a greatly expanded National Farmers Registry, which has become an essential tool for planning and targeting support to farm households. These important institutional advances are a critical dimension of the success of RESEPAG II, especially in the fragile context of Haiti. Indeed, the institutional strengthening and RESEPAG II's decentralized approach enabled it to continue implementing successfully even in the context of a complete lockdown of the country in 2019,³² political turmoil and natural disasters.

Mobilizing Private Sector Financing

42. **While the project was not designed to mobilize private sector financing, it included a minimum 20 percent own financing requirement for sub-projects financed under the Market Support Facility.** This resulted in the mobilization of US\$2.39 million in counterpart financing by RPOs over five years (2015-20). The US\$40 million in IDA financing also leveraged US\$45 million in public GAFSP and CRW resources for strengthening institutional capacity and resilience.

Nutrition, Poverty Reduction and Shared Prosperity

43. **RESEPAG II increased awareness and provided training on nutrition issues.** Sub-projects supported by the MSF were required to be sensitive to gender, environment and nutritional issues, with targets exceeded (cf. Section on gender). The Project Coordination Unit reports that 607 trainers on nutrition issues were trained, of whom 44 percent were women, and that they in turned reached out to around 15,000 project beneficiaries. The agricultural and livestock production supported by the project also enhanced the availability and nutritional value of food for beneficiaries.

44. **RESEPAG II made an important contribution to poverty reduction, albeit with risks to its sustainability.** The project greatly increased the value of production by beneficiaries of the FSS, and in sales by RPOs supported under the MSF. This has also strengthened the capacity of beneficiary rural producers to manage adverse shocks, relative to non-beneficiaries. In addition, the agroforestry and irrigation rehabilitation/water management investments will have lasting impacts in terms of improved livelihoods relative to the without-project scenario. However, the political, economic and natural disaster fragility of Haiti represent important persistent risks for the sustainability of the poverty reduction, and overall food insecurity has been increasing in rural areas of Haiti in recent years (see Section IV.D). Continued support for rural producers under PARSA will help to consolidate gains achieved by RESEPAG II in terms of poverty reduction.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

45. **RESEPAG II was designed in the aftermath of the 2008-09 global food crisis and the devastating earthquake that struck Haiti in 2010.** Following the global food crisis, Haiti was selected as one of the first three countries to receive support from the newly created GAFSP, along with Rwanda and Bangladesh. The GAFSP required recipient countries to have national agriculture investment plans with identified financing gaps that could be filled in part by GAFSP, so a top priority for the Bank in early 2010 was to support MARNDR in preparing the PNIA, together with other donor partners. Thereafter, while the original idea was for the Bank to manage a US\$50 million GAFSP grant to build local capacity and expand the FSS piloted under RESEPAG I, the concept changed dramatically during preparation: US\$40 million of the US\$50 million was reassigned to the IDB (to demonstrate GAFSP's readiness to work with different partners, as the Bank

³¹ ACCPAC stands for "A Complete and Comprehensive Program for Accounting Control" and is an accounting/financial management software that can be used for project management.

³² *Peyi Lòk* refers to a lockdown form of protest that halts all economic activity, leading to shortages of food, gas, and other necessities.



was to lead GAFSP-financed projects in Rwanda and Bangladesh), and the IDB expanded the FSS in the North/Northeast. Thus, the Bank supplemented the remaining US\$10 million GAFSP financing with a US\$40 million IDA grant. Moreover, as GoH had expressed interest in the productive alliances approach that the Bank had been supporting in Colombia, Honduras and elsewhere. RESEPAG II's design switched to establishing the MSF to directly finance RPOs, as opposed to financing a voucher scheme for individual farmers as under the FSS. The productive alliances approach was simplified in the Haitian context to one more akin to the Brazilian experience, with matching grants and technical assistance (TA) for RPOs to improve post-harvest and agribusiness technology, but without formal purchase or financing agreements from buyers or financial intermediaries, respectively. To put the project in place quickly, top priority was given to developing the manual for the new MSF, and since MSF support required sub-projects to be financially/economically viable, the economic analysis was streamlined, relying on the findings of farm models developed by the IDB for their operations.

46. A critical decision was also taken to continue the novel approach of RESEPAG I and design the project to be coordinated within and by MARNDR, rather than by a self-standing Project Implementation Unit. This decision would require not only significant investment in capacity building but also strong buy-in across MARNDR, which led to the inclusion of various Technical Directorates and thereby initially increased the institutional complexity involved in the implementation of Component 1. The balance that the Bank sought at appraisal between ownership and complexity was adjusted later during the 2015 Restructuring with more institutional streamlining under Component 1.

47. The decision taken during preparation to include a component that provided immediate support in the event of a range of emergencies proved to be appropriate in the Haitian context. The component was activated within one year of implementation due to the 2012 pest infestations, and again after Hurricane Matthew and the 2021 earthquake.

B. KEY FACTORS DURING IMPLEMENTATION

48. The key factor under the control of GoH and its Coordinating Unit that most affected implementation was its implementation capacity, which was built up over time. RESEPAG II consolidated RESEPAG I's approach (which broke with past practices) by placing project coordination firmly under MARNDR's leadership. RESEPAG II had just two project coordinators over the 10-year life of the project, and this continuity (in the face of 11 changes of Minister and turnover at departmental levels) favored project implementation. However, in Haiti's fragile context, institutional capacity had to be built up over time from an initial low base that resulted in a slow start to implementation. Capacity was built by both training existing Ministerial staff and hiring young consultants on a contractual arrangement that offered them career opportunities to be hired as staff with time, with related potential promotions and a pension (cf. Annex 9 Box 9.2). In the early years of the project, staff/consultant turnover was high (as those trained by RESEPAG II were attracted to work on other projects by higher salaries), and ISRs reported delays in fulfilling key positions in the coordinating unit, including for safeguards and M&E, as procurement efforts to fill those positions with adequate skills failed on several occasions. However, with time MARNDR was able to establish a generally young, motivated and well-trained core of excellence that was retained over time, and that is exemplary in the Haitian context (with parallels only in the Ministry of Transport). MARNDR's decision to create a central unified procurement unit (UMPM) for all project and Ministerial procurement also led to greatly strengthened capacity in this area and contributed to improved project implementation. With regard to strategic priorities, high ministerial turnover led to some uncertainty in sector strategies,³³ although sector strategy was generally supportive in light of the 2010 and 2016 PNIA's. Overall, MARNDR's commitment to the project was strong and favored successful implementation of RESEPAG II, even with numerous adverse shocks.

³³ The risk rating for Sector Strategies and Policies was raised in ISR 9 (June 2016) from Substantial to High, before being reduced again to Substantial in ISR 18 (June 2020).



49. The key factor under the control of the Bank was its intensive solutions-oriented implementation support, which was instrumental for the success of the project. The Bank restructured the project on four occasions to respond flexibly to implementation challenges and shocks in the external context, as well as to emerging priorities. This is evinced by the refocusing of Component 1 on SPS and the expansion of support under the FSS with the 2015 Restructuring, as well as by the 2017 AF in response to the damages provoked by Hurricane Matthew, which not only provide additional resources to improve livelihoods in the short term, but also a greater focus on longer-term solutions (via agroforestry and water management systems) to enhance resilience. The Bank team also actively strengthened the Results Framework over the life of the project; pursued enhanced M&E, including via support from the Bank's Development Impact Evaluation (DIME) team; and closely followed up on fiduciary and safeguards, including Grievance Redress Mechanism (GRM), issues (cf. Section IV.B). Supervision missions were frequent and regular, coordinated closely with donor partners (especially the IDB), were complemented by continuous local support from Bank staff in Port-au-Prince (and in later years of the project by a locally based co-Task Team Leader (co-TTL)), and were followed by action plans that were monitored closely. Moreover, when the Covid-19 pandemic made mission travel impossible, the Bank switched to a system of monthly virtual meetings with the MARNDR coordinating team to support implementation.

50. The project suffered an inordinately large and diverse range of major adverse shocks beyond the control of GoH or the Bank during implementation. In the very first year of implementation, Haiti was struck by two powerful hurricanes, Isaac and Sandy, and by coffee rust, and by an unprecedented infestation of cochineal (white mealybug) in the project areas in North/Northeast Haiti. These emergencies triggered Component 3 and absorbed considerable time and attention from an already understaffed Coordinating team at MARNDR, thus affecting the implementation of the other components. By 2015-16 drought conditions were hampering agricultural production, and a cross-border problem with fruit flies threatened to reach Haiti and affect its exports of mangos to the United States, requiring field-level training plus the contracting of traps for fruit flies following United States Department of Agriculture guidance. At the same time, the mealybug infestation continued to spread in Haiti, although project-supported chemical controls in the North/Northeast were having some effect in controlling the infestation in those Departments. Moreover, in October 2016, Haiti was struck by level IV Hurricane Matthew, the most powerful hurricane to strike Haiti in the last five decades, resulting in the need for emergency response under Component 3 and the 2017 AF to support the most affected areas.

51. Economic and political conditions worsened after the AF became effective. Growth first stagnated and then in 2020 contracted by 3.3 percent, even as the cost of the Minimum Food Basket soared by 25 percent in the year to September 2020, eroding households' purchasing power.³⁴ The Haitian Gourde (HTG), which stood at HTG 40.5 per US dollar at project Appraisal in 2011, had devalued to HTG 100 per US dollar by 2021, resulting in inflation in food imports, on which Haiti depends heavily, as well as in fuel and inputs for agricultural production. The economic conditions fueled an intensified political crisis in 2018 with large, violent demonstrations against fuel shortages, cost of living increases and corruption allegations. This culminated in the complete paralysis of the economy (*'Peyi Lòk'*) in 2019, as well as a sharp spike in gang violence, with gangs blocking road transport into and out of the capital—a problem that persists today.³⁵ In the absence of elections to replace legislators whose terms had expired, President Jovenel Moïse ruled by decree after January 2020,³⁶ until he was assassinated on July 7, 2021, plunging the country further into uncertainty. These challenges were compounded further by the Covid-19 pandemic after March 2020, which resulted in additional restrictions on mobility and impacted supply chains, as well as by a 7.2 magnitude earthquake that struck Haiti's

³⁴ World Development Indicators, 2020, available at: <https://databank.worldbank.org/source/world-development-indicators>.

³⁵ Armed Conflict Location & Event Data Project, 2021. <https://acleddata.com/2021/02/02/ten-conflicts-to-worry-about-in-2021/#1612195820235-14ee80d6-2b08>. Indeed, works were halted at the Agricultural Middle School of the Artibonite Valley (EMAVA) and MARNDR's project staff could not even visit the facilities during more than two years, due to violent security conditions (cf. the Aide Memoire prepared in June 2020).

³⁶ Haiti's Political and Economic Conditions, Congress Research Services, 2020 <https://www.justice.gov/eoir/page/file/1316076>



southern region on August 14, 2021, resulting in over 2,000 deaths, over 5,000 wounded, and economic damages in the Grand'Anse, Les Nippes and Sud Departments reaching US\$1.11 billion (equivalent to 7.8 percent of Haiti's 2019 GDP; cf. the map of Haiti in Annex 9, Figure A9.2).³⁷ This disaster triggered the need for a further rapid emergency response under RESEPAG II. The earthquake damage was aggravated three days later by the passage of Tropical Storm Grace over southern Haiti, resulting in further deaths of people and livestock, and destroying crops, perennials, and rural infrastructure such as irrigation channels. The achievement of so many of RESEPAG II's key performance indicators in this fragile context of repeated, major adverse shocks is a testament to the commitment of MARNDR, the operators, and the Bank team, to achieving the project's objectives.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

52. **The design of the Results Framework at Approval was underpinned by a rational, albeit not explicit, theory of change, with indicators that reflected the original priorities.** The M&E system was designed to be housed in MARNDR's Directorate of Monitoring and Evaluation (DSE), with a full-time senior DSE manager as the M&E Coordinator, and provision in the project for consultant support for M&E, as well as for impact evaluation of the MSF in the North and Northeast Departments and for a final evaluation of the project. Sub-component 1.a envisaged "the establishment of learning-based monitoring and evaluation mechanisms", to build on the system developed under RESEPAG I, create an integrated system that would be of use to MARNDR beyond the project's life cycle, and strengthen MARNDR's orientation towards learning, impact and results. The PAD reported that RESEPAG I's Operational Manual had been updated for RESEPAG II, including with regard to M&E.³⁸ The design of the indicators and results framework reflected the original objectives and outcomes, although during implementation the results framework had to be revised entirely in order to changing priorities under both major components of the project (i.e., the achievement of the strategic extension objectives and the emergence of urgent SPS priorities in Component 1, and the addition of a large new sub-component for farm subsidies in Component 2 with the 2015 Restructuring; and the addition of new livestock and irrigation/water management sub-components under Component 2, and an increased focus on the hurricane-struck areas in Southern Haiti with the 2017 Additional Financing). The 2015 Restructuring also pointed to the need to strengthen the linkages from project activities to outcomes in the results framework.

M&E Implementation

53. **MARNDR's M&E unit lacked adequate capacity at the start of the project, and the absence of adequate consultant support and baseline data at Approval constrained M&E activities in the early years.**³⁹ After being downgraded to Unsatisfactory (U), due in part to weak early ownership (with MARNDR's focus on the pest infestations in 2012-13), M&E was upgraded to Moderately Unsatisfactory (MU) in May 2014,⁴⁰ following consultant support and preparation of an M&E manual, although challenges remained. A revised RF was developed during the 2015 Restructuring, with revamped indicators aligned with the revised PDO objectives, and ISR 8 in December 2015 noted that MARNDR Departments were able to closely monitor their actions, procurement activities, indicators, budgets and next steps. By June 2016, a baseline

³⁷ Global Rapid Damage Estimation Report, August 27, 2021, World Bank Group.

³⁸ Cf. PAD for RESEPAG II, page 35.

³⁹ Cf. ISR 4, issued in October 2013, notes that most KPIs were still at zero, mainly because of implementation lags, but also because of a "lack of linkages between activities and [the] results framework".

⁴⁰ Cf. ISR 5, issued in May 2014.



for the impact evaluation had been completed for matching grant beneficiaries under the first call for proposals, with support from the Bank's Development Impact Evaluation (DIME) team.⁴¹ However, challenges persisted with M&E data collection for impact evaluations of the MSF assistance in the North and Northeast Departments, which was reflected in the ratings. The RF was fine-tuned further with the 2019 Restructuring, and M&E was upgraded to Satisfactory (S) in ISR 20 in June 2021, reflecting the Bank's view that data on key project indicators was being collected reliably and consistently.⁴² By Project Closing, data had been gathered on progress on all KPIs in the RF—a major achievement in the extremely fragile and volatile context (cf. Section III.B)—although data on beneficiary impacts (e.g. incremental incomes) was not collected during implementation and had to be obtained in the end via ex-post surveys (cf. Annex 4).

M&E Utilization

54. The Bank was concerned about limited ownership of the M&E system in the early years of RESEPAG II, but M&E utilization increased significantly by the end of the project. The M&E system made it possible to share important information on MARNDR's website. The M&E data were, moreover, used for the preparation of the PARSA project, which has continued to rely on the Kobo Toolbox system introduced under RESEPAG II, and the MARNDR team implementing the Resilient Productive Landscapes (RPL) Project harmonized its data collection and methodology with those of RESEPAG II.⁴³ Finally, the National Farmer Registry, whose coverage was expanded massively with RESEPAG II financing, has proved invaluable for targeting support to farmers not only under PARSA but also under other GoH and donor-financed programs.

Justification of Overall Rating of Quality of M&E

55. The M&E system delivered reliable information on the PDO, and intermediate indicators and the system has proved sustainable. The M&E system, as designed, implemented and used, was generally sufficient to assess the achievement of the objectives and to test the links in the results chain, and it proved valuable beyond RESEPAG II. While there were some shortcomings at the design and implementation phases that had to be overcome in the process of strengthening institutional capacity, the strong progress achieved in building that capacity, the adoption of the Kobo Toolbox, the production of reliable data to track KPIs, and the major benefits derived from implementing the livestock database and especially the National Farmer Registry—all in a fragile context in which the project faced repeated adverse external shocks—taken together justify an **overall rating of quality of M&E as Substantial**.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

56. RESEPAG II was properly classified as a Category B project and originally triggered four safeguards, with a fifth one triggered at the time of the AF. The safeguards policies triggered at Appraisal were: Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.04); Forests (OP/BP 4.36); and Pest Management (OP 4.09). Involuntary Resettlement (OP/BP 4.12) was triggered in the AF Project Paper in June 2017. In line with Condensed Procedures in para 12 of OP 10.00 (*Projects in Situations of Urgent Need of Assistance or Capacity Constraints*), the RPF was prepared

⁴¹ The DIME team also contributed an impact evaluation of the MSF, but this was limited to a qualitative assessment.

⁴² Already in June 2020, ISR 20 had observed that: "The M&E team has updated the project progress in the results framework and has successfully conducted a qualitative evaluation that has been useful to complement the quantitative evaluation to better understand the project results and issues that have affected production and technology adoption. The GAFSP report of the project was completed and has informed the World Bank evaluation of the GAFSP activities. The M&E team has been collecting data with Kobo Toolbox on potential beneficiaries of emergency activities. The team will continue using this tool for monitoring and evaluation."

⁴³ Cf. ISR 18, issued in June 2020.



during implementation and published by MARNDR in March 2018, and a Resettlement Action Plan was prepared for the eight persons who were affected by, and duly compensated for, construction work in the Dory irrigated perimeter.⁴⁴

57. Environmental and Social Risks were rated Low to Moderate, and compliance with all safeguards was rated Moderately Satisfactory or Satisfactory throughout implementation. Social risks were mitigated by closely engaging communities through Departmental Agricultural Consultation Tables in prioritizing FSS support. RESEPAG II was also designed to avoid financing activities with significant negative environmental impacts and to promote environmental good practices such as reforestation and soil conservation. The key environmental concerns involved disposal of syringes and of expired pharmaceuticals for the vaccine campaigns (which were duly incinerated); inadequate sanitation in sub-projects (poor design of latrines); clearing land of trees and shrubs for market gardening; and pest management. Mitigation measures were managed using the Environmental and Social Management Framework (ESMF), under which Environmental and Social Management Plans (ESMP) were prepared to minimize, mitigate and manage these potential impacts: e.g., an Integrated Pest Management Plan was prepared as part of the ESMF to ensure the use of only approved pesticides, training of operators, and to promote biological control of mealybugs using natural predators.

58. Fiduciary compliance was mixed at times and required close follow-up by the Bank but concluded satisfactorily. There were delays in complying with legal covenants related to the appointment of independent auditors and the implementation of an acceptable accounting software, although eventually all of RESEPAG II's legal covenants were complied with. There were also delays at times in submitting interim financial reports, and while there are no reports of ineligible expenditures, around US\$2.2 million in GAFSP-related expenditures were originally posted to IDA financing and had to be reposted to GAFSP funds.⁴⁵ However, by the end of the project, FM was rated Satisfactory, with the final ISR (March 2022) noting that: "there are not shortcoming affecting the capacity to provide timely and reliable provision of information required to manage and monitor the implementation of the project. The Project Implementation Unit (PIU) completed the installation of the ACCPAC computerized accounting system, and the system is operational."

59. On the procurement side, the primary challenge was related to delays in procurement processes, in part due to capacity constraints in the early years of the project, and delays in clearing awarded contracts for signature. This was due to cumbersome prior reviews by the General Accounting Office (the requirement was eventually lifted in February 2020 after significant follow-up by the Bank).⁴⁶ Another procurement challenge was the failure of several bidding processes, in part because of cumbersome national requirements for paperwork even for small contracts, and in part due to inadequate quality of applications, although most of the required procurements were eventually made. The establishment and strengthening of the Unified Procurement Unit (*Unité de Passation des Marchés Publics*) in MARNDR to conduct all procurement for MARNDR (both Ministerial and donor-financed) with a strong skills base transformed procurement, which was upgraded to Satisfactory by December 2019, more than two years before Project Closing.⁴⁷

C. BANK PERFORMANCE

Quality at Entry

60. The Bank's preparation of RESEPAG II presents a number of strengths. The Bank team moved quickly with other donor partners in early 2010 to support GoH in preparing the PNIA that paved the way to access GAFSP financing and ensured RESEPAG II was strategically aligned with the PNIA. When US\$40 million in GAFSP financing was reassigned from the Bank to IDB, the Bank stepped in quickly to replace it with US\$40 million equivalent in IDA financing. The Bank

⁴⁴ ISR 18, dated June 2020, confirms that the compensation payments under the RAP had been made.

⁴⁵ Cf. the Aide Memoire issued in September 2019.

⁴⁶ Cf. the Interim Project Completion Report for GAFSP, submitted to GAFSP in June 2020.

⁴⁷ Cf. ISR 17, dated December 2019.



undertook intensive design work to respond to GoH's request to develop a productive alliances approach rather than the individual farmers voucher approach (FSS) piloted under RESEPAG I, designing the new MSF approach that was implemented effectively. The Bank included an emergency component that proved extremely useful in the fragile context of Haiti. The Bank also took the visionary decision to consolidate the RESEPAG I approach and ensure coordination of RESEPAG II directly by MARNDR. While this led to important initial delays, it proved invaluable in terms of long-term institutional development. Close co-ordination with the IDB in preparing the PNIA and in the geographic coverage and nature of activities funded by both agencies, served Haiti well, (as IDB expanded RESEPAG I's FSS support for production in the North/Northeast, while RESEPAG II supported post-harvest activities and applied research with the MSF in these areas). A key design feature of RESEPAG II that was essential for success was to combine central support with decentralized implementation arrangements, including local Operators to implement the MSF and teams in the DDAs to support/oversee implementation. Thus, when political and Covid-19-related mobility restrictions impeded field visits from Port-au-Prince, implementation was able to proceed locally thanks to this design feature. Another positive aspect of the Bank's performance at the design stage was the appropriate identification of, and mitigation measures for, environmental and social risks, as well as measures designed to ensure the inclusion of women beneficiaries and track related indicators. Overall risks were appropriately assessed as Substantial at the time of the first ISR (dated December 5, 2011, four days after Board Approval), including High country risk and Substantial capacity and delivery monitoring risks, although these risk assessments are not reflected in the Operational Risk Assessment Framework (dated August 1, 2011) they were retained in the PAD (which did include fiduciary and other measures to mitigate risks).

61. There were also some minor shortcomings in project design. These included some project readiness issues, as key technical consultant resources and certain procedures (e.g., for M&E) were not in place at Board Approval. The project's initial RF had indicators that were found later not to be as well aligned as expected with project activities (and were revised during implementation), and the Appraisal included EIRR calculations based on external sources that later proved to be optimistic. Also, in order to increase ownership, Component 1 initially included activities for more MARNDR Technical Directorates than proved feasible in the end, although this was adjusted during the 2015 Restructuring. These minor shortcomings were resolved by the Bank team during implementation.

Quality of Supervision

62. The Bank's highly proactive, solutions-oriented supervision contributed significantly to RESEPAG II's success:

- RESEPAG II was intensively supervised throughout the life of the project, with implementation support both from Headquarters- and locally based staff, including multiple field visits by a locally based co-TTL with relevant skills (Agricultural Specialist) who was associated with RESEPAG II for almost the entire life of the project. When Covid-19-related travel restrictions impeded Bank travel to Haiti, the Bank supervision switched to regular formal monthly supervision meetings combined with almost daily contact with the Coordinating Unit. As mobility restrictions due to political violence and Covid-19 also impeded local movement into/out of Port-Au-Prince, the Bank ensured that the Coordinating Team had multiple internet service providers and technology tools to be able to engage with and support/monitor local implementation by DDAs and Operators in the five Departments.
- The Bank was highly proactive in identifying and proposing solutions to problems as they arose. This included four Restructurings, with two requiring Board approval, and a successful Mid-Term Review that helped to turn around project performance. These changes include the reorientation of Component 1 from extension towards SPS, the addition of FSS support after RESEPAG I closed, and additional financing to ensure short-term livelihoods support while strengthening longer term climate resilience after Hurricane Matthew.
- The Bank ensured that RESEPAG II was highly responsive in emergencies, as is exemplified by the responses to the 2012-13 pest infestations, Hurricane Matthew and the 2021 earthquake (where the Bank worked at once with



the Coordinating Unit on an action plan and made funds available within two days of the formal request to activate Component 3, while also increasing the livelihoods response to the disaster via FSS-supported activities).

- The Bank worked closely with donor partners, notably the IDB: e.g., when MARNDR established the UPMP in 2014, the Bank and donor partners worked closely to harmonize requirements and strengthen the unit's skills.
- Bank support for strengthening systems, notably the ACCPAC accounting software, the Kobo Toolbox for M&E, the STEP system for procurement, and the National Farmer Registry, greatly enhanced institutional development.
- The Bank also strengthened the RF; simplified and clarified the categories of disbursements; engaged closely with MARNDR to ensure that the requisite fiduciary, safeguards, and M&E skills were hired and retained and that the requisite IFRs and Audit reports were submitted; and placed considerable emphasis on strengthening M&E and on monitoring gender outcomes, to ensure successful project implementation.

Justification of Overall Rating of Bank Performance

63. As the Bank's performance during project design reflected a number of strengths with some minor shortcomings, and the Bank's proactive, responsive and solutions-oriented implementation support was decisive in ensuring the success of RESEPAG II in a context of extreme fragility and repeated external shocks, the overall rating for the Bank's performance is Satisfactory.

D. RISK TO DEVELOPMENT OUTCOME

64. The risks to the achievements of the project being sustained are **Substantial**, although the implementation of the PARSA Project (approved in March 2022) represents an important source of mitigation of future risks, and RESEPAG II has greatly strengthened direct beneficiaries' capacity to cope with future risks. The project's approach continues to enjoy strong sectoral strategic support, social support as reflected MARNDR's continued engagements with the Agricultural Roundtables, and technical/institutional continuity as evinced by the PARSA project. Indeed, the adoption of RESEPAG II's institutional arrangements and capacity to implement PARSA, as well as the continued support to producers in the southern and central Departments using similar methodologies to those delivered by RESEPAG II, (as well as continuing IDB support to producers in Northern Haiti), constitute important mitigation measures for these risks.

65. **Three key sources of risk could affect the sustainability of achievements under RESEPAG II, namely political, economic and environmental risks, with both the likelihood and severity of these risks being Substantial.** Political turbulence and gang violence continue to constrain Haiti's broader economic development, and to hinder the ability of farmers and local suppliers in the project areas to access inputs and markets in Port-au-Prince, especially due to blockages of key roads into and out of the capital. The political crisis is both driven by and fueling continued macroeconomic challenges for the country, including inflation and the devaluation of the Haitian Gourde which affects access to fuel and other inputs. Haiti also remains one of the most vulnerable countries in the world to natural disasters, with key risks in terms of earthquakes, hurricanes, flooding and droughts, especially as most agriculture is rainfed. Even with the support provided under the project, food insecurity has continued to worsen across Haiti in light of the above challenges, with 4.5 million Haitians in all of the country's 10 Departments facing crisis or emergency levels of food insecurity as of June 2022.⁴⁸ However, without the technical solutions that RESEPAG II provided in terms of capacity building; market price information; improved SPS management of pest infestations; improved agricultural

⁴⁸ The Integrated Food Security Phase Classification (IPC) was developed by FAO to provide a rigorous standard for classifying food insecurity contexts in five stages, to inform policymaking and responses: 1: Minimal; 2: Stressed; 3: Crisis; 4: Emergency; and 5: Famine. See <https://www.ipcinfo.org>. IPC 2020. Cf. Haiti: Acute Food Insecurity Projection Update March - June 2022. Available at: <https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1155488/?iso3=HTI>.



technologies; better management of watersheds via agroforestry and protection of riverbanks and gullies; improved access to water in irrigated perimeters, and livestock restocking, the ability of the project's direct beneficiaries to cope in the event that the risks materialize would be significantly lower.

V. LESSONS AND RECOMMENDATIONS

66. RESEPAG II's exemplary success in achieving all its PDO indicators in a fragile context despite extraordinary political, economic and natural disaster challenges, offers several key lessons for operations in Haiti and beyond:

- **Building institutional capacity is essential in a fragile context such as that of Haiti, and while it can imply a slower initial pace of implementation, it can yield significant benefits over the longer term.** A key lesson from RESEPAG II is that building MARNDR's institutional capacity, notably by placing the coordination of the project firmly in MARNDR, rather than in a parallel PIU, and by relying on relevant Departments rather than on a PIU for the technical supervision of project-supported activities in their areas of purview, can result in significant improvements in the way the Ministry performs its mandate, as lines of responsibility are clearer, and capacities are reinforced. This requires: *a realistic time-frame for implementation for the institutional development to take root in a fragile context, i.e. more than the standard five-year time-frame for a project; significant government ownership; intensive implementation support, including by locally based Bank expertise; a judicious blend of capacity building for existing Ministerial staff together with reliance on technical expertise from consultants; and continuity for core members of the project coordination team, be they staff or consultants.*
- **The use of locally based operators to support MARNDR in delivering services, as well as reliance on locally based Project Coordination staff to oversee and support implementation, proved invaluable.** Thus, when restrictions on mobility due to gang violence and to the Covid-19 pandemic impeded close field-level follow-up by the central Project Coordination Unit, project implementation was able to continue thanks to decentralized operators in the project areas and to supervision/support by locally based teams of the Project Coordination Unit. As the Recipient's ICR argues, *it is preferable to rely, where available, on regional operators with roots in the community and proven capacity, rather than on more distant operators that are less likely to value local skills or integrate local communities. In addition, it is important to ensure close control over the operators via reporting requirements and close monitoring of compliance with fiduciary, safeguards, M&E and other requirements.*
- **As indicated in the Recipient's ICR and in the lessons learned in PARSA's PAD, strengthening community capacity and facilitating civic engagement greatly increases local commitment, improves results and reduces social risks.** Close collaboration with the Departmental Agricultural Consultation Tables, irrigators' associations, RPOs and other local institutions to prioritize and define interventions yielded major dividends in terms of commitment, the likelihood of successful implementation and sustainability. RESEPAG II's participatory approach and its transparency in executing grant support for farmers, together with the definition of clear selection criteria and approval processes in the operations manual, mitigated political interference and contributed to better, more sustainable results. The PARSA PAD states: "experience under RPL and RESEPAG II with participatory community selection of beneficiaries has proven successful and this approach will be adopted in targeting support under the PARSA Project".⁴⁹
- **Adapting flexibly and responding rapidly to changing circumstances is essential in a fragile context.** RESEPAG II was buffeted by a exceptionally large and diverse external shocks (political, macroeconomic, climate-related, animal and plant health-related, and by a global pandemic). The project's strong grounding in strategic priorities

⁴⁹ Cf. the PAD for the PARSA project (P177072), Report No. PAD4673, Lessons Learned, page 18.



established by MARNDR (reflected in the 2010 and 2016 PNIAs), and its flexibility in responding to changing priorities and emerging challenges via four Restructurings and activation of the emergency component proved invaluable for its success. *Responsiveness and flexibility are essential for success in a fragile context, and to this end, teams should adapt the project's Theory of Change and RF as needed.* Also, responses via interventions that address immediate livelihood needs while promoting longer-term resilience, as supported by RESEPAG II, can generate more sustainable positive impacts and address environmental drivers of fragility.

- **The Farmer Field Schools model of innovation encourages both community-level and broader sharing of lessons.** These schools have proven valuable to strengthen communities and to test and disseminate innovative agricultural techniques and improved varieties that are closely adapted to local agro-ecological contexts and to local capacities, with the knowledge dissemination closely linked to the provision of FSS incentives. Distilling lessons from the Farmer Field Schools via didactic materials allowed for wider dissemination of lessons. In the same vein, knowledge sharing events among RPOs proved valuable to increase motivation among RPO members.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Reinforce the capacity of the MARNDR to provide or facilitate access to services in the Ag. sector

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
1. Key elements to strengthen institutional capacity of MARNDR implemented	Percentage	0.00 01-Apr-2012	0.00 01-Apr-2012	80.00	81.25 31-Mar-2022

Comments (achievements against targets):

This target was achieved as of Project closing, with the final value of 81.25 percent for the indicator (corresponding to 13 out of 16 sub-elements of the indicator met) equivalent to 102 percent of the 80 percent target.

Objective/Outcome: Increase market access to small producers and food security in Selected Areas

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2. Value of production	Amount(USD)	0.00	0.00	24,000,000.00	32,500,000.00



generated by the farmer subsidy scheme program		01-Apr-2012	01-Apr-2012		28-Feb-2022
<p>Comments (achievements against targets): This target was exceeded, with the actual value of production generated by the farmer subsidy scheme equal to 136 percent of the target at Project Closing.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
3. Increase in sales of the supported producer organizations	Percentage	0.00 01-Apr-2012	0.00 01-Apr-2012	50.00	172.00 28-Feb-2022
<p>Comments (achievements against targets): This target was greatly exceeded, with the 172 percent actual increase in sales of the supported producer organizations equal to 344 percent of the 50 percent target at Project Closing.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
4. Direct project beneficiaries	Number	0.00 01-Apr-2012	50,000.00 01-Apr-2012	60,000.00	78,242.00 28-Feb-2022



Female beneficiaries	Percentage	0.00	20.00	40.00	47.03
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Comments (achievements against targets):

The actual number of direct project beneficiaries greatly exceeded both the original and the revised target, with the actual number of direct beneficiaries equivalent to 130 percent of the revised target. The actual percentage of female beneficiaries also greatly exceeded the original and revised targets, with the actual percentage (47 percent) equivalent to 118 percent of the revised target of 40 percent. The targets for both the Households affected by Hurricane Matthew that received support from the Crisis Response Window and the target for the number of direct beneficiaries in the Southern Region were both met, with actual values equivalent to 99 percent and 101 percent of their respective targets.

Objective/Outcome: Improve livelihood in areas affected by Hurricane Matthew

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Of which beneficiaries in the Southern region	Number	7,445.00 13-Jan-2017	0.00 17-Jan-2017	50,500.00	50,888.00 28-Feb-2022

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Households affected by	Number	0.00	0.00	28,000.00	27,958.00



Hurricane Matthew that received support from the Crisis Response Window		13-Jan-2017	13-Jan-2017		28-Feb-2022
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Comments (achievements against targets):

Objective/Outcome: Enable the Government to respond promptly and effectively to an eligible emergency

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
5. Time taken to disburse funds requested by the government for an eligible emergency	Weeks	20.00 13-Jan-2017	0.00 16-Sep-2021	4.00	0.80 28-Feb-2022

Comments (achievements against targets):

This indicator was achieved, with funds disbursed less than one week after the formal request from Government. In particular, the request for No Objection for implementation of the emergency action plan following the earthquake on August 14, 2021 (the eligible emergency) was submitted to the Bank on September 16, 2021, the Bank provided its no objection on September 18, 2021, and MARNDR's Project Coordination Unit confirmed that the disbursement of funds began within two days of the receipt of the No Objection from the Bank, i.e. by September 20, 2021.

A.2 Intermediate Results Indicators

Component: Component 1: Agricultural Support Services



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
1.1 Central Building built and equipped	Number	0.00 01-Apr-2012	0.00 01-Apr-2012	1.00	1.00 31-Mar-2022
<p>Comments (achievements against targets): This indicator was achieved 100 percent.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
1.2 Number of client days of training linked to SPS provided to epidemiological volunteers and private veterinarians.	Number	0.00 01-Apr-2012	0.00 01-Apr-2012	6,600.00	14,560.00 28-Feb-2022
<p>Comments (achievements against targets): This target was greatly exceeded, with the actual number achieved at completion equivalent to 221 percent of the target. This is due to the great number of people interested in the training provided by the project. This activity was completed on December 31, 2019.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
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1.3 Number of cattle identified by the Project and included in the information system	Number	0.00	0.00	250,000.00	317,364.00
		01-Apr-2012	01-Apr-2012	01-Apr-2012	28-Feb-2022

Comments (achievements against targets):

This target was exceeded, with the actual number achieved at completion equivalent to 127 percent of the target.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
1.4a Number of Departments where market prices have been collected and disseminated through a user-friendly web-based system	Number	0.00	0.00	0.00	4.00
		01-Apr-2012	01-Apr-2012	01-Apr-2012	28-Feb-2022
1.4b Number of Departments where producers have had access to market information by SMS, community radio and/or by publication at all DDA and BACs.	Number	0.00	0.00	3.00	3.00
		01-Apr-2012	01-Apr-2012		28-Feb-2022

Comments (achievements against targets):



The targets for both indicators 1.4a and 1.4b were met (100 percent).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
1.5 Number of didactical material elaborated and diffused in the Project zone, classified by themes.	Number	0.00 01-Apr-2012	0.00 01-Apr-2012	20.00	18.00 28-Feb-2022

Comments (achievements against targets):

The actual number achieved at completion was equivalent to 90 percent of the target. There were delays in developing didactical materials, so this target could not be fully achieved when the GAFSP support for this sub-component was closed on December 31, 2019.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
1.6 Agricultural Middle School's infrastructure is upgraded	Text	No 01-Apr-2012	- 01-Apr-2012	Yes	No 28-Feb-2022

Comments (achievements against targets):

This indicator was revised in the 2019 Restructuring from operationalization of the school to upgrading of its infrastructure, as the operationalization depended on factors outside the scope of the project, including the training and appointment of teachers. However, by June 2020, the Bank's aide



memoire to GoH observed that it had been impossible to access the school for almost to two years due to insecurity. While not adjusted again in a formal restructuring, the March 2022 ISR22 notes that this activity (and therefore its related indicator) had been dropped.

Component: Component 2: Direct Support to producers and associations

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.1 Producers adopting improved agriculture technologies promoted by the Project.	Percentage	0.00 01-Apr-2012	0.00 01-Apr-2012	70.00	78.00 28-Feb-2022

Comments (achievements against targets):

This target was exceeded, with the actual percentage (78 percent) equivalent to 111 percent of the target (70 percent).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.2 Number of hectares restored or converted to agroforestry productions by the Project	Number	0.00 13-Jan-2017	0.00 13-Jan-2017	2,500.00	6,013.00 28-Feb-2022

Comments (achievements against targets):



This target was greatly exceeded, with the actual number of hectares restored or converted to agroforestry production by the Project equivalent to 241 percent of the target.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.3 Number of client days of extension services provided to producers, members of producer organizations, different than SPS training.	Number	0.00 01-Apr-2012	0.00 01-Apr-2012	21,500.00	37,552.00 28-Feb-2022

Comments (achievements against targets):

This target was greatly exceeded, with the actual number equivalent to 175 percent of the target.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.4 Satisfaction rate of participants of the farmer field schools.	Percentage	0.00 01-Apr-2012	0.00 01-Apr-2012	75.00	90.62 28-Feb-2022

Comments (achievements against targets):

This target was exceeded, with the actual percentage (90.62 percent) equivalent to 121 percent of the target (75 percent).



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.5 Percentage of producer organizations having an operational investment at least 12 months after its completion.	Percentage	0.00 01-Apr-2012	0.00 01-Apr-2012	75.00	80.00 28-Feb-2022
<p>Comments (achievements against targets): This target was exceeded, with the actual number equivalent to 107 percent of the target</p>					
Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.6 Percentage of sub-projects that are sensitive to a) gender; b) environment; or c) nutrition.	Percentage	0.00 01-Apr-2012	0.00 01-Apr-2012	60.00	82.80 28-Feb-2022
<p>Comments (achievements against targets): This target was greatly exceeded, with the actual number equivalent to 138% of the target.</p>					



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Area provided with new/improved irrigation or drainage services	Hectare(Ha)	0.00	0.00	2,000.00	2,244.00
		13-Jan-2017	13-Jan-2017	13-Jan-2017	28-Feb-2022
<p>Comments (achievements against targets): This Corporate Results Indicator's target was exceeded, with the actual area provided with improved irrigation or drainage services equivalent to 112 percent of the target.</p>					

Component: Component 4: Institutional Strengthening, Monitoring and Evaluation, Project Management and Studies

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
4.1 Number of agricultural producers registered in the MARNDR registry.	Number	14,000.00	0.00	150,000.00	224,905.00
		13-Jan-2017	13-Jan-2017		28-Feb-2022
<p>Comments (achievements against targets): This target was greatly exceeded, with the actual number equivalent to 150 percent of the target.</p>					



B. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1: Reinforce the capacity of MARNDR to provide or facilitate access to services in the agricultural sector	
Outcome Indicators	<ol style="list-style-type: none"> 1. Key elements to strengthen institutional capacity of MARNDR implemented (This target was achieved as of Project Closing, with the final value of 81.25 percent for the indicator, corresponding to 13 out of 16 sub-elements of the indicator met, equivalent to 102 percent of the 80 percent target.)
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. 18 didactic materials were developed (90 percent of the target of 20). 2. The upgrading of the Agriculture Middle School (Target: Yes; Actual: No) was dropped as an activity, due to long-lasting insecurity at the site that did not allow project staff or contractors to visit the site during more than two years. 3. Market price information was collected by CNSA in 4 Departments (100 percent of target). 4. Market price information was made available by SMS, community radio and/or by publication at all DDAs and BACs in 3 Departments (100 percent of target). 5. UPS' Central Building was built and equipped (100 percent completed by Project Closing, as confirmed in a communication from the Project Coordinator dated August 15, 2022). 6. 14,560 client days of training linked to SPS were provided to epidemiological volunteers and private veterinarians (221 percent of the target of 6,600 client days). 7. 317,364 cattle were identified by the Project and included in the information system (127 percent of the target of 250,000).
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<ol style="list-style-type: none"> 1. The agriculture strategy and master plan was developed, adopted, disseminated and made available on MARNDR's website. 2. 115 Farmer Field Schools were established and disseminating innovations and best practices. 3. 220 facilitators were trained in agriculture extension techniques. 4. Farmers and municipal agricultural staff were trained at the Farmer Field Schools. 5. More than 876,000 requests for price information via SMSs were received. 6. Two staff were trained for 2 weeks in France at the Agricultural Research Centre for International Development (CIRAD) on raising of natural predators and integrated control. 7. 30 "trappers" (farmers) were trained on collecting specimens.



	<ul style="list-style-type: none"> 8. 500 farmers were using fruit fly traps, with 40,000 traps purchased under RESEPAG II and the related training and installation implemented by the IDB. 9. 578 farmers were trained in mealybugs control in the Northeast. 10. 3,368 private and public sector staff were trained in surveillance and vaccination. 11. 1,208,015 animals were vaccinated against rabies. 12. 2,430,000 vaccinations were administered against anthrax (primarily for bovines). 13. UPS' quarantine strategy was finalized. 14. UPS' governance strengthening strategy and joint basic procedures were developed.
Objective/Outcome 2: increase market access to small producers and food security in Selected Areas	
Outcome Indicators	<ul style="list-style-type: none"> 1. Value of production generated by the farmer subsidy scheme program (Target US\$24 million; Actual: US\$32.5 million, equal to 136 percent of the target). 2. Increase in sales of the supported producer organizations (Target: 50 percent; Actual: 172 percent, equal to 344 percent of the target). 3. Direct project beneficiaries (Actual: 78,242, equivalent to 130 percent of the Target: 60,000). 4. Female beneficiaries (Actual: 36,774, equivalent to 47 percent of total beneficiaries, versus a target of 40 percent, i.e. the actual percentage was 118 percent of the target).
Intermediate Results Indicators	<ul style="list-style-type: none"> 1. Producers adopting improved agriculture technologies promoted by the Project (Actual: 78 percent, equal to 111 percent of the Target: 70 percent). 2. Number of hectares restored or converted to agroforestry productions by the Project (Actual: 6,013, equal to 241 percent of the Target: 2,500). 3. Number of client days of extension services provided to producers, members of producer organizations, different than SPS training (Actual: 37,552 client days, or 175 percent of the Target: 21,500 client days). 4. Satisfaction rate of participants of the farmer field schools (Actual: 90.62 percent, equal to 121 percent of the Target: 75 percent). 5. Percentage of producer organizations having an operational investment at least 12 months after its completion (Actual: 80 percent, equal to 107 percent of the Target: 75 percent).



	<p>6. Percentage of sub-projects that are sensitive to a) gender; b) environment; or c) nutrition (Actual: 82.8 percent, equal to 138 percent of the Target: 60 percent).</p> <p>7. Area provided with new/improved irrigation or drainage services (Hectare (Ha), Corporate) (Actual: 2,244 ha, or 112 percent of the Target: 2,000).</p> <p>8. Number of agricultural producers registered in the MARNDR Registry (Actual: 224,905, equal to 150 percent of the Target: 150,000). Note: this indicator was associated with Component 4 but is directly relevant to the support provided under Objective/Outcome 2.</p>
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	<p>1. 21,739 farmers have benefited little from incentives under the FSS (44 percent of whom are women), covering an agricultural area of 11,113 ha.</p> <p>2. 132 Rural Producer Organizations (RPOs) received direct support to carry out investment sub-projects, benefitting a total of about 7,452 households.</p> <p>3. In the South and Grand'Anse Departments, 7,452 people (85 percent women) benefited from the technical packages for goats and poultry (18,180 goats, 21,000 poultry), with additional support provided to 280 beekeepers. The "pasé kado" (i.e., pass on the gift) scheme extended benefits to several hundred more families by passing on kids generated from the goat packages to additional households.</p> <p>4. 3,800 farmers benefitted from irrigation rehabilitation in four irrigated perimeters (Dory, Dubreuil, Les Anglais and Melon).</p>
Objective/Outcome 3: Improve livelihood in areas affected by Hurricane Matthew	
Outcome Indicators	<p>1. (Direct Project Beneficiaries) of which households affected by Hurricane Matthew that received support from the Crisis Response Window (Target 28,000; Actual: 27,958, equal to 99 percent of the target).</p> <p>2. (Direct Project Beneficiaries) of which beneficiaries in the Southern Region (Target: 50,500; Actual: 50,888, equal to 101 percent of the target).</p>
Intermediate Results Indicators	The intermediate results are subsumed under those for Objective/Outcome 2.
Key Outputs by Component	The key Outputs by Component are subsumed under those for Objective/Outcome 2.



(linked to the achievement of the Objective/Outcome 3)	
Objective/Outcome 4: Enable the Recipient to respond promptly and effectively to an Eligible Emergency	
Outcome Indicators	1. Time taken to disburse funds requested by the Government for an eligible emergency (Target: 4 weeks; Actual: 0.8 weeks.)
Intermediate Results Indicators	1. The RF does not specify Intermediate Results Indicators for this component
Key Outputs by Component (linked to the achievement of the Objective/Outcome 4)	<p>1. In response to the August 14, 2021 earthquake and Tropical Storm Grace, which struck three days later, the Bank provided its no objection on September 18, 2021, to the emergency action plan submitted by GoH on September 16, 2021, triggering the almost immediate release (within two days) of US\$2.24 million to respond to the emergency. The primary outputs supported were the repair and dredging of irrigation channels in the irrigated perimeters supported under the project (Dory, Dubreuil, Les Anglais and Melon), as well as repairs to infrastructure and equipment of RPOs supported with the MSF.</p> <p>2. The emergency component had also been triggered following the 2012 pest infestation and the 2016 Hurricane Matthew, but since this PDO indicator was only introduced with the 2017 AF, the emergency outputs and activities supported prior to 2017 (e.g. the provision after Hurricane Matthew of seeds, fertilizers and plowing services to about 3,060 producers in the Dory and Avezac areas of the Sud Department and basic repairs of irrigation systems in these locations through public works and a cash-for-work program for 4,415 people that restored access to irrigation water on 2,750 hectares) did not contribute to achieving the target value itself of disbursing funds in less than 1 week, only to establishing the baseline for this target.</p>

ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Diego Arias	Task Team Leader, Senior Agricultural Specialist
Ariani Wartenberg	Junior Professional Associate, Environmental Specialist
Eli Weiss	Rural Economist
Yao Wottor	Senior Procurement Specialist
Alois Ndorere	Consultant, Procurement Specialist
Franck Bessette	Senior Financial Management Specialist
Valerie Hickey	Environmental Specialist
Rachel Nadelman	Consultant, Social Specialist
Barbara Coello	Consultant, Social Specialist
Erika Salamanca	Temporary - Project Assistant
Jeroen Dijkman	Senior Agriculture Specialist
Marie Chantal Messier	Senior Nutrition Specialist
Pai-Yei Whung	Adviser
Hassine Hedda	Senior Financial Specialist
Melanie Zipperer	Senior Communications Officer
Nicolas Weber	Information Technology Consultant
Julius Thaler	Counsel
Preparation - Additional Financing	
Norman Bentley Piccioni	Task Team Leader
Caroline Aurelie Plante	Task Team Leader
Christophe Frederic Robert Grosjean	Agriculture Specialist
Pierre Olivier Colleye	Senior Agriculture Specialist

Rose Desruisseaux-Cadet	Procurement Specialist
Fabienne Mroccka	Senior Financial Management Specialist
Isabella Micali Drossos	Senior Counsel
Anatol Gobjila	Senior Agriculture Economist
Roble Sabrie	Economist, FAO-CP
Barbara Coello	Consultant, Social Specialist
Felipe Jacome	Consultant, Safeguards Specialist
Asli Gurkan	Senior Social Development Specialist
Nicolas Kotschoubey	Consultant, Environmental Specialist
Faly Diallo	Finance Officer
Lydie Madjou	Financial Management Specialist
Julia Isabel Navarro Espinal	Consultant

Supervision/ICR

Soulemane Fofana	Task Team Leader (2020-22; ISR 19-22)
Remi Charles Andre Trier	Task Team Leader (2019-20; ISR 17-18)
Caroline Aurelie Plante	Task Team Leader (2017-19; ISR 11-16)
Pierre Olivier Colleye	Task Team Leader (2013-17; ISR 4-10)
Diego Arias	Task Team Leader (2011-13; ISR 1-3)
Norman Bentley Piccioni	Co-TTL, Senior Rural Development Specialist
Eli Weiss	Co-TTL, Rural Development Specialist
Christophe Frederic Robert Grosjean	Co-TTL, Agriculture Specialist
Yao Wottor	Senior Procurement Specialist
Alois Ndorere	Consultant, Procurement Specialist
Franck Bessette	Senior Financial Management Specialist
Valerie Hickey	Environmental Specialist
Melanie Zipperer	Senior Communications Officer
Marie Chantal Messier	Senior Nutrition Specialist
Abdoulaye Sy	Young Professional



Barbara Coello	Consultant, Social/Gender Specialist
Erika Salamanca	Temporary - Project Assistant
Carmelie Montuma	Temporary - Project Assistant
Jeroen Dijkman	Innovation and Livestock Specialist, FAO-CP
Josue Akre	Financial Management Specialist
Itchi Gnon Ayindo	Procurement Specialist
Patricia Yamilee Payen	Procurement Team Member
Alfred Jean-Marie Borgonovo	Financial Management Specialist
Nicolas Weber	IT Consultant
Prosper Nindorera	Senior Procurement Specialist
Emmanuel Ngollo	Consultant
Peter F. B. A. Lafere	Safeguards Specialist
Priscila Leal Dos Santos	Team Member
Tim Ekin	Agribusiness Specialist, Non-Bank staff
Theodoros Boditsis	Economist, FAO
Katie Freeman	Agricultural Economist
Laurent Msellati	Practice Manager
Ethel Sennhauser	Practice Manager
Preeti Ahuja	Practice Manager
Daniel Stein	Evaluation Specialist, DIME
Khadija Faridi	Procurement Specialist
Aboubacar Magassouba	Procurement Specialist
Danilo Pereira de Carvalho	Procurement Specialist
Beth Wanjeri Mwangi	Financial Management Specialist
Lucas Carrer	Financial Management Specialist
Mamata Tiendrebeogo	Procurement Specialist
Aboubacar Magassouba	Procurement Specialist
Emeline Bredy	Financial Management Specialist
Markus Friedrich Vorpahl	Social Specialist



Nyaneba E. Nkrumah	Environmental Specialist
Tatiana Tassoni	Senior Social Development Specialist
Guzman P. Garcia-Rivero	Team Member
Rahmoune Essalhi	Team Member
Ingrid Marie Pierre Mollard	Team Member
Rachael Themora Levy	Team Member
Behnaz Bonyadian Dehkordi	Team Member
Benjamin Billard	Team Member
Mario Mendez	Team Member
Robert H. Montgomery	Environmental Safeguards Specialist
Amadou Konare	Environmental Safeguards Specialist
Anatol Gobjila	Senior Agriculture Economist
Roble Sabrie	Economist, FAO-CP
Asli Gurkan	Senior Social Development Specialist
Felipe Jacome	Consultant, Safeguards Specialist
Rose Desruisseaux-Cadet	Procurement Specialist
Ingrid Sandra Milord	Procurement Team
Bruce MacPhail	Social Specialist
Kevin McCall	Environmental Specialist
Nicolas Kotschoubey	Consultant, Environmental Specialist
Paul Eliz Viannica Jean- Jacques	Team Member
Faly Diallo	Finance Officer
Andrea Patton	Team Member
Maria Cristina Rosa Lucia Villani	Procurement Team
Fabienne Mroccka	Senior Financial Management Specialist
Isabella Micali Drossos	Senior Counsel
Lydie Madjou	Financial Management Specialist
Julia Isabel Navarro Espinal	Consultant

B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US\$ (including travel and consultant costs)
Preparation		
FY12	9.721	305,873.20
FY18	0	0.00
Total	9.72	305,873.20
Supervision/ICR		
FY12	7.150	74,354.40
FY13	37.689	248,110.19
FY14	49.954	391,148.06
FY15	92.296	445,505.40
FY16	47.967	295,965.41
FY17	33.308	429,341.10
FY18	39.968	256,701.66
FY19	31.705	235,180.19
FY20	31.212	219,350.53
FY21	22.823	141,583.27
FY22	9.435	81,173.80
FY23	6.575	34,547.47
Total	410.08	2,852,961.48



ANNEX 3. PROJECT COST BY COMPONENT AND BY SOURCE OF FINANCING

Table A3. 1: Project Cost by Component

Components	Amount at Approval (US\$m)	Amount at 2015 Restructuring (US\$m)	Amount at Additional Financing (US\$m)	Actual at Project Closing (US\$m)	Actual as Percent of Approval	Actual as Percent of AF
Component 1: Agricultural Support Services	10.00	11.00	11.00	9.00	90%	82%
Component 2: Direct Support to producers and associations	36.00	25.00	54.03	56.96	158%	105%
Component 3: Emergency Response Contingency Reserve	1.00	1.50	.75	.37**	37%	49%
Component 4: Institutional Strengthening, Monitoring and Evaluation, Project Management and Studies	3.00	6.95	13.62	14.23	474%	104%
Total	50.00	44.45*	79.40	80.56***	161%	101%

*Note: This reduced total relative to the Amount at Approval reflects adverse movement of the US dollar against the SDR, rather than a cancellation of funds.

**Note: Although the Emergency Component 3 was triggered three times during implementation (in 2012, 2016 and 2021), a large share of the costs of related interventions were registered under Component 2 rather than Component 3, which explains the relatively low final Actual Cost at Project Closing for Component 3.

***Note: The actual final values in US dollars above, which were provided by the Coordination Unit of MARNDR, differ from the Bank totals by Source of Financing below, due to different dates for currency conversions to US dollars.

Table A3.2: Key Project Dates and Project Costs by Source of Financing*

Grant/TF No.	Approval	Signing	Effective	Closing	Amount Approved (US\$m)	Amount Disbursed (US\$m)	Amount Undisbursed (US\$m)
TF-11396	11-Jan-12	11-Jan-12	3-Apr-12	31-Dec-19	10.00	9.00	1.00
IDA-H7410	1-Dec-11	11-Jan-12	3-Apr-12	31-Mar-22	40.00	35.29	0.32
IDA-D2100	14-Jun-17	29-Jun-17	7-Nov-17	31-Mar-22	35.00	34.36	1.74
Total					85.00	78.65	3.06

*Note: These data are drawn from the World Bank's systems. The totals do not include counterpart funding under the MSF programme (sub-component 2.2), amounting to an estimated US\$3.7 million (cf. Annex 4).



ANNEX 4. EFFICIENCY ANALYSIS

1. **This Annex presents the methodology and results for the economic and financial analyses (EFA) that were conducted at completion to assess the impact and viability of the various activities supported under the Project.** The first section presents the financial analysis of the outcomes for end beneficiaries, particularly farmers and rural producer organizations. The second section presents the economic analysis of the project's viability from a national standpoint; indicates which benefits could be quantified and valued in the analysis and which could not; describes the applied methodology and assumptions; and provides a summary of the results, including a sensitivity analysis and how these results can be interpreted in light of data limitations. The final section compares the results of the economic analysis at completion with those estimated at appraisal in 2011 and for the Additional Financing in 2017.

I. Financial Analysis

Sub-component 2.1: Farmer Subsidy Scheme and Sub-component 2.3: Animal husbandry

2. **Following the first Restructuring in 2015, RESEPAG II began to support targeted farmers/households to enhance their agricultural production and incomes through the Farmer Subsidy Scheme under a new sub-component 2.1.** This scheme built on experience and lessons learnt under RESEPAG I and IADB-funded projects and was implemented via a voucher mechanism that enabled participants to access inputs (improved seeds and planting material, fertilizers, chemicals, small agricultural tools) so as to apply improved technologies on their plots ("*paquets techniques*"). This access to inputs was coupled with technical advice delivered by private service providers ("*opérateurs prestataires de services - OPS*") contracted by the project. The OPS were responsible for selecting the farmers; distributing the vouchers; monitoring their use to access inputs via registered input dealers (identified and supported in parallel by the project); providing farmers with technical advice; reporting on progress (including the number of beneficiaries, the quantities of inputs delivered to farmers, and the value of vouchers used); and assessing the extent to which participating farmers applied the technology packages.

