Report Number: ICRR0022734

1. Project Data

Project ID	Project Name	
P088799	PY PRODERS - Sust. Agric. & Rur Dev. Prj	
Country	**Practice Area(Lead)**	
Paraguay	Agriculture and Food	

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
IBRD-75030,IBRD-83160	28-Dec-2013	137,500,000.00
Bank Approval Date	**Closing Date (Actual)**	
29-Jan-2008	30-Nov-2020	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	37,500,000.00	0.00
Revised Commitment	137,500,000.00	0.00
Actual	137,500,000.00	0.00

Prepared by	Reviewed by	ICR Review Coordinator	Group
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2. Project Objectives and Components

a. Objectives

The ICR stated that as per the Loan Agreement, the Project Development Objective (PDO) of the Sustainable Agriculture and Rural Development Project (PRODERS) was ***"****to improve the quality of life of Small-Scale Farmers and Indigenous Communities in the Project Area in a sustainable manner, through the support of actions to strengthen community organization and self-governance, improve natural resources management and enhance the socio-economic conditions of said farmers and communities."*

The PDO was modified when the project received Additional Financing (AF) in November 2013. The revised PDO was *"to improve in a sustainable way the socio-economic condition of Small-Scale Farmers and Indigenous Communities in the Project Area, through the support of actions to strengthen their community organization, self-governance, and access to markets and value chains* (ICR, paragraph 17; AF Project paper 2013).

This review did not find the changes in the PDO to have had a material impact on the project's level ambition, rather the PDO revised in 2013 made it more measurable and clear (ICR, paragraph 22). Therefore, the revised objective will be used against which to assess this project's achievements in Section 4 of this review. On the other hand, the PDO indicators and targets were amended in such a way that the project's level of ambition was lowered. The changes in indicators will be discussed below in Section 2e under the heading of "Restructurings and Additional Financing".

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

Yes

Date of Board Approval

07-Nov-2013

c. Will a split evaluation be undertaken?

Yes

d. Components

The project had five components (PAD, pages 12-15).

Component 1: Community Organization Development and Capacity Building (Appraisal Estimate: US$2.7 million, Estimate with AF: US$4.04 million; Actual Cost: US$1.71 million). This component aimed to: (i) organize beneficiaries to actively participate in local decision-making structures; and (ii) support project staff to implement the project's technical strategy to adopt sustainable agriculture and rural development activities in micro-catchments. The sub-components included: (1.1) training of project extension workers, project staff, as well as rural workers and youth; (1.2) develop an environmental education program; and (1.3) training and establishment of community-based organizations (i.e., Micro-catchment Development Committees (MDC), Indigenous Associations (IA) and Municipal Steering Committees (MSC))

Component 2: Rural Extension and Adaptive Research (Appraisal Estimate: US$10.9 million; Estimate with AF: US$44.78 million; Actual Cost: US$45.36 million). This component would assist small-scale farmers, community groups and indigenous communities to overcome technical, socio-economic, and environmental constraints to shift from existing, non-sustainable agricultural practices to sustainable livelihood strategies for improved natural resources management and rural poverty reduction. The two subcomponents included: (1.1) Rural Extension: technical assistance related to agriculture and environmental practices, support in developing community development plans and trainings; and (1.2) Adaptive Research and Studies.

Component 3: Sustainable Rural Development Fund (FDRS) (Appraisal Estimate: US$24.9 million; Estimate with AF: US$98.89 million; Actual Cost: US$101.92 million. This component aimed to finance demand-driven investment subprojects prepared by project beneficiaries in the micro-catchment areas. The grant would finance a maximum of 85 percent of the investments of the subproject, with the remaining 15 percent to be contributed (in-kind) by the beneficiaries. The project would finance five types of subprojects: (i) Individual small-scale farmer subprojects for basic home improvements and sanitation (up to US$500 per subproject); (ii) Individual small-scale farmer investment subprojects to improve farm production and productivity (up to US$2,000 per subproject); (iii) Community Development Group investment subprojects to improve agricultural and livestock production and productivity (up to US$10,000 per subproject); (iv) Indigenous community investment subprojects (up to US$25,000 for subproject); and, (v) Municipal investment subprojects (up to US$40,000 per subproject).

Component 4: Animal Health Improvement (Appraisal Estimate: US$4.2 million; Estimate with AF: US$4.51 million; Actual Cost: US$1.13 million). This component was designed to build the capacity of the nodal implementing agency (SENACSA) and Vice Ministry of Animal Husbandry (VMG) on animal health improvements and national standards. The project would procure equipment (software and information systems, lab/office equipment, communication services etc.) and provide training on monitoring animal health and animal husbandry initiatives effectively.

Component 5: Project Management, M&E and Technical Assistance (Appraisal Estimate: US$4.1 million; Estimate with AF:US$12 million; Actual Cost: US$7.87 million. This component would cover overall management of the project, including activities related to Monitoring and Evaluation, and Communication and Information Dissemination.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project cost: The appraisal estimate for the project cost was US$46.75 million (PAD, Annex 5). The revised estimate including Additional Financing was US$162.72 million and the actual cost at project closing was US$158.24 million (ICR, Annex 3).

Financing: The original project was financed by an IBRD loan of US$37.5 million. Additional Financing of US$100 million was approved on December 05, 2013. With this the total credit for the project from the Bank was US$137.5 million and amount disbursed was US$137.3 million.

Borrower contribution: Borrower contribution at appraisal was estimated to be US$3.86 million. With additional financing, borrower contribution was estimated to be US$6.00 million. At project end, the total amount contributed by the borrower was US$20.95 million.

Dates: The project was approved on January 29, 2008 and became effective on June 30, 2009. The project was to close on December 28, 2013 but with one additional financing, restructurings, and several extensions of the loan closing date, the project was closed on November 30,2020, nearly 7 years after the original closing date.

Restructurings and Additional Financing: The project was implemented over a 12.5-year period with seven restructurings including one additional financing.

First Restructuring, June 2013: Based on the MTR mission's (February 2013) recommendation, the restructuring reduced the scope of the project. The ICR (paragraph 22) stated that at MTR, the project had only disbursed 30 percent of funds in 80 percent of the project time. The project delays were due to delayed project effectiveness, slow recruitment of project staff, complex set of sub-projects, dispersed activities under the animal health component and lack of an integrated Monitoring and Evaluation System. The project was slow in financing of sub-projects and there was limited progress with two of the Subcomponents on adaptive research and support to the Vice-Ministry of Livestock. The key changes were: (i) one PDO Indicator was dropped; (ii) two sub-components were dropped; and (iii) targets for several intermediate outcome indicators were reduced, a few sub-indicators were dropped and new sub-indicators with targets were added (details provided in ICR, Annex 7, Table A7.2)

Additional Financing (AF), November 2013: An additional financing of US$100 million was approved by the Board in November 2013, which also included a restructuring. The Government requested additional financing to increase the scope of the project by adding Departments (regions) with the highest incidence of poverty. The additional financing revised the PDO (referred in Section 2a) to improve its measurability and to increase focus on access to markets (Restructuring Paper 2013). The other key changes made by the additional financing/restructuring were: (i) five PDO indicators were dropped and two added (including one beneficiary target) (ii) targets were increased for PDO indicators related to agricultural income and land productivity, (iii) targets for several intermediate indicators were increased and new sub-indicators were added to reflect scaled-up activities under the AF; and (iv) changes were made to Project Component 3 and 4 all aimed at increasing the project's scope (ICR, paragraph 19, Annex 7, Table A7.2). On balance, the level of ambition was increased.

Third Restructuring, July 2015: To improve efficiency and expedite the delivery of services to communities through community grants, a clause was added to the loan agreement to allow for an option to hire one or more contracting management entities to facilitate the provision of goods and services through a centralized procurement service rather than through community procurement (Restructuring Paper, 2015).

Fourth Restructuring, July 2017: The closing date was extended by 12 months, until December 28, 2018, to allow for make up for the initial delays in implementation. A new approach was added called "Family by Family" to target families rather than communities to address extreme poverty. The approach would complement the existing community-based approach to promote inclusion of the most vulnerable families who were not always fully integrated into their community because of their lower income level (ICR, paragraph 22). The restructuring made changes to the RF. The key changes were: (i) PDO indicator "At least 70 percent of target farms increase their agricultural income by 30 percent" was revised to "Number of targeted farms that increase their agricultural income by at least 30 percent. The associated target was reduced to 10,000 farms (earlier target: 25,500); (ii) Target for the PDO indicator on 'number of direct project beneficiaries' was reduced to 225,000 (earlier target 256,500); (iii) Several intermediate indicators related to access to services (water, identity card, land titling) for indigenous people and a few additional social services related targets were added. This restructuring lowered the ambition of the project considerably.

Fifth Restructuring, July 2018: The Restructuring paper stated that the project had faced several delays, including the 10 months it took for the Additional Financing to be approved. Considering that community procurement required about 20 months, the decision was made to extend the project from December 28, 2018 to November 2019.

Sixth Restructuring, May 2019: An activity was added under Component 5 to allow the borrower to allocate funds to prepare for a follow-up project.

Seventh Restructuring, November 2019: A final extension of the closing date to November 30, 2020 was made, to allow activities to be completed under community development assessments which had faced with implementation delays.

As noted in sub-section 2a above this review did not find the changes in the PDO to have had a material impact on the project's level of ambition. On the other hand the fourth restructuring introduced changes in PDO indicators that had the net effect of lowering the ambition of Objective 1 considerably. Therefore a split rating of objectives will be introduced in assessing the achievements of the project in Section 4 of this review.

The key indicator changes during restructuring for Objective 1 were:

- PDO indicator “At least 70 percent of target farms increase their agricultural income by 30 percent” was revised to “Number of targeted farms that increase their agricultural income by at least 30 percent”. The associated target was reduced to 10,000 farms (earlier target: 25,500)
- PDO Indicator “Incidence of poverty reduced by at least 50 percent in the assisted small-scale farmers and indigenous communities” changed to “Number of targeted families able to pass above the poverty line with a target of 10,000 farms".
- Target for the PDO indicator on ‘number of direct project beneficiaries’ was reduced from 256,000 to 225,000
- Several new intermediate indicators were added; these raised the level of ambition.

3. Relevance of Objectives

Rationale

Context at Appraisal. At the time of project appraisal, Paraguay had recovered from a long period of economic stagnation of the 1990s. The ICR (paragraph 1) stated that in 2006, Real GDP grew at an estimated rate of 3.5 percent, and there was significant decline in external public debt which stood at 30.5 percent of GDP - a reduction of 50 percent from earlier years. Despite this economic recovery, the country’s per capita GDP in 2006 was at the same level as that of a quarter of century ago. Further, Paraguay was faced with high inequalities (Gini coefficient of 0.53) and poverty was high among people living in rural areas. Over 1.2 million people in rural areas lived in poverty, which included all of Paraguay’s 86,000 indigenous people, and more than 650,000 people living in extreme poverty (PAD, paragraph 3). Most of the rural people’s livelihood depended on agriculture. With agriculture and livestock sector accounting for 25 percent of GDP, 85 percent of exports and 45 percent of the employed population, it was an important economic sector for the country. However, this sector’s benefits were not equitably distributed with high inequalities in land tenancy. While it had benefited the segment of the sector that was modern and more entrepreneurial with large land holdings growing cotton, the other key segment consisting of about 300,000 small-scale farmers continued to engage in subsistence farming with limited access to land, capital, technology and markets. Further, because of the model of agriculture development practiced in the country that focused on land expansion, slash-and-burn agriculture, extensive grazing and mono-cultivation of cotton and soy, Paraguay had suffered from severe environmental degradation. This had resulted into accelerated erosion, loss of soil fertility, loss of biological diversity, decreased quantity and quality of water resources, and severe deforestation (ICR, paragraph 3).

Previous Bank experience and collaboration with other ongoing projects. The Bank had previous experiences in the sector under the Natural Resources Management Project (PARN) and the Pilot Community Development Project (PRODECO), including other rural development projects that the Bank had financed since the 1970s. The project would closely coordinate with the JSDF Indigenous Land Regularization Project to jointly prepare indigenous peoples' annual work plans and targets for land titling. It would also closely work with ongoing/planned projects - JSDF Indigenous Community Development Project, Land Administration Project, GEF/Bank Paraguay Biodiversity Project and the proposed Forestry Project.

Government Strategy. Government of Paraguay's development strategy focused on sustainable growth through agroindustry and export diversification, and increased human capital by promoting equity and increased access to basic services. The country's sectoral focus included actions to strengthen agricultural production and agro-industry, reduce poverty and social exclusion in rural areas. In operationalizing these actions, the Government had in place the following key strategies: (i) National Strategy for the Fight Against Poverty, Inequality and Social Exclusion; (ii) Agricultural and Rural Development Plan (2004-2008); (iii) National Plan to Revive Family-based Agriculture (2003-2008); and (v) 2004 law that prohibited transformation and conversion of forested areas in the Eastern Region of Paraguay. The Government's policies and programs were in line with the project's PDO to sustainably improve the socio-economic condition of small-scale farmers and indigenous people.

Bank Strategy. The project was well-aligned with the Bank strategy at appraisal and continued to be relevant at closing. The project's objectives contributed to the World Bank's Country Assistance Strategy's (FY04-07) focus on Sustainable Growth, by supporting small farmers through participatory approaches for crop diversification, natural resource management and land titling. During implementation, despite the various restructurings, the PDO remained relevant and would contribute to the achievement of the focus area of "Reducing Volatility, Strengthening Natural Capital Management and the Rural Economy" of the current World Bank's Country Partnership Framework (FY19-23). Within this focus area, the project was linked to the objective to unlock productivity of the rural economy by supporting family agriculture with a special attention to inclusion of women and indigenous farmers to address constraints they continued to face on access to markets, finance, technology, and land.

In summary, the project's objectives were highly-aligned with both Government and World Bank strategies. The project design addressed key development challenges faced by the rural people in Paraguay. However, the project design (including the clarity of the project's objectives) had shortcomings that led to several restructurings. The core objectives remained the same and were relevant, but their relevance was masked by many changes in the indicators and targets during the life of the project, which were not detrimental to the project, but lowered the ambition of the project's objectives. Nevertheless, the Relevance of this project's objectives to Government and World Bank strategies in Paraguay at appraisal and at the project's close were rated by this review as Substantial.

Rating
Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective
To improve in a sustainable way the socio-economic condition of small-scale farmers and indigenous communities

Rationale
Theory of Change**.** The ICR provided a retrospective Theory of Change (ToC) for the project (Figure 1). To achieve the Objective, the project would strengthen community organizations to develop their capacity and promote self-governance. It would provide technical assistance to small-scale farmers, community groups and indigenous communities to develop demand-driven community-level development plans and provide financing for adoption of sustainable agriculture and environmental practices, home improvements and sanitation. Institutions related to animal health would be strengthened through modern information systems and equipment (i.e., laboratory conducting food safety) for animal health management and husbandry. These activities would be expected to lead to higher-level outcomes of: (i) Improved agricultural productivity and sustainability of small-scale farmer sector; (ii) Reduced poverty and improvement in quality of life for small-scale farmers; and (iii) Reduced social exclusion in rural areas.

Outputs

The project surpassed targets for most of its outputs. Project interventions included technical assistance to farmers and community organizations by training 440 technicians (target: 345) in the project areas. Trainings were focused on improved production practices marketing, community development, strengthening of organizations, and gender issues (ICR, paragraph 38). An additional 2,782 farmers were also trained on sustainable agriculture production. Examples of sustainable practices included utilization of green manure crops, crop rotation, minimum tillage etc. Diversification practices included the production of milk and eggs, raising small animals, and fruit production. Per the IICA (Inter-American Institute for Cooperation on Agriculture) survey commissioned at project end, 82 percent of beneficiaries trained had adopted diversification and new sustainable technologies to increase productivity. Large number (64,469) project beneficiaries were reached with environmental education program and 5430 ha of land were following good forestry practices (agro forestry, reforestation, native tree plantation etc.).

The project's financing mechanism (i.e., Sustainable Rural Development Fund) disbursed US$64 million over the project period which funded 1,180 community investment proposals and an additional 180 indigenous community development plans. Against the target of 80 percent, nearly all subprojects (99.7 percent) completed disbursement and investment targets established in their plans. All these projects were under implementation at project closing (ICR, Annex 1).

Outcomes

The project reached 249,662 beneficiaries (against the target of 256,000), out of which 53 percent were women beneficiaries. To achieve the objective to improve socio-economic condition of small-scale farmers and indigenous communities, the project measured the following PDO indicators:

- At least 70 percent of target farms increase their agricultural income by 30 percent*. Target: 70 percent/ Result: 110 percent*
- Incidence of poverty reduced by 50 percent in the assisted small-scale farmers and indigenous communities. *Target: 50 percent/ Result: 26 percent*
- Percentage of farms that have increased their productivity (per ha) by at least 25 percent through the application of productive practices promoted by the Project. *Target: 25 percent / Result: 32 percent (128 percent)*

These results were based on the Inter-American Institute for Cooperation on Agriculture (IICA) survey commissioned by the client and the Bank at the end of the project. According to the ICR (paragraph 24), the evidence generated by the survey was critical due to the weak M&E system of the project. For the first PDO indicator, the ICR (Annex 1) stated that the survey covered a representative sample of 185 workshops with 4,060 beneficiaries. Before and after comparison of agricultural income was made in the absence of a baseline data. The target was surpassed with 28,172 farms found to have increased their agricultural income by 30 percent against a target of 25,500 farms (110 percent achievement).

With respect to the second PDO indicator, according to the IICA survey data, the average poverty rate (proportion of beneficiaries below the poverty line) was 52 percent before project intervention, which was reduced to 48 percent at project closing. Against the target of 26 percent (50 percent of the poverty rate prior to project intervention), the project only achieved 48 percent, Based on this outcome Objective 1 was not achieved. The third PDO indicator “percentage increase in agriculture production” was based on yield increase for two commodities maize and cassava, crops that most beneficiaries produced. The target was surpassed with 32 percent increase in average yield for either commodity.

In addition to these indicators, the project had two additional PDO indicators (Annex 1, 6A, 6B):

- Associative management capacity of Community Development Groups increased with business proposals oriented to business plans to access markets and inclusive value chains. Target: 80 percent; Achieved: 84.8 percent
- Associative management capacity of Indigenous groups increased with business proposals oriented to business plans to access markets and inclusive value chains. Target: 50 percent; Achieved: 62 percent.

Targets for both were achieved but the indicators were found to be output oriented, rather than focused on outcomes.

In summary, the project’s achievements were mixed. It achieved its outcome on increased agricultural income and yield, but on the other hand, fell considerably short in achieving the second outcome related to reduced poverty among the project’s beneficiaries. Considering that the project period was 12.5 years in the context of a poverty targeted strategy, without additional evidence related to this key poverty reduction outcome, the efficacy with which Objective 1 was achieved is rated ‘Modest’.

Rating
Modest

OBJECTIVE 1 REVISION 1

Revised Objective
To improve in a sustainable way the socio-economic condition of small-scale farmers and indigenous communities.

The objective did not change but there were changes in the PDO indicators and targets as part of the project’s fourth restructuring (listed in Section 2e above) that took place in July 2017 which reduced the level of ambition of the original objective and now defined as Objective 1 Revision 1. Under the restructuring, the following additional changes were made: (i) an extension of the closing date of the Project by 12 months, until December 28th, 2018; (ii) a reallocation of proceeds between disbursement categories; (iii) the introduction of a new approach called “Family by Family”; (iv) changes to the Results Framework; and (v) the revision of the disbursement estimates and implementation schedule in line with the proposed extension of the closing date (Restructuring Paper 2017).

Revised Rationale
The ToC of the project remained the same. However, a new program was added under Component 2 and 3 which introduced a new ‘Family by Family’ approach (Familia por Familia) targeting families living in extreme rural poverty in the project areas. Sub-projects on productive investments were supported. The ‘Family by Family’ approach would complement the two existing approaches, which targeted communities of small-scale farmers and indigenous communities. This program was added based on a pilot project which found the need to follow a targeted approach to reach the poorest families, those that were not always fully integrated in communities due to their lower income.

Outputs

In addition to the outputs achieved under the original objective, to support the poverty focus of the project and capture non-income and social benefits, the July 2017 restructuring added several new intermediate indicators. At closing, the project was able to reach 70 indigenous communities assisting a total of 3,643 families gain access to water and/or electricity (against a target of 60 communities). Formal identity cards were provided to 5,923 (target: 4,000) indigenous people and awareness programs were conducted. Technical assistance on land titling was provided to 105 indigenous communities (target: 80) benefiting a total of 8,523 members.

Outcomes

The project surpassed its revised targets. At project closing, 28,172 farms increased their agricultural income by at least 30 percent (target:10,000 farms based on the Inter-American Institute for Cooperation on

Agriculture (IIICA) survey. Further, during the project period, the IICA survey also found that 28,180 families had passed and graduated to above the poverty line (compared with a target of 10,000). The ICR stated that this indicator used Individual beneficiary income data based responses from 925 beneficiaries (Annex 1) - again based on the IICA survey.

Based on the revised indicators and the results of the IICA survey it was concluded that the efficacy with which the Objective 1 Revision 1 was achieved was Substantial.

Revised Rating
Substantial

OVERALL EFFICACY

Rationale
The project achieved two out of the three PDO indicators for Objective 1. It also achieved targets for two additional PDO indicators related to capacity development of community organizations supported, but they were found to be more output-focused than outcome-focused. In the two Departments covered by the original project and several more Departments included by the Additional Financing to scale up project interventions in poorer communities, the indicator “Incidence of poverty reduced by at least 50 percent in the assisted small-scale farmers and indigenous communities” was a critical measure for assessing the project's achievements. In the event at project closing poverty had been reduced by only 26 percent. Despite the achievement of two other PDO indicators, the critical target outcome for poverty reduction was only partly achieved. Therefore the overall efficacy with which Objective 1 was achieved was rated "Modest".

Overall Efficacy Rating
Modest

Primary Reason
Low achievement

OVERALL EFFICACY REVISION 1

Overall Efficacy Revision 1 Rationale
Following the 2017 Restructuring, the project achieved Objective 1 Revision 1 by surpassing the targets for the revised PDO indicators. Therefore, the overall efficacy with which Objective 1 Revision 1 was achieved was rated “Substantial”.

