

Document of
The World Bank

Report No: ICR3942

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IBRD-75970)

ON A

LOAN

IN THE AMOUNT OF US\$ 300.00 MILLION

TO THE

ARGENTINE REPUBLIC

FOR A

SECOND PROVINCIAL AGRICULTURAL DEVELOPMENT PROJECT

October 17, 2017

Agriculture Global Practice
Argentina Country Department
Latin America and Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 15, 2017)

Currency Unit = Argentine Peso (ARS)

ARS 1.00 = USD 0.064

USD 1.00 = ARS 15.5544

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AAP	Affected Assets Plan
ANR	Non-Refundable Contributions (Grants) (<i>Aportes no Reembolsables</i>)
ASNR	Non-Reimbursable Seed Support (<i>Aportes Semilla no Reembolsables</i>)
BCR	Borrower Completion Report
CAS	Country Assistance Strategy
CAT	Technical Assistance Component (<i>Componente de Asistencia Técnica</i>)
CPS	Country Partnership Strategy
DID	Difference in Difference Methodology
DO	Development Objective
EA	Environmental Assessment
EE	Liaison Entity (<i>Entidad de Enlace</i>)
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPAF	Financial Administration Entity (<i>Entidades para la Administración Financiera</i>)
EPDA	Provincial Agro-Livestock Development Agency (<i>Ente Provincial de Programación del Desarrollo Agropecuario</i>)
EPEN	Provincial Energy Company of Neuquén (<i>Ente Provincial de Energía del Neuquén</i>)
EPSA	Provincial Agricultural Services Strategy (<i>Estrategía Provincial de Servicios Agrícolas</i>)
FAO	Food and Agriculture Organization
FCOP	Program to Strengthen Provincial Operational Capacity (<i>Fortalecimiento de las Capacidades Operacionales Provinciales</i>)
GOA	Government of Argentina
IDB	Inter-American Development Bank
IFR	Interim Financial Report
IP	Implementation Progress
IDEMI	Micro-regional Development Initiatives (<i>Iniciativas de Desarrollo Microregional</i>)
IERR	Internal Economic Rate of Return
IICA	Inter-American Institute for Cooperation in Agriculture
INTA	National Institute for Agro-livestock Technology

	<i>(Instituto Nacional de Tecnología Agropecuaria)</i>
IP	Implementation Progress
IPC	Investment Programming Committee
IPP	Indigenous Peoples' Plan
IPPF	Indigenous Peoples Planning Framework
IRR	Internal Rate of Return
IS	Institutional Strengthening
ISR	Implementation Status Report
ITI	Innovation Transfer Initiative
JER	Young Rural Entrepreneurs Program <i>(Jóvenes Emprendedores Rurales)</i>
MAGyP	Ministry of Agriculture, Livestock and Fisheries <i>(Ministerio de Agricultura, Ganadería y Pesca)</i>
MAI	Ministry of Agro-industry
M&E	Monitoring and Evaluation
MTR	Mid-term Review
NPV	Net Present Value
O&M	Operation and Maintenance
ORSEP	Argentine National Authority for Dam Safety <i>(Organismo Regulador de Seguridad de Represas)</i>
PAD	Project Appraisal Document
PADS	Provincial Agricultural Development Strategy (see EPSA)
PDO	Project Development Objectives
PESM	Project Environmental and Social Manual
PIU	Project Implementation Unit (see UEC)
PROCAL	Argentina Food Quality Program <i>(Programa de Calidad de Alimentos Argentinos)</i>
PROSAP II	Second Provincial Agricultural Development Project
RDI	Regional Development Initiative
SAGPyA	Secretariat of Agriculture, Livestock, Fisheries and Food <i>(Secretaría de Agricultura, Ganadería, Pesca y Alimentación)</i>
SENASA	National Service for Food and Agriculture Sanitation and Quality <i>(Servicio Nacional de Sanidad Animal y Vegetal)</i>
SEPA	System for the Execution of Procurement Plans <i>(Sistema de Ejecución de Planes de Adquisiciones)</i>
SIU	Subproject Implementation Unit
TA	Technical Assistance
TEC	Technical Evaluation Committee
UCAR	Unit for Agriculture and Rural Change <i>(Unidad para el Cambio Rural)</i>
UEC	Central Project Execution Unit <i>(Unidad de Ejecución Central)</i>
UEP	Provincial Execution Unit <i>(Unidad Ejecutora Provincial)</i>
VAT	Value-added Tax
VBP	Gross Value of Production <i>(Valor Bruto de la Producción)</i>
WUA	Water User Association

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ARGENTINA
Second Provincial Agricultural Development Project (PROSAP II)

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MAP: IBRD 35969R

A. Basic Information			
Country:	Argentina	Project Name:	AR PROSAP2 - Second Provincial Agricultural Development
Project ID:	P106684	L/C/TF Number(s):	IBRD-75970
ICR Date:	12/06/2016	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	GOVERNMENT OF ARGENTINA
Original Total Commitment:	USD 300.00M	Disbursed Amount:	USD 300.00M
Revised Amount:	USD 300.00M		
Environmental Category: B			
Implementing Agencies: UCAR <i>Unidad para el Cambio Rural</i> (Unit for Rural Change)			
Co-financiers and Other External Partners: N/A			

B. Key Dates				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	12/17/2007	Effectiveness:	05/11/2009	05/11/2009
Appraisal:	03/10/2008	Restructuring(s):		11/16/2012 09/08/2014 08/03/2016
Approval:	09/25/2008	Mid-term Review:	11/20/2012	11/19/2012
		Closing:	03/30/2015	03/15/2017

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Moderately Unsatisfactory
Risk to Development Outcome:	Moderate
Bank Performance:	Moderately Unsatisfactory
Borrower Performance:	Moderately Unsatisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	Ratings	Borrower	Ratings
Quality at Entry:	Moderately Unsatisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Moderately Unsatisfactory	Implementing Agency/Agencies:	Moderately Unsatisfactory
Overall Bank Performance:	Moderately Unsatisfactory	Overall Borrower Performance:	Moderately Unsatisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at any time (Yes/No):	Yes	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Moderately Satisfactory		

D. Sector and Theme Codes		
	Original	Actual
Sector Code (as % of total Bank financing)		
Other Agriculture, Fishing and Forestry	31	31
Irrigation and Drainage	20	20
Public administration - Agriculture, fishing and forestry	23	23
Rural and Inter-Urban Roads	10	10
Agricultural markets, commercialization and agri-business	16	16
Theme Code (as % of total Bank financing)		
Land administration and management	10	10
Rural non-farm income generation	30	30
Rural services and infrastructure	50	50
Water resource management	10	10

E. Bank Staff		
Positions	At ICR	At Approval
Vice President:	Jose Familiar	Pamela Cox
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F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)

To increase the productivity and sales volume of small and medium-size producers.

Revised Project Development Objectives (as approved by original approving authority)

The PDO was not revised but selected Intermediate Outcome Indicators were modified, clarified or eliminated in March 2016 due to insurmountable issues affecting methodology, measurement and

timing, and some targets were changed. Because these changes were not part of a formal restructuring, the Bank's internal review directed that changed targets revert to those in the PAD Results Framework. Changes to the indicators themselves would be sustained. Also, while baselines were prepared for provincial subprojects as they entered the portfolio, these were found later to be unusable for formal evaluation due to methodology and lack of standardization. However, time, planning and cost issues made conducting a classic baseline exercise late in the project period infeasible and alternatives were devised within the final evaluation strategy/plan. See ICR Section 2.3, and Annexes 2, 3 and 5.

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1:	Increase in labor productivity (%)			
Value quantitative or Qualitative)	Baseline values were to be determined by subproject/activity but the results were unusable for formal evaluation.	10% increase by end-project		8%
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Partially achieved: 80% Indicator was measured via ex post impact and economic/financial evaluations in 2015 and 2016 of seven irrigation, rural roads, rural electrification and seeds subprojects with at least 2 years of operation in the Provinces of Mendoza, Neuquén, San Juan, Salta and Córdoba, using a difference on difference approach. See Table 8, Annex 2, and Impact and Economic/Financial Evaluations and Borrower Completion Report (BCR - UCAR, 2017) in archive with summaries in Annexes 3, 5 and 7.			
Indicator 2:	Increase in land productivity (%)			
Value quantitative or Qualitative)	Baseline values were to be determined by subproject/activity but results were unusable for formal evaluation.	12% increase by end-project		9.5%
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Partially achieved: 80% Calculation of the incremental productivity of land was derived from ex post evaluations of public investment subprojects (as above) and data from qualified informants, administrative registries, and secondary sources such as provincial agencies. Seven irrigation, roads, rural electrification and seeds subprojects were analyzed. References as in PDO Indicator 1 above.			
Indicator 3:	Increase in sales volume (%)			
Value quantitative or Qualitative)	Baseline values to be determined by subproject/activity	20% increase by end-project		Aggregate gross production increase is 9.4% based on total volume of production with and without project.
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Modest achievement: 47% The aggregate gross production increase with- project vs without-project is 9.4%; and, average variation across all 15 crops associated with 5 irrigation subprojects in 3 provinces is 23%. Methodological obstacles (time, lack			

	of baselines) prevented measurement of sales volume. Since on-farm consumption of production was insignificant among subproject beneficiaries, and they typically sold all their production (taking into account normal waste/spoilage), the Bank/UCAR agreed that “ <i>volume of production</i> ” was a methodologically acceptable surrogate for “ <i>volume of sales</i> ”, i.e. what farmers produced is what they sold. References as above.
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(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1:	Strategic investment plans prepared and adopted in each Province receiving financing from PROSAP II			
Value (quantitative or Qualitative)	Zero	15 plans prepared and adopted		19 investment plans prepared and adopted
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Exceeded: 126.6% This measures the number of provinces with an EPSA presented and adopted/implemented. The number of provinces seeking participation by submitting a Provincial Agricultural Services Strategy or EPSA (19) exceeded those which eventually secured an approved subproject (8). Preparation of an EPSA (called PADS at appraisal) was a pre-requisite for eligibility for PROSAP II and over time, became the strategic basis for accessing other operations coordinated by UCAR. All 19 provinces with EPSA participated in the ANR (complementary Matching Grants).			
Indicator 2:	Level of participation of private sector stakeholders in provincial investment planning (low/medium/high)			
Value (quantitative or Qualitative)	Zero	Med/High - 15		Not measured
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Indicator was eliminated by agreement between the Bank and UCAR in March 2016 due to major methodological and other obstacles associated with its measurement. See Section 2.3 discussion on monitoring and evaluation (M&E) design and implementation.			
Indicator 3:	Hectares of new productive area as a result of improved infrastructure (#)			
Value (quantitative or Qualitative)	Zero	673.8 ha		3,274 has. based on 6 of the 21 subprojects
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Exceeded: 486% Indicator was clarified in March 2016 to: “ <i>Incremental hectares under production as a result of improved infrastructure</i> ”, measured against the original target. This result is based on six subprojects out of 21, i.e., those with a degree of maturity permitting the observation and/or measurement of results. Information was provided by water user consortia for: Irrigation Chachingo-Pescara (Mendoza); Irrigation Canal San Martin (Mendoza); Irrigation Colonia Santa Rosa (Salta); Irrigation Cespedes-Sarmiento (San Juan); and Electrification/Irrigation Anelo (Neuquén), as well as data from the Seed Sector subproject (San Juan).			
Indicator 4:	Improved efficiency of irrigation systems (%)			
Value (quantitative)	Baselines were to be estimated for irrigation	65%		26%

or Qualitative)	subproject/systems but results were inadequate for formal evaluation.			
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	<p>Modest achievement: 40% Indicator was clarified in March 2016 to: “Average percentage increase in the efficiency of water conduction of irrigation systems rehabilitated” and is measured against the original target. Measuring the overall efficiency of irrigation systems is costly and there were no baselines. The revised indicator: (i) measured the increase in conduction capacity (reduced water losses) from project-financed rehabilitation, compared to a constructed baseline for each system; and, (ii) calculated a weighted average of these changes in conduction efficiency, taking into account the volume of water received by each system. Efficiency of conduction permits the evaluation of water losses in the primary canal from the headwaters (<i>bocatoma</i>) to its final point, and is dependent on the good physical condition of the canal.</p>			
Indicator 5:	Increase in yields of crops (%)			
Value (quantitative or Qualitative)	Baseline values for specific subprojects were determined but proved unusable for formal evaluation.	20%		Average 13.7% and a range of 7% to 25% depending on the crop.
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	<p>Partially achieved: 68.5% This indicator was clarified in March 2016 to: “Average percentage incremental increase in the yields of crops in zones corresponding to irrigation projects” and is measured against the original target. Data were collected from selected irrigation subprojects in Mendoza, Neuquén, San Juan and Salta Provinces. The crops analyzed were grapes and diverse vegetable crops. Measured in the same way as PDO Indicator 2.</p>			
Indicator 6:	Improved road transportation (annual daily transit average in %)			
Value (quantitative or Qualitative)	Zero	2% increase in average daily transit		70 %
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	<p>Exceeded: 467% This indicator was modified: “Average incremental increase in the transit of vehicles in road improvement subprojects, measured by TDMA” (<i>Tránsito Diario Medio Anual</i> - average daily transit, annualized) and is measured against the original target. Measurement was based on data reported by provincial roads directorates, from the Rural Roads subprojects in Córdoba and San Juan, and, in the case of Córdoba within the Road Improvement in Dairy Production Areas subproject. TDMA was calculated before/after road works on selected road segments.</p>			
Indicator 7:	Decrease in prevalence of disease in sanitary and phytosanitary interventions (%)			
Value (quantitative or Qualitative)	Argentina already had OIE (World Animal Health Organization) status	OIE status maintained		OIE Status of “country with negligible risk” was maintained
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	<p>Achieved: 100% Due to measurement difficulties, this indicator was modified to: “Maintaining Argentina’s sanitary status in relation to Transmittable Spongiform Encephalitis (TSE)”. Measurement changed from a percentage to maintaining the status of Argentina as one with negligible risk of TSE as declared by the OIE, based</p>			

	on its criteria/statutes. The project: demonstrated via histopathological and biochemical analysis of animals/humans that TSE was not present in the national territory; improved controls on the production and importation of risk materials; evaluated the national ovine genotype, for prevalence of genotypes susceptible to PRP; and, provided comprehensive information on diseases with nervous system symptoms in the national territory.			
Indicator 8:	Level of participation of small/medium size producers in value chain organizations and in provincial/local investment planning (low/medium/high)			
Value (quantitative or Qualitative)	Low	Med/High (cumulative by Y6)		Not measured
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Indicator was eliminated in March 2016 due to insurmountable methodological and measurement difficulties.			
Indicator 9:	Increased on-farm and off-farm investments by beneficiary producers (%)			
Value (quantitative or Qualitative)	Zero	25% by end-project		Not measured
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Not measured due to lack of data: This indicator was re-defined in March 2016 as: “ <i>Total volume of private investment on- and off-farm caused by the project</i> ”. Its measurement changed from a percentage increase to an absolute value (in USD million), measured as the total volume of private investment (in Matching Grants (ANRs)) carried out by PROSAP II beneficiaries of ANRs on- and off-farm. The revised target in absolute value terms was US\$50.0 million but given the decision to restore the original appraisal target, the final value at closing could not be measured.			
Indicator 10:	Increased amount of beneficiary and commercial financing leveraged by the project (USD million)			
Value (quantitative or Qualitative)	Zero	USD 64.5 million (cumulative Y3 to end Y6)		Not measured
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	This indicator was eliminated in March 2016 due to methodological, time and data issues limiting measurement. However, as it turned out, total investment financing leveraged (beneficiary own and credit/borrowed) under the ANR - which explicitly sought a 60% beneficiary contribution (from own or borrowed funds) - was USD 51.0 million, or 79.0% of this target.			
Indicator 11:	Increased provincial capacity for policy development and implementation of subprojects (low/med/high)			
Value (quantitative or Qualitative)	Zero (later revised to 63% but date unclear)	Low/medium/high		90% or “High”.
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Exceeded: 143% This indicator was revised in March 2016 to: “ <i>Improved physical and operational characteristics of PROSAP institutional entities at the provincial level</i> ”. Measurement was changed from a qualitative ranking (low, medium, high) to a more meaningful percentage improvement over baseline but given the decision to use the original target, the following was achieved: The baseline index of institutional capacity of provincial entities is 63% with 100% (maximum) reflecting optimal technical, managerial and operational capacity of the provincial entity re program/project execution. The actual achievement of 90% is 143% of the baseline			

	and rated under the original target/range as High. Results are based on evaluation of Executing Units of 18 participating provinces.			
Indicator 12:	The PIU and PLUs, FAUs and SIUs in charge of day-to-day activities			
Value (quantitative or Qualitative)	Zero	By Year 1		All required institutional units (since re-named by UCAR but equivalent) were established and in charge of daily activities by end-Year 1.
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Achieved: 100% These were, respectively: Central Project Executive Unit, the Provincial Liaison Units, the Financial Administration Unit and Subproject Implementation Units (in Spanish: UEC, EE, EPAF and EEP – see acronym list). All were established, operational and in charge of day-to-day activities.			
Indicator 13:	Institutional Development Study carried out and discussed by the PIU			
Value (quantitative or Qualitative)	Zero	Year 1		Institutional development studies prepared and discussed by PIU (UEC)
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Achieved: 100% Institutional development studies prepared: (i) <i>Institucionalización de la UCAR y del PROSAP</i> (Nogueira, 2011); and (ii) <i>Análisis de la Estructura Organizativa y Funcional de la UCAR y el PROSAP: Propuesta de Rediseño Organizativo</i> (Badui, 2013).			
Indicator 14:	Base-line studies for each subproject finalized and available at beginning of implementation			
Value (quantitative or Qualitative)	Zero	100% cumulative (Years 1-4)		Zero
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Not achieved: Initial baseline studies were done for all the provincial subprojects but they did not meet the standard for methodologically sound impact evaluation with control groups, due to lack of standardization and other flaws. The focus shifted to describing the direct characteristics of the beneficiary population for each subproject.			
Indicator 15:	Annual evaluations carried out in participating provinces, discussed, and disseminated.			
Value (quantitative or Qualitative)	Zero	Years 3-6, Yes/No		Yes: Diagnostic evaluations were conducted, published and distributed to/shared with, participating provinces seeking access to PROSAP II subprojects.
Date achieved	09/25/2008	03/30/2015		03/15/2017

Comments (incl. % achievement)	Achieved: 100% This indicator was modified in March 2016 to: “ <i>Diagnostic evaluations carried out, published and distributed to the participating provincial subprojects</i> ”.			
Indicator 16:	Final evaluation carried out, discussed and disseminated			
Value (quantitative or Qualitative)	N/A	Year 6		Evaluations conducted; reports discussed; and, dissemination is planned.
Date achieved	09/25/2008	03/30/2015		03/15/2017
Comments (incl. % achievement)	Substantially achieved: 95% This indicator is rated 95% because UCAR conducted the studies requested by the Bank, received Bank comments, and has a dissemination agenda prepared but not yet executed. All evaluation reports prepared by UCAR are listed in Annex 9.			

G. Ratings of Project Performance in ISRs

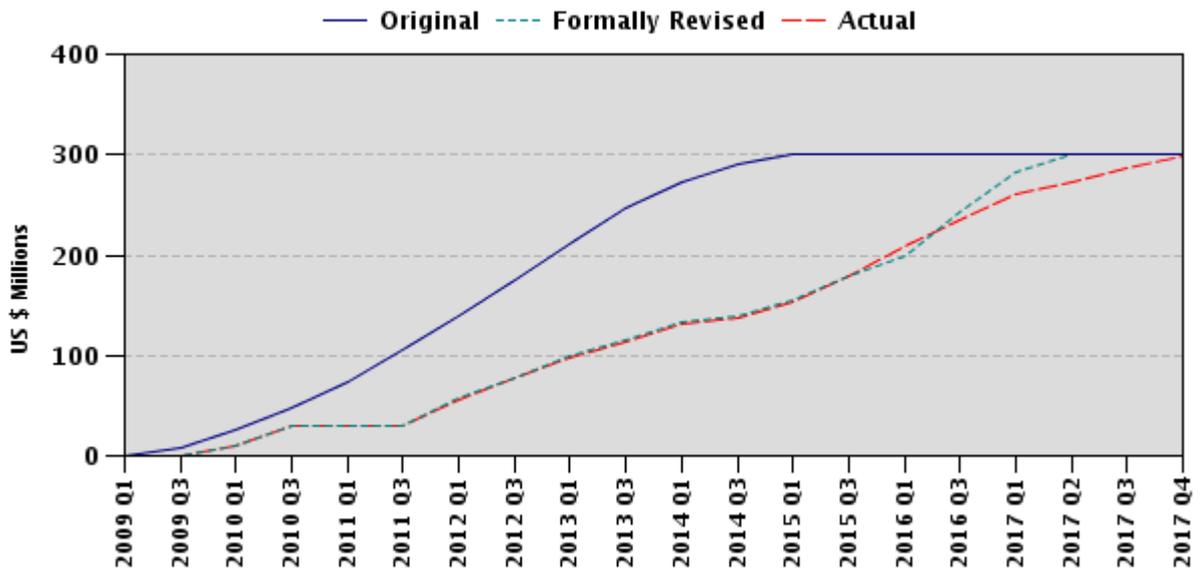
No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	11/17/2008	Satisfactory	Satisfactory	0.00
2	05/16/2009	Satisfactory	Satisfactory	0.00
3	12/24/2009	Satisfactory	Satisfactory	30.00
4	02/09/2010	Satisfactory	Satisfactory	30.00
5	05/28/2010	Satisfactory	Satisfactory	30.00
6	02/13/2011	Satisfactory	Satisfactory	30.00
7	11/02/2011	Satisfactory	Satisfactory	55.82
8	05/20/2012	Satisfactory	Satisfactory	83.64
9	12/14/2012	Satisfactory	Satisfactory	105.61
10	07/10/2013	Satisfactory	Moderately Satisfactory	122.91
11	02/19/2014	Satisfactory	Moderately Satisfactory	138.02
12	10/15/2014	Satisfactory	Moderately Satisfactory	155.73
13	05/11/2015	Satisfactory	Moderately Satisfactory	190.94
14	12/28/2015	Moderately Satisfactory	Moderately Satisfactory	227.48
15	06/02/2016	Moderately Satisfactory	Moderately Satisfactory	239.72
16	11/16/2016	Moderately Satisfactory	Moderately Satisfactory	268.98
17	03/15/2017	Moderately Satisfactory	Moderately Satisfactory	286.67

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
11/16/2012		S	S	100.48	Triggered 2 additional safeguards: OP/BP 4.04 (Nat. Habitats) and OP/BP 4.37 (Safety of Dams) due to the nature of six new subprojects proposed by the Borrower.

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
09/08/2014		S	MS	150.17	Extended closing date 18 months to 09/30/2016; reallocated Loan funds between categories; increased the Bank's percentage financing from 80% to "up to 100%" for Category 1(b) Works under Provincial subprojects.
08/03/2016		MS	MS	254.56	Established March 15, 2017 as closing date to permit completion of works under Provincial and National subprojects, and finalization of key studies; changed percentage of eligible expenditures to "up to 100%" for Categories 2(a), 2(b), 2(c).

I. Disbursement Profile



1. Project Context, Development Objectives and Design

1.1 Context at Appraisal

1.1.1 **Country background:** At the time of appraisal, the Argentine economy had recovered from the severe economic and social crisis of 2001-02. The country had benefited from a very competitive exchange rate and unusually favorable external conditions that fueled economic growth, which resulted in a gross domestic product (GDP) which was nine percent higher in 2009 than a decade earlier. Argentina was seen as having the opportunity for sustainable and equitable socio-economic development. From the Bank's perspective, the key challenges to this macroeconomic scenario were the need to strengthen macroeconomic policy to curb the aggregate imbalances that led to high inflation and a deteriorating fiscal balance. Improving productivity and increasing investment were considered crucial elements of a reform effort.

1.1.2 **Sector background:** Agriculture remained a central player in the national economy, contributing 60 percent of total goods exports, nine percent of GDP, 22 percent of the value-added of the goods sectors, and directly generating 12 percent of national employment. Rural Argentina is divided into five economic and geographic regions: Pampas, Northeast, Northwest, Cuyo and Patagonia. The Pampas is a comparatively homogeneous region of flat, temperate and fertile areas covering most of the provinces of Buenos Aires and Córdoba, and large portions of Santa Fé, La Pampa and Entre Rios. The non-Pampas regions, known as the "Regional Economies" (RE), were to be the focus of project activities. The RE showed diverse agro-ecological conditions, crops and irrigated and rain-fed farming systems, with potential to grow many different products. However, efforts to boost the competitiveness of small and medium-sized producers in the RE faced several constraints: deficient/deteriorated rural infrastructure (irrigation, roads, electricity and information technology); lack of bank lending for on-farm investments and agricultural processing; and, an unfavorable setting for the generation and adoption of agricultural and marketing innovations.

1.1.3 **Government's sector strategy:** PROSAP II had the Government's full support, driven by the gains of the first operation, ongoing demand for investment in agricultural competitiveness activities and the fact of critical, persistent shortcomings affecting the competitive conditions of small and medium-sized producers in the RE. This situation was becoming even more critical as the frontier for high-value crops moved outwards, extending the production of many commodities and products into those regions. Government's strategy for the RE emphasized strengthening competitiveness conditions through: improved management and efficiency of irrigation systems; improved rural roads, electrification and other infrastructure; transfer of technology; establishing product sanitary and quality systems to meet international standards; and, promoting agribusiness. The project was closely aligned with these goals.

1.1.4 **Rationale for Bank assistance:** PROSAP is a national program of the Government of Argentina, comprising an array of programs and projects and funded by multiple donors (World Bank, Inter-American Development Bank (IDB), Latin American Development Bank (known as CAF)) and others. PROSAP I had achieved its complex development objectives, but its influence extended more widely through its innovative and successful fostering of collaboration between the federal and provincial governments on agricultural development, and its status as government's flagship sector investment program and brand-name public policy instrument supporting small and medium-sized producers, primarily in the RE. It was seen as an explicit alternative to export-

focused, entrepreneurial and larger-scale commodity producers of the Humid Pampas.¹ The combination of PROSAP's success, strong institutional performance by the Secretariat for Agriculture, Livestock, Fisheries and Food (SAGPyA), and excellent M&E which gave project achievements visibility, stimulated demand in-country and trust in the Bank. The project contributed to the Bank's higher level objectives by supporting two key pillars of the 2006-08 Argentina Country Assistance Strategy: sustained growth with equity and social inclusion.

1.2 Original Project Development Objectives (PDO) and Key Indicators (as approved)

1.2.1 The PDO was to *increase the productivity and sales volume of small and medium-size producers*. The Key Impact Indicators at the beneficiary level were to projected increases in three areas: labor productivity (increased by 10 percent); land productivity (increased by 12 percent); and, sales volume (increased by 20 percent). See Data Sheet and Section 3.2.

1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification

1.3.1 Neither the PDO nor Key Indicators were revised.

1.4 Main Beneficiaries

1.4.1 The primary intended target population was small and medium-sized producers with some level of capitalization and market access, but unable to consolidate or grow by entering value-added markets or benefiting from the then-recent growth in the agriculture sector due to uneven access to productive services. As the PAD makes clear, the project had no overt poverty objectives; the intended direct beneficiaries were not producers on the lowest socio-economic rung. Some 68,000 small and medium-sized producers were expected to benefit, about 34 percent of their total number in the RE. Other beneficiaries would include the central and provincial project implementation units.

1.5 Original Components (as approved)

1.5.1 PROSAP II comprised three components:

Component 1: Support to Pre-investment Activities (estimated total cost US\$11.0 million) financed: (i) institutional development activities and preparation of Provincial Agricultural Development Strategies (PADS)² by candidate provinces; (ii) identification and preparation of subproject profiles and following selection by the Investment Programming Committee (IPC), full subproject proposals; (iii) pilot Regional Development Initiatives (RDI) to increase the competitiveness of selected micro-regions; and (iv) pilot public-private innovation networks (IN, later re-named Innovation Technology Investments, ITI) to improve producers' competitiveness and market access through adaptive research in improved farming practices.

Component 2: Investment Subprojects for Competitiveness (estimated total cost US\$392.7 million) financed agricultural competitiveness subprojects and/or agricultural productive investment subprojects with IPC-approved profiles (based on consistency with project objectives

¹ See Implementation Completion and Results Report (ICR), Report No. 1591, November 15, 2010.

² Later re-named as EPSA: *Estratégias Provinciales de Servicios de Agricultura*

and provincial priorities expressed in the PADS, and with detailed preparation reports cleared by the Technical Evaluation Committee (TEC)). Subproject types supported included: (i) public infrastructure and services (priority irrigation infrastructure rehabilitation) with complementary on- and off-farm investments;³ (ii) institutional development; and (iii) pilot instruments (e.g., RDI and ITI). An estimated 35 provincial and national public infrastructure investments were to be financed.

Component 3: Project Management (estimated total cost US\$19.4 million) financed project coordination and management: monitoring and evaluation (M&E); strengthening of the PIU especially in regard to adopting the project's new conceptual orientation; and, preparation of special studies by the PIU (i.e., policy development and the experience of operation and maintenance (O&M) under PROSAP I). An institutional study in the first year would identify measures to further mainstream PROSAP II within SAGPyA.

1.6 Revised Components

1.6.1 The components did not change. However, the project was characterized from the start as a framework operation with built-in flexibility, under which activities identified for financing at appraisal could potentially be financed by other donors, and new activities could be added.

1.7 Other significant changes

1.7.1 There were three Level two restructurings:

- November 16, 2012: This restructuring was necessitated by the triggering of two additional safeguards - OP/BP 4.04 Natural Habitats and OP/BP 4.37 Safety of Dams - due to proposed subprojects which: (i) intervened in areas connected to natural and critical habitats; and (ii) entailed irrigation systems connected to existing dams. See Section 2.4.
- September 8, 2014: This restructuring: (i) extended the closing date by 18 months to September 30, 2016; (ii) reallocated loan funds between categories; and (iii) increased the Bank's percentage financing from 80 percent to "up to 100 percent" for Category 1(b) Works under Provincial Subprojects.
- August 3, 2016: This restructuring: (i) established March 15, 2017 as the closing date, an extension of 5.5 months to permit the conclusion of remaining works under provincial and national subprojects, and the finalization of key studies; (ii) reallocated loan proceeds among categories; and (iii) changed the percentage of eligible expenditures under category 2(a), 2(b) and 2(c) to "up to 100 percent".

1.7.2 It is noted that changes to the Results Framework Intermediate Outcome Indicators in March 2016 (modification/clarification, elimination in some cases, and revised targets) were made informally through the Aide Memoire, not formally via a restructuring. See Section 2.3.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

2.1.1 **Design and technical strategy:** PROSAP II featured a framework of intervention areas, an enhanced and more comprehensive approach, and new instruments. It was seen as a more flexible operation providing "locally-tailored" solutions. While it was intended that the bulk of

³ *Aportes No-Reembolsables* (ANR) or Matching Grants, were piloted in the final stages of PROSAP I.

project resources would finance public investments in rural infrastructure and ancillary producer services (similar to PROSAP I), the project also financed complementary types of smaller investments using a range of instruments: (i) non-refundable matching grants (ANR, piloted under PROSAP I) with a 40/60 grant portion/beneficiary contribution (own and/or borrowed funds), intended to drive private sector investment on-farm (individuals) and off-farm (groups) within the command areas/economic and technical network of the provincial subprojects;⁴ (ii) institutional development investments, both central and provincial; and, (iii) pilot instruments: Regional Development Initiatives (RDI) in territories (inter-provincial) with comparative production advantages; and, Innovation Transfer Initiatives (ITI), supporting public/private adaptive research in the productive science/technology sectors. Technical assistance and institutional capacity building were a priority, supporting the EPSA and subproject formulation, incorporated as “soft” components in all the provincial subprojects, and available to beneficiaries of the ANR and pilots.

2.1.2 While project design was technically sound and strategically coherent, aspects of the background analysis and assumptions were insufficiently developed or needed clarification:

Subproject identification, prioritization and selection were subject to well-defined criteria but the process did not factor in certain realities including the political economy of national-provincial relationships and the superior efficiency of certain provinces. Criteria for provincial access were challenging with candidate provinces having inter alia, to develop a Provincial Agricultural Services Strategy (Spanish acronym EPSA).⁵ The quality/utility of the 19 EPSA were uneven and in many cases, the connection between the EPSA diagnosis and the subproject prioritized was insufficiently developed. UCAR’s comments describe the EPSA as a “multi-variable analysis for investment prioritization.” EPSAs were an instrument by which UCAR channeled donor/other funding for agricultural investments, to the provinces.⁶

The project favored large subprojects and would have benefited from a more balanced approach. The weight was primarily on irrigated agriculture – as foreshadowed in the PAD - which, prima facie, was rational provincial policy given pressing concerns about competitiveness, climate risk, systems decay or obsolescence, and improving the productivity of the RE. UCAR, in its comments (see Annex 7) asserts that the preponderance of large irrigation subprojects was due to the general state of obsolescence of many systems and provincial demands for their rehabilitation. UCAR also notes that the final decision to accept or reject a proposed subproject rested with the Bank. However, project design might have been improved by reflecting the complex equation of sector strategic needs and producers’ constraints at the farm level. The operation mixed different scales and levels of interventions which were not well-conceptualized or explicitly linked in the PAD: the project

⁴ The ANR could innovate, add value, intensify or diversify production. The expected link to the irrigation subprojects (PROSAP I and II) was close. Beneficiaries had to finance the full investment then the 40 percent grant portion would be reimbursed. This created a difficulty for ANRs approved near the closing date.

⁵ UCAR’s letter (September 5, 2017, see Annex 7) states that all subprojects were selected through open calls for proposals; were based on provincial demand; went through a complex eligibility process; and, were aligned to project objectives. Specific conditions were: adoption of an EPSA; institutional capacity to participate; provincial laws authorizing indebtedness for PROSAP II and specifying fiscal responsibility to sign the Subsidiary Loan Agreement; Federal Secretariat of Finance authorization to participate; and, a signed Subproject Agreement.

⁶ PROSAP was also financed by the Inter-American Development Bank (IDB) and other donors, and in parallel, not jointly, i.e., the Bank project was a piece of a larger endeavor. UCAR data (2016) show 129 EPSA-based provincial subprojects totaling over US\$2.2 billion awaiting financing, ranging from US\$1.0 million to US\$300 million with mostly modest numbers of direct beneficiaries.

became a hybrid private sector development/regional development operation, and this in turn, made the Theory of Change and Results Framework challenging to design (see 2.3).

Project analytics and design needed a more nuanced understanding of the legal, political and social determinants of organized management of water infrastructure at the provincial level. The direct beneficiaries of the hydraulic works would be organized in civil associations/consortia and receive training, TA and machinery in a fairly standardized format/package. However, the implications of divergent provincial water laws were not taken into account.⁷ For example, water is solely under provincial jurisdiction in Argentina: in many provinces, water management cannot be delegated to civil associations and more flexible, alternative arrangements were needed. Also, the distinction was not made between the provision of water and its improved use, i.e., system conduction capacity was/is not synonymous with improved use. Such complex relationships, laws and systems needed a clearer focus in project design.

The project was multi-sector, but there was no provision in the PAD for involving non-agricultural ministries in the consultation, decision-making or implementation process, i.e., those responsible for roads and electrification. There is no evidence that other ministries had any role in assessing the location or costs of planned works, and they were not included in the institutional arrangements for project execution through partnership and/or consultative mechanisms, for example. Yet, electricity investments under PROSAP were larger than total Bank financing for the Argentine energy sector.

Despite the message in the PAD, the project did not finance significant facilitation of commercial links between the supply and demand sides based on a value-chain analysis. Such linkages were to be supported just at a small scale, micro-regional level in the case of the RDI, and would feed into pre-existing, loose chains. The PAD's "linkages between production and markets" were mainly through: electrification and rural roads, i.e., the physical facilitation of the production and marketing process; through the priority selection of the ITI; and, during implementation, through new activities to boost SENASA and Argentina's TSE-free status. Further, there was no clear, unifying principle linking/integrating the diverse investment instruments. Even the intended, and potentially very productive public infrastructure/ANR nexus, was not well-conceived or explained.

The target population was to be small and medium-size producers in the RE but the PAD did not characterize them by region, productive typology, assets or other variables. Existing Argentine poverty and household surveys did not cover rural areas. The project thus lacked clear definition of its target population. Further, the bulk of the funding directly benefited a modest number of producers (Table 6, Annex 2): a high proportion of project beneficiaries would actually come from the smaller instruments/pilots whose combined cost was a fraction of the large subprojects.⁸ Project design did not adequately acknowledge/analyze the cost-benefit or benefit distribution implications.

2.1.3 Lessons of earlier operations: PROSAP II was prepared well in advance of the closing of PROSAP I but by that time the emerging lessons were clear, especially those stemming from disparate capacity. Project design responded by: (i) ensuring that participating provinces' technical, institutional and financial capacity gaps were addressed using tailored supply and demand-driven

⁷ See UCAR/Pinto and Andino, Evaluación Fortalecimiento a Consorcios de Usuarios, March 2017. UCAR rebuts this assertion (see Annex 7), stating that the arrangements for organized water management were similar to those under PROSAP I, a project which the Bank rated overall as Satisfactory.

⁸ The Fire Prevention subproject in Jujuy Province alone contributed over 34,000 beneficiaries, 74 percent of total beneficiaries of the 21 provincial subprojects, but the origins/substance of this estimate are not known.

approaches (although standardization rapidly set in because it simplified planning and delivery); (ii) providing structured TA enabling private sector actors including water user groups/consortia to exploit improved infrastructure and services, and expanding the matching grant mechanism (ANR) piloted under PROSAP I; and, (iii) bringing weaker, less well-endowed provinces into PROSAP by supporting their EPSA preparation and subsequent subproject formulation/execution. However, the lesson that complex, difficult operations with long lead times require an extended horizon was not heeded. The PROSAP II engagement period was standard and ultimately needed extensions totaling almost two years. Project implementation showed a similar trajectory to its predecessor in its early years, with delays of several years before works started.

2.1.4 Institutional arrangements: Responsibility for project implementation initially rested with SAGPyA (within the Ministry of Economy and Production) but it was transferred in 2010 to the newly-established Unit for Rural Change (UCAR) within the Ministry of Agriculture, Livestock and Fisheries (MAGyP). This change had major implications for the project, which rapidly became just one operation in a much larger portfolio. A central project Unit for Execution and Coordination (UEC) was responsible for the Bank loan. The UEC interacted formally with the provinces through Provincial Execution Units (UEP) - responsible for subproject coordination and supervision - Financial Administration Units and Subproject Implementation Units (SIU). The ANR beneficiaries (individual and group) would implement their own investments with project assistance. A category of “national” agricultural competitiveness subprojects was to be implemented variously by the relevant under-secretariat, decentralized agencies, or the PROSAP UEC. Separate arrangements again, governed the pilot activities.⁹ The institutional arrangements did not include a mechanism for bringing other sector ministries to the table, e.g., roads and energy.

2.1.5 Risk mitigation: At appraisal, Overall Project Risk was assessed as Moderate. The risk analysis was sound and the mitigation measures rated fairly based on the Bank’s knowledge of and experience under PROSAP I and with SAGPyA. However, provincial capacity was not mentioned as a risk except in the context of procurement. Most of the participating provinces had not worked with the Bank and had to prepare and execute costly, large-scale public infrastructure with complex engineering, contracting, administration and supervision. While the project acknowledged this reality by financing provincial institutional development subprojects and TA, the actual situation called for province-specific mitigation strategies/plans addressing the wider legal and administrative elements governing provincial performance, which was beyond the scope of this project. The risks associated with operational sequencing, the adequacy of the engagement period and thus the likelihood that impact would be evident by closing, given the types of investments and innovative instruments, were not considered.

2.1.6 Adequacy of participatory processes: The SAGPyA conducted a systematic Social Assessment in the RE as part of project preparation, including evaluations of PROSAP I and analysis of the social context, diversity and gender, institutions in project areas, participation frameworks and processes, and social risks. Further, given its expected positive social impacts, the project was to develop indicators for key social outcomes: social participation and inclusion, capacity-building and empowerment, security and equity for indigenous and other vulnerable groups, and public consultation/participation. This was not done.

2.2 Implementation

⁹ RDI would be implemented by Development Consortia, and the ITI by the Innovation Networks, ad hoc institutions that congregated directly-involved actors.

2.2.1 The following factors affected the pace and quality of project implementation:

Provincial eligibility requirements were demanding, and the subprojects were complex. Subproject approval was just an initial step. Significant time was needed for the signature of contracts and agreements, presentation of guarantees, and final designs (executive projects). The public infrastructure subprojects quite commonly needed design adjustments or additional works, resolution of land disputes, and/or the incorporation of additional activities/features. Irrigation works had inherent technical and operational complexities not present in rural roads or electrification works for example, and represented 45 percent of the portfolio.

Participating provincial entities/execution units experienced frequent rotation/loss of professional personnel. This eroded technical and operational skills and knowledge, such assets often the direct result of project institution-building activities. It also created an unstable and fluid relationship between affected provinces and the UCAR/UEC, which made an immense effort to facilitate this relationship in the interests of the project. Despite the strong performance of the institutional strengthening subprojects (Component 1), provincial administrations needed more systematic, continuous project support. Similarly, rotation on the Bank team was frequent: the project had four Bank Task Team Leaders, six Procurement Specialists and at least five Environmental Specialists from preparation to closing.

Retroactive incorporation of new safeguards elements in subprojects was disruptive. The need to retrofit new safeguards requirements to ensure compliance with the Indigenous Peoples and Involuntary Resettlement policies (including Affected Assets Plans) seriously delayed subprojects, especially those with executive designs, established budgets and ready to implement. Safeguards requirements coupled with weak institutional capacity affected subproject execution times and/or created unforeseen operational costs. This also complicated the preparation of ANR and the pilot RDI/IDEMI, adding in the latter case to the disproportionate effort involved in setting up very small investments. More positively, UCAR came to routinely incorporate environmental and social perspectives in its investments, contracted safeguards professionals and fostered provincial safeguards capacity-building.

Institutional strengthening and technical assistance services while comprehensive, had uneven effects. The soft activities embedded in the provincial subprojects, while executed comprehensively, had uneven results, caused delays and had legal issues. The asymmetric capacity of water user organizations and the regulations/involvement of water resource and irrigation institutions, were partly responsible.¹⁰ Also, few agricultural extension entities were able to reliably deliver quality TA services.¹¹ Agreements with national and provincial organizations to deliver TA/training had disparate results. Lack of synchrony between TA/training and subproject completion also meant beneficiaries were not ready to exploit the improvement. Heterogeneous provincial laws impeded the development of effective/transparent cost recovery mechanisms for some irrigation systems. The Bank sought/insisted on minimum criteria for water users' sustainable operation of systems.¹²

Provincial "rules of the game" impeded progress. The administrative and legal systems of the national and provincial governments and local jurisdictions, importantly procurement management

¹⁰ Evaluación Fortalecimiento a Consorcios de Usuarios, Informe Final, UCAR/Pinto and Andino, 2017

¹¹ Evaluación Transversal de los Componentes de Asistencia Técnica, UCAR/Belmonte and Martin, 2017

¹² This included: (i) sufficient autonomy to make decisions, elect leaders, and to define/assign a cost recovery arrangement; (ii) members with the legal status to receive and manage equipment; and, (iii) mechanisms allowing participatory decision-making (assemblies, consortia).

and the payment of provincial and local counterpart, were especially challenging and affected project implementation efficiency. UCAR's transfer of funds to the Provinces via a special bank account increased complexity, required extra coordination and lowered efficiency, when submission of a payment order to UCAR would have been simpler, and clarified who was responsible for managing the funds. UCAR asserts that such solution was not permissible under federal and provincial law (see footnote 17). Further, restrictions on imports impeded the timely flow of procurement, especially for subprojects requiring imported inputs/equipment, and in some cases, bidding processes were abandoned for lack of suppliers.

Distortions in the INDEC Index in an inflationary context affected price adjustments for works, creating serious difficulties with contractors and slowing subproject execution. Beneficiaries and technicians complained of excessive time between subproject formulation/approval and implementation, e.g., provincial changes rendered a project's design/formulation outdated, eroding producers' initial enthusiasm, commitment and willingness to remain involved in subsequent stages of the investment.

Climate risk awareness increasingly gained traction in and beyond the project. Climatic events seriously damaged PROSAP II subprojects in Cordoba, Catamarca and Salta provinces, prompting UCAR to increasingly and systematically direct efforts to inject climate risk provisions/projections into all aspects of subproject formulation. While the PAD did not refer explicitly to climate change, government's strategic interest in irrigated agriculture reflected in its dominant place in project design played to the emerging climate change narrative in Argentina. Climate risk carried increasing weight in UCAR's programs and activities, resulting in its national accreditation to the Adaptation Fund and Green Climate Fund, positioning UCAR prominently in the national dialogue.

Inter-provincial, cross-border investment instruments – the RDI - proved challenging to establish and operationalize. Evaluation shows that RDI-type investments need a complex institutional framework/structure to manage the diverse provincial laws and administrations associated with straddling several provinces, and when the investment takes place, clear lines of responsibility and leadership. This prompted the mid-stream shift to the concept of micro-regions within a single province and within a single district or zone (RDI became IDEMI) but it did not alleviate their institutional complexity, i.e., the energy and institutional apparatus needed for very small-scale activities. The experience was informative, but whether the model merits scale-up needs further analysis. See Annex 2.

Flexible approaches to ANR selection and prioritization extended their benefits. Selection and prioritization of the ANR were governed by UCAR guidelines, but it is unclear whether these were followed strictly or whether many ANR were functionally - as opposed to notionally or geographically - linked to a specific infrastructure or program.¹³ Over time, the tightly-integrated connection envisaged at appraisal gave way to a more flexible approach. In practice, linkages emerged organically, including approving ANRs associated with certain ITI adaptive innovations ready for field application, and with RDI and IDEMI investments. Annexes 2 (paras 2.3-2.9 and Table 4) and 5.

2.2.2 Project Restructuring: The three Level Two restructurings are discussed in Section 1.7.

¹³ The PAD (p. 56) referred to a single "subproject typology" with the ANR "within the public irrigation and drainage subprojects", but the operational details and flow-through to the producer, were/remain unclear.

2.2.3 Mid-term Review: The Mid-term Review (MTR) of November 2012 assessed the project as satisfactory overall in terms of implementation progress (IP) and likelihood of achieving its development objectives (DO). For DO, given the limited, preliminary indications of achievement, under-developed state of the M&E system and lags in subproject completion, these ratings seem unrealistic. At the 40-month mark of a 72-month operation, disbursement was 33 percent but the loan was almost fully-committed. Considering the number of large, complex public works either under implementation or analysis, disbursement was rated satisfactory. UCAR's MTR report provided a good foundation for further progress and for preparing a possible PROSAP III. Several Intermediate Outcome Indicators were slated for modification through formal restructuring (Aide Memoire Annex 3), and it was agreed that each/all of the public infrastructure subprojects would be evaluated formally. Training of and technical assistance (TA) for producers were making good progress but the Bank urged UCAR to ensure synchronization of TA and institutional strengthening services delivery with the finalization of the physical works to maximize farmers' ability to exploit the improved infrastructure, much of which was irrigation. UCAR was also urged to widely disseminate information on the ANR instrument. There was also agreement to increase the ceiling of the grant portion of the ANR per producer, given inflation and other factors/realities. Government initiated discussion of a third PROSAP with indicative financing of US\$500 million. UCAR's follow-up on MTR recommendations was satisfactory, but the RF was not restructured. (See footnote 15).

2.2.4 Project at risk status: The project was categorized as a potential problem project but it was never declared at risk.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

2.3.1 Design: The PAD (Annex 3) detailed an ambitious and comprehensive M&E agenda to be managed by the unit established under PROSAP I, which had performed exceptionally well. This included a physical and financial implementation monitoring system, and an expanded, web-based MIS to track subproject implementation and ensure that baseline and follow-up data for key performance indicators were collected and organized. Given the increasing size of the PROSAP II portfolio, the cornerstone of the project's impact evaluation was to be an Independent Evaluation System (IES) complementing the PIU's (later UEC) M&E system, and reporting directly to SAGPyA.¹⁴

2.3.2 PDO and Results Framework: The PDO was compact and straightforward: "*increase the productivity and sales volume of small and medium-size producers*" with brief additional language in the PAD explaining the project's expected long-term contributions to agricultural productivity, competitiveness and market access. The PDO Indicators were sound and important Intermediate Outcome Indicators (see 2.3.3) were included. However, targets were modest for the size of the investment, and especially in the case of irrigation improvement which would typically aim higher. Basic flaws in the RF included its inadequate coverage, both physical and thematic, and, in some cases, the activities/instruments designed to be captured by an important indicator were too small to have significant impact. There were no indicators for gender or indigenous participation. The RF needed to reflect what was actually financed, measuring not only the results of irrigation works (e.g., canal conduction efficiency), but also improved global efficiency of the systems rehabilitated resulting from the institutional strengthening investments. This meant going beyond water conduction to water distribution and application on-farm - a whole systems

¹⁴ The IES was to assess impact, provide feedback to provincial stakeholders, improve subproject investment planning and execution, and support capacity-building with an experienced team of external technical staff.

measurement. Given the large size of individual provincial subprojects, each one needed its own theory of change and it would have been reasonable to expect that each would have causal impact on “master” indicators in the RF; yet large, costly subprojects were approved whose causal sequence and results stories did not fit the RF as designed (especially so for some of the national subprojects).

2.3.3 M&E implementation: UCAR established specific systems for the project’s financial and operational monitoring, introduced adjustments throughout the implementation period and prepared useful studies and progress reports. However, M&E experienced a protracted period of poor management - responsibility for which must be shared by UCAR and the Bank - followed by a strong recovery phase in the final year to ensure that the impact and outcomes of project investments could be/were measured. Three factors explain this situation: (i) ***UCAR did not establish the planned IES.*** The Borrower Completion Report (BCR/UCAR, 2017) attributes this to: the implied need for a quasi-permanent team of professionals operating in parallel to the UCAR M&E Unit, which UCAR did not favor; the high cost of field surveys covering the dispersed beneficiary population and respective control groups for all subprojects; and, the lack of dedicated resources to cover the IES’ operational costs. UCAR preferred to build the IES concept into the functions of the M&E Unit by contracting specialist firms/consultants; (ii) ***Bank missions focused heavily on subproject implementation, not on M&E.*** Early, unperceived errors in baseline development (within pre-investment feasibility studies using un-standardized methodologies unsuitable for formal evaluation) and UCAR’s inadequate data monitoring and updating – only limited, preliminary data was available to the MTR - impeded the project’s ability to demonstrate achievement. In any case, there was little to measure until the later stages. The subprojects took several years to launch and faced multiple implementation challenges. Many were completed late, and lacked the maturity to show or causally generate, meaningful results; and (iii) ***Demands on the UCAR M&E Unit expanded due to UCAR’s widening donor universe and portfolio of projects.*** PROSAP I left a strong system in place but it unraveled. The M&E Unit became an aggregator of financial institutions’ demands for information, and for the multiple participating provinces whose data collection, storage and transmission capacity were uneven. This burdensome situation needed early attention from the Bank and UCAR. When the Bank finally focused attention, the methodological options for evaluation had narrowed, requiring intense effort to ensure sound evaluation in the time remaining.

2.3.4 Evaluation plan: The Bank/UCAR agreed on an evaluation strategy and methodology based on what was feasible in the time remaining, and the Results Framework was adjusted accordingly.¹⁵ Most subprojects had initial data from surveys, farm models or secondary data which permitted characterization of the target population and quantification of variables. This data was not however, generated with the explicit objective of formal evaluation with causal attribution. The mixed strategy adopted included: (i) a compilation/synthesis of project activities and existing, partial evaluations; and, (ii) preparation of case study/impact evaluations (by subproject) with causal attribution using a difference in difference (DID) analysis. Unresolved data and time-related issues resulted in the PDO Indicator “*volume of sales*” being substituted by a proxy equivalent

¹⁵ Restructuring of the RF was discussed during the MTR in 2012 but no action was taken. In March 2016, the Bank again agreed with UCAR on modifications to the RF (including targets) and asked that UCAR ensure their inclusion in the Borrower’s formal request to the Bank for the third restructuring. However, the Borrower’s request received in June 2016 did not include the RF and there was insufficient time left to revive this issue. The Bank team proceeded using an informal set of revisions. See also Footnote 20.

“*volume of production*” since: (i) the beneficiary profile showed target farmers in the subproject zones produced a limited number of crops exclusively for sale; and, (ii) production for household consumption was insignificant in all the subprojects financed/sampled. See Section 3.2.

2.3.5 Utilization: The UCAR M&E Unit customarily disseminated draft studies to the Bank and within UCAR at the central and provincial levels, and invited direct, critical feedback. All finalized documents were uploaded to the UCAR website and transmitted through its newsletter. Depending on the relevance/importance of a specific evaluation, regional events/seminars discussed findings and/or, reports were published. Even so, UCAR’s basic monitoring data aligned to the RF were incomplete and unreliable until quite late in the project and not of significant use to project supervision. More recently, based on the agreed evaluation plan, UCAR delivered a series of satisfactory evaluation and economic/financial studies used as inputs to the ICR. The Bank reviewed UCAR’s draft BCR and provided comments and UCAR sent a final version in June 2017.

2.4 Safeguard and Fiduciary Compliance

2.4.1 Safeguards performance and compliance: The project was rated Category B and triggered OP/BP 4.01 Environmental Assessment, OP 4.09 Pest Management, OP/BP 4.36 Forests, OP/BP 4.04 Natural Habitats, OP/BP 4.37, Safety of Dams, OP/BP 4.12 Involuntary Resettlement and OP/BP 4.10 Indigenous Peoples. The Bank’s monitoring of environmental safeguards was continuous and systematic from 2011 to closing. The project prepared/developed all required environmental and social analyses, management frameworks and plans. Each subproject needed its own environmental and social evaluation which was then built into all aspects of subproject formulation including technical assistance. UCAR’s central and provincial Preparation Units were trained to prepare these analyses. At closing, the Bank rated performance under/compliance with triggered environmental safeguards as satisfactory and with triggered social safeguards as moderately satisfactory. The following discussion focuses on two environmental safeguards – Natural Habitats and Safety of Dams – triggered by a 2012 restructuring in response to six proposed, new subprojects, and, separately, on the social safeguards experience. See Annex 2, Appendix 1.

2.4.2 *Natural Habitats:* First, the proposed Livestock and Commercial Development subproject (Neuquén) was assessed likely to negatively affect highland wetlands (*mallines*), the main source of pasture for cattle ranching. Measures introduced to mitigate negative impacts included the exclusive use of native species, water resources management and fencing to manage grazing land. The National Institute of Agro-livestock Technology (INTA) prepared an inventory of and mapped, the *mallines*’ ecosystems in four pilot areas in six eco-regions, on the basis of which reports and guidelines were prepared and disseminated. This was a successful, innovative exercise and the first of its kind in Argentina. Second, three subprojects in San Juan (Irrigation Area Canal Cespedes-Sarmiento; Rural Roads for Agricultural Development; and, Rural Electrification for Livestock Development) were identified in/around a critical Ramsar site in the south: Lagunas de Huanacache, Desaguadero and Bebedero, a site jointly administered/protected by San Juan, Mendoza and San Luis provinces. The Provincial Government’s action plan fostered greater awareness and participation of users of the Ramsar site; improved the access of institutional and social actors to water data; and, trained users in agricultural best practices.

2.4.3 *Safety of Dams:* Two proposed subprojects (Modernization of Irrigation Systems – San Patricio del Chanar related to the El Chanar Dam in Neuquén Province, and Reconstruction and Improvement of Irrigation System Los Altos in Catamarca, associated with the Sumampa Dam reservoir) were determined to need strengthening of dam safety mechanisms, triggering OP/BP 4.37. The Argentine Dam Safety National Authority (*Organismo Regulador de Seguridad de Represas*, ORSEP) provided an opinion on the dams’ condition, functionality, risks and needs.

MAGyP's action plan ensured that ORSEP recommendations were implemented. In the case of Sumampa, measures to improve dam safety procedures, maintenance and environmental conservation were included in the Environmental Impact Assessment (EIA) and EMP, and ORSEP signed a cooperation agreement with the Province of Catamarca for regular supervision of dam safety. The related action plan resulted in hydrological and sedimentation models for the sustainable long-term management of the dam and the irrigation system, and improved environmental conditions, O&M and emergency planning. ORSEP concluded, in the case of the El Chanar Dam, that it had adequate safety, maintenance and emergency plans consistent with the requirements of OP/BP 4.37 and that no other activities or studies were needed. The irrigation works proceeded as planned.

2.4.4 Social safeguards: The Bank's monitoring of social safeguards was continuous and systematic from 2011 to closing. UCAR's Environmental and Social Unit and its provincial teams made a valuable contribution to the implementation and monitoring of social safeguards plans, and increased the number of professionals dedicated to social aspects of the project. As discussed in Section 2.2, difficulties arose when subprojects ready for implementation required the retroactive application of new Bank social safeguards requirements introduced in 2012. Most provincial subprojects were delayed until the corresponding involuntary resettlement and indigenous peoples' plans could be developed and approved. At the time of ICR finalization, seven provinces were still implementing 340 unfinished Affected Assets Plans (AAP) under OP 4.12, based on action plans agreed with the Bank, resulting in OP 4.12 performance being rated moderately unsatisfactory. Performance under OP 4.10 was satisfactory. Overall, social safeguards performance and compliance was moderately satisfactory.

2.4.5 Financial Management (FM): The Bank conducted at least 16 FM supervision missions - either stand-alone or as part of regular project supervision - an average of twice yearly after project effectiveness due to the substantial recurrent risk. The overall FM performance rating fluctuated, reflecting the substantial risk for flow of funds and/or capacity issues, both central and provincial. Funds flowed slowly between the donor, the project, beneficiaries and participating provincial entities, delayed, among other reasons, by the requirement that funds for payments be transferred by UCAR to provincial bank accounts. UCAR states in its comments however, (Annex 7) that under the Argentine federal system, decentralized payments must adhere to national and provincial regulations, thus explaining the system used. Even so, as tested occasionally under the project, direct payments to providers and contractors can be carried out if the Province agrees. The temporary use of Bank funds to finance the local counterpart share of expenditures, an issue detected in mid-2010 but persisting until 2013, garnered FM a rating of moderately unsatisfactory. The Borrower was required by the Bank to deposit in the project operating account its local counterpart share prior to the payment of co-financing expenses, and the Loan Agreement was amended to permit the Bank's financing of certain categories of expenditure at 100 percent. A sub-national level supervision of four provinces in 2014 found no major issues and upgraded the FM rating to moderately satisfactory (MS). The Bank urged flexibility in the use of funds to avoid a quasi-permanent disconnect with the *pari passu* in the provincial subprojects, and encouraged provinces to accelerate their submission of expenditures to avoid the immobilization of Bank resources. To alleviate this, the Bank approved a second increase to 100 percent for eligible expenditures under Category 1(b) works for provincial subprojects but the problem persisted, until finally resolved by UCAR which put an immense and consistent effort into following up with the provinces. The final FM performance rating was MS.

2.4.6 Fiduciary compliance: Annual audits were delivered on time and found acceptable to the Bank. Audit opinions over the course of the project were consistently Qualified Exception, and the Bank worked with the UCAR/UEC to resolve the issues raised, none of which the Bank rated as

high risk. The Bank reviewed the 2016 audit at the time of ICR finalization. Auditors presented qualified opinions on the Financial Statements, Designated Account and SOE Statement due to their inability to access records of disbursements under the PROSAP-FAO¹⁶ agreement totaling USD6.3 million; the Bank review noted that qualified opinions were also issued in previous years for the same situation. Some internal control weaknesses were also documented. The Bank noted that none of the auditors' qualifications raised accountability issues. UCAR was asked to inform the Bank within 30 days of measures to resolve the issues raised¹⁷. The final audit will cover January 1, 2017 to September 14, 2017 (Application Deadline).

2.4.7 Procurement: The procurement learning curve was steep, both at the central and provincial levels. Issues indicating weak internal controls arose early on, compounded by uneven monitoring and updating of the Procurement Plan to reflect progress. This was partly due to the UCAR Procurement Unit not being fully up to speed on the newly-installed Procurement Plan Execution System. A Bank Independent Procurement Review in 2012 found weaknesses in the management, consolidation and systematization of information related to execution of the Procurement Plan, especially in consultant management. Repeated turnover of the Bank procurement specialist with resulting differences of approach, focus, and relationship with UCAR, and slow Bank responses on no objections, were not helpful. The formal involvement of international entities such as IICA (International Institute for Cooperation in Agriculture), OEI (Organization of Spanish American States) and the local foundation ArgenINTA, as contract managers to help speed up the hiring of individual consultants was repeatedly noted in Bank post-reviews. The Bank agreed with UCAR on several action plans over time and performance improved substantially due to the collaborative resolution of issues. The Bank's final rating for procurement was MS.

2.4.8 Governance: During the implementation of PROSAP II, the Task Team's due diligence (through a technical audit) revealed possible irregularities in the management of one contract, involving possible fraudulent progress certifications in the provinces. The Team reported these concerns immediately to the Institutional Vice-Presidency of the Bank. At the same time, the Team itself took special operational measures to address inadequate field supervision by the UEC in specific provinces, including declaring ineligible over-payments for works not executed, and taking measures to ensure completion of works even after the closing date. UCAR intervened actively in helping to identify possible irregularities and in resolving them. However, UCAR states in its comments (Annex 7) that the technical audit in question was of poor quality and conducted by a

¹⁶ Prior to the signing of both agreements with FAO, PROSAP informed the World Bank in its no-objection request (PROSAP note 1459 dated 4/20/2010 and PROSAP note 3294 dated 8/13/2010), on the limitation to scope of the audit of AGN Financial Statements regarding the implementation of these agreements. Similarly, the World Bank issued the respective no objection dated 4/11/2010.

¹⁷ UCAR informed the Bank, through note no. 4256-97 dated October 4, the measures implemented to address internal control observations that were reported by the auditors in their Audit Report as of December 31, 2016, for the Second Provincial Agricultural Services Program (PROSAP II). The Bank acknowledged the clarifications that have been presented, on which there are not no further comments.

technical specialist inexperienced in works, that the Bank might have provided greater support to UCAR to improve its procurement management, and that resolution of this issue was costly and time-consuming. Among the lessons learned, the Task Team has shared with other staff the importance of addressing the division of responsibilities in the project cycle among provincial and federal units, simplifying the system for decentralized payments and including controls in financial management software.

2.4.9 Project costs and financing: At closing, total estimated project cost was US\$420.70 million, or 99.24 percent of appraisal. Costs varied from appraisal estimates: Component 1 was 134.5 percent, Component 2 was 94.7 percent, and the cost of Project Management was 171.5 percent, in part due to the 23-month extension and the extensive use of consultants. The Borrower's contribution was US\$86.60 million, 151.1 percent of appraisal, while the beneficiary cost-share (ANR) was 51 percent, in part because the ANR implemented were smaller than anticipated. UCAR data show that PROSAP's total cost from 2009 to 2017, and from all UCAR's PROSAP financing sources including the Bank loan, was about US\$1.877 billion, of which the Bank loan-funded activities represented 16 percent. The UEC's reported management costs in this same period were about five percent of the total cost of the Bank-supported project, but it was not possible to relate this to specific PROSAP II activities or to determine efficiency.

2.5 Post-completion Operation/Next Phase

2.5.1 Post-completion operation: The transition to post-completion operations including O&M is described in the formal subproject agreements between the provincial entities and UCAR but there were no additional provisions made at closing for the operational phase of completed subprojects, whose status at project completion is summarized in Table 7, Annex 2. Section 4.0 discusses O&M practices, prospects and capacity as a function of sustainability. Importantly, the Bank requested and obtained assurances from the Borrower that subprojects unfinished at closing would be completed by governments – national and provincial - using own funds. For unfinished ANR investments/works, the beneficiaries are solely responsible. UCAR informed the Bank in its comments (Annex 7) that this applied to just four percent of ANR with investment plans initiated.

2.5.2 Operation and maintenance arrangements: See section 4.0.

2.5.3 Institutional capacity: Sustaining institutional capacity developed by the project will depend on many factors beyond the Bank's control. The project financed distinct activities for building institutional capacity at the national, provincial and local levels - technical assistance for this purpose was a constant focus throughout. The impact of these efforts can be gauged from studies summarized in Annexes 2 and 5.¹⁸ It is clear that in spite of significant technical assistance and training of provincial institutions – most of which was intended to support specifically their subproject formulation and implementation activities/responsibilities - little enduring/long-term change was effected. This is mainly because the project did not address, and realistically could not be expected to address, fundamental aspects of provincial laws and administrative systems, as well as the complex incentives driving institutional growth and change. Even so, project studies documented many positive findings.

¹⁸ Evaluación Transversal do los Componentes de Asistencia Tecnica, UCAR/Belmonte and Martin, 2017; and, Evaluación Fortalecimiento a Consorcios de Usuarios, UCAR/Pinto and Andino, March 2017.

2.5.4 **Follow-up operation:** The Bank decided, in agreement with the Ministry of Finance, not to finance a third phase of PROSAP and in any case, UCAR had already secured financing from the Inter-American Development Bank (IDB) and CAF for new PROSAP operations. A new, Bank-financed agricultural operation was under preparation at the time of ICR finalization. The Integrated Management of Agricultural Risk - P162316 – estimated US\$150.0 million Bank financing, would strengthen the resilience of the agro-industrial sector to climatic and market risk, focusing on the most vulnerable producers. Proposed components: (i) Strengthening Agro-climatic Information Systems (improved capacity and inter-operability of agro-climatic and price information systems); (ii) Agriculture Risk Mitigation Investments (inter-provincial agriculture value chain risk mitigation strategies, development of a value and risk matrix, rural public infrastructure works, and adoption of climate smart agricultural technologies); and, (iii) Agriculture Emergency Response Financing (efficiency, equity and transparency of the agriculture emergency system; risk mitigation/transfer to improve the financial sustainability of the agriculture emergency system; and, provincial, rapidly-disbursing, insurance-like products/financial instruments for quick response to emergency events).¹⁹ Board presentation is expected in FY18.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

Rated: **Substantial**

3.1.1 **Relevance of objectives:** The relevance of project objectives was high at appraisal and remains high, as reflected in Bank and government country and sector strategies. The Bank's FY2015-2018 Country Partnership Strategy (CPS) seeks to maintain Argentina's position as a globally important food producer by addressing the needs of small and medium-sized farmers, an ongoing national development challenge. The CPS is organized around nine Results Areas within three broad, strategic pillars: Pillar 1 "Sustainable employment creation in farms and firms" is designed to "unlock long-term productivity growth and job creation" in response to the Government's reorientation of sector policies. Result Area 3 CPS is to "raise the productivity of small and medium-sized farms in low income regions".²⁰ "Sustainable" incorporates agricultural risk management and climate change mitigation, as per the objectives of the proposed new operation, and is rooted in UCAR's successful efforts to inject climate awareness into PROSAP II investments.

3.1.2 Project objectives also remain highly relevant to government's sector goals embodied in its Agri-food and Agribusiness Strategic Plan (*Programa Estratégico Agroalimentario e Agro-industrial Participativo e Social 2010-2020*, which the Argentine Government has extended to 2030 with revised targets). This strategy would move the Argentine agriculture model from primary production to value-addition taking into account four strategic objectives: economic-productive, socio-cultural, territorial-environmental and institutional. Broken down into its many themes, this includes support for small and medium-sized producers, increasing productivity through investments in rural infrastructure, technical assistance, use of appropriate/innovative technologies including climate risk mitigation, and increasing market access. The PDO of PROSAP II remains aligned to government's sector objectives and its relevance is rated **High**.

¹⁹ Project Concept Note (PCN) dated February 27, 2017.

²⁰ Country Partnership Strategy 2015-2018, World Bank Report No. 81361, August 7, 2014

3.1.3 **Relevance of design:** Project design was comprehensive, sought to consolidate and expand important features of its successful predecessor while piloting complementary investment instruments, paid attention to the lessons of PROSAP I, and set out an ambitious M&E agenda based on the PROSAP I track record. But equally, design was flawed in key respects including: the disconnect between project activities on the ground and the design of the RF; inadequate analysis of critically important institutional elements which led to design features which did not reflect reality; inadequate characterization of project beneficiaries; incomplete understanding of the forces likely to drive the selection of large-scale provincial investments; and, inattention to the cost benefit implications of expensive public infrastructure with low numbers of direct beneficiaries, and benefit distribution. Relevance of design is rated **Modest**.

3.1.4 **Relevance of implementation:** While the project's implementation issues in key respects mirrored those of PROSAP I, it was a complex, multi-sector operation executed within a markedly different institutional setting from the one that prevailed during preparation. The Bank (and UCAR) sought to maintain flexibility and momentum, adapting to changing circumstances by: twice increasing the Bank's disbursement percentage for categories of activities to resolve financing and administrative bottlenecks; extending the closing date for over 23 months to permit the completion of major works and studies, and to compensate for major delays in the early years;²¹ introducing two additional safeguards aligned to proposed subprojects entering the project portfolio; expanding the typologies of programs for ANR linkage/integration, which in the PAD were more strictly defined; re-focusing the RDI pilot instrument at the district level (as IDEMI) to facilitate implementation; and, adopting flexible, constructive approaches to resolving negative circumstances affecting certain provincial subprojects. The project required firm leadership to execute a two-tiered operation with major provincial participation within the Argentine federal system. The ICR reserves judgment on whether UCAR's implementation approach was consistently relevant, but given the major challenges involved, it was, on balance, effective. This assessment also factors in the weakness of project M&E and the time it took for the Bank to understand the implications and address them (see 2.3). That said, the Bank did address M&E decisively in the final year with an action plan and evaluation agenda which was fully achieved by the UCAR M&E Unit and supported the ICR. Relevance of implementation is, on balance, rated **Substantial**.

3.2 Achievement of Project Development Objectives

Rating: **Modest**

3.2.1 The project showed modest achievement of its development objectives “*to increase the productivity and sales volume of small and medium-sized producers*”. Achievements under the three PDO Indicators were partial in all three cases, although there is a strong likelihood that they will meet or exceed those targets with additional productive cycles and maturation. The results reported below are drawn from impact and ex-post economic evaluations of irrigation, rural roads, rural electrification and seeds subprojects.²² The PDO is broken down by its main elements

²¹ UCAR states in its comments that extensions of the closing date were due mainly to the need to retrofit new environmental and social safeguards requirements in subprojects, and to devaluation of the Argentine currency resulting in additional funds being available for subprojects, not subproject type or complexity, or provincial capacity. The Bank maintains however, that complexity and capacity were prominent among the factors causing delayed implementation. See Annex 7, summary of the Borrower's Completion Report.

²² Evaluación de Impacto Subproyectos de Riego en las Provincias de Mendoza y San Juan, UCAR, March 2017; Evaluación Económica ex post Subproyecto Electrificación Anelo (UCAR 2016); Evaluación Económica ex post Subproyecto Riego Colonia Santa Rosa (UCAR 2016); Evaluación Económica ex post

“productivity” and “sales volume” within the broader context of “competitiveness”. Evidence for achievement of the PDO Indicators is presented, complemented by some intermediate results and other supporting information. The measurement methodology for the PDO Indicators is described in Table 7, Annex 2 and in the summaries of the evaluation studies in Annex 5. The ICR acknowledges shortcomings and measurement issues and notes the complex reality on the ground; the analysis reflects a best effort measurement of what could be measured. The team had to conduct impact evaluation without baselines, which led to the use of the difference on difference methodology for irrigation and roads. The subprojects studied are not necessarily representative of all the subprojects financed: they were, of necessity, selected on the basis of completion status and operational cycles completed. Statistical extrapolation was not feasible under such conditions and attribution is not absolutely clear in all cases. However, the evaluation exercises were carefully planned and conducted and they demonstrate important results in the with/without situations.²³ The Modest rating of PDO takes into account the methodological issues, as well as the smaller scale of project achievements/impact compared to appraisal, summarized below.

Objective 1: Increase the productivity of small and medium-sized producers Rated: **Modest**

PDO Indicator 1: Percentage increase in the productivity of labor.

Subproject	PAD Estimate %	Actual at Closing %	Level of Achievement %
Irrigation Canal San Martin and North Canal (Mendoza)	10	10	100
Irrigation Chachingo-Péscara (Mendoza)	10	12	120
Irrigation Céspedes-Sarmiento (San Juan)	10	2	20
Irrigation Colonia Santa Rosa (Salta)	10	12	120
Weighted average by cost of SP:	10	8	80

Source: UCAR Evaluation Studies and BCR (2017)

3.2.2 Labor productivity is measured as the units of gross income generated for each unit of man days of labor, and is an indicator of labor productivity expressed in financial, not physical terms. The percentage increment between points in time (or situation without and with project) shows that a unit of manual labor generated additional gross income with respect to the situation without-project. See Table 8, Annex 2 for details on methodology.

PDO Indicator 2: Percentage increase in the productivity of land

Subproject	PAD Estimate %	Actual at Closing %	Level of Achievement %
Irrigation Canal San Martin and North Canal (Mendoza)	12	8	67
Irrigation Chachingo-Pescara (Mendoza)	12	8	67

Subproyecto Caminos Rurales de San Juan (UCAR 2016); and, Evaluación de Impacto Subproyectos Caminos Rurales de Córdoba (UCAR 2016).

²³ The Intermediate Outcome Indicators were partially modified/clarified in 2016, and some targets revised. Changes were not made through formal restructuring. The Bank’s ICR internal review directed that the original targets be restored so as not to change the benchmark for project assessment, but the modified wording was sustained. This created some measurement anomalies, e.g. Intermediate Indicators 3, 9 and 10.

Subproject	PAD Estimate %	Actual at Closing %	Level of Achievement %
Electrification Añelo (Neuquén)	12	24	200
Irrigation Céspedes-Sarmiento (San Juan)	12	7	58
Irrigation Colonia Santa Rosa (Salta)	12	10	83
Seeds Development (San Juan)	12	25	208
Rural Roads (San Juan)	12	4.75	40
Weighted average by cost of SP:	12	9.5	80

Source: UCAR Evaluation Studies and BCR (2017)

3.2.3 These results for land productivity show a substantial, positive advance towards achieving project objectives. The indicators – based on the subprojects evaluated – show in all cases increases ranging from 40 percent to 208 percent. Results at the bottom of the range – to varying degrees affecting all cases - are explained by diverse external and internal factors, including:

- **Crop conversion:** The slow process of varietal replacement in wine/grape-growing areas with irrigation investments (substitution of low quality grapes destined for must or table wines, with quality grapes for medium and high quality wines). This conversion process implies a period of diminished productivity.
- **Climatic contingencies:** Arid and semi-arid regions were affected by low snowfall resulting in scarce water for irrigation, suppressing the production of regional, water-dependent crops. Mendoza Province declared a water emergency in 2010 and 2016, as did San Juan from 2012 to 2014.
- **Short maturation period:** Insufficient time had passed since works were concluded to allow observations of maximum - or at least greater – impacts than those shown. This would require a minimum period of 4-5 years of productive development and consolidation.

3.2.4 The following additional results complement the above:

- Average yields for six subprojects (irrigation, electrification, and seeds development) increased 13.8%, exceeding the targeted 12%, and ranged from seven percent to 25 percent, depending on the crop.
- Evaluation of rural electrification in Neuquén Province – using satellite information as an innovative substitute for surveyed baseline and final data - analyzed changes in soil use before and after the subproject, demonstrating increased area cultivated (controlling for proximity to the electric poles, equipment and lines).
- Beneficiary producers were cropping an average of two additional hectares each in 2016 compared to 2007. Taking into account total additional area under cultivation of 929 ha in the zone of influence, 40% or 376 ha are attributed to the project.
- Employment creation/labor use increased: There was an increase over a baseline of around 88,600 person-days/year for 4,838 families, or around 18 person-days/year/family for four irrigation subprojects in Salta, Mendoza and San Juan.²⁴

Objective 2: *Increased sales volume of small and medium-sized producers* Rated: **Modest**

²⁴ Measured as the quotient of gross value of production and expenditure on/cost of manual labor utilized, for a situation with/without project and for a defined period.

3.2.5 As explained previously, the Bank and Borrower agreed that “sales volume” would be measured using the surrogate “volume of production”, because the former entailed insoluble methodological and measurement issues at that time.²⁵

3.2.6 As shown in the following table, in *gross volume of production* terms:

- All five subprojects had positive impacts, with increases in production/sales volume ranging from four percent in San Juan Province (system concluded more recently) to 51 percent in Salta Province.
- Based on 14 individual crops in three provinces, variations in production/sales volume ranged from increases of 3,841 percent variation for corn, 885 percent for beans (*poroto*) and 738 percent for sugarcane (all Salta Province) to declines in certain crops, e.g., fresh citrus declined 63 percent and 37 percent, respectively for the two subprojects in Salta, banana was down 34 percent in Salta and stone fruits declined 41 percent in San Juan.
- Sharp shifts in production reflect ongoing crop substitution linked to producers’ strategies in the command area of irrigation subprojects to increase production of higher value crops and intensify land use. These transitions were more pronounced in Salta Province.

3.2.7 Farmers were also asked whether the *gross value of production* (GVP) had increased as a result of their investment, even though this was not a formal project indicator. Results show for the same five irrigation subprojects in Mendoza, San Juan and Salta, increased GVP for the with-project versus without-project situation ranging from a low of 12.3 percent to a high of 41.9 percent. See table below capturing both metrics.

PDO Indicator 3: Percentage Increase in Gross Volume and Value of Production

Subproject	Unit	GVS Without Project	GVS With Project	%	GVP Without Project (ARS)	GVP With Project (ARS)	%
Irrigation Chachingo-Péscara - Mendoza	Kg	47,315,300	64,886,100	37.0	268,561,850	381,176,400	41.9
Irrigation San Martin, Canal Norte -Mendoza	Kg	202,345,365	225,602,930	11.0	558,077,528	629,192,455	12.7
Irrigation Céspedes Sarmiento - San Juan	Kg	558,621,500	583,596,200	4.0	284,782,000	319,699,500	12.3
Irrigation Metán - Salta	Kg	1,873,900	2,827,800	51.0	33,303,595	40,239,330	20.8
Irrigation Colonia Santa Rosa - Salta	Kg	362,953,900	406,850,000	12.0	1,520,494,050	1,744,600,000	14.7
Total	Kg	1,173,109,965	1,283,763,030	9.4			
Aver. Variation				23.0			

Source: Ex post economic evaluations, 2016-17, and UCAR/M&E, 2017

²⁵ Measured as agreed, using proxy “volume of production” at constant prices for the with- and without-project situations. GVP is Gross Volume of Sales. Percentage columns measure percentage variation without and with-project. Value calculations are based on the financial price in kilos, i.e. the price received by the producer and including tax on value-added. Each subproject is based on a different combination of crops. The Excel tables synthesized here are available. Production data for subprojects Chachingo-Péscara, San Martin and Céspedes-Sarmiento were collected via the impact evaluation studies (data in administrative records) and from economic evaluation field data. Subprojects shown for value results are from Farmod data.

3.2.7 **Competitiveness:** Reference to the substantial body of studies completed provides additional positive evidence as well as indications of the likelihood of longer-term impacts on competitiveness, linked causally to project activities and achievements, as follows:

- The private sector focus of the ANR mechanism, its complementarity with diverse public sector investments and programs (see Annex 2) paid off: beneficiaries reported positive results in key productive indicators, e.g., volume of production (73 percent), total income (146 percent) and productivity (21 percent); and were positive about the mechanism: 65 percent reported high impact and 35 percent moderate impact.
- Even so, with respect to production volume and income, the control group (CG) performed better than the treatment group (TG), a result attributed to the higher proportion of larger farms in the former. See Annexes 2 and 5 for key findings on the ANR.
- Argentina retained its animal disease-free status for Transmissible Spongiform Encephalitis (TSE) – declared by the World Animal Health Organization (OIE) as negligible risk - vital for population and export health, as a direct result of the project.
- The economic/productive potential of the successful ITI experience was evidenced in: identification of commercial products and new productive techniques; generation of new products; incorporation of new management tools; increased associative behavior; complementarity with other UCAR programs/funding sources; and, demonstrated transferability of innovations and links to clusters and regional development.²⁶ Annex 2.

3.2.8 **Factors affecting the PDO rating:** Despite the above results and confidence that additional productive cycles and maturation of investments will further boost benefits, several concerns about the scale of achievement impact negatively on the PDO rating: (i) **Beneficiary numbers:** The PAD estimated project coverage of 68,000 producer beneficiaries; UCAR data shows around 79,000 were actually benefited. Of these, 34,000 represent just the Fire Prevention subproject (Jujuy); the Young Entrepreneurs Program is shown as benefiting 14,000 youth but while most received project-supported training and business plan guidance, only 400 received seed financing for actual business development and barely one-third of those were in the primary sector; the national subprojects (ITI and RDI) show another 12,500 beneficiaries but the 12 ITI were not widely disseminated; and, only three of the 15 RDI were actually implemented (one partially). Direct “producer” beneficiaries (including the ANR) are thus unlikely to have exceeded 30,000; and (ii) **Area covered:** The project expected to cover some 675,000 ha or around 10 ha per beneficiary; fewer producer beneficiaries implies a significantly smaller area benefiting from project interventions. Further, beneficiary producers were cropping on average, only two additional hectares by 2016. This also implies that the land and labor productivity indicators and the sales volume (production volume) indicators, even if achieved, are at smaller scale than expected.

3.3 Efficiency

Rating: **Modest**

3.3.1 For the final evaluation, an ex-post financial and economic analysis was conducted for the provincial subprojects implemented and operated for at least one production cycle. There was also an ex-post financial analysis for: (i) a small sample of on-farm investment grants (ANR, including those of young entrepreneurs); and, (ii) technology innovation initiatives (ITI) already implemented and with observed results. Results are discussed below.

²⁶ See: Informe de Evaluación de las Iniciativas de Transferencia de Innovación (ITI) del PROSAP II, UCAR/Aguirre, February 2014.

3.3.2 **Provincial subprojects:** The provincial subprojects assessed include nine out of 20 (one subproject was not concluded at the time of the analysis) funded by PROSAP II, and represent 48 percent of the overall budget for provincial investment subprojects. The overall ex-post financial and economic NPV of the assessed provincial subprojects is USD 22.8 million, involving 6,176 direct beneficiary families with 66,971 hectares. The overall ex-post financial and economic IRR are 12 percent and 15 percent, respectively, lower returns than those estimated when the assessed subprojects were prepared and approved. However, the IRRs are expected to rise in the coming years with additional productive cycles, and some benefits were not valued in quantitative terms. The assessed returns should thus be interpreted as conservative estimates. Average figures per beneficiary family are: USD 23,100 of total investment (USD 5,300 from provinces and beneficiaries themselves) ranging from USD 94,500 to USD 10,900; and, USD 3,700 of economic NPV ranging from USD 72,100 to USD (39,700). Average figures per ha involved are: USD 2,130 of total investment (USD 490 from provinces and beneficiaries) ranging from USD 900 to USD 4,800; and, USD 340 of economic NPV ranging from USD (1,200) to USD 1,900.

3.3.3 **Matching Grants (ANR):** A random sample of 24 (out of 608) on-farm investment grants (ANR) was assessed. The overall financial IRR was estimated at: 20 percent over 5 years; and 32 percent over 10 years. Average figