Report Number : ICRR0020887

## 1. Project Data

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|---|---|---|
| **Project ID**<br>P106700 | **Project Name**<br>BO Agricultural Innovation and Services | |
| **Country**<br>Bolivia | **Practice Area(Lead)**<br>Agriculture | |
| **L/C/TF Number(s)**<br>IDA-50030 | **Closing Date (Original)**<br>15-Feb-2017 | **Total Project Cost (USD)**<br>52,900,000.00 |
| **Bank Approval Date**<br>21-Jul-2011 | **Closing Date (Actual)**<br>15-Feb-2017 | |

| | IBRD/IDA (USD) | Grants (USD) |
|---|---|---|
| Original Commitment | 39,000,000.00 | 0.00 |
| Revised Commitment | 39,000,000.00 | 0.00 |
| Actual | 34,830,309.80 | 0.00 |

| Prepared by | Reviewed by | ICR Review Coordinator | Group |
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| Cynthia Nunez-Ollero | J. W. van Holst Pellekaan | Christopher David Nelson | IEGSD (Unit 4) |

## 2. Project Objectives and Components

### a. Objectives

Both the Financing Agreement (FA, p.5) and the Project Appraisal Document (PAD, paragraph 15) state that the Project Development Objectives (PDOs) were:

1. To strengthen the *Sistema Nacional de Innovacion Agropecuaria y Forestal* (SNIAF or the National System for Innovation in Agricultural and Forestry), and
2. To strengthen the *Instituto Nacional de Innovación Agrícola y Forestal* (INIAF or the National Institute for Innovation in Agricultural and Forestry).

The PDOs were expected to contribute to productivity growth, food security, sustainable rural development, and the income earning potential of families dependent on agriculture and forestry.

The Government organized the SNIAF as a network to oversee innovations in agriculture and forestry. SNIAF is led by the Plurinational Innovation Council or PCI, which is in charge of policy making and overall institutional coordination and includes among its members the Departmental and Regional Innovation Councils (DICs and RICs). The DICs include 211 public and private actors (ICR, Annex 2, paragraph 2a). The RICs and DICs include 15 departmental and municipal extension systems or public entities, 6 universities, 11 private or mixed research entities (Non Governmental Organizations or NGOs) involved in agricultural extension, and 3 producers' organizations (PAD, paragraph 8).

The Government created the INIAF in 2008 by Legal Decree no. 29611 (PAD, paragraph 9) to lead research policy, generate knowledge, and disseminate agricultural and forestry technology in the country. In this project INIAF served as secretariat to SNIAF and financed SNIAF subprojects (ICR, paragraph 47).

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

No

## c. Will a split evaluation be undertaken?

No

## d. Components

**1. Strengthen the National Agricultural and Forestry Innovation System (SNIAF**) (appraised at US$6.10 million, actual US$3.16 million). This component financed policy studies, developed a communication and information exchange strategy, established a Plurinational Council for Agricultural and Forestry Innovation, and established a competitive research fund to identify, test, and disseminate innovation not covered by the INIAF-led research program below.
**2. Strengthen core INIAF activities** (appraised at US$26.18 million, actual US$22.22 million). This component financed a research program (in six areas originally - wheat, potato, quinoa, dual purpose cattle, horticulture, and forestry, later added two more areas focusing on maize and rice); prepared a national technical assistance (TA) development program, create a Departmental Agricultural and Forestry Innovation Councils, later renamed Departmental Innovation Councils (DICs) to implement the TA program and pilot two TA rural extension programs, later replaced by nine smaller subprojects; promoted the use of quality seeds in the western districts, upgraded the seed program laboratories, and strengthened the regulatory framework surrounding seed production, certification, and marketing; and established a national network of germplasm banks (these consisted of (i) core banks used for long-term conservation of genetic resources; (ii) active banks used for genetic variability, and (iii) working banks used for breeding).
**3. Support INIAFs institutional development**. (appraised at US$16.41 million, actual US$27.11 million). This component financed the consolidation of an institutional management model, and trained institutional staff in administrative efficiency, the INIAF leadership in their technical, administrative, and management skills; and trained the members of the Board of Directors to oversee INIAF and SNIAF.
**4. Project Management, Monitoring and Evaluation (M&E).** (appraised at US$4.21 million,

actual US$2.59 million). This component financed project administration and setting up the project's M&E functions.

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

**Project Cost:** The project was appraised at US$52.9 million. At project close, the actual project cost was US$55.08 million.

**Financing:** The International Development Association (IDA) financed this Specific Investment Credit (SIC) at appraisal, which was later renamed Investment Project Financing (IPF) credit for SDR24.4 million or the equivalent of US$39.0 million of which only US$34.87 million was disbursed because some subprojetws could not be completed by th time the project closed. There were two co-financing sources: (i) the Swiss *Confederation Suisse de Developpement et Cooperation* (COSUDE) for US$2.9 million (US$2.82 million actual according to ICR, Annex 1, although ICR, paragraph 23 cited US$5.1 million actual. The Task Team Leader clarified in a December 4, 2017 email that the US$5.1 million was indeed fully disbursed to INIAF), and (ii) the Danish Development Agency (DANIDA) for US$2.0 million (US$3.31 million actual).