Overall Efficacy Revision 1 Rating

Substantial

5. Efficiency

Ex Ante

At appraisal (PAD, Annex 9), an economic and financial analysis (EFA) was conducted based on nine farm models representative of individual agricultural farming and one representing collective indigenous production system. Incremental net benefits were estimated based on increased agricultural production and farmers' income, and prices were adjusted to reflect the economic opportunity cost. The cost stream for the economic analysis was based on estimated on-farm investment and recurrent costs, extension to farmers, community development costs and training, community and municipal investments, and partial costs of project administration. The overall internal economic rate of return (EIRR) of the project was estimated to be 17%. The PAD stated that this was a conservative estimate, which had not considered additional benefits related to positive environmental externalities, better nutrition, and health due to diversified production, improved water quality, biodiversity conservation, etc.

Ex Post

At project closing, a standard cost-benefit analysis was undertaken to assess the financial and economic value of the project. The EFA was conducted for the four types of investment plans supported by PRODERS: Community Investment Plan, Indigenous Communities Investment Plan, Farm Investment Plan and Family by Family (PIC, PICI, PIF and FxF). The information was based on the IICA survey that collected primary information from 185 investment subprojects randomly selected through participatory workshops with project beneficiaries distributed between PIF, PICI, PIC In addition, primary information was collected through 460 surveys randomly selected of FxF beneficiaries (ICR, Annex 4, paragraph 8). For the three investment types (PIC, PIF and PICI), a model farm was built to represent a production system with-project and without-project situation with information on total income, costs and net income which according to the ICR was important in the absence of baseline data.

Economic and Financial Analysis. The analysis included benefits generated by the project related to increase in production and diversification at subproject level. These benefits were based on project investments in rehabilitation and conservation of natural resources, technical assistance to farmers for the implementation of good agricultural practices and diversification of crops, organizational strengthening, and delivery of production packages and strengthening of marketing chains (ICR, Annex 4). In addition to benefits from investment on agriculture, the economic analysis also considered other social and environmental benefits such as: (i) increased availability of time and reduction of the incidence of acute respiratory diseases because of improved stoves: (ii) drinking water systems at community level; and (iii) recovery of ecosystem services due to the project's environmental investments and capacity building. Analysis of these benefits are provided in detail in Annex 4.

The financial and economic analysis used a discount rate of 12 percent per year that was applied to all future cost and benefit flows. The income growth rate was calculated as an annual average between income and costs in the "without- project" and "with-project" situation. Based on the assumption of the ex-ante EFA at appraisal, a 20-year evaluation horizon was also used in the ex post EFA to assess incremental net benefits. Additional analysis was also done for 10 and 15 year horizons. To calculate benefits derived from the investment plans which covered several families, profitability was calculated first at the investment plan level by calculating the NPV, and IRR, and then the benefits were estimated at family or farm level [Net Present Value (NPV)/beneficiary, Equivalent Annual Payment (EAP)/beneficiary]. For FxF, the benefits were calculated at the family/farm level. The ICR indicated that EAP data acts as a proxy for average net income that each family will receive during the evaluation period. The results were as follows:

- On average, 77 percent of investment plans were viable at 10 years (440/568 plans), 86 percent at 15 years (487/568 plans) and 89 percent at 20 years (506/568 plans). On project viability, for a 20-year period, all types of investment plans had positive IIR – highest at 115 percent for FxF and the lowest at 25 percent for PICI.
- All types of investment plans presented positive profitability indicators. At the aggregate level, the financial rates of return of 25.7 percent, 31.5 percent, and 32.5 percent were obtained for 10, 15 and 20 year-horizons, respectively. Benefit cost ratios were 1.21, 1.39 and 1.46 for the 10, 15 and 20 year-horizons.
- A sensitivity analysis was carried out to assess the robustness of the results. According to the analysis, if there was a 10 percent decrease in yields after the project as a result of: (i) less technical assistance from project; (ii) low rate of adoption of good agricultural practices adopted by beneficiaries; and/or (iii) incidence of adverse weather conditions, at an aggregate level the IRR would drop to 18.4 percent, 25.3 percent by 26.5 percent for 10, 15 and 20 year-horizons respectively, and a benefit-cost ratio would be 1.09, 1.25 and 1.29 for the 10, 15 and 20 year horizons.
- On the economic analysis, with a total project cost US$137.5 million and a 20-year horizon, the incremental economic benefit (Net Present Value) for the entire project was estimated at US$7.7 million, with an economic internal rate of return of 28.2 percent. Of the total economic benefits, 22 percent came from social benefits (lower incidence of respiratory diseases and increase in time availability due to efficient stoves and drinking water systems in the communities), 13 percent of the total benefits corresponded to ecosystem services recovered by the project, and 65 percent of the economic benefits came from agricultural productive activity.

The ICR stated that there were many additional economic, social and environmental benefits, such as on food and nutritional security due to improved availability of food in the communities, delivery of identity documents for 4,099 beneficiaries belonging to indigenous communities, access to improved bathrooms, electricity, home improvements investments, all which were highly valued by the beneficiaries.

Administrative and Operational issues. The Project was implemented over 12.5 years, which included six restructurings and an Additional Financing. Following the Additional Financing, the project's closing date was extended three times. Starting from the early stages, the project faced implementation delays and during the project implementation period, there was a high turnover of project staff. Between 2009 to 2020, the project was led by ten different Coordinators (ICR, paragraph 66). The project frequently faced administrative challenges (e.g. service contractor hiring for one of the investment plans took year and half), which resulted in delays with financing of subprojects (ICR, paragraph 71). Even with the longer than planned implementation period and numerous operational setbacks, the actual administrative cost for the project was only 4 percent (US$5.53 out of total project costs of US$137.3)

In summary, despite the administrative challenges that the project faced, the EIRRs of 28.2 percent, based on economic and social benefits derived from the project's data, and the 4 percent administrative costs, justify a rating of Substantial for Efficiency.

Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	17.00	0 ☑ Not Applicable
ICR Estimate	✓	28.20	0 ☑ Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The Outcome Rating is based on a split evaluation of the performance of the project's objective.

This review rated the project's Relevance to be Substantial, ratings for Efficacy prior to the restructuring as Modest, and Substantial following the project's fourth restructuring, and Substantial for Efficiency.

1. *Substantial rating for Relevance of the PDO*: The project's objectives were relevant and highly-aligned with both Government and World Bank strategies for Paraguay. However, the project design had shortcomings that led to several restructurings. The core objectives remained the same, but the relevance of objectives was weakened by changes in PDO indicators that lowered the ambition level of the objectives.
2. *Modest and Substantial ratings for Efficacy*: Prior to the fourth restructuring, one out of three PDO indicators which focused on poverty reduction was only partly achieved; therefore the project's achievement was rated Modest. Following the fourth restructuring and revisions of indicators, the project achieved all targets which led to the project's achievements being rated Substantial.
3. *Substantial Rating for Efficiency*: The project's EIRR was positive and the EFA was based on quantification of relevant economic and social benefits derived from the project.

Based on these results the project had moderate shortcomings in its Efficacy. This review concludes that the project's overall outcome is "Moderately Satisfactory". Details on the derivation of this rating are provided in the table below.

Rating Dimensions	**Original Objectives**	**Objectives at Fourth Restructuring (2017)**
1. Relevance of Objectives	Substantial	
Efficacy (with same objectives, but revised indicators/targets)		
Objective	Modest	Substantial
2. Overall Efficacy	Modest	Substantial
3. Efficiency	Substantial	
Outcome Rating	Moderately Unsatisfactory	Satisfactory

Outcome Rating Value	3	5
Amount Disbursed	88.81	48.49
Disbursement (%)	64.7	35.3
Weight Value	1.94	1.77
Total Weights	3.71 (Round to 4)	
Overall Outcome Rating	Moderately Satisfactory	

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

The ICR (page 26) discussed the following risks that could potentially impact the project's development outcome:

- **Sustainability of subprojects financed by the project**. The IICA survey conducted at project-end found 76 percent of sub-projects still in operation two years post-completion and 96 percent of the PIC and PIF project participants eager to continue to adopt the agricultural practices introduced by the project. In addition, the survey found that most of the community organizations implementing the projects were less formalized which could be a challenge in competing with other formal organizations. The ICR (paragraph 95,96) stated that the decentralized and participatory approach, including the technical assistance, training of trainers/lead farmers, organization of farmer field schools that were supported by the project should help communities to continue to take ownership of and sustain project supported activities. While these are positive results, the findings from the EFA regarding the high sensitivity of financial profitability with respect to yields can be a challenge for subprojects' sustainability. According to the ICR (Annex 4), with a 10 percent decrease in yields (due to low technical assistance low adoption rate and/or incidence of climate factors), the total NPV at the aggregate level fell by 56 percent, 36 percent and 36 percent for the 10,15 and 20-year horizons.

- **Profitability of project's productive investments.** As community organizations become more integrated into markets and value chains, they can face market risks related to price volatility, quality, and timely delivery of goods including issues of compliance with contracts. This could impact return on investments or profitability of the investments. To address these risks, the ICR (paragraph 97) noted that the project provided awareness on the functioning of markets to the farmers which should equip them better to operate in the market.

- **Adverse weather events' impact on production**. Paraguay was faced with significant adverse weather events that included droughts in the 2011/2012 and 2017/2018 growing seasons, and flooding in 2015/16 and 2016/17 (ICR, paragraph 74). The project's intervention on adoption of sustainable practices and the Environmental Education Program has helped increase awareness among communities about these challenges. The Ministry of Agriculture has also been issuing meteorological bulletins and investing in agro-meteorological infrastructure to monitor weather events and provide the information to the communities.

8. Assessment of Bank Performance

a. Quality-at-Entry

The project was well aligned with the country and sector strategies of sustainably improving the socio-economic condition of small-scale farmers and indigenous people. The project design benefited from the experience of previous Bank funded projects such as the Paraguay Natural Resources Management Project (PARN) which promoted an integrated model of natural resources management and agricultural technical assistance (PAD, paragraph 23). Learnings from initiatives of other development agencies and lessons learned from Bank funded poverty alleviation and natural resource management projects in Brazil were reviewed and adapted. Lessons incorporated into project design were listed in detail in the PAD (paragraph 61).

The ICR stated that despite the project being innovative and relevant to the development context of the country, the original objective of the project was not clear and there were initial delays due to shortcomings in project preparation. On project design, the participatory demand-driven approach and emphasis that the project placed in building the capacity of producer organizations and indigenous communities were appropriate. However, the ICR found, and this review agrees, that the scope of activities to be funded by the investment proposals were broad and ambitious, which stretched the institutional capacity of the implementing agency. Further, the M&E system and arrangements were not well prepared at project entry, requiring substantial changes in the Results Framework over the Project's lifetime (described in detail in Section 9 of this review).

At appraisal, the overall risk to achievement of the PDO was appropriately assessed to be Substantial (PAD, paragraph 92). Key risk areas and mitigation measures identified in the PAD included: institutional weakness of Ministry of Agriculture and Livestock, lack of Government commitment and provision of counterpart funding, lack of consultation and participation of indigenous communities, challenges in implementing a decentralized and participatory project, and limited financial and procurement capacity. The ICR pointed out that the risks associated with institutional capacity were valid but the mitigation measures such as the use of consultations, public accountability and capacity building were not sufficient to address the continued implementation challenges faced by the project during its initial years (ICR, paragraph 92).