3. **Eight principal models/technologies were promoted under this delivery mechanism.** These were: annual crops (Congo peas, beans); semi-perennial crops on pure stands (cassava, bananas); two agroforestry models ("*Creole*" gardens that combined annual and perennial food and fruit crops); a commercially oriented vegetable gardening model, and a motorized pump model. The two agroforestry models were the most widely supported models and accounted for 54 percent of total beneficiaries, with the largest share (44 percent) for creole gardens in the South, followed by the vegetable gardening model (15 percent), bananas (10 percent) and Congo peas (6 percent).

4. **The 2017 Additional Financing introduced a new sub-component 2.3 for livestock recapitalization.** This sub-component targeted mainly women farmers, and implementation began in the 2018-2019 fiscal year. A total of 6,015 beneficiaries were provided with livestock kits (including live animals, small tools and inputs) and associated technical advice. This included 3,915 beneficiaries (65 percent) of support for goat rearing and 2,100 (35 percent) beneficiaries for poultry production. In addition, 280 individuals received bee production kits and associated advice during the final years of implementation. These beneficiaries were also identified and supported by OPS contracted under the project, in this case via a direct management and delivery mechanism rather than the voucher scheme used for agricultural support under sub-component 2.1.



5. Table A4.1 below indicates the number of beneficiaries of the farmer subsidy scheme and of the livestock recapitalization scheme by year.

Table A4.1: Farmer Subsidy Scheme and Animal Husbandry Activities: Number of Beneficiaries by Year

Individual beneficiaries of agricultural and livestock support by fiscal year and by model type											
Model Type	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	TOTAL	Percentage
1. Congo peas				861	477					1,338	6%
2. Creole garden (Centre)				324	628	1,321				2,273	10%
3. Cassava				73	50					123	1%
4. Banana				286	1,062	821				2,169	10%
5. Creole garden (South)					717	6,388	2,482			9,587	44%
6. Beans					573	2,007				2,580	12%
7. Motorized pumps					240	257				497	2%
8. Vegetable gardening					1,290	2,100				3,390	15%
Total FSS/agricultural support										21,957	100%
9. Goat rearing						2,000	1,915			3,915	65%
10. Poultry production						1,023	1,077			2,100	35%
Total Livestock support										6,015	100%

Remarks:

- 1/ During its first 3 years of implementation the project didn't fund individual support to farmers. This was introduced and added to component 2 after the 1st restructuring in the second half of 2015. First vouchers were handed in 2016-2017. Livestock recapitalization was introduced during the sixth year of implementation, in 2018-2019.
- 2/ Numbers above don't include the 5,500 individual beneficiaries in the South who were hit by the August 2021 earthquake and were supported in the last six month of implementation (October 2021 to March 2022).
- 3/ Under livestock support, the 280 beneficiaries of bee production kits are not reported above as kits had not been fully delivered and production had not yet started when the impact survey was carried out in October/November 2021.
- 4/ Numbers above were transmitted by the RESEPAG2/PMU on 16 August 2022.

6. RESEPAG II did not collect data on the financial impacts at the level of final beneficiaries as part of its routine M&E data collection. There were no clauses in the OPS contracts to task them to collect and analyze data on increases in yields, production, sales, expenses or net incomes for targeted farmers/households.⁵⁰ With all the challenges and external shocks faced by the project, and the steep learning curve in M&E for even the project's basic key indicators, this was not at the center of the project's attention. While the OPS' were requested to provide this information late in the life of the project, they did not deliver the information and RESEPAG II could not enforce the request contractually.

7. The need to produce data on financial impacts at the beneficiary level was only brought to light in late 2021, when the Recipient's Completion Report was being prepared. A rapid financial impact survey was carried out via questionnaires (“fiches technico-économiques”) that were filled out in the field by MARNDR surveyors during October-November 2021. A total of 559 questionnaires were answered by farmers and organizations that did/did not benefit under the project: 410 for agricultural activities under sub-component 2.1 (including 339 project beneficiaries and 71 non-beneficiaries); 134 for animal re-stocking and production support under sub-component 2.3 (including 111 project beneficiaries and 23 non-beneficiaries); and 15 beneficiary RPOs under sub-component 2.2. A database was produced by the RESEPAG II PMU and analysed by an international consultant who was hired to conduct the EFA analysis for the Recipient's Completion Report. These data were used by this ICR to elaborate the agricultural, animal production and agro-processing models presented below (see also Annex 9 Figure A9.2 on the geographic distribution of project beneficiaries).

8. The results of the financial models summarized in Table A4.2 below show a substantial increase in revenues and gross margins in the “with project” situation for all models. However, the results should be treated with a measure of caution as: (i) the financial data reported by farmers (whether beneficiaries or non-beneficiaries under the project) were declared and not based on records; (ii) the answers covered a period of 3 to 5 years (2017 to 2021); (iii) there were data gaps in the filled questionnaires; (iv) the number of

⁵⁰ The same is true for the Rural Producer Organizations supported under sub-component 2.2 of the project.



respondents per year for each model differed sometimes, which could have affected the average revenue, production cost and gross margin estimates. A deeper analysis of the database by the RESEPAG II M&E unit is needed to confirm (or correct as needed) the results of the analysis.

Table A4.2: Farmer Subsidy Scheme and Animal Husbandry Activities: Financial Results Summary (in HTG)

Model	Number of beneficiaries	Number of technico-economic questionnaires filled			Without project Situation			With project Situation			Incremental			
		Total	Beneficiaries	Non Beneficiaries	Revenue	Costs	Gross Margin	Revenue	Costs	Gross Margin	Revenue	Costs	Gross Margin	% of Increase
Farmer Subsidy Scheme	21,957	410	339	71										
1. Congo pea	1,338	41	33	8	5,540	1,755	3,786	20,037	3,268	16,769	14,497	1,513	12,983	343%
2. Creole garden - Centre Dept.	2,273	34	27	7	40,150	12,689	27,461	81,601	2,648	78,954	41,451	-10,042	51,493	188%
3. Cassava	123	19	14	5	108,600	7,210	101,390	187,240	4,538	182,701	78,640	-2,672	81,311	80%
4. Bananas	2,169	48	43	5	129,220	21,324	107,896	140,239	7,431	132,808	11,019	-13,894	24,912	23%
5. Creole garden - South Dept.	9,587	72	59	13	2,064	1,171	892	4,236	770	3,467	2,173	-402	2,574	288%
6. Beans	2,580	92	77	15	18,913	12,077	6,836	19,866	4,552	15,313	952	-7,525	8,477	124%
7. Motorized pump	497	36	32	4	181,875	37,151	144,724	266,957	49,788	217,169	85,082	12,637	72,445	50%
8. Vegetables	3,390	68	54	14	105,886	6,723	99,163	145,287	5,303	139,984	39,401	-1,420	40,821	41%
Animal production Support	6,015	134	111	23										
9. Goat rearing	3,915	103	84	19	289	11	279	3,725	1,526	2,199	3,436	1,516	1,920	688%
10. Poultry production	2,100	31	27	4	1,120	898	222	4,328	2,425	1,903	3,207	1,527	1,681	756%

Sub-component 2.2: Sub-projects for RPOs promoted via the Market Support Facility

9. **Eight models were elaborated based on the data collected from 15 RPOs in the North and North-East Departments that benefitted from support under sub-component 2.2 of RESEPAG II.** The financial results are summarized in Table A4.3 for these 15 RPOs (out of a total of 55 beneficiary RPOs in those Departments). All eight activities were found to be profitable to varying degrees, with the most profitable activity being milk processing, with a financial internal rate of return (FIRR) of 367%. Again, the results should be interpreted with due caution in light of the data limitations explained above.

Table A4.3: Summary of Financial Results for Sub-projects Supported by the MSF (in HTG)

MSF Sub-Project Model	Revenue a/	Costs b/	Gross margin	FIRR
1. Cocoa processing	1,142,588	925,813	216,775	19%
2. Coffee processing	855,000	118,800	736,200	7%
3. Maize processing	6,986,281	5,872,253	1,114,027	7%
4. Cassava processing	147,025	76,000	71,025	28%
5. Fruit processing	1,182,285	157,400	1,024,885	7%
6. Milk processing	4,664,483	4,377,380	287,103	367%
7. Honey production	185,950	63,400	122,550	28%
8. Compost production	3,076,225	1,773,475	1,302,750	30%

a/ at full production; b/ excluding investment costs.

II. Economic analysis

10. **A cost-benefit analysis was conducted to assess the economic viability of RESEPAG II from the overall standpoint of the national economy.** Detailed calculations for the aggregation of economic benefits by model and by sub-component, investment costs, economic cash flows and sensitivity analyses were made for a 25-year period and are available in Project Files. The main features, assumptions made, limitations and results of the analysis are described below.

Project development impact and economic benefits

11. **RESEPAG II has generated numerous tangible socio-economic benefits, including the following:**



- (i) increased agricultural and animal production thanks to the access it facilitated for smallholders to inputs, knowledge, value chain finance, improved technologies, and markets;
- (ii) improved food and nutrition security for targeted households, thanks to an increased share of production that can be sold to generate monetary revenues;
- (iii) increased incomes for both direct and indirect beneficiaries;
- (iv) enhanced market opportunities for smallholder rural producers and their organizations that were strengthened (via enhanced technical and managerial capacity), provided with access to finance (via matching grants), and better linked to markets and traders, which in turn may lead to increased average producer prices and greater share of benefits accruing to producers;
- (v) reduced asymmetry of technical and market information between value chain actors;
- (vi) longer term multiplier effects of strengthened capacities of smallholders and their organizations;
- (vii) both restored and increased water productivity (in physical and monetary terms), thanks to the rehabilitation of small-scale irrigation schemes; and
- (viii) a shift to more sustainable land and crop management practices with an expanded cultivated area under agroforestry, with associated carbon sequestration and reduced greenhouse gases (GHG) emissions.

12. **Some of these benefits could be quantified in the ex-post economic analysis, while the non-quantified benefits (including from carbon sequestration) suggest that the overall benefit of the project calculated below may be significantly underestimated.**

Economic benefits considered in the analysis

13. **Quantified economic benefits considered in the analysis are tangible benefits generated by the implementation of Component 2, in particular:**

- (i) the incremental agricultural production generated by sub-component 2.1 activities (under the farmer subsidy scheme);
- (ii) the incremental cash flows from the agricultural diversification, processing and value chain enhancement sub-projects funded by the matching grant scheme that benefitted 132 Rural Producer Organizations (RPOs) under the Market Support Facility (MSF) of sub-component 2.2; and
- (iii) the incremental animal production derived from sub-component 2.3 (the livestock recapitalization scheme).

14. **Non-considered benefits are those benefits that could not be valued in the analysis, but can be considerable, and may play an important role in reducing inequities and tensions and improving social stability in the project intervention areas.** They include:

- (i) the restored production capacity and incremental production and incomes derived from the emergency support to 5,500 farmers in the South who were hit by the August 2021 earthquake. This support was implemented in the last six months of implementation and no data was available yet to properly value it in the analysis;
- (ii) benefits from the rehabilitation of 2,244 hectares of small-scale irrigation schemes under sub-component 2.4, which happened in the last year of implementation, and for which no data were



- available yet on impacts in terms of increased yields, changes in cropping patterns and in cropping intensity, and changes in irrigated areas after the project intervention was provided;
- (iii) the potentially significant value of reduced GHG emissions, especially as a result of shifts in land use with the wider application of agroforestry “jardin creole” practices; and
 - (iv) the longer term multiplier effects of strengthened capacities and enhanced access to technologies of smallholder farmers and their organizations and the reduced asymmetry of technical and market information between value chain actors.

15. **In valuing incremental production, the financial prices of outputs at farm or factory gate or at local market (declared by smallholders and RPOs in the October/November 2021 financial impact survey) were considered identical to economic prices.** That is, a conversion factor of 1.0 was applied to convert financial to economic values. This is because the bulk of the additional agricultural and animal production and the production of RPOs that received MSF support (staple food crops, fruits, vegetables, milk and meat, processed commodities) is meant for households self-consumption (food security enhancement objective) and for domestic markets, and only a small share involves internationally traded commodities (imported or exported).

16. **A conversion factor equal to 1.0 was also applied to the casual labor and to value the family labor used in production.** This takes into consideration the scarcity of labor in rural areas due to high pressure to access land; rural migration to the main cities (notably the suburbs of Port-au-Prince) to access basic facilities such as education and health services, energy and employment; emigration to the Dominican Republic (and other countries) in search of a better life and job opportunities; and the poor (and deteriorating) security and sanitary conditions in rural areas.⁵¹

Benefits from sub-component 2.1 (FSS) and sub-component 2.3 (Animal Husbandry)

17. **The incremental gross margins by model calculated in the financial analysis were aggregated over 25 years taking into account the pace of implementation of sub-components 2.1 and 2.3 and the number of new beneficiaries of the 10 models.**⁵² In the “without project” situation, farmers typically used their own-produced seeds, no or very little fertilizers and chemicals and their own labor. Under the technologies promoted by the project (the “with project” situation), they accessed packages/kits inclusive of improved seeds/planting materials, fertilizers and chemicals, animal feed, small agricultural tools, animal husbandry improvements, and live animals, etc. coupled with technical assistance provided by the OPS.

18. **The project Results Framework indicates that most of the farmer beneficiaries (78 percent) fully applied the recommended package/kit at least during one season, namely the first year during which they received the OPS support.** However, both the Recipient's Completion Report (finalized in March 2022) and the Impact Evaluation Report (prepared in November 2021) stressed the difficulty that many farmers faced in applying the improved technologies/packages during subsequent seasons. This is due to a wide range of reasons, including: cash generated by the sales of part of the incremental production after the application of the package at no cost in the first year might not have been sufficient to meet the purchase costs of the improved inputs for the following season; unfavorable weather conditions or a natural disaster (drought, flood, earthquake, etc.) after the first year/season of support; and pressure to meet day-to-day living expenses as well as extraordinary events (notably ceremonies such as funerals, weddings, religious events, etc.). However, neither reports provides figures on average adoption rates of improved technologies after the first year of

⁵¹ The data set and financial models do not specify whether family labor (or only paid casual labor and services) was valued.

⁵² Eight models for the farmer subsidy scheme and two for the livestock recapitalization activities.



support. A fairly optimistic 60 percent adoption rate was assumed in the base case scenario. The variation in the long-term adoption rate is in fact a key parameter tested in the sensitivity analysis below.

Benefits from sub-component 2.2 (sub-projects funded under the MSF scheme)

19. **A profile of the evolution of incomes, expenses and incremental gross margins over ten years (after financing) was developed for eight sub-project financial models financed under the MSF.** Table A4.4 was developed using the financial data provided by the 15 RPOs supported in the North and the North-East that answered the Oct/Nov 2021 impact survey. A weighted average incremental gross margin (over 10 years) generated by each HTG/US dollar invested was calculated taking into account the share of each model in the overall data.

Table A4.4: Incremental Gross Margin generated over 10 years for a typical sub-project (in percent of each HTG/US dollar invested)

MSF-financed sub-project models	Number of funded sub-projects*	Number of technico-economic data collection forms filled	Percentage of respondents (%)	Incremental Gross margin per HTG/USD invested, by year (in %)										
				1	2	3	4	5	6	7	8	9	10	
1. Cocoa processing	5	2	40%	-1%	-1%	29%	29%	29%	29%	29%	29%	29%	29%	29%
2. Coffee processing	7	1	14%	41%	4%	39%	39%	39%	39%	39%	39%	39%	39%	39%
3. Maize processing	6	3	50%	42%	-8%	22%	22%	22%	22%	22%	22%	22%	22%	22%
4. Cassava processing	6	2	33%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%
5. Fruit processing	8	2	25%	5%	11%	4%	11%	17%	20%	23%	11%	11%	11%	11%
6. Milk processing	4	2	50%	64%	47%	64%	64%	64%	64%	64%	64%	64%	64%	64%
7. Honey production	1	1	100%	22%	25%	19%	25%	25%	25%	25%	25%	25%	25%	25%
8. Compost production	4	2	50%	2%	44%	18%	31%	31%	31%	31%	31%	31%	31%	31%
Total	41	15	37%											
Incremental gross margin generated by HTG/USD (weighted average)				24%	15%	26%	29%	30%	31%	31%	29%	29%	29%	29%

*Note: distribution of the 41 funded sub-projects in the North and North-East Departments for which a model could be elaborated.

20. **The pace of financing of the MSF matching grants over years and the average matching grant percentage (relative to the total sub-project costs) were considered to aggregate the benefits derived from the sub-projects funded by the MSF.** Matching grants for the 132 sub-projects funded under the project amounted to the equivalent of US\$10.6 million. They were disbursed by tranches, from 2015-2016 to 2021-2022, at a pace shown in the actual project costs by fiscal year provided by the RESEPAG II coordination unit. The total costs of the 132 subprojects was estimated at US\$14.3 million, including RPO members/beneficiaries' contributions estimated at US\$3.7 million and US\$10.6 million in matching grants. To arrive at this total, the average matching grant percentage of sub-project costs observed for the 55 sub-projects supported in the North and North-East, i.e., 74 percent, was applied to all 132 sub-projects funded under sub-component 2.2.

21. **As is generally the case for these kinds of activities, not all funded sub-projects would generate positive incremental gross margins over 10 years and some would fail.** The sub-project failure rate was estimated at 33 percent, in line with the fact that out the 55 sub-projects funded in the North and North-East, 18 sub-projects were reported as not active/not productive at the time of data collection in late 2021 (i.e. a failure rate of about 32 percent). This assumption enabled the calculation of investment costs (by project year) of "successful" sub-projects, to which the profile of incremental gross margin per year and per US dollar invested (see above) was applied in order to estimate the incremental benefits generated by successful sub-projects by project year. This benefit stream was then used in the overall economic analysis of the project (see below).

22. **The total discounted economic value of benefits drawn from "successful" sub-projects was calculated at US\$12.6 million, compared to the discounted total value of the sub-component's economic**



costs of US\$12.9 million (including investment costs financed by the MSF and by beneficiaries, as well as related project administration costs). Based on the above-described assumptions, and given the slow pace of accrual of benefits, sub-component 2.2 yielded an EIRR of 5 percent and a NPV close to zero (US\$ -0.3 million). This was due in particular to high transaction costs: the nominal (non-discounted) outlay (mainly for OPS services) to support 132 sub-projects with non-discounted investment costs of US\$14.3 million was US\$7.4 million. Thus, the support costs were equivalent to 52 percent of total sub-project investment costs and 70 percent of the US\$10.6 million in disbursed matching grants. While bearing in mind that these administrative costs include a significant portion of financing for technical assistance and knowledge transfers to accompany investments, this nonetheless highlights the significant costs associated with decentralized service delivery by service providers in the fragile Haitian context.

Results of the Economic Analysis

23. A base case scenario was considered that excludes the costs for component 1, sub-component 2.4 (irrigation infrastructure) and component 3, for which no economic benefits could be quantified in the analysis. It also excludes a small share (14 percent) of component 4 costs⁵³ that corresponds to the weight of component 1, sub-component 2.4 and component 3 costs in total project costs. In the base case, the project yielded an Economic Internal Rate of Return (EIRR) of 15 percent over a 25-year period, which is substantial, and an Economic Net Present Value (NPV) of US\$25 million.

24. A variant case was also considered that includes all project costs in the analysis (but does not estimate benefits for components 1 and 3 or for sub-component 2.4). In this variant case, the EIRR was found to be 9 percent, which is still well above the economic opportunity cost of capital (OCC) (5 percent per year), and the economic NPV would be US\$11 million.

Sensitivity Analysis

25. A sensitivity analysis was carried out for the base case scenario in order to test the impact on the EIRR and NPV of modifying key parameters of the analysis. The key parameters that were modified were the long-term adoption rate of improved agricultural and animal husbandry practices and the failure rates of sub-projects supported under the MSF. The results of the sensitivity analysis are summarized in Table A4.5.

Table A4.5: Summary of Sensitivity Analysis - Base case*

	Base case*	Change in adoption rate of agricultural and animal						Change in failure rates of sub-projects					
		20%	30%	40%	50%	60%	75%	100%	10%	20%	33%	40%	50%
EIRR	15%	1%	5%	9%	12%	15%	18%	24%	16%	15%	15%	14%	13%
NPV (US\$ million)	25	-8	0	9	17	25	37	58	29	28	25	24	22

*The base case excludes costs of Component 1, sub-component 2.4, Component 3 and 14% of Component 4 costs

26. The project's EIRR shows a strong resilience to an increase of the failure rate of sub-projects under sub-component 2.2. It would still be equivalent to 13 percent in the event that half of the sub-projects funded under sub-component 2.2 were to fail. This is not surprising, as the benefits derived from successful sub-projects under sub-component 2.2 account for only 16 percent of total benefits in the EIRR analysis.

27. The EIRR is more sensitive to a reduced long-term adoption rate of improved agricultural practices and animal husbandry packages. In case the adoption rate were to decline by half to 30 percent, the EIRR would be 5 percent (equal to the OCC). In the unlikely case of an adoption rate of only 20 percent, the stream

⁵³ Sub-components 2.1, 2.2 and 2.3, for which economic benefits could be quantified in the analysis, represent 86 percent of the total costs of components 1, 2 and 3.



of benefits would yield an EIRR of 1 percent and a negative NPV. By contrast, in the very optimistic scenario of a long-term adoption rate of 75 percent, the EIRR would increase to 18 percent.

Caution in Interpreting Results due to Limitations in the Data Set

28. **It should be highlighted that the EFA calculations and results presented above remain estimates as:**

- (i) the calculations are based on information generated in the October-November 2021 survey that targeted a small share of total beneficiaries, with data gaps in the questionnaires completed in the field by MANRDR surveyors;
- (ii) the data on production, input usage, technology applications, expenses, sales and incomes over a number of years were declared by respondents and not based on registered figures;
- (iii) high inflation and deterioration of the HTG/US dollar exchange rate in the final years of project implementation (especially since 2019) make it difficult to compare incomes, expenses and net incomes across years; the average HTG/US dollar exchange rate over the period 2017-2021 was considered to convert the incremental gross margins from HTG to US dollars (i.e., HTG 81.5/US\$1), but by project closing in March 2022 the exchange rate had depreciated to HTG 106.1/US\$1;
- (iv) for some models/technology packages (notably the agroforestry ones that encompass tree crops replanting), increases in agricultural production and income materialize in a gradual manner and may not have been captured fully in the 3-to-5-year retroactive data set (2017 to 2021);
- (v) In the same vein, for sub-projects funded by the MSF, no technical monitoring or simple accounting records were established at the level of the RPOs, while technical support and management advice by the contracted OPS was limited in time (maximum two years), which did not allow the OPS to track the medium-term impact of funded sub-projects;
- (vi) Of greater concern, the contracts with OPS' for all sub-components did not include any clauses requiring the collection and analysis of data on increases in yields, production, sales, expenses or net incomes experienced by targeted farmers/households and RPOs as a result of RESEPAG II's support. This oversight was not corrected during project implementation: while numerous Bank implementation support missions pursued improvements in the M&E function, the focus was on producing data for the indicators in the Results Framework, rather than on evaluating benefits at the field level. The remedy was, therefore, to carry out a rapid financial impact survey in October-November 2021, with the methodological and data interpretation shortcomings explained above.

29. **At the same time, the results presented above can be considered underestimated and conservative, as the analysis could not take into account several economic benefits derived from project implementation.** The primary benefits excluded are those derived from the rehabilitation of 2,244 hectares of irrigation schemes for smallholders, the emergency support provided to farmers hit by the 2021 earthquake in the South, and climate co-benefits, especially those associated with improved agro-forestry practices, as explained above.

III. Comparison of the ICR's EFA Analysis with the Appraisal and Additional Financing EFA Analyses

30. **A rapid EFA was carried out during project preparation when funding for RESEPAG II was estimated at only US\$10 million (comprising only GASFP funds).** The analysis was based on the following assumptions:

- Income increases between the “with project” and “without project” situations for 16 crops (food crops such as beans, cassava, yam, rice and plantain; and cash crops such as citrus trees, coffee, cocoa, pineapples, and cashew nuts) based on previous estimates drawn from a IDB-funded value chain study



and an IDB-funded project. However, details were not provided on improved cropping patterns, nor were input/output prices considered. The forecasted increases in income were quite high, ranging from 36 to 93 percent, and were applied linearly from the traditional “without project” practice to the improved “with project” situation, without a progressive yield increase over several years;

- A total target area of 17,096 ha was considered for these 16 crops (or combinations of these);
- A non-linear adoption rate was applied to the total target area that was not well-aligned with the projected pace of project implementation/disbursements (i.e., an additional 1 percent per year in the first five years, rising to 50 percent for years 6 to 9, and then to 60 percent in years 10 to 14; and ending at 75 (scenario 1), 85 (scenario 2) or 100 (scenario 3) percent from year 15 onwards, without a clear justification or explanation of these adoption rates); and
- No conversion factors were applied for transforming financial prices into economic prices for benefits or costs.

31. **As a result of these optimistic assumptions, the EIRR was estimated at 43 percent in the first two scenarios and at 44 percent under scenario 3.**⁵⁴ Benchmarking with other project designs for the agricultural sector elsewhere and in Haiti, one can state that there were shortcomings in the EFA analysis: while there was a basis for the income increases assumed per hectare, both the calculations and the assumptions regarding the total target area and crop distribution were not well justified, while the assumed adoption rates were not very realistic, so that the EIRR was in all likelihood overestimated. When US\$40 million in IDA funds were added to the GASFP funding prior to Appraisal, the activities, models, and target area were not revised and it was assumed that the previously estimated EIRR could be applied to the increased total project costs, and the EFA's findings were reported as such in the PAD.

32. **At the time of the Additional Financing in 2017, an EFA was carried out only for the additional funds that were to be allocated to agricultural production enhancement activities.** The analysis used the same income increases per crop and per hectare assumed at appraisal six years earlier, suggesting that no updated data on yield and income increases had been generated during the early years of project support for use in the analysis. The additional financing (US\$25 million) was estimated to be disbursed over three years, yielding income increases equivalent to those assumed at appraisal on an additional 15,000 hectares with project support. The additional benefits from the rehabilitation of irrigation schemes affected by Hurricane Matthew were not estimated. The revised EIRR, calculated over 15 years, was estimated at 23 to 25 percent, depending on the adoption rate under the same three scenarios as per the original EFA at appraisal. No EFA Annex or detailed calculation was included in the AF Project Paper. The AF's calculations in Excel (retrieved from Project Files for this ICR) suggest that the ICR has adopted more conservative assumptions, based on actual data obtained from the field surveys in October-November 2021, than were used in the EFA analysis for the AF.

IV. Conclusion on the Efficiency Rating

33. **Based on the survey data and on more conservative assumptions than those used at Appraisal and for the AF, this ICR concludes that the economic and financial returns from RESEPAG II were strong.** This is especially true for the FSS and livestock support, although the MSF also yielded returns essentially equivalent to the opportunity cost of capital (accounting for all TA and delivery costs). Bearing in mind that the economic benefits of RESEPAG II have in all likelihood been underestimated, as a range of benefits could not be quantified, this EFA analysis supports the conclusion that **RESEPAG II's Efficiency at Completion is Substantial.**

⁵⁴ The minor difference between the three scenarios is largely explained by the fact that the change in final adoption rate was applied as from year 15 onwards, and are therefore highly discounted.

ANNEX 5. RECIPIENT, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

1. **The Recipient was engaged early on in the process of producing the ICR, including reviewing earlier drafts and provided brief inputs on the final draft of the ICR for the Decision Meeting.** The Bank team is very grateful to the Project Coordination Unit for the inputs received in the course of the preparation of the ICR. The draft ICR was submitted to the Recipient for their final review and comments after the Quality Enhancement Review held on August 30, 2022. The Recipient responded with some editorial corrections relating to institutions associated with the project, but other than reiterating that a portion of the costs of emergency interventions had been registered under Component 2 rather than Component 3, the Recipient had no further comments on the ICR's findings and ratings.

ANNEX 6. SUMMARY OF THE RECIPIENT'S COMPLETION REPORT

Context⁵⁵

1. **The project contributes to the achievement of the objectives of the National Agricultural Investment Plan (2011-2016).** The RESEPAG II objectives are aligned with the PNIA (axes: infrastructure, support for development of value chains and strengthening of public agricultural services, including training, research, extension and health protection), as well as the country's agricultural policy. RESEPAG II's activities were articulated around four components: (1) General agricultural support services, (2) Direct support to producers and associations, (3) Response to Emergencies; and (4) Institutional Strengthening, Monitoring and Evaluation, Project Management and Studies. The project focused on providing financial and technical incentives, technical assistance and a capacity building program through Farmer Field Schools, to promote the adoption of good agricultural practices. It established a register of farmers and of suppliers of goods and services in the Departments of Sud, Nippes and Grand'Anse. Moreover, it enabled beneficiaries to improve their access to the goods and services they need to achieve their objectives and to strengthen their resilience with regard to climate change, declining soil fertility, and to income, food and nutritional insecurity.

Changes During the Life of the Project

2. **The project underwent significant changes during its implementation at several levels: development objective, components, results frameworks, budget, closing date.**⁵⁶ It was restructured on three different occasions. Having started in April 2012, the project's activities were initially scheduled to end on November 30, 2016 and then in December 2019 and 2021. There are a number of factors that affected project implementation, in particular:

- The passage of Hurricane Matthew, which delayed activities and led to the reformulation and readjustment of the Operations Manual;
- Socio-political problems, in particular episodes of “country lockdown”;
- The frequent scarcity of fuel;
- The volatile nature of the exchange rate and inflation;
- The Covid-19 pandemic and the related health restrictions, which complicated the operation of the project by causing delays;
- Climate hazards, particularly during periods of hurricanes (Hurricane Matthew, Tropical Storms Laura and Grace), and also episodes of flooding or drought;
- The untimely changes of Ministers at the head of the MARNDR, causing delays in the signing of contracts;
- Cumbersome administrative procedures involving the Central Office of the RESEPAG II project, the World Bank, the Public Procurement Unit, Legal Affairs, and the Cabinet of the Minister;
- The often noted unavailability on site of the necessary Suppliers who could offer quality services to meet the demand for inputs and plowing.

⁵⁵ The drafting of this report is based on the results of the surveys carried out by the consultant who produced: (i) the impact assessment report of the RESEPAG II project and (ii) the economic and financial analysis of the RESEPAG II project.

⁵⁶ Due in large part to the additional support provided following the passage of Hurricane Matthew which resulted in damage in the *Grand Sud*.



- Two major events led to the triggering of the emergency component of the project: (i) the appearance of the white cochineal (*Crypticeria genistae*) in the Northeast in 2012/2013, and (ii) the passage of Hurricane Matthew in the *Grand Sud* on October 3 and 4, 2016.

Original versus Actual Project Costs

3. As of end-February 2022, the project had spent US\$75,966,376.13 of the total adjusted budget of US\$80,549,050, i.e. 86.35% (see Table A6.1):

Table A6.1: Actual Expenditures vs. Adjusted Budget, as of February 28, 2022

Component	Adjusted Budget (US\$) ⁵⁷	Expenditures as of February 28, 2022 (US\$)	Difference
C1: General agricultural support services	10,000,000.00	9,002,062.20	997,937.80
C2: Direct support to producers and associations	55,020,893.58	52,253,576.35	2,767,317.23
C3: Emergencies	750,000.00	368,635.00	381,365.00
C4: Institutional Strengthening, Monitoring & Evaluation, Project Management and Studies	14,778,156.42	14,342,102.58	436,053.84
TOTAL	80,549,050.00	75,966,376.13	4,582,673.87

Project Relevance, Efficiency, Outcomes, and Overall Rating

4. **The development objective of the project is relevant.** Indeed, the objectives and results sought are intended to contribute to the real problems experienced by the target groups, in particular the poor access to the means of production, to the appropriate technologies, to advice and to training, a situation that was moreover aggravated by the damage caused by natural disasters, including the earthquake of January 12, 2010, Hurricane Matthew in October 2016 and the earthquake of August 14, 2021. Rating: **Satisfactory**.

5. **The overall efficiency of the project is deemed Satisfactory.** The actual project cost per beneficiary, calculated by dividing the total cost by the total number of beneficiaries reached is US\$1,009.14 versus a forecast of US\$1021.50. As for the financial results, RESEPAG is economically profitable. The economic internal rate of return (EIRR) is 16.2% at the long-term opportunity cost of capital of 8%. The corresponding NPV is US\$30.8 million.

6. **The project on average achieved 126% of its targets (Table A6.2, panels A and B):**

Table A6.2, Panel A: Results Indicators

Indicator	Initial value	Initial target value (according to project document)	Revised target value (official restructuring)	Current value achieved (or year of achievement)
Indicator 1	MARNDP's performance in terms of SPS			
	80%	80%		75% as of 3/15/22

⁵⁷ Based on the exchange rate of 1 XDR = USD 1.3915 as of February 2022, since the amounts for IDA funds were approved in XDR.



<i>Comment:</i> the target of 100% was not reached due to certain activities not being fully executed. The MARNDR units concerned are the CTPVA, the DFPEA and the UPS bringing together departments (DPV-PS, DSA, the tamarind laboratory and the Quarantine Department)				
Indicator 2	The percentage increase in the value of production of the beneficiaries of the incentives			
	100%	100%		135.6% as of 3/15/22
<i>Comment:</i> This target is progressing in the South department. The production value generated by the subsidized technical packages (Congo peas, bananas, fodder, market gardening, beans, agroforestry, and irrigation pumps) reached USD 32.5 million. The overachievement is due to the large plots of agroforestry put in place and the emergency support provided post cyclone in this context as well as the technical assistance provided to farmers				
Indicator 3	Increase in sales of supported producer organizations			
	50%	50%		344% as of 3/15/22
<i>Comment:</i> the results only concern the departments of Nord and Nord-Est where about fifty processing workshops are in production. Those in the South are newly installed and have not yet gone into production. The increase achieved of 172% is compared to the target increase of 50%, i.e. it was overachieved by 344%. This percentage is subject to change.				
Indicator 4	The number of direct beneficiaries (disaggregated by gender)			
	60,000	60,000		78,242, of whom 36,774 (47%) are women
<i>Comment:</i> This figure is the sum of the direct beneficiaries of all the actions undertaken by the project as of 3/15/22. Target approximately 130% achieved due to campaigns following Hurricane Matthew in October 2016 and the earthquake of August 14, 2021, and a larger target than initially planned.				
Indicator 5	The total number of households in the South region affected by the Hurricane and supported by the project: 27,958			

Table A6.2, Panel B: Intermediate Indicators

Indicator	Initial value	Initial target value (according to project document)	Revised target value (official restructuring)	Current value achieved (or year of achievement)
Indicator 1	Central UPS building constructed and being equipped			
Number	1			1 as of 03/15/2022
<i>Comment:</i> Building completed with further support from IDA				
Indicator 2	Number of SPS related clients of training provided to volunteers, epidemiological, private veterinarians			
Number	6,600			14,600 as of 07/31/2021
<i>Comment:</i> indicator greatly exceeded				
Indicator 3	Number of cattle identified by the project and included in the information system			
Number	250,000			317,363 as of 07/31/21



<i>Comment: indicator greatly exceeded</i>			
Indicator 4	Number of departments where producers have access to market information by SMS, community radio, and/or by display in the DDAs and BACs		
Number	3		3 as of 07/31/21
<i>Comment: indicator achieved</i>			
Indicator 5	Number of departments where market prices are collected and disseminated via a simple and practical web system		
Number	4		4
Indicator 6	Number of teaching materials developed and disseminated in the project area, classified by theme		
Number	20		18 as of 31/12/19
<i>Comment: Activities ended on December 31, 2019 due to end of GAFSP funding</i>			
Indicator 7	Middle school infrastructure rehabilitated		
	Yes		No
<i>Comment: Rehabilitation not completed due to the insecurity situation in the area</i>			
Indicator 8	Producers who adopt improved agricultural technologies promoted by the project		
	70		78
<i>Comment: indicator achieved</i>			
Indicator 9	Number of hectares restored or converted to agroforestry implemented by the project		
	2,500		6,013
<i>Comment: indicator greatly exceeded</i>			
Indicator 10	Number of client days of extension services provided to producers, members of organisations, apart from SPS etc. (disaggregated by gender)		
Number	21,500		37,552
<i>Comment: indicator greatly exceeded</i>			
Indicator 11	Satisfaction rate of participants in field farmer schools		
Percentage	75%		91%
<i>Comment: indicator greatly exceeded</i>			
Indicator 12	Number of farmers registered in the MARNDR agricultural register		
Number	150,000		224,905
<i>Comment: indicator greatly exceeded</i>			
Indicator 13	Percentage of producer organizations with an operational investment at least 12 months after its end		
Percentage	75%		80%
<i>Comment: indicator achieved</i>			
Indicator 14	Percentage of sub-projects that are sensitive to: a) gender b) the environment or c) training		
Percentage	60%		82.8%
<i>Comment: indicator greatly exceeded</i>			
Indicator 15	Areas benefiting via the project from new/improved irrigation or drainage services in the southern departments		
Hectares	2,000		2,244
<i>Comment: indicator achieved</i>			

7. **The overall number of direct beneficiaries is: 78,242 including 36,774 women, i.e. 47%.** More than 224,000 farmers are registered in the registers of RESEPAG II. The main beneficiaries of the project are (i) the farmers within the framework of participation in the incentive program and in investments on the plots (ii) the organizations of rural producers (OPR) (iii) the MARNDR as well as its technical directorates and its regional delegations (iv) service providers, and (v) agricultural workers and other organizations having partnership relations with farmers and beneficiary organizations.