**Borrower Contribution:** The Government committed US$9 million during appraisal but had disbursed US$16.44 million at project close. The Government increased its contribution to address human resource needs of INIAF (ICR, paragraph 45).

**Dates**: The project was completed on February 15, 2017 as scheduled. A Mid Term Review (MTR) was conducted in July 2014, as scheduled. There were three Level 2 restructurings as follows:

- May 2012 to extend the deadline for the effectiveness of the Swiss Development Corporation (SDC) co-financing agreement by two years from June 2012 to June 2014 due to policy changes at SDC;
- June 2015, at the request of the Government, to: (i) expand the number of Departments to pilot TA subprojects; (ii) authorize an additional procurement method; and (iii) amend the Results Framework to provide a more precise definition of PDO and some other indicators; and
- February 2016 to reallocate project financial resources to match expenditures.

## 3. Relevance of Objectives & Design

### a. Relevance of Objectives

The project's two objectives were clearly stated and relevant to the country's Economic and Social Development Plan for 2015-2020, which sought to maintain a stable path to continued growth and poverty reduction. Agriculture was one of the sectors that supported Pillar 6 of this plan which focused on productivity and diversification (PDES, Section V, Item 6.2). The project objectives were expected to strengthen two strategic agricultural state institutions - SNIAF and INIAF (their roles were defined above in Section 2a) - and thereby support the capacity of small scale agricultural producers to increase their outputs.

The project objectives to strengthen SNIAF and INIAF were weak, however, because these objectives provided no sense of the scale of strengthening to be expected as a result of the project's implementation. The Financing Agreement indicated that strengthening of INIAF and SNIAF was in order that these institutions could carry out their mandates, but again there was no sense of the scale expected. The relevance of the objectives was weakened further by the shift in Government strategy towards the end of the project (ICR, paragraph 47). The Government became less interested in establishing INIAF as a financier of SNIAF and therefore less focused on strengthening SNIAF.

Although the relevance of objectives became weaker by the project's close, they remained relevant to the World Bank's Country Partnership Framework (CPF) for FY 16-FY20. For example, the CPF stated that agriculture and agro-industries, with private investments, offer an alternative source of growth (CPF, paragraph 21). The project objectives directly contributed to Objective 3 under Pillar 1 of the CPF, namely, to promote broad based and inclusive growth (CPF, paragraph 55). During the consultations associated with the preparation of the CPF, small scale producers cited the need for improved and innovative agricultural technology and women's associations highlighted the need for time-saving technological innovations that promote women's participation in agricultural production (CPF, Box 3).

This Review concluded that the relevance of the project's objectives was modest because they did not indicate the scale of expected strengthening, and in addition strengthening of SNIAF became less relevant to the Government by the time the project closed.

### Rating
Modest

### b. Relevance of Design

Project design benefited from lessons from prior efforts to foster agricultural innovations and deliver extension services in the country. First, there was a centralized national agricultural research organization, the defunct *Instituto Boliviano de Tecnologia Agropecuaria* (IBTA or Bolivian Institute of Agricultural Technology), which conducted research and extension services but had no capacity to respond to producers needs. A subsequent incarnation of IBTA, this time a decentralized system, the *Sistema Boliviano de Tecnologia Agropecuaria or* SIBTA (PAD, paragraph 24), which did not benefit from other innovation stakeholders. However, IBTA was closed in 2006because it did not respond to producers' needs (ICR, paragraph 18). These failures led to the establishment of INIAF in 2008. It played a crucial role as the national leader of the innovation system and often collaborating with decentralized partner organizations to provide agricultural research and extension services on a demand driven basis (ICR, paragraph 19).

The four project components were consistent with the project's stated objectives. However, the Results Framework was inadequate at appraisal although it clearly defined the three PDO indicators supported by 29 intermediate outcome indicators. It was not until the 2015 Restructuring, which amended the Results

Framework that a convincing theory of change and a more precise definition of the PDO indicators and intermediate outcome indicators were established. Overall, the project's design was consequently made modestly relevant.

**Rating**
Modest

## 4. Achievement of Objectives (Efficacy)

### Objective 1

**Objective**
To strengthen the Instituto Nacional de Innovación Agrícola y Forestal (INIAF or the National Institute for Innovation in Agriculture and Forestry).

The FA (Schedule 1) indicated that the achievement of this objective would contribute to productivity growth, food security, sustainable rural development, and the income earning potential of recipient families dependent on agriculture and forestry.

**Rationale**
**OUTPUTS**:
The INIAF was credited with the following outputs, which contributed to achieving Objective 1.