Based on the above-mentioned assessment, Quality at Entry is rated Moderately Satisfactory. This rating reflected shortcomings related to M&E design and implementation readiness.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

Implementation was challenging starting from the initial delays of the project. According to the ICR, the delays led to the project only disbursing 33 percent of the loan a year before its original closing date (December 2013). The MTR was also delayed due to frequent changes with Project Coordinators from the client side. Similarly, there was high turnover of Bank Task Team leadership with seven different TTLs from project preparation to closing with two of them serving 8 out of the 12.5 year of project life (ICR, paragraph 93).

During the project period, the Bank conducted 27 implementation missions and according to the ICR (paragraph 93) Bank missions "mobilized a wealth of technical support sourced from World Bank Headquarters, the Country Management Unit, and other agencies such as the FAO".

As part of the implementation support, the project was restructured seven times, and an Additional Financing was provided to scale up the project. With the Bank's support for the various restructurings (including the Additional Financing), the PDO was clarified, and changes were made to the Results Framework which allowed the indicators to be simpler, less ambitious and more measurable. This showed that the Bank provided close supervision support, but the project continued to face challenges due to a weak M&E system which was a challenge in assessing status of project activities and in monitoring targets.

Despite the challenges faced during implementation, the Bank and the implementing agency worked closely at project closure, ensuring that all activities and investments were completed. The project also prepared an Impact Evaluation Survey which bolstered some weaknesses in the M&E, and the client prepared a Borrower Completion Report.

Overall, the Bank's performance is rated Moderately Satisfactory. This rating agrees with the ICR on its assessment that there were both Quality at Entry and Quality of Supervision shortcomings. While the project was well aligned with Bank and Government strategies, the ICR's assessment that the project had a complex design, along with the limitation of M&E, is valid. Further, this review found that despite Bank's previous experience in the sector, the project was not implementation-ready which led to delays during the early years of the project.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

A Theory of Change (ToC) was not included in the PAD as it was not required at the time of the project appraisal. Nevertheless, the ICR (page 3, figure 1) provided a retrospective ToC which presented the causal relation between the planned project interventions, its outputs, outcomes, and long-term impacts.

According to the PAD (Appendix 2), the M&E system designed at project appraisal aimed to monitor project objective, outputs and outcomes would be supported by a web-based MIS. In addition to the various studies it would generate, the M&E system would be based on the ex-ante (baseline) evaluation to be supplemented by mid and ex post evaluations. The participatory M&E system would promote accountability for resource use, provide and receive feedback from stakeholders and generate inputs for dissemination of project results and lessons learned.

While the proposed features of the M&E system and the related implementation arrangements were sound, the original PDO was not clearly defined (ICR, paragraph 92) and had to be revised. Along with the change with the PDO, there were substantial changes made to the Results Framework through the various restructurings. According to the ICR, the original RF included 9 PDO Indicators and 64 Intermediate Results Indicators which were simplified and revised to 6 PDO Indicators and 18 Intermediate Results Indicators at project closing (details provided in Table A7.2). The rationale for the changes with PDO Indicators and Intermediate Results were mainly due to weak definition of the indicators or repetition (several indicators were designed to measure the same outcome).

b. M&E Implementation

During the project period, M&E implementation faced continuous challenges. At the early phase of the project, there were delays in establishing an M&E system. Project activities had been initiated but due to this delay, the project was unable to collect baseline data for a formal impact evaluation. As per the ICR, the weaknesses of the project's M&E were periodically raised in Aide Memoires and the MTR review mission held in 2013 but the frequent changes of the RF and the indicators points out that M&E implementation challenges persisted throughout the project. Additionally, there were frequent rotation of the project's M&E staff which is likely to have contributed towards M&E's limited progress.

According to the ICR (paragraph 81), the project's progress was monitored based on three sources: (i) Project database that collected information on project activities (e.g., number of sub-projects financed, training of extension staff, assistance related to services (water, electricity, land); (ii) RENABE (Registro Nacional de Beneficiarios) database; and (iii) IICA Survey. On both the project database and RENABE (national database), the ICR (paragraph 81) noted several shortcomings. The project database's MIS did not collect information on four out of the six final PDO indicators and key Intermediate Results Indicators. On data that it did collect, either there were gaps in information (e.g., no data on number of family members) or that they were collected mid-way through project implementation. For data on beneficiaries under the Family-by-Family strategy, the project had planned to use RENABE, which had information gaps about indigenous communities as data collection was initiated late and did not include a representative sample of project beneficiaries across all geographies. Following the suggestion to the government by the Bank team, the Inter-American Institute for Cooperation on Agriculture (IICA) survey was commissioned at project closing to assess efficacy.

c. M&E Utilization

With shortcomings of the project's M&E design and implementation, the project continued to face challenges to measure progress. This resulted into several restructurings which simplified the indicators and targets to help improve the project's planning as well as M&E. The project used its MIS system to track financial disbursements and documentations related to sub-projects. Other than this, the project did not utilize any supplementary thematic studies except for an FAO evaluation conducted in 2016. In the absence of project's M&E, the IICA survey did provide useful evidence at project closing.

In summary, this review agrees with the ICR which has rated M&E Quality as Modest. The original RF had numerous indicators (9 PDO Indicators and 64 Intermediate Results Indicators), and several were not clearly defined or measurable. Shortcomings of the M&E design, including the absence of baseline data, affected M&E implementation and utilization, which made measuring progress during project supervision and evaluation challenging. The survey by IICA which was commissioned at the project's close to assess the project's efficacy. provided the main source of data on the project's performance.

M&E Quality Rating

Modest

10. Other Issues

a. Safeguards

The project was classified as a Category B (partial assessment) project under World Bank safeguard policies. At appraisal, five safeguard policies were triggered: Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Pest Management (OP/BP 4.09), Forests (OP/BP 4.36), and Indigenous Peoples (OP/BP 4.10).

Environmental Safeguards: According to the PAD (Annex 10), one of the basic objectives of the project was to promote positive environmental practices. At appraisal, in line with the Bank policy and Government legislation on Environmental Assessment, an Environmental Assessment (EA) was conducted, and an Environmental Management Plan (EMP) was prepared based on consultation with key stakeholders. During implementation, the ICR (paragraph 86) noted that project interventions included promotion of green fertilizers, reforestation with native and exotic species, adoption of agroforestry systems (e.g., silvo pasture, windbreaker curtains, mixed home gardens), and dissemination of Integrated pest management techniques. Under the subprojects financed by the project, forest plantations were promoted and use of native forests were discouraged by introducing exotic tree species such as eucalyptus for household firewood needs.

Social Safeguards: One of the key beneficiaries of the project were indigenous people. During project preparation, a social assessment was carried out to assess the needs and the priorities of indigenous communities based on consultation with indigenous leaders and NGOs working in the areas. Trainings of extension works were planned to ensure that they were respectful of the cultural aspects of the communities (PAD, Annex 10). According to the ICR, the performance of social safeguards over the project period was satisfactory. At initial stages of the project, an Indigenous Strategy was prepared which was implemented by dedicated project and local staff. At project end, the targets related to investment plans geared towards indigenous people were fully achieved, including targets for interventions related to indigenous communities' access to access to water and/or electricity which benefited 3,643 families, identity cards issued to 5,923 members and land titling support to 8,523 members covering more than 50,000 hectares of land.

Overall, the ICR has rated Safeguards as Moderately Satisfactory at project closing.

b. Fiduciary Compliance

Financial Management: The ICR (paragraph 90) noted that the project faced high FM risk due to the complexity of the implementation process, particularly in administering grants that were provided to individuals, rural and indigenous communities which were geographically dispersed. During project implementation, performance on financial management varied between Moderately Unsatisfactory to Satisfactory. According to the ICR, the MU rating in 2015 was "due to: (a) delays in appointing key PMU staff; (b) failure to reinforce FM staffing in view of the expanded activities to be financed under the Additional Financing Loan; and (c) failure to complete the process for extending the contract of the concurrent auditor to carry out subproject audits". Over time, performance did improve, and the project received Satisfactory ratings since early 2019. The ICR also pointed out that financial management issues related to implementation of grants which comprised of subproject audits, procurement, documentations of expenses did not encounter major problems. Financial Statement Audit Reports were received on time or with a delay of less than four months. The project's budgeting, internal controls, financial reporting, and auditing were completed, with most (68 percent) of the Interim Financial Reports (IFRs) submitted on time. The project's periodic auditing results did find any misuse of project funds.

Procurement: As per the ICR (paragraph 91). the country's public procurement system was well aligned with Bank's Core Procurement Principles. During project implementation, procurement performance was rated Moderately Satisfactory. In the early phase of the project, subproject implementation faced challenges because of communities' inability to prepare appropriate documentations related to procurement. This was resolved once implementation processes were improved following the 2015 Restructuring whereby communities were able to hire accounting service providers to support them. Yet, the project continued to face challenges with procurement compliance due to limited capacity of procurement staff, and cumbersome internal procedures of the Ministry of Agriculture.

c. Unintended impacts (Positive or Negative)

None

d. Other

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11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Moderately Satisfactory	Efficacy of the achievement of the project's original objective prior to the project's Fourth Restructuring was rated Modest as one key PDO indicator on poverty reduction was not achieved.

Bank Performance	Moderately Satisfactory	Moderately Satisfactory
Quality of M&E	Modest	Modest
Quality of ICR	---	Substantial

12. Lessons

The ICR included six lessons, out of which this review has highlighted the following four that has broader applicability.

1. **M&E system developed for a project needs to be based on ground realities.** The project had an elaborate M&E system but did not benefit from technical experts at project preparation who understood the ground realities of implementing an M&E system of a complex project. Over the course of the project, several restructurings took place that resulted into the changes to the Results Framework which could have benefited more if technical and specialized support had been provided on M&E.
2. **Project investments on technical assistance can build the capacity of both independent service providers as well as Government agencies.** On technical assistance and training for farmers on new technologies, financial management etc. the project relied on private service providers only. Due consideration to building the capacity of relevant agencies of the Government (i.e., extension departments), is needed so that they can also continue to support project beneficiaries once the project closes.
3. **Decentralized and participatory program delivery is found to be effective in reaching vulnerable groups such as indigenous communities.** The Project was effective in engaging with indigenous communities through consultations at workshops and by using appropriate communication through radios. Along this process, it was important to also strengthen the capacity of the National Indigenous Institute and other relevant organizations working with indigenous communities.
4. **It is important to recognize at design phase variations in the capacities of different types of community groups to better tailor project interventions.** During implementation, the project found that there were differences with respect to capacity amongst community groups, where some were less formal and needed a lot more technical support. While there were others that were already market-oriented and required less support. If a project has a better understanding about the capacity level of local institutions in project areas, differentiated and targeted approaches can be developed based on their requirements.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR was clear, candid and acknowledged the shortcomings of the project design and implementation, particularly of the M&E system and the Bank's performance. In the absence of a good M&E system, evidence included in the ICR was based on the Inter-American Institute for Cooperation in Agriculture (IICA) survey which was well explained. However, the Efficacy analysis could have benefited from further evidence provided from thematic studies if they were undertaken during project implementation and from secondary information, mainly to justify the project's under-achievement on the original PDO indicator/ targets on poverty reduction.

The document provided detailed coverage and rationale for the various restructurings and the changes that were made to the indicators and targets. However, the justification provided by the ICR to not pursue a split rating was not clearly explained.

Finally, the ICR followed OPCS guidelines, was concise, and provided useful lessons based on evidence in the project. Several lessons presented had broad applicability to the design and implementation of participatory projects.

Despite some shortcomings this review rates the quality of the ICR as Substantial.

a. Quality of ICR Rating

Substantial