8. **Based on the result achieved and satisfactory efficiency, the evaluation of the RESEPAG II project is deemed satisfactory (Table A6.3):**

Table A6.3: Summary of Project Ratings

Summary of ratings	
Performance rating	
Results	Satisfactory
Performance of the Bank	Satisfactory
Performance RESEPAGII (MARNDR)	Satisfactory

9. **The project had a number of strengths that militated in favor of its success, namely:**

- The innovative nature of the project, promoting good production practices through incentives, and using the FSV for the dissemination of good processing and hygiene practices, and for the diversification of the activities of the beneficiaries;
- The synergy developed within the project team, between the components or sub-components, between the Central Office and the Field Branches;
- Development of competent, responsible and dedicated human resources;
- An increase in producers' incomes, particularly through agricultural and livestock incentives;
- Consideration of cross-cutting themes: gender, nutrition, environment and integration of young people;
- The importance of training in the process of strengthening local organizations and developing their project implementation and management capacities; the new capacities acquired thanks to the projects relate essentially to the technical mastery of production processes, organizational capacity, the processing of agricultural products and financial management;
- Good collaboration between the Field Branches and the DDAs;
- The “pase kado” mechanism allowing the redistribution of freshly born goats to new beneficiaries, resulting in faster penetration of goat breeding in the communities

Monitoring and Evaluation

10. **Since 2019, monitoring of the project results framework has intensified following WB recommendations during supervision and technical support missions.** The collection of information through the monitoring sheets is done by the M/E unit of the project according to the periodicity of the indicators defined in the monitoring manual.

Bank and Recipient Performance

11. **The World Bank made the financial resources necessary for the implementation of the project available at the appropriate time.** According to the project coordination, no interruption in funding was recorded during the implementation of activities, which greatly facilitated effective implementation. The WB carried out periodic support missions (both face-to-face and remotely) for the implementation of the project. The recommendations of these missions helped to improve the implementation of the project and to make the



necessary adjustments. The Bank showed some flexibility. Overall, according to key officials, the Bank's performance is deemed **Satisfactory**.

12. **The Recipient's performance is shown in Table A6.4 below:**

Table A6.4: Evaluation of the Recipient's Performance

Bank and Recipient Assessment (by ICR)			
Bank	Evaluation	RESEPAG II - Recipient	Evaluation
Quality at entry			Satisfactory
Quality of supervision		Implementing agency: (MARNDR)	Satisfactory
Overall Bank performance		Overall Recipient Performance - RESEPAGII (MARNDR)	Satisfactory

Key Lessons Learned and Recommendations

Lessons Learned

- The participatory approach and transparency during the execution involving the beneficiaries (DDAs, BAC, Organizations, farmers, private operators and other local actors) at all phases of the project, from start-up to closure contributed to a better achievement of results and indicators.
- Small-scale projects, even with rather limited funding, lead to significant impacts in terms of food availability, job creation, community life or local development, if they are properly managed and supported by a strong and credible organization. Sustainability thus seems to be better guaranteed when the project promoters have a presence in the beneficiary communities. They are more inclined to ensure the follow-up of the interventions after the end of the projects.
- A prequalification of beneficiary organizations should be done during calls for proposals. There were often mistakes about the true level of the organizations and their real capacities, so that the accompaniment required more time and more effort, which partly justifies the fairly frequent requests for amendments from the OPS. Organizations that were already working in a value chain (cocoa, manioc/cassava, groundnuts, fruits) were found to be much more successful than novices in implementing their projects.

Recommendations

- Providing incentives for only one year does not yield the desired impact. Farmers should be supported over 2 or 3 years to ensure that the farm actually enjoys a certain financial balance and relative autonomy.
- The establishment of mechanisms obliging the OPS to work with the BACs can encourage these state structures in the field to become effectively involved in the implementation of projects. The search for sustainability cannot be done without the BACs. There is therefore a need for more involvement of the decentralized structures of MARNDR in such a project to guarantee the sustainability of operations.
- More control is needed over the Operators on the part of RESEPAG, and more control over the firms on the part of the organisations. They must also be required to report and monitor compliance with the frequency of transmission of execution reports. Priority should be given to regional firms with roots in the community and proven capacities, as long as they exist, rather than to distant structures that are generally expensive, show little presence in the field, do not value local skills, do not integrate the communities, do not respect the deadlines for supplying deliverables, and do not necessarily guarantee a quality service that adequately meets the expectations and needs of the organizations.

ANNEX 7. A MATRIX OF RESTRUCTURING CHANGES DURING PROJECT IMPLEMENTATION⁵⁸

Item/ Rationale	Original Project Approved (GAFSP TF-11396 & IDA H7410)	2015 Restructuring (Level 1)	2017 Additional Financing (IDA D2100) (Level 1)	2019 Restructuring (Level 2)	2021 Restructuring (Level 2)
Date Approved	December 1, 2011 (IDA) & January 11, 2012 (GAFSP).	July 2, 2015.	June 14, 2017.	June 2, 2019.	December 21, 2021.
Amount	GAFSP US\$10 million & IDA SDR 25.1 million (US\$40 million equivalent).	GAFSP US\$10 million & IDA SDR 25.1 million (US\$34.4 million equivalent).	GAFSP US\$10 million & IDA SDR 25.1 million (US\$34.57 million equivalent) & IDA SDR 25.6 million (US\$35 million equivalent).	GAFSP US\$10 million & IDA SDR 25.1 million (US\$35.63 million equivalent) & IDA SDR 25.6 million (US\$35.92 million equivalent).	GAFSP US\$9.0 million & IDA SDR 25.1 million (US\$35.63 million equivalent) & IDA SDR 25.6 million (US\$36.21 million equivalent).
Explanation	..	Change in SDR/US\$ exchange rate.	Change in SDR/US\$ exchange rate, plus Additional Financing.	Change in SDR/US\$ exchange rate.	Change in SDR/US\$ exchange rate, and partial cancellation of GAFSP financing upon Closing of grant.
Amount Disbursed	US\$0 million.	US\$12.8 million.	US\$19.93 million.	US\$43.38 million.	US\$77.04 million.
Closing Date	November 30, 2016.	June 30, 2018.	December 31, 2019.	December 31, 2021 (IDA financing only).	March 31, 2022.
Rationale for extension	..	The extension by 19 months was necessary to implement all Project activities and allow time for necessary technical support to accompany matching grants to RPOs.	Extension of the closing dates for IDA H7410 and GAFSP TF- 11396 to align with the closing date for the Additional Financing (IDA D2100).	Enable completion of all major IDA-financed activities, notably irrigation rehabilitation. GAFSP would still close on December 31, 2019.	To ensure full achievement of the PDOs, using available funds from both ongoing IDA grants, as well as an orderly Project closure; & justified by external factors that prompted delays.
Policy Waivers	..	..	To provide the AF entirely as a grant rather than on Haiti's IDA terms current in FY17, due to the high risk of debt distress found in the Debt Sustainability	..	..

⁵⁸ Note: Changes in items due to Restructurings are highlighted in **bold**; ">" indicates that earlier changes were carried forward with no further change in subsequent Restructurings; and ".." indicates the item does not apply to a given Restructuring (or the relevant Restructuring document presents no further information on the item).



			Analysis conducted after Hurricane Matthew.		
PDO	The objectives of the project are to: (a) strengthen MARNDR's capacity to define and implement the National Agriculture Extension Strategy; (b) increase access of small farmers to Agriculture Extension Services and training on animal and plant health in the Priority Regions; and (c) provide financial assistance in the case of an Agriculture Sector Emergency.	The development objectives of the Project are to: (a) reinforce the capacity of the Ministry of Agriculture, Natural Resources and Rural Development to provide or facilitate access to services in the agricultural sector; (b) increase market access to small producers and food security in Selected Areas; and (c) provide financial assistance in the case of an Agriculture Sector Emergency.	The objectives of the Project are to: (a) reinforce the capacity of MARNDR to provide or facilitate access to services in the agricultural sector; (b) increase market access to small producers and food security in Selected Areas; (c) improve livelihood in areas affected by Hurricane Matthew; and (d) enable the Recipient to respond promptly and effectively to an Eligible Emergency.	>	>
Rationale for change in PDO	..	A new PDO was deemed necessary to reflect the restructuring of the various components, providing a better link between the project's overall objective and activities financed.	The PDO was modified to reflect the inclusion of activities in the areas affected by Hurricane Matthew and emerging good practices in responding to an emergency.	..	..
Results Framework	See Annex 8 for the original results framework.	The Results Framework was revised to align the PDO indicators to the new PDO and intermediate indicators to revised project activities. The RF followed a Theory of Change from project activities, to outputs, outcomes and impact. It was elaborated with MARNDR's various technical departments to ensure ownership, so as to improve monitoring of the indicators (See Annex 8).	The Results Framework was revised to reflect the new PDO objective of restoring livelihoods to victims of Hurricane Matthew and to respond promptly and effectively to an eligible emergency. It aligns indicators with these objectives, including by measuring households affected by the hurricane that are supported by the project and introduces an outcome indicator triggered only in case of an eligible emergency. It also adjusts intermediate indicators	The changes to the RF include revising four PDO indicators and sub-indicators, and five intermediate indicators, & dropping one intermediate indicator, to clarify the indicators and methodologies. The first PDO indicator was reformulated; the target for the second PDO indicator was revised downward based on more realistic data; the methodology for	> (See Annex 8 for the final results framework)



			to reflect objectives related to enhanced resilience, restoration and protection of irrigation services, the cash-for-work program, and re-stocking of livestock. The RF also revised some existing indicators that showed flaws, via changes in wording, targets, or measurement methods, including for a PDO indicator (see Annex 8).	measuring the third PDO indicator was revised, and a sub-indicator under the fourth PDO indicator was corrected for clarity (see Annex 8).	
Components & Costs: Component 1	Strengthening the role of MARNDR in providing agricultural support services (US\$10 million): - Sub-component 1.a: Planning and coordination of agricultural extension and training services provision (US\$3 million) - Sub-component 1.b: Agricultural sector information systems (US\$2 million) - Sub-component 1.c: Sanitary and Phytosanitary (SPS) capacity (US\$5 million).	Agricultural Support Services (US\$11 million): - Sub-component 1.1: Training and Extension (US\$1.4 million) - Sub-component 1.2: Market Information (US\$1.16 million) - Sub-component 1.3: Sanitary and Phyto-Sanitary (SPS) Services (US\$8.45 million) .	>	Sub-component 1.3 Sanitary and Phyto-Sanitary (SPS) is streamlined to cover: (a) Design, rehabilitation and construction of infrastructure; (b) Development of UPS strategies and procedures; (c) Disease surveillance and control activities.	>
Component 2	Providing support for local agricultural extension and innovation services (US\$36 million equivalent).	Direct Support to producers and associations (US\$25 million equivalent) - Sub-component 2.1: Farmers Subsidy Scheme (US\$10 million equivalent) - Sub-component 2.2: Market Support Facility (US\$15 million equivalent) .	Direct Support to producers and associations (US\$54.03 million equivalent) : - Sub-component 2.1: Farmers Subsidy Scheme (US\$23.43 million equivalent) - Sub-component 2.2: Market Support Facility (US\$15.7 million equivalent) - Sub-component 2.3: Restoring Livestock Assets (US\$3.8 million equivalent) - Sub-component 2.4: Restoring water (irrigation)	>	>



			infrastructures (US\$11.1 million equivalent).		
Component 3	Agriculture Risk and Emergency Response Contingency Reserve (US\$1 million equivalent).	Emergency Response Contingency Reserve (US\$1.5 million equivalent).	Emergency Response Contingency Reserve (US\$0.75 million equivalent).	>	>
Component 4	Project Administration and Coordination (US\$3 million equivalent).	Institutional Strengthening, Monitoring and Evaluation, Project Management and Studies (US\$6.95 million).	Institutional Strengthening, Monitoring and Evaluation, Project Management and Studies (US\$13.62 million).	>	>
Rationale for changes	..	To reduce the number of activities to be financed under the Project, simplifying its implementation. Priority was given to activities best aligned with MARNDR priorities and part of its strategic and staffing plan to ensure sustainability while still supporting the higher-level objectives of food security and rural income generation. Thus, under Component 1, support for hydro-meteorology and agricultural insurance were dropped and information systems were streamlined, (keeping support for gathering and disseminating market price information), while SPS was expanded, especially in light of new pest infestations. Under Component 2 a new sub-component was added to scale up the Farmer Subsidy Scheme tested under the closed RESEPAG I project.	The structure of the original four components is maintained, with the AF contributing an additional US\$31.1 million to Component 2 and an additional US\$3.9 million to Component 4 to cover additional operational and monitoring costs. Under Component 2, support is provided for two new subcomponents in response to Hurricane Matthew, namely to restore livestock assets as well as to restore water (irrigation) infrastructures via both civil works contracts and community-based cash-for-work schemes. In addition, the AF scales up the Farmer Subsidy Scheme, notably in the South and with a stronger focus on climate resilience. It also strengthens the National Registry of Producers, which is valuable for targeting support. The Market Support Facility activity remains unchanged.	Component 1 was scheduled to close on December 31, 2019 with no further extensions. Therefore, in the June 2019 Restructuring, activities with no prospect of significant improvement, or insufficient time to achieve targets, were eliminated (including the building/rehabilitating quarantine facilities and constructing offices for the Departmental Center for Sanitary Protection. At the same time, selected activities under the SPS sub-component were scaled up to consolidate & build on achievements, e.g. rabies epidemiology surveillance. Components 2, 3 and 4 remained unchanged.	..
Safeguards Policies Triggered	Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.04); Forests (OP/BP	>	Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.04); Forests (OP/BP	>	>



	4.36); and Pest Management (OP 4.09).		4.36); Pest Management (OP 4.09); and Involuntary Resettlement (OP/BP 4.12).		
Rationale for changes	..	..	Rehabilitation of irrigation and water management infrastructure could result in involuntary resettlement.	..	..
Other Changes to Safeguards (Explanation)	..	The ISDS was updated to reflect the change in PDO and Component description.	There were no other changes to safeguards, but an updated PID/ISDS was issued (in May 2017).	>	>
Legal covenants	<ul style="list-style-type: none"> - Article IV, 4.01: The Grant Agreement has been executed and delivered and all conditions precedent to the effectiveness or to the right of the Recipient to make withdrawals under said agreement (other than the effectiveness of this Agreement) have been fulfilled - Schedule 2, Section II. B.4: Appointment, not later than four months after the Effective Date, the independent auditors referred to in Section 4.09 (b) of the General Conditions - Schedule 2, Section II. B.5: Acquire and configure, through MARNDR, an accounting software agreed with the Association for the accounting and financial management system for the Project - Schedule 2, Section I. C. 1: Establish a market support facility and operate and maintain 	<ul style="list-style-type: none"> - The Amendment to the Financing Agreement, dated August 11, 2015, replaces and updates the entire Project Description in Schedule I of the original Financing Agreement, dated January 11, 2012. - The Amendment adds a new Section I. C to Schedule 2 with covenants regarding the Farmer Subsidy Scheme. - The Amendment revises Schedule III (List of Prohibited Activities) to remove the restriction on "New irrigation, drainage and flood control works" and to clarify the restrictions on the use of pesticides. - The Amendment updates the Categories of Eligible Expenditures table in Section IV.A.2 of Schedule 2, as well as the Definitions in the 	<p>Schedules 1 and 2 were amended to reflect the new activities under the AF (including a new Schedule 2, Section I.D on the Cash-for-Work Program and Section I.E. on the Livestock Program. Section I.G. on Eligible Emergencies is streamlined to increase flexibility. Key additional covenants under the AF Financing Agreement are:⁵⁹</p> <ul style="list-style-type: none"> - Section I.D.2: For purposes of carrying out the Cash for Work Program, the Recipient, through MARNDR, shall select under eligibility criteria detailed in the Operational Manual the eligible Beneficiaries under the Cash for Work Program and execute with said selected Beneficiaries and thereafter maintain Cash for Work Agreements, under terms and conditions 	>	>

⁵⁹ The covenants in the original 2012 IDA Financing Agreement, as amended in August 2015, are retained with only minor adjustments. Key new AF covenants are presented here. The full set of 34 covenants reported on pages 12-17 of the 2017 AF Project Paper (Report No. PAD2331) are in the Financing Agreement for the AF, dated June 29, 2017.



	<p>said facility during project implementation</p> <ul style="list-style-type: none"> - Schedule 2, Section I. A. 2: The Recipient, through MARNDR, shall, not later than February 28 of each year of Project implementation: (a) submit to the Association, annual Project work plans and budgets for its prior review and approval for Parts 1, 2 and 4 of the Project; and (b) carry out each plan in a manner consistent with the terms of this Agreement - Schedule 2, Section II. B. 2: The Recipient shall prepare and furnish to the Association not later than one month after the end of each calendar quarter, interim unaudited financial reports for the Project covering the quarter, in form and substance satisfactory to the Association - Schedule 2, Section II. B. 3: The Recipient shall have its Financial Statements audited in accordance with the provisions of Section 4.09 (b) of the General Conditions. Each audit of the Financial Statements shall cover the period of one fiscal year of the Recipient. The audited financial statements for each such period shall be furnished to the Association not later than six months after the end of such period. 	<p>Appendix to the Financing Agreement.</p> <ul style="list-style-type: none"> - The procurement methods in Sections III.B.2 is revised and the procurement of consultants method previously permitted in Section III.C.2(f) of Schedule 2 (Selection of consultants under Indefinite Delivery Contract or Price Agreement) is deleted - The Closing Date in Section IV.B.3 of Schedule 2 is revised to June 30, 2018. 	<p>satisfactory to the Association, as further detailed in the Operational Manual.</p> <ul style="list-style-type: none"> - Section I.E.2 Schedule 2: For purposes of carrying out the Livestock Program, the Recipient, through MARNDR, shall select under eligibility criteria detailed in the Operational Manual the Eligible Households under the Livestock Program and execute with said selected Eligible Households and thereafter maintain Livestock Agreements, under terms and conditions satisfactory to the Association, as further detailed in the Operational Manual. - Section I.I.1 Schedule 2: The Recipient, through MARNDR, shall: (a) no later than six months after the Effective Date, prepare, consult, adopt and publish the RPF in form and substance satisfactory to the Association; and (b) ensure that the Project is carried out in accordance with the ESMF, the RPF and the Pest Management Plan, including the guidelines, rules and procedures defined in said ESMF, RPF or Pest Management Plan. To this end, if an ESMP or a RAP is required on the basis of the ESMF or the RPF, the Recipient shall specifically take the following 		
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			<p>actions, in a manner acceptable to the Association.</p> <p>- Section II.A Schedule 2: The Recipient shall monitor and evaluate the progress of the Project and prepare Project Reports in accordance with the provisions set forth in the Financing Agreement and on the basis of the indicators acceptable to the Association as set up in the Operational Manual. Each Project Report shall cover the period of six months, and shall be furnished to the Association not later than forty-five days after the end of the period covered by such report.</p>		
Rationale for changes	..	The revisions reflect the Restructuring's adjustments to project activities, notably under Components 1 and 2, including the addition of the FSS.	The revisions reflect new and revised activities under the AF, including the expanded FSS activities (including agro-forestry), the new livestock restocking and cash-for-work programs.	..	..
Disbursement Categories - rationale for changes	GAFSP: (1) Goods (GO), Works (CW), Non-consulting services (NCS), and Consultants' services (CS) under Parts 1 and 4 of the Project - US\$10 million (100%). IDA: (1) Goods, Works, Non-consulting Services, Consultants Services, Training (TR) and Operating Costs (OP) under Parts 2 and 4 of the Project - SDR 24.4 million (100%); (2) Goods, Works, Non-consulting services, Consultants services and	GAFSP: (1) GO, CW, NCS, CS, Parts 1 and 4 - US\$1.13 million (100%); (2) GO, CW, NCS, CS, TR, Parts 1 and 4 - US\$8.87 million (100%). IDA: (1) GO, CW, NCS, CS, TR, OP Parts 2 and 4 - SDR 2.71 million (100%); (2) GO, CW, NCS, CS, TR, OP Subproj. and Part 3 - SDR 1.25 million (100%);	<u>REVISED:</u> GAFSP: (1) GO, CW, NCS, CS, Parts 1 and 4 - US\$1.31 million (100%); (2) GO, CW, NCS, CS, TR, Parts 1 and 4 - US\$8.68 million (100%). IDA: (1) GO, CW, NCS, CS, TR, OP Parts 2 and 4 - SDR 4.71 million (100%); (2) GO, CW, NCS, CS, TR, OP, Subproj. and Part 3 - SDR 0.55 million (100%);	<u>REVISIONS TO AF DISB. CATEGORIES:</u> (1) Goods, works, non-consulting services, consulting services, Training, Operating Costs, Farmer Subsidy Scheme Payments and Cash for Work Payments under Part 2 and Part 4 of the Project - SDR 25.53 million (100%);	..