- Introduced 18 innovations using participatory methods. This indicator was added in the 2015 Restructuring to better measure how the INIAF Institute involved beneficiaries in designing agricultural innovation.
- Prepared 10 TA strategies, which were approved by 10 departments (sub-regional administrative areas in Bolivia).
- Consolidated the National Seed System. In the final year, INIAF certified 119,000 tons of seeds (target 106,000 tons, exceeded). The 2015 Restructuring added this indicator to measure the contribution made by INIAF in facilitating the distribution of improved varieties and high quality seeds and defined seed producers to consist only of individuals rather than organizations. There was no recorded baseline even though INIAF was already certifying 78,700 tons of seeds when the project started. Seed producers satisfied with the INIAF certification procedures exceeded the 80% targets.
- Managed national genetic resources by registering 18,434 accessions in conservation and characterized 66.25% (target 20%, exceeded) morphological and agronomic traits. The 2015 Restructuring defined "accessions characterized" to mean accessions for which INIAF created morphological descriptions. This indicator replaced "number of accessions" to better measure the extent the INIAF Institute promoted innovation by increasing the usefulness of the accessions in its germplasm banks. No baseline data were provided.

- Implemented management systems in eight functions covering Human Resource, Resource Management, Financial Management, Procurement, and Legal departments under the *Ley de Administracion y Control Gubernametales* (SAFCO or the Government Administration and Control Act). The 2015 Restructuring revised this indicator to facilitate measurement. There was no baseline provided.
- Management Information System called *Sistema para Plan Operativo Anual (*SISPOA) created 9 modules for monitoring annual processes and plans although only 6 were used. Three additional modules were designed to manage sub project investments but was not regularly used because the project was closing. *Sistema para Plan Operativo Anual-Alianzas Estarategicas* (SISPOA-AE) modules were created to monitor research subprojects and TA. Both systems were implemented toward project end (ICR, paragraph 27).
- Established a network of 15 (target 16, substantially achieved) national level and departmental offices. One departmental office was closed because of lack of budget.
- Signed 37 (target 16, met) formal collaborations with national and international counterparts although only 16 were implemented. The 2015 Restructuring added this indicator to reflect INIAF Institute's enhanced capacity to partner effectively with others in building its capacity in research such as with the International Maize and Wheat Improvement Center, the International Potato Center, the International Center for Tropical Agriculture, and the International Rice Research Institute (ICR, paragraph 70).

**OUTCOMES**:
The INIAF accomplished the following outcomes, which contributed to the achievement of Objective 1.

- The INIAF Institute delivered technical assistance (TA) in 193 municipalites, reaching over 21,200 beneficiaries (no baseline information available) through a network of technical advisors and systematic introduction of innovative practices (ICR, Results Framework Analysis, p. xi). A strengthened INIAF Institute (more staff, increased operating budget) financed TA subprojects using a competitive grants mechanism, which increased demand for its services. This increased demand led to new protocols for identifying, validating, and delivering extension services as well as improved administrative and fiduciary systems (ICR, paragraph 70). The INIAF Institute also increased its interaction with target groups although coordination issues persisted between the Research and TA Directorates (ICR, footnote 8). TA beneficiaries were disaggregated by gender. Nearly all (98% of both men and women surveyed) indicated their satisfaction with the TA provided. Producers adopted 20 INIAF-led agricultural innovations and the beneficiaries reached were evidence of a strengthened INIAF capacity (ICR, paragraph 54).
- At project close, the INIAF Institute continued to develop innovation policies, regulatory frameworks, set strategic TA priorities, conduct applied research, deliver advisory services, and characterize and conserve genetic resources. The ICR disaggregated beneficiaries of project outcomes by gender based on surveys conducted at project close.
- Agricultural research and extension (R&E) institutions and a sample of farmer organizations and seed producers were surveyed, which expressed satisfaction with the INIAF Institute's leadership in coordinating stakeholders, generating policy proposals, and mobilizing financial resources for innovation. Participants to the January 2017 results workshop in La Paz pointed to the INIAF Institute's

capacity building activities, emphasis on markets, and seed certification activities. The INIAF Institute also offered new services (ICR, paragraph 54) such as improved seed varieties, improved agricultural machinery and implements, on-line genetic resources, fee-based laboratory analysis and customized TA.

- The INIAF Institute strengthened its seed program by upgrading staff and infrastructure in seed laboratories and seed processing facilities, introducing new seed quality standards, strengthening the regulatory framework for seed marketing and publicizing the benefits of certified seed covering an expanded range of crops (ICR, paragraph 70 and Annex 3, paragraph 21). At project close, about 4,500 seed producers and 300 producer organizations (14,000 families) benefited from INIAF's seed certification services (ICR, paragraph 62). The INIAF Institute also strengthened the seed program with the creation of a National Germplasm Bank Network of active and working banks with 19 institutions participating, such as core banks (used for long-term conservation of genetic resources), active banks (used to provide genetic materials for studies on genetic variability), and working banks (used to provide genetic materials for breeding programs, ICR, paragraph 13 (d)). The Government also signed two international treaties on genetic resources following the Nagoya Protocol. These were major steps in the INIAF Institute's national role in terms of managing genetic resources, genetic data conservation, germ plasm characterization, and genetic improvement.

### Rating
Substantial

## Objective 2
### Objective
To strengthen the National Agricultural and Forestry Innovation System (SNIAF).

The FA (Schedule 1) indicated that the achievement of a strengthened SNIAF was expected to contribute to productivity growth, food security, sustainable rural development and the income earning potential of recipient families dependent on agriculture and forestry.

### Rationale
**OUTPUTS:**
The SNIAF was credited with the following outputs, which contributed to achieving Objective 2.

- The SNIAF system sponsored a Competitive Research Fund, which financed 23 projects (original target 30, revised during the 2015 restructuring to 24, substantially achieved). The 2015 Restructuring clarified that a subproject must have received final payment to be counted as complete. A subproject was terminated early and no final payment made before the project closed (ICR, paragraph ). Only 61.11% (target 100%, partially achieved) of the demand-driven sub-projects covered priority themes that were established by the DICs.
- The SNIAF system developed 7 (original target 4, exceeded) innovation policies or instruments

approved by the *Ministerio de Desarrollo Rural y Tierra* (MDRyT or the Ministry of Rural Development and Lands). The 2015 Restructuring defined “innovation policies” to mean policies, strategies, and regulatory documents spelling out norms and standards as prepared by the INIAF Institute, Regional Innovation Councils (RICs), and Departmental Innovation Councils (DICs), at the national, regional, and local levels respectively.

- Created 11 (original target 12, revised to 10, which was achieved) DICs and RICs. The 2015 Restructuring adjusted the original target because there were only nine DICs and one RIC in the country.
- Prepared 2 supreme decrees and five departmental agricultural and forestry innovation plans.

**OUTCOMES:**
The SNIAF accomplished the following outcomes, which contributed to achievement of Objective 2.

- The SNIAF system established a Plurinational Council for Innovation in Agriculture and Forestry (PCI) with public and private stakeholders including the RICs, DICs, and the INIAF Institute. At project close, the SNIAF system was acknowledged to be a functioning innovation network (ICR, paragraph 55) by virtue of its convening powers through the DICs and RICs that were established. 71.32% (original target 40%, revised to 70%, achieved) of 136 Research and Extension (R&E) service organizations participated in SNIAF meetings at national (INNOVARE) and subnational levels (sponsored by DICs and RICs). Evidence to support a strengthened SNIAF system network is reflected in these regularly convened programs where more than 300 agriculture and forestry representatives and actors addressed departmental and regional issues such as prioritizing innovation areas, calling for proposals, approving subprojects, and conducting innovation events (ICR, Annex 7, paragraph 3). These SNIAF sponsored events promoted the effectiveness of strategic planning, fostered collaboration, and facilitated knowledge exchange among the various stakeholders, and attracted broad participation and support.
- Agricultural organizations were surveyed and expressed satisfaction that the SNIAF system was a functioning innovation network (ICR, paragraph 55) hosting forums (DIC, RIC, workshops) for the expressions of technology needs, backed by financing instruments and mechanisms for delivering benefits to the field level. The network system also fostered innovation partnerships at the sub-national, national, and international levels. The competitive grants sponsored by the SNIAF system allowed many R&E organizations to use these grants to access matching funds provided by RICs and DICs for priority innovation areas (ICR, paragraph 55).
- However, the establishment of the SNIAF took longer than anticipated (beginning only in year 4 and with lower than anticipated activity) because of a shift in Government priority during implementation away from strengthening SNIAF. At project close only about 30% of grants earmarked for subprojects had been transferred to partner R&E organizations because of regulations governing the transfer of public funds to non-governmental organizations as well as "the reluctance of INIAF senior management to channel project funds to third party recipients when some areas within INIAF were pinched for funding (ICR, paragraph 55).
- The ICR noted, however, that "While SNIAF may have taken longer than expected to become established, all signs suggest the SNIAF will endure based on an organizational plan identifying a new operational unit to lead SNIAF; innovation councils that have committed to continue to operate at both the

regional and national levels, the completion of the remaining DICs innovation plans, and the next national innovation forum planned for October 2017 (ICR, paragraph 55).

**Rating**
Substantial

## 5. Efficiency

**Economic and Financial Efficiency:** The project's objective was institution building and the expected outcomes - were strengthened INIAF and SNIAF. This Review agrees with the ICR that strengthening institutions does not lend itself to quantification or valuation (ICR, paragraph 56 and Annex 3). The ICR also noted that actual contributions of the project to outcomes such as increased productivity and sustained rural development through institutional strengthening "take many years to materialize" and "were not measurable in any meaningful way at project closing" (ICR, paragraph 56). Nevertheless, the ICR proposed two approaches to assessing the project's efficiency using values from two types of benefits, namely (a) value of increased production resulting from the adoption of innovations attributable to the project, and (b) value of increased production attributable to the use of certified seed produced by the INIAF Institute using project resources (ICR paragraph 57).

At appraisal, the first approach was used. Benefits were based on the value of increased production resulting from the adoption of innovations attributable to the project. Seed certification was a prominent INIAF Institute service based on research and innovation. Seed certification activities introduced new varieties into the market, stimulated large scale adoption and generated user fees that could support other non-fee generating INIAF Institute activities such as conservation of genetic resources (ICR, paragraph 61).

Conventional cost-benefit analysis was used to measure the project worth of each innovation. Values were calculated for NPV, EIRR and FIRR. The benefits attributable to seed certification were calculated using the incremental area and yield gain estimates using farm budgets with and without the project scenarios. The analysis concluded that the project had an EIRR of 54.4%. The aggregated benefits from the project using the entire project investment of US$55.1 million resulted in an EIRR of 18.8%. A benefit cost ratio of 1.73 was estimated which (according to the ICR) was "consistent with returns documented for similar projects both within the Latin America and the Caribbean (LAC) region and globally" (ICR, Annex 3, paragraph 27).

The ICR (Annex 3) presents an extensive economic and financial analysis of the project including a sensitivity analysis using the two values of production (ICR, paragraph 57) under three scenarios, as follows:

- 50% of subprojects failed (low adoption scenario) - EIRR would fall to 13%
- All prices of agricultural products declined by 20% (unfavorable price scenario) - EIRR would fall to 17.2%

- 50% of subproject failure and 20% decline in prices (double shock scenario) - EIRR would fall to 11.8%

**Administrative and Operational Efficiency**
Administrative and management instruments of the project were not always well aligned with public norms governing the administration of goods and services. In addition, the Operational Manual was acknowledged to be insufficient (ICR, paragraph 49). Instruments established to direct project resources were adequate but needed improvements (e.g., some project allocation was supply driven, directly allocating resources to strengthen the research program rather than demand driven as originally designed where competitive grants would finance innovative sub projects). The INIAF Institute was new and the sector it operated in was evolving and complex. There were stretches of slow progress because of implementing agency capacity issues (see Section 9(b) below). At project effectiveness, the INIAF Institute staff was unfamiliar with Bank processes. In addition, high staff turnover delayed procurement. Procurement in 2015 using DANIDA funds did not follow Bank rules, but both DANIDA and the INIAF Institute could not obtain supporting documentation to support this finding which would have allowed funds to be returned or reprogrammed (ICR, paragraph 97). The INIAF Institute remediated this finding. There were chronic fiduciary issues during the initial stages of project implementation, which will be outlined in Section 11 of this Review. Participants in the stakeholder workshop held in November 2016 expressed concerns about administratively complex and excessively bureaucratic proposals, delays in evaluating and approving subprojects, which slowed disbursements of funds to partners and delayed implementation (ICR, paragraph 74). Finally, as discussed in Section 10 below, the M&E system was weak, did not collect adequate evidence regarding the achievement of the PDOs. Nevertheless, costs of project management have been low (only 4.7% of total actual project costs) and sufficient to achieve the project development objective of strengthening the INIAF Institute and SNIAF.

### 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 | | 0 | 0<br>☐Not Applicable |
| ICR Estimate | ✓ | 18.80 | 100.00<br>☐Not Applicable |

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

## 6. Outcome

The relevance of the project's objective was modest as was the relevance of design. Efficacy was substantial for both objectives (strengthening of INIAF and SNIAF). Efficiency was substantial following the reasonableness of costs and effective use of project funds. This Review concludes that there were moderate shortcomings in achieving the project's objectives, and its outcome is therefore rated as moderately satisfactory.

### a. Outcome Rating

Moderately Satisfactory

## 7. Rationale for Risk to Development Outcome Rating

At appraisal, high risk to development outcome derived from insufficient funds from the Government to support the project, INIAF Institute's implementation capacity, slow implementation, and ensuring financial and organizational sustainability of the project. These risks were addressed during implementation by both the Government and the Bank. The Government even disbursed substantially more than its original commitment as part of its counterpart contributions. However, Government commitment to sustain the increased capacity of the INIAF Institute to deliver agricultural innovation remains at risk. In the months leading to project close, the INIAF Institute’s mid and long term financing was uncertain. Budget cuts scaled back INIAF programs and reduced the overall work force (ICR, paragraph 76). Technical risks or the technical innovations introduced in the INIAF Institute MIS are also at risk since modules developed were unutilized even during implementation and there is no indication that budgets will address requisite software updates when needed. At the time of the ICR preparation, the INIAF Institute's 2017 budget from all sources stood at around US$10.0 million and the budgets proposed in the 2017-2020 INIAF Institute strategic plan called for modest annual increases in the INIAF Institute budget until 2020, which eased sustainability concerns. However, the projected budgets may still be insufficient to finance the full scale of the INIAF Institute's programs to have transformative impact at the national level (ICR, paragraph 46).

### a. Risk to Development Outcome Rating

Modest

## 8. Assessment of Bank Performance

### a. Quality-at-Entry

The project design benefited from lessons learned from prior engagement in the sector in the country and the region. The technical, financial and economic aspects were adequately appraised, except for determining the economic efficiency of the project related to the use of INIAF-certified seed in determining economic efficiency of the project. The ICR addressed this oversight in its discussion of project efficiency (ICR, paragraph 58). Environmental as well as poverty, gender and social development aspects were satisfactorily addressed. However, implementation arrangements could have benefited from more attention to issues such as human resources management to attract and retain highly talented staff, and the technical limitation surrounding the transfer of funds to external partners to implement sub projects (ICR, paragraph 78). Finally, the original Results Framework and M&E system were problematic because some indicators proved irrelevant and some others (such as indicators for the PDOs) proved difficult to measure.These weaknesses were addressed in a 2015 Restructuring after the 2014 Mid Term Review (MTR). In addition, baseline data were not established, M&E data collection systems were not defined, and instruments (modules) were not developed in time. Some performance indicators such as for the PDOs were measured only shortly before closing (ICR, paragraph 78) when data became available.

### Quality-at-Entry Rating

Moderately Satisfactory

### b. Quality of supervision

When after year 1 none of the performance indicators had been measured, the Bank team worked closely with INIAF to devise a strategy, prepare methodological guides for data collection, manage M&E modules as part of the national Management Information System (MIS) and foster collaboration among the different directorates and departments to improve data collection (ICR, paragraph 36). In the second year, M&E function was outsourced but the INIAF Institute decided to develop its own M&E system as part of the larger MIS and used a cloud-based depository following the strategy adopted during the 2015 restructuring.

The Bank team proactively addressed implementation delays from capacity weaknesses and prepared action plans in collaboration with project management together with hands-on support. However, Bank support was lacking for procurement (training inadequate), M&E (only partially successful in rolling out the modules under the project monitoring system and Results Framework restructuring), and not proactive in ensuring compliance with social safeguards oversight (inadequate attention to filling the social specialist position) and monitoring protocols.

### Quality of Supervision Rating

Moderately Satisfactory

### Overall Bank Performance Rating

Moderately Satisfactory

## 9. Assessment of Borrower Performance

### a. Government Performance

Government ownership and commitment varied from project start to implementation. Support for the project was strong during appraisal but this commitment declined in the course of implementation as evidenced by the high turnover rate in leadership to ensure that the project was implemented as agreed (ICR, paragraph 83). The Government also changed its views on the role of the INIAF Institute, particularly its independence and leadership in innovation in coordination with decentralized partners and pursuing a demand-driven innovation agenda (ICR, paragraph 19). The Ministers of Rural Development and Lands used the project as a vehicle to implement their own ministerial policies, which undermined the autonomy of the implementing agency (ICR, paragraph 24).

Payment of government counterpart funding also slowed down during implementation although in the end, the Government provided more resources than it originally committed. Significant progress followed the MTR. At project close, there were adequate transition arrangements made to sustain project outcomes with the aid of external partners like DANIDA and COSUDE but the Government showed a lack of commitment to take remedial measures when challenged with sustaining he improvements introduced during the project as evidenced by the implementing agency's scaling back its operation and reducing its workforce (ICR, paragraphs 76 and 83).

### Government Performance Rating

Moderately Unsatisfactory

## b. Implementing Agency Performance

The INIAF Institute was the implementing agency. The project financed INIAF's entire budget (ICR, paragraph 24). INIAF showed commitment to achieving the project's development objectives through streamlined administrative and fiduciary management systems by the time the project closed (ICR, paragraph 84). There were adequate beneficiary and stakeholder consultations as evidenced by the favorable results of the beneficiary surveys at project close. There were also well established relations and coordination with development partners and stakeholders, evidenced by the increased demand for INIAF Institute services. However, as an implementation agency, there was a lack of outreach by INIAF and an ineffective communication strategy exacerbated because of what the ICR stated was a lack of a strong champion within INIAF to advocate its interests in the Government and build awareness of its mission as articulator for SNIAF (ICR, paragraph 30).

Readiness to implement was hampered by the newness of the function assigned to INIAF (to lead the modernization of SNIAF) and the lack of capacity because of lack of ability to hire and retain talent and establish familiarity with Bank procedures. INIAF capacity constraints, frequent changes in project management staff, high staff turnover (over the life of the project five Executive Directors and four Project Coordinators) led to implementation delays. The lack of INIAF capacity in its role as implementing agency was cited as a reason for lack of compliance with safeguards such as delayed procurement and financial management issues.

Slow early implementation stemmed from a lack of administrative and technical staff and a lack of qualified experts who could be readily mobilized to implement innovative projects (ICR, paragraphs 28 and 51). In addition, the INIAF Board of Directors had a limited role in implementation because it was marginalized by the Ministry of Rural Development and Lands (ICR, paragraph 29) and the function of the Project Coordinator did not fit well into the INIAF hierarchy, which led to the lack of authority to manage project activities (ICR, paragraph 51). The appropriate indicators to match the PDO in the Results Framework as well as the inadequate M&E system were eventually addressed following the 2014 MTR and the resulting 2015 Restructuring.The project was implemented on time and project development outcome indicators met targets.

### Implementing Agency Performance Rating
Moderately Satisfactory

### Overall Borrower Performance Rating
Moderately Satisfactory

## 10. M&E Design, Implementation, & Utilization

### a. M&E Design
The project M&E focused on INIAF's institutional development, tracked operational procedures and human resource development, and M&E activities, results, and impact. The data for the project's outcome and results indicators were to be derived from the three INIAF technical units - Research, Technical Assistance, and Seeds - and then compiled by the Planning and Systems unit (PAD, Annex 3, paragraph 70), identified in the ICR as INIAF's Planning and Organizational Development unit. However, each of these units operated independently of each other with their respective formats and standards. Because the INIAF Institute did not have a homogenous format for data compilation, the project funded the installation of an M&E system that would address this, install the system at all levels, and conduct training. The M&E system would also include a grievance mechanism. As part of the project Management Information System (MIS) an M&E module would be introduced to compile data from different sources into a homogenous format. INIAF would finalize this plan during implementation.

As noted already in this Review, the Results Framework had design shortcomings. While the PDOs were clearly stated, the scale of achievement was problematic and never clarified. There were no baselines nor methods to define them although focused client (beneficiary) surveys identified a strengthened capacity of both INIAF and SNIAF (ICR, paragraph 54). The definitions of two direct indicators were clarified in the 2015 restructuring and procedures to measure these were further defined. One intermediate outcome indicator measured the percentage of women and indigenous people in management or research position at the INIAF and further refined in the 2015 restructuring to include women and indigenous people with decision making function in the INIAF.
Several intermediate outcome indicators were problematic because of unclear procedures to be used to measure the indicator, or the indicator referred to an outcome over which the project had little or no influence, or the obsolescence of the indicator. The 2015 Restructuring addressed these problems and clarified definitions of the indicators and how to measure them.

### b. M&E Implementation
M&E implementation was uneven and did not initially serve the project well (ICR, paragraph 36). Corrective measures were introduced but progress remained slow mainly due to staff turnover. Plus, the INIAF Planning Unit did not complete its M&E activities. Consequently, by Year 2 of the project, the Bank team proposed that

M&E be outsourced (ICR, paragraph 37). The INIAF Institute decided instead to develop its own M&E system within the larger MIS, using a cloud based depository and following the strategy adopted during the 2015 restructuring. The software systems adopted for the M&E system came on line later in the life of the project. The cloud based depository contained a detailed description of every performance indicator, historical data for each indicator, and the latest status of each indicator thus systematizing project results information without fear of institutional memory loss due to staff turnover (ICR, paragraph 38).

A final evaluation by an external consulting firm was completed in 2016. A Borrower's Completion Report was finished in January 2017. As noted already, an overall beneficiary survey was not carried out covering the entire project (ICR, paragraph 71). However, smaller, focused beneficiary surveys were carried out as part of the M&E plan to measure some performance indicators such as institutional strengthening of INIAF and SNIAF. A national stakeholder workshop was held in November 2016 to further capture project achievements (ICR, paragraph 72).

### c. M&E Utilization

The M&E system only became functional toward the latter part of the project and therefore was not utilized to a significant extent to influence implementation.

### M&E Quality Rating

Negligible

## 11. Other Issues

### a. Safeguards

The project was not expected to have significant adverse environmental impacts and was classified as a category B and triggered the following safeguards (PAD, paragraph 45 and ICR, paragraph 40):

- Environmental Assessment (OP/BP 4.01)
- Natural Habitats (OP/BP 4.04)
- Forests (OP/BP 4.36)
- Pest Management (OP/BP 4.09)
- Indigenous Peoples (OP/BP 4.10)

The ICR noted satisfactory compliance with environmental safeguards throughout implementation (ICR, paragraph 41) although the Results Framework did not include performance indicators to monitor compliance in implementing the Environmental Management Plan (ICR, paragraph 40). The high staff turnover at INIAF led to gaps in safeguards monitoring during the periods when the position of Environmental Specialist was vacant. Nevertheless, INIAF used the project to promote environmental good practices (ICR, paragraph 41). Since 62% of the target population self identified as indigenous peoples, all project supported activities were designed and implemented to conform with the measures laid out in the

Indigenous Peoples Plan (ICR, paragraph 9). The ICR had no information with regard to compliance with natural habitats, forests, and pest management although the ICR noted that the INIAF Institute took advantage of the project to promote environmental good practices such as manuals, guides, field days, and training events to build awareness of conservation agriculture, integrated pest management, and organic production methods (ICR, paragraph 41).

A Social Assessment was carried out during preparation. A Social Consultation and Participation Plan prepared and disclosed. Compliance was noted to be deficient at times due to high staff turnover and became problematic when a number of complaints were registered regarding alleged damages as a result of project-supported activities. The mechanism for addressing the complaints were noted to be weak (ICR, paragraph 42). No clear protocol was established for conducting effective consultation with local communities. Multiple and inconsistent methods were used to address social safeguard needs of local communities without appropriate documentation. Nevertheless, the Bank team established through field visits to the affected sites that no harm came to indigenous peoples (ICR, paragraph 42) and affected beneficiaries expressed satisfaction with the support received under the project.

### b. Fiduciary Compliance

**Procurement**: When the project started, INIAF capacity to implement the project was weak. The INIAF Institute staff was unfamiliar with Bank policies and procedures. Action plans were prepared to address this weakness through intensive hands on support from the Bank. Procurement procedures were revised during implementation to simplify and streamline procurement activities. Nevertheless, high staff turnover again negatively affected procurement activities. New staff had to be retrained and documentation required revisions leading to delays. One procurement in 2014 using DANIDA funds was found not have followed Bank procurement rules and had to be remedied and resolved by the INIAF Institute. .

**Financial Management**: There were chronic fiduciary issues during the initial three years of the project. Interim Financial Reports were late, returned for adjustment, reconciliation errors persisted, accounting records were not updated and funds were advanced without appropriate supporting documentation. After the 2014 MTR and the adoption of an action plan to address these issues (updating accounting records, reconciling items in the designated account, recovery of advances, resolution of disbursement issues in subprojects) financial management improved from late 2015 till the project closed.

### c. Unintended impacts (Positive or Negative)

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### d. Other

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## 12. Ratings

| Ratings | ICR | IEG | Reason for Disagreements/Comment |
|---|---|---|---|
| Outcome | Moderately Satisfactory | Moderately Satisfactory | --- |
| Risk to Development Outcome | Modest | Modest | --- |
| Bank Performance | Moderately Satisfactory | Moderately Satisfactory | --- |
| Borrower Performance | Moderately Satisfactory | Moderately Satisfactory | --- |
| Quality of ICR | | Substantial | --- |

**Note**

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.
The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

## 13. Lessons

The ICR points to eight lessons learned based on the evidence from project implementation. This Review considered the following lessons were the most important because of their relevance beyond this project:

- **The World Bank instrument selected for this project, the Investment Project Financing (IPF) was not the best instrument for promoting the strengthening of institutions although at the time of appraisal it was the only instrument available.** Recent instruments like the Development Policy Framework or Program for Results (P for R) may be better suited because of their focus on building capacities in institutions.
- **Participatory Approaches**. Introducing a participatory and bottom up approach to foster innovation in research management requires time, adequate outreach strategy, and clear vision on how to leverage resources through novel alliances. These may cause delays in project implementation and project teams are best served by recognizing crucial bottlenecks that could be addressed by heightened capacity building early in the project.
- **Decentralization of Research**. Contracting research to external partners as part of a decentralized approach to engage NGOs and private firms and other non-traditional partners in research activities was potentially useful but required a framework that would allow government to easily transfer funds to non governmental organizations.
- **Staffing Challenges**. Research institutions (such as the INIAF Institute) which support innovation systems (like the SNIAF system) depend on retaining highly qualified staff. This objective is best served by an autonomous institution (such as the INIAF Institute) that can manage its human resources independently of political influence.

## 14. Assessment Recommended?

No

## 15. Comments on Quality of ICR

The ICR was thorough, concise, results oriented and followed OPCS guidelines. Analysis of the evidence on project results, particularly economic efficiency was noteworthy. Annex 3, for example, provided a clear justification for the methods and assumptions used in assessing the financial and economic benefits from the project components, and the project appraisal literature was used to justify the introduction of agricultural innovation and extension services. There was a candid assessment of the shortcomings of both Borrower and Bank performances. Lessons learned included a credible assessment of the deficiencies of investment project financing for a project aimed at institutional development but other lessons were weak because they were focused too much on the details of this project without broader relevance for other operations. Given that the objectives were to strengthen both the SNIAF system and the INIAF Institute, there could have been a clearer discussion of the extent to which the SNIAF system was strengthened as a result of the project.

**a. Quality of ICR Rating**

Substantial