	<p>Operation Costs: (a) under Emergency Recovery and Reconstruction Subprojects; and (b) financed by Farmer Subsidy Scheme Payments under Part 3 of the Project - SDR 0.7 million (100%).</p>	<p>(3) GO, CW, NCS, CS, TR, OP Parts 1, 2 and 4 - SDR 10.64 million (100%); (4) GO, CW, NCS, CS, TR, OP under Parts 2 of the Project for vouchers under the FSS - SDR 4.25 million (100%); (4) GO, CW, NCS, CS, TR, OP under Parts 2 of the Project for vouchers under the MSF - SDR 6.25 million (100%).</p>	<p>(3) GO, CW, NCS, CS, TR, OP Parts 1, 2 and 4 - SDR 9.33 million (100%); (4) GO, CW, NCS, CS, TR, OP under Parts 2 of the Project for vouchers under the FSS - SDR 4.25 million (100%); (4) GO, CW, NCS, CS, TR, OP under Parts 2 of the Project for vouchers under the MSF - SDR 6.25 million (100%).</p> <p>NEW: IDA AF (CRW): (1) Goods, Works, Non-consulting Services, Consulting Services, Training, Operating Costs, resettlement compensation and assistance for Displaced Persons under the Part 2 of the Project, except for Parts 2.1 (b) (Farmer Subsidy Scheme), 2.1 (g) (Cash for Work Program), and 2.2 (Sub-Grants under Market Support Facility) - SDR 10.8 million (100%); (2) Goods, Works, Non-consulting services, Consulting services, Training and Operating Costs for: (a) Farmer Subsidy Scheme - SDR 10.2 million (100%); (b) Cash for Work Program - SDR 4.1 million (100%); (c) Sub-Grants under the Market Support Facility SDR 0.5 million (100%); (3) Eligible Emergency Expenditures - SDR 0 (100%).</p>	<p>(2) Goods, works, non-consulting services, consulting services, Training and Operating Costs for: (a) Farmer Subsidy Scheme Payments under Part 2.1(b) of the Project - SDR 0 (Pro Memoriam) (b) Cash for Work Payments under Part 2.1 (g) of the Project - SDR 0 (Pro Memoriam) (c) Sub-Grants under the Market Support Facility under Part 2.2 of the Project - SDR 0 (Pro Memoriam) (3) Eligible Emergency Expenditures - SDR 0 million (100%) (4) Cash compensation and assistance to Displaced Persons as set forth in the RAP (excluding land acquisition) - SDR 0.0744 million (100%).</p>	
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Rationale for changes	..	The original categories were kept, since disbursements had already been made against them, but their amounts were capped at the disbursed amounts and therefore reduced from their original allocations. GAFSP would now finance Operational Expenses and Training, to implement activities under Component 1; the first category of IDA-H7410 would now allow financing of Component 1, and a new category was created for IDA to finance the Farmer Subsidy Scheme and existing Market Support Facility. The category for emergencies was increased to reflect assistance disbursed to fight the cochineal infestation in 2012-13.	The revisions were to rationalize disbursement categories within and between the various sources of funds, remove overlaps (e.g. between the two GAFSP disbursement categories), cover some cost overruns, and eliminate the emergency reserve of funds, with category 3 only used in case of an eligible emergency. In addition, the requisite disbursement categories were created for the IDA AF grant, including new sub-components under Component 2.	The revisions were designed to correct some inconsistencies in the disbursement categories and allocations in the AF Financing Agreement. The changes included creating a new Part 4 under the AF disbursement categories to earmark funds destined to support potential resettlement costs related to irrigation rehabilitation (these funds had originally been included in the AF under Category 1).	..
Disbursement Estimates	<u>FY: Annual / Cumulative</u> - FY12: US\$1m / US\$1m - FY13: US\$8m / US\$9m - FY14: US\$14m / US\$23m - FY15: US\$14m / US\$37m - FY16: US\$10m / US\$47m - FY17: US\$3m / US\$50m.	<u>FY: Annual / Cumulative</u> - FY12: US\$1m / US\$1m - FY13: US\$3.18m / US\$4.18m - FY14: US\$2.79m / US\$6.97m - FY15: US\$2.98m / US\$9.95m - FY16: US\$9m / US\$18.95m - FY17: US\$12m / US\$30.95m - FY18: US\$13.5m/US\$44.45m.	<u>FY: Annual / Cumulative</u> - FY17: US\$21m / US\$21m - FY18: US\$20m / US\$41m - FY19: US\$25m / US\$66m - FY20: US\$13.4m / US\$79.4m.	..	..
Rationale for changes	..	New disbursement estimates considered delays in the first two years of implementation and an agreed implementation plan. Changes in the US\$/SDR exchange rate reduced the total US\$44.45 million.	Disbursement amounts and the pace of disbursements were expected to increase.	..	..
Financial Management	FM arrangements for RESEPAG II built on those for RESEPAG I and	FM arrangements remained the same for all activities	>	>	>



<p>Arrangements (and rationale for changes)</p>	<p>the experience of the MARNDR in managing several Bank projects. MARNDR is responsible for financial management, record keeping, controls, audits of accounts and submission of Interim Financial Reports. The Project Coordinator authorizes expenditures under the project, while the Financial Management Advisor has overall financial management responsibilities, in line with the Operational Manual and the FM Procedures Manual, which also specifies procedures and the flow of funds for payments to farmers, service providers and financial agents. A computerized financial management system would be used to maintain accounts. Separate Designated Accounts would be opened for GAFSP and IDA funds.</p>	<p>except the newly introduced Farmers Subsidy Scheme, to be implemented using the same approach as under RESEPAG I (P113623), with which the unit had ample experience, involving a Financial Agent to administer all payments and financial transfers under the Farmer Subsidy Scheme; and (ii) the Operators will oversee the technical implementation and supervision of the Farmer Subsidy Scheme. The rationale for this change is to accommodate the inclusion of the Farmer Subsidy Scheme.</p>			
<p>Procurement</p>	<p>Procurement activities for RESEPAG II would be carried out by the same project team as under RESEPAG I. The project would procure works, goods, consultants and non-consulting services, as well as consumables as part of operating costs, in line with the agreed procurement plan and established thresholds for procurement methods and prior review.</p>	<p>Procurement activities would be carried out by the newly created MARNDR unit called “Unité de Passation des Marchés Publics” (UPMP). Created in May 2014, this unit gathers all the procurement staff working for the MARNDR. It comprises 11 staff, headed by a seasoned professional. The project will strengthen UPMP's capacity.</p>	<p>Procurement would be carried out by UPMP under existing arrangements. A Project Procurement Strategy for Development (PPSD) was prepared with adequate market analysis for the selection methods detailed in the Procurement Plan, and would be executed in accordance with paragraph 5.9 of the World Bank Procurement Regulations for IPF (July 2016) (“Procurement Regulations”), and the Bank’s</p>	<p>></p>	<p>></p>



			Systematic Tracking and Exchanges in Procurement (STEP) system.		
Rationale for changes	..	MARNDR created the unified procurement unit for all donor-funded projects to concentrate and strengthen procurement capacity.	The Bank introduced the PPSD and STEP systems to strengthen value for money for clients, as well as alignment with PDOs, and to increase efficiency via better tracking of procurement	..	..
Implementation Schedule (see Closing Date above) - rationale for changes	Project activities would be completed by the Closing Date of November 30, 2016.	Since the Closing Date was extended by 19 months and activities were removed and added, changes were made in the implementation schedule and reflected in the revised Operational Manual, Procurement Plan and Operational Plan of Activities. Producer organizations and farmers would receive TA over a longer period of time to support investments under Component 2, so as to increase the Project's sustainability.	Activities related to the matching grant for RPOs severely affected by Hurricane Matthew were extended by around 12 months to allow the RPOs to complete them. RESEPAG II's Closing Date was extended to ensure that all additional planned activities would be satisfactorily completed in line with the revised implementation plan.	..	..



ANNEX 8. EVOLUTION OF THE RESULTS FRAMEWORK WITH PROJECT RESTRUCTURINGS⁶⁰

PDO Indicators							
Original Results Framework in the PAD	Baseline (Dec.2011) > Target (Nov.2016)	2015 Restructuring	Baseline (Apr.2012) > Target (Apr.2018)	2017 Additional Financing	Baseline (Apr.2012) > Target (Dec.2019)	2019 Restructuring	Baseline > Target
<u>PDO Indicator 1</u> : Number of client days of extension services provided to farmers, community members, etc. (disaggregated by gender)	+0 > +62,000 farmers; (0 > 20% women heads of household)	Dropped					
<u>PDO Indicator 2</u> : Definition, adoption and implementation of a national extension strategy by the MARNDR and main stakeholders	None > Implementation	Dropped					
<u>PDO Indicator 3</u> : Number of farmers that have access to improved agriculture information, technologies, inputs, material, and services (disaggregated by gender)	0 > 50,000 farmers; (0 > 20% women heads of household)	Dropped					
		PDO Indicator 1: Performance of MARNDR in Sanitary and Phytosanitary (SPS) measures (Index Rating from gap analysis using methodology of World Organization for Animal Health)	30% > 60%	>	>	PDO Indicator 1: Key elements to strengthen the institutional capacity of MARNDR strengthened	0% > 80%

⁶⁰ Note: Changes in indicators due to Restructurings are highlighted in **bold**; ">" indicates an earlier change was carried forward with no change in the subsequent Restructuring.



		PDO Indicator 2: Production increase by voucher beneficiaries	+0% > +30%	PDO Indicator 2: Value of production generated by the farmer subsidy scheme program	US\$0 > US\$30m	PDO Indicator 2: Value of production generated by the farmer subsidy scheme program	US\$0 > US\$24m
		PDO Indicator 3: Increase in sales of the supported producer organizations (Aggregated million US\$)	US\$0m > US\$10m	>	>	PDO Indicator 3: Increase in sales of the supported producer organizations (Aggregated million US\$)	0% > 50%
		PDO Indicator 4: Direct project beneficiaries	0 > 19,000 (number)	PDO Indicator 4: Direct project beneficiaries	0 > 60,000 (number)	>	>
				PDO Indicator 4.1: Of which households affected by Hurricane Matthew that received support from the Crisis Response Window	7,445 > 41,000 (Note: baseline Jan.13,2017)	PDO Indicator 4.1: Of which households affected by Hurricane Matthew that received support from the Crisis Response Window	0 > 28,000
				PDO Indicator 4.2: Of which beneficiaries in the Southern region	11,195 > 50,500 (Note: baseline Jan.13,2017)	PDO Indicator 4.2: Of which beneficiaries in the Southern region	7,445 > 50,500
		PDO Indicator 5: Female beneficiaries	0 > 5,400 (number)	PDO Indicator 5: Female beneficiaries	0% > 40% (percent)	>	>
				PDO Indicator 6: Time taken to disburse funds requested by the Government for an eligible emergency	N/A > 4 (number of weeks)	>	>
		<p><i>Notes on the above changes: The original 3 PDO indicators and 2 sub-indicators were replaced by 5 PDO indicators to link them better to the activities: The new PDO1 reflects the desired outcome for the main sub-component of Component 1, namely SPS (the Appraisal PDO2 indicator on extension strategy had already been achieved and the emphasis</i></p>		<p><i>Notes on the above changes: PDO2 was revised because measuring value before/after allowed comparisons also in the many cases in which production changed after incentives; The PDO4 target was revised to reflect more direct beneficiaries with the AF. The new PDO4.1 is linked to the new PDO objective to improve livelihood in areas</i></p>		<p><i>Notes on the above changes: The revised PDO1 reflects the broader range of support received by various Units/Directorates of MARNDR, including UPS; Directorates for Animal Health, Plant Protection, Quarantine, Agriculture Innovation and Extension, and CNSA. The key elements include strategies dissemination, processes, innovations,</i></p>	



		<p>was shifted to SPS). The new PDO2 and PDO3 are directly aligned to sub-components 2.1 and 2.2, respectively, of Component 2. The new PDO4 measures overall project beneficiaries (replacing the narrower Appraisal PDO3) while the new PDO5 raises the measure for women beneficiaries from a sub-indicator to a full indicator.</p>	<p>affected by Hurricane Matthew (via AF-funded cash-for-work, winter 2016 and spring 2017 crop planting campaigns, livestock restocking, and additional vouchers focused on resilient agriculture productions). The new PDO4.2 sub-indicator measures total beneficiaries in the South affected by the Hurricane Mathew, including both original IDA-funded and AF-funded activities. The new PDO6 indicator relates to the Emergency Response Contingency (ERC).</p>	<p>human and physical capacity building to improve MARNDR's design and delivery of services (see Annex 9, Table A9.2). The target for PDO2 was revised down based on more solid assumptions and data from recent studies. The PDO3 unit of measure and target were revised, drawing on field-based observations, to better reflect expected improvements. The baseline and target for PDO4.1 was corrected, as was the baseline for PDO4.2.</p>			
Intermediate Indicators							
Original Results Framework in the PAD	Baseline (Dec.2011) > Target (Nov.2016)	2015 Restructuring	Baseline (Apr.2012) > Target (Apr.2018)	2017 Additional Financing	Baseline (Apr.2012) > Target (Dec.2019)	2019 Restructuring	Target
<u>Component 1 - Sub-component 1.a</u>							
Active coordination of national agricultural extension (public sector) through appropriate structures equipped with necessary means at the central, department and local level (BAC – Centers)	No > Yes (Admin. measures undertaken)	Dropped					
Continued exchange of information / experiences, dialogue, and training of executives, between Haiti and International Partners	0 > 5 Trainings 0 > 2 Exchange trips/missions	Dropped					
<u>Component 1 - Sub-component 1.1</u>							
		Number of didactical material elaborated and diffused in the Project zone, classified by themes	0 > 20	>	>	>	>



		Agricultural Middle School is operational for at least 30 students	No > Yes	>	>	Agricultural Middle School's infrastructure is upgraded	No > Yes
		<i>Notes on the above changes: The above intermediate indicators more concretely link project activities to expected outputs.</i>		<i>No changes.</i>		<i>Notes on the above changes: Since operationalization of the Agricultural Middle School depends on factors outside of the scope of the Project, notably the financing of complementary works through other sources of financing and the training and appointment of teachers, the indicator was revised.</i>	
<u>Component 1 - Sub-component 1.b</u>							
Agroclimatic forecasting available	0 > 2 Departments with forecasting	Dropped					
		<u>Component 1 - Sub-component 1.2</u>				<u>Component 1 - Sub-component 1.2</u>	
		Number of Departments where producers have access to market information by SMS, community radio and/or by publication at all DDA and BACs	0 > 4	>	>	Number of Departments where producers have access to market information by SMS, community radio and/or by publication at all DDA and BACs	0 > 3
						Number of Departments where market prices have been collected and disseminated through a user-friendly web-based system (Number)	0 > 4
		<i>Notes on the above changes: The above intermediate indicator reflects the shift to a focus on market price information under Sub-component 1.b, rather than agroclimatic information.</i>		<i>No changes.</i>		<i>Notes on the above changes: A new indicator was added to capture both market price information and access via SMSs, with the target for the SMS pilot corrected from 4 to 3 Departments.</i>	
<u>Component 1 - Sub-component 1.c</u>							



Certification of the national laboratory (Tamarinier)	No > Level 2 ISO certification for certain tasks	Dropped					
		<u>Component 1 - Sub-component 1.3</u>				<u>Component 1 - Sub-component 1.3</u>	
		a) Central Building; b) Polyvalent centers; c) Quarantine stations; and d) Laboratories; are built or rehabilitated, equipped and operational	a) 0 > 1; b) 0 > 4; c) 0 > 5; d) 0 > 3.	>	>	a) Central Building built and equipped; b) Polyvalent centers; c) Quarantine stations; and d) Laboratories; are built or rehabilitated, equipped and operational	0 > 1
		Number of client days of training linked to SPS provided to epidemiological volunteers and private veterinarians	0 > 6,600 (number)	>	>	>	>
		Number of samples analyzed for the detection of the presence of diseases	0 > 96,000 (number)	>	>	Dropped	
		Number of cattle identified by the Project and included in the information system	0 > 250,000 (number)	>	>	>	>
		<i>Notes on the above changes: The new intermediate indicators reflect the shift in emphasis to more SPS activities, following the infestations in 2012-13, and link results closely to planned activities.</i>			<i>No changes.</i>	<i>Notes on the above changes: Sub-component 1.3 was streamlined to reflect feasible activities prior to GAFSP Closing in December 2019. The sample analysis indicator was dropped for procurement reasons (the IDB is also financing this activity).</i>	
<u>Component 2</u>							
Number of farmers (from a sample) that are satisfied with the quality and	~0% > 50% men ~0% > 50% women	Dropped					



availability of agriculture services							
Number of farmer organization networks (cooperatives, groups, associations, etc.) reinforced and with improved post-harvest operations	0 > 25 (number)	Dropped					
Number of agriculture applied research partnerships between MARNDR and NGOs, Universities, Farmer Groups, Private Sector, etc.	0 > 20 (number)	Dropped					
		<u>Component 2 - Sub-component 2.1</u>					
		Number of client days of extension services provided to producers, members of producer organizations, different than SPS training	0 > 13,000	Number of client days of extension services provided to producers, members of producer organizations, different than SPS training	0 > 21,500	>	>
		Number of producers adopting improved technologies promoted by the Project (disaggregated by gender)	0 > 8,000 (total) 0 > 2,400 (women)	Number of producers adopting improved agriculture technologies promoted by the Project (disaggregated by gender)	0 > 15,000 (total) 0 > 2,400 (women)	Number of producers adopting improved agriculture technologies promoted by the Project	0% > 70%
		Increase in productivity of the voucher beneficiaries	+0% > +25%	Dropped			
		Satisfaction rate of participants of the farmer field schools	0% > 75%	>	>	>	>
		Number of accredited suppliers of inputs and services in the targeted areas	0 > 200	Dropped			



				Number of hectares restored or converted to agroforestry production by the Project	0 > 2,500 (Note: baseline Jan.13,2017)	>	>
		<i>Notes on the above changes: The revisions reflect the introduction of a Farmer Subsidy System sub-component to RESEPAG II</i>		<i>Notes on the above changes: The target for extension clients was increased in line with the increase in the number of producers benefiting from the Project (livestock packages and vouchers on climatic resilient production). The wording of the technology adoption indicator was adjusted slightly to match the corresponding core indicator, and the target was increased to account for more FSS beneficiaries under the AF. The gender disaggregation was dropped to avoid redundancy as it is already included in the PDO indicator. The productivity increase indicator was dropped because most activities were found to involve a change of production, thus impeding the before/after incentives comparison. The accredited suppliers indicator was dropped as its result could not be attributed to project activities, although the number of participant suppliers will continue to be monitored. The new agroforestry hectares indicator is linked to new FSS support to improve the resilience of agricultural production.</i>			<i>Notes on the above changes: The unit of measure for adoption of technologies was changed from number to percentage to better capture results among FSS beneficiaries.</i>
		<u>Component 2 - Sub-component 2.2</u>					
		Percentage of producer organizations having an operational investment at least 12 months after its completion	0% > 75%	>	>	>	>



		Percentage of sub-projects that are sensitive to a) gender; b) environment; or c) nutrition	0% > 60%	>	>	>	>
		<i>Notes on the above changes: The revisions enable the project to measure important priorities related to the Market Support Facility.</i>		<i>No changes.</i>		<i>No changes.</i>	
				<u>Component 2 - Sub-component 2.4</u>			
				Area provided with new/improved irrigation or drainage services in Southern Departments by the Project	0 > 3,500 (hectares; Note: baseline Jan.13,2017)	Area provided with new/improved irrigation or draining services (CRI, Hectare (Ha)) in Southern Departments by the Project	0 > 2,000
				<i>Notes on the above changes: the new/improved irrigation area indicator is a core indicator linked to the new activities on irrigation in the South to restore and increase the resilience of irrigation infrastructure against future climatic disasters, under the new Sub-component 2.4.</i>		<i>Notes on the above changes: The target was revised as another project took over the D'Avezac area that RESEPAG II had planned to cover. The end target corresponds to the areas of Les Anglais (400 ha; Dory: 550 ha; Dubreuil: 1,000 ha and Melon: 50 ha). The irrigated areas will be improved rather than new.</i>	
				<u>Component 4</u>			
				Number of agricultural producers registered in the MARDNR registry	14,000 > 150,000 (Note: baseline Jan.13,2017)	>	>
				<i>Notes on the above changes: This indicator was added to capture support for registering farmers in the National Farm Registry, which MARNDR needs to better design, implement, and monitor agriculture programs, notably for disaster preparedness and response.</i>		<i>No changes.</i>	



ANNEX 9. SUPPLEMENTARY FIGURES, TABLES AND BOXES

Figure A9.1: Final Results Framework for RESEPAG II

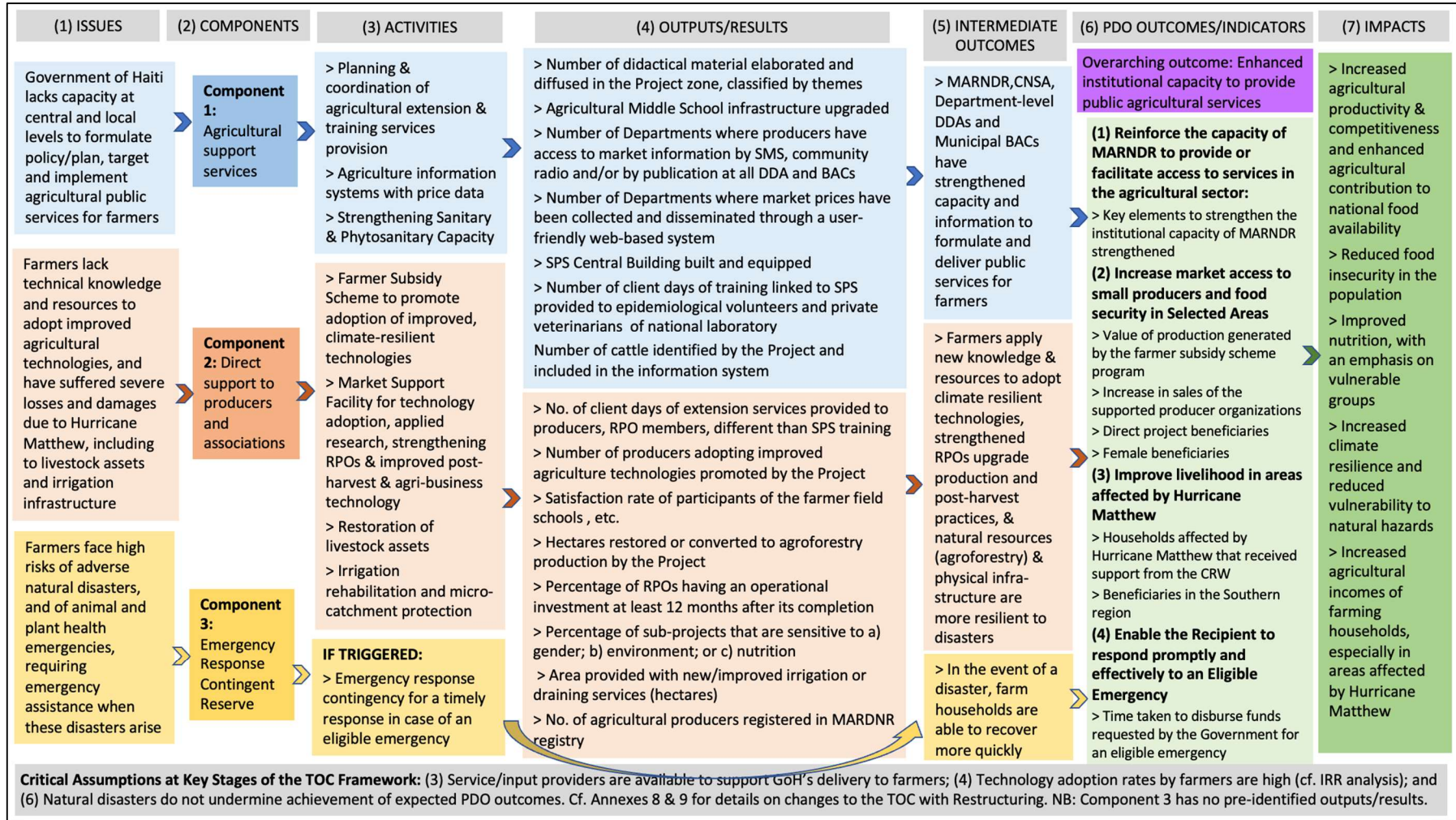




Table A9.1: Summary of Key Changes Made via the Four Restructurings of RESEPAG II

Key Changes	2015 (Level 1) Restructuring	2017 Additional Financing	2019 (Level 2) Restructuring	2021 (Level 2) Restructuring
Change in Project's Development Objectives	√	√		
Change in Results Framework	√	√	√	
Change in Safeguards Policies Triggered		√		
Other Changes to Safeguards	√			
Change in Legal Covenants	√	√		
Change in Grant Closing Date	√	√	√	√
Reallocation between Disbursement Categories	√	√	√	
Change in Disbursement Estimates	√	√		
Change in Components and Costs	√	√		
Change in Financial Management	√			
Change in Procurement	√	√		
Change in Implementation Schedule	√	√		√
Other Changes			√	

Table A9.2: Elements for the Assessment of PDO Indicator 1

PDO Indicator 1	Unit	Target	Achieved
Key elements to strengthen the institutional capacity of MARNDR implemented	Percentage	80% of elements achieved	81.25% of elements were achieved
16 Constitutive Elements for PDO Indicator 1			
1. Master Plan of Agricultural Vulgarization (PDVA) disseminated to agricultural sector stakeholders and, available on the MARNDR website	Yes/No	Yes	Achieved
2. Set of best practices technical sheets produced	Number	12	Achieved
3. Number of facilitators trained in extension techniques in Farmers' Field Schools	Number	220	Achieved
4. Number of BAC staff trained on Farmer's Field Schools methodology (2 southern communes 2 central communes)	Number	8	Achieved
5. Number of Farmer's Field Schools set up by the Project disseminating agricultural innovations and good practices coming to an end.	Number	110	Achieved*
6. Strategy to monitor and fight against the white mealy bugs finalized	Yes	No	Partially Achieved
7. Number of "trappers" (farmers) trained and collecting specimens	Number	30	Achieved
8. Number of frames trained 2 weeks in France CIRAD (breeding of natural predators and integrated control)	Number	2	Achieved
9. Number of farmers using fruit fly traps (trap purchased by RESEPAG, training and installation implemented by the IDB) (purchased 40,000)	Number	500	Achieved
10. Number of farmers trained on white mealy bugs control in the Northeast	Number	500	Achieved
11. Functional bovine identification database	Yes/No	Yes	Partially Achieved



12. Number of people trained (surveillance and vaccination, private and public sector)	Number	3,200	Achieved
13. Number of animals vaccinated against rabies and anthrax supported by the Project	Number	Rabies: 1,161,775	Achieved
		Anthrax: 2,400,000	Achieved
14. Quarantine strategy finalized	Yes/No	Yes/No	Achieved
15. Number of people trained within MARNDR in administrative management and other technical areas corresponding to their function within the UPS	Number	Central level: 15	Not Achieved
		Departmental Directorates level: 30	Not Achieved
16. UPS Governance Strengthening Strategy and Joint Basic Procedures Developed	Yes/No	Yes	Achieved

Note: Element 5 was reported as not achieved at the time of the GAFSP Interim PCR, but was subsequently achieved with the establishment of 115 Farmer Field Schools (see Annex 1, Section B) against the target of 110. Thus, 13 of the 16 elements were achieved, two were partially achieved, while Element 15 (comprising two parts) was not achieved.

Box A9.1: Beneficiary Profiles and Targeting of Beneficiaries

The beneficiaries of the FSS incentives and the matching grants under the MSF are required to be registered in the National Farmer Registry. By Project Closing, 224,905 farmers had been registered in this registry. This registry includes information on the farming families and their landholdings (where landholdings need not necessarily involve established tenure, but rather farming households adding value to a given parcel). With landholdings averaging less than 2 hectares, the RESEPAG II Coordination unit reports that farming families rely on diversified sources of income for their sustenance:

Gender	Agriculture	Commerce	Livestock	Fisheries	Small trades	Coal production	Other	Total
Female	60%	27%	5%	2%	1%	1%	4%	100%
Male	58%	11%	15%	5%	2%	2%	7%	100%

Moreover, while remittances accrue to both wealthier and poorer households in Haiti, the remittances from external migrants constitute a key source of income to sustain the livelihoods of poorer households, which may have family members working in agriculture, construction, domestic employment or other sectors in the Dominican Republic, the US or other countries.⁶¹ Remittances to Haiti amounted to US\$1.5 billion in 2010, rising to US\$4.2 billion in 2021, equivalent to 20 percent of GDP, making Haiti one of top 15 countries in the world in terms of dependence on remittances.⁶²

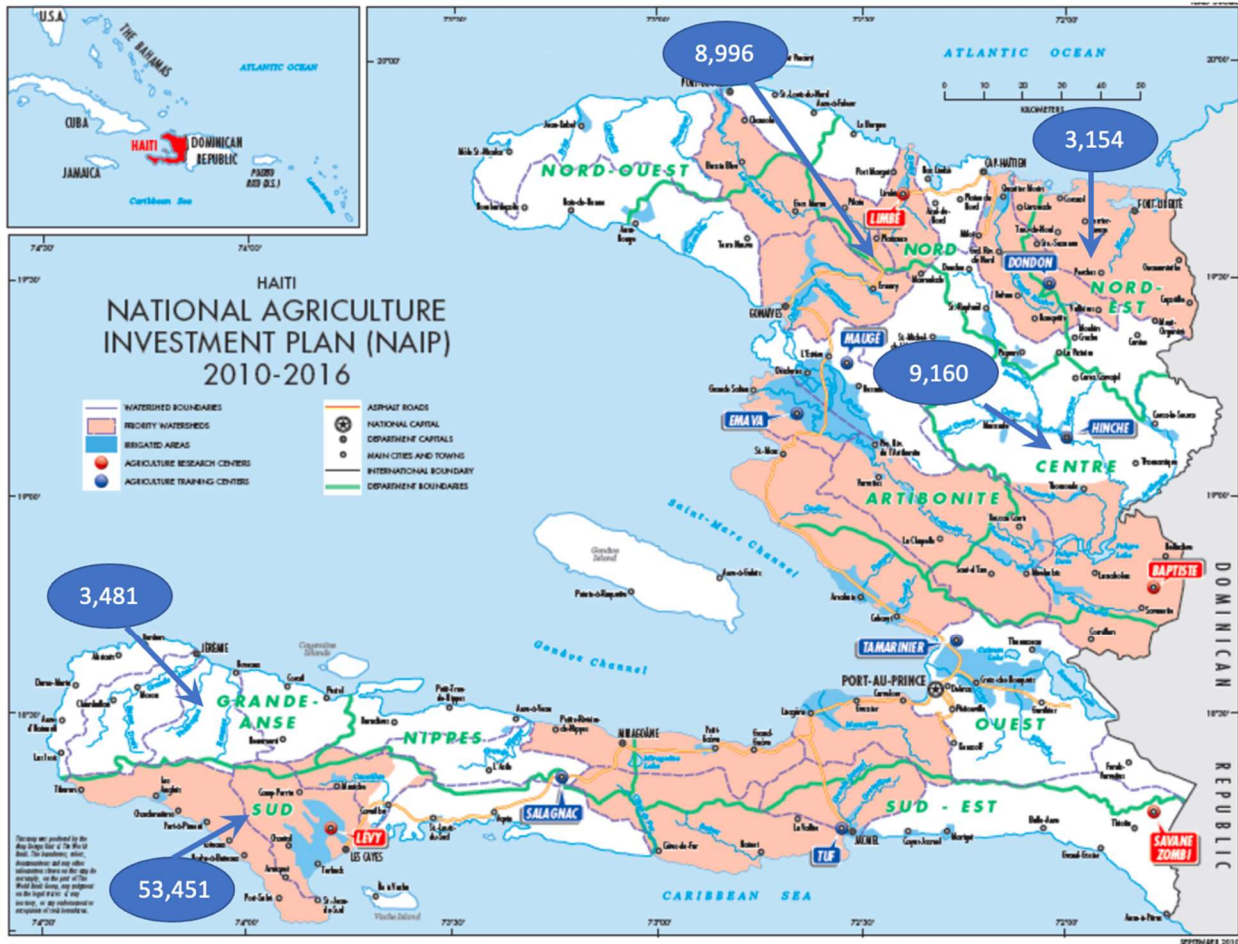
MARNDR establishes the criteria for targeting support under various mechanisms (agricultural production, livestock recapitalization, agroforestry, etc.) to those registered in the national Farmer Registry. Following a campaign to register people in a given geographic location, which may be selected as a priority because of its food insecurity levels (IPC ratings), or based on proposals from Agricultural Roundtables that can advise MARNDR on where to look for beneficiaries and what packages to support, operators then identify farmers

⁶¹ A World Bank Country Social Analysis of Haiti found that remittances accounted for 14 percent of total incomes of the poorest quintile of the rural population in Haiti. Cf. The World Bank. 2006. Haiti - Social resilience and state fragility in Haiti: a country social analysis.

⁶² Cf. <https://www.knomad.org/data/remittances>.

who are eligible for the given campaign based on the criteria established by MARNDR. These may include minimum and maximum holding sizes to ensure both feasibility and focus on the poor, priority areas/activities for production, among other criteria established by MARNDR. In principle, in order to ensure greater social cohesion, everyone who is eligible for a given line of support in an identified zone will be supported.⁶³

Figure A9.2: Number of RESEPAG II Beneficiaries by Department, and 2010-16 PNIA Priority Areas



Source: Map drawn from the PAD for RESEPAG II; data on beneficiaries provided by RESEPAG II's Coordinating Unit

Box A9.2: Institutional Arrangements for RESEPAG II

RESEPAG II adopted and consolidated the project implementation arrangements established under RESEPAG I. In particular, in lieu of the standard model of an independent PIU (often housed outside of the responsible Ministry), staffed entirely with consultants and reporting to a Steering Committee that had previously been used with frequency in Haiti, the project coordination for RESEPAG I and II was located firmly within MARNDR, drawing on a blend of MARNDR staff and consultants and with the coordination headed by a MARNDR staff member who reported directly to the Director-General of MARNDR. (When the project coordinator retired in

⁶³ For additional information on how targeting is currently conducted, see the PAD for the PARSA project (P177072), Report No. PAD4673, dated March 4, 2022.



2016, he was replaced by the technical director for Component 2, who saw RESEPAG II through to completion in March 2022 and is now coordinating the PARSA project—hired on an annually renewable contract.)

While RESEPAG I had explored the possibility of financing top-ups for MARNDR staff to work with the coordinating unit, this was quickly abandoned. Instead the coordinating unit relied on the modality of annually renewable consultancies, aligned with Haiti's fiscal year, with pay scales that did not greatly exceed Ministry pay scales, so as to avoid resentments, and with a modality for consultant contracts known as "Consultant intégré a la fonction publique". This modality was used to attract young persons with the requisite skills and was attractive as it provided a channel for them to convert to staff in due course (in a Ministry with a severely restricted budget), and thus to seek promotions and obtain a pension in due course. In addition, training was provided for MARNDR staff at central and local levels (DDAs and BACs) who supported the project.

There were problems in early years with turnover of key staff. For example, ISR 8 noted in December 2015 that: "The best staff of the [Central Procurement] unit are being offered considerably higher salaries by other donor-funded projects, including other World Bank projects, which regularly reduces the unit's capacity and forces new training activities to be undertaken for new staff joining the unit. This issue is expected to be discussed at the next CPPR planned for December 2015." However, this problem was addressed with GoH and over time RESEPAG II has been able to retain a core of skilled, committed staff and consultants who have ensured significant continuity and institutional capacity, and who are now supporting the implementation of the PARSA project.

The rooting of RESEPAG II in MARNDR was not limited to project coordination. Rather, MARNDR's respective Departments, e.g. for Extension and for SPS, (or the CNSA for market information), were directly responsible for the oversight of the project's support in areas under their purview, with training and technical support from RESEPAG II. For example, capacity was built, among others, in the Directorates for extension, training, SPS, agricultural innovation to coordinate and supervise their respective areas of the project, while fiduciary (flow of money) and safeguards functions were handled by the coordinating unit. In addition, in the case Procurement, a significantly strengthened central unified procurement unit was established in MARNDR that handled all procurement for the Ministry and was supported by all donor partners (including the Bank, IDB and the International Fund for Agricultural Development, IFAD). Finally, the coordination extended to the field level, with RESEPAG II coordination team members located in the DDAs in the North Department (also covering the Northeast Department), the Sud Department (also covering Grand'Anse) and a small unit in the Centre Department, partnering with Ministerial staff and building their capacity to supervise and support implementation at the local level.



ANNEX 10. SUPPORTING DOCUMENTS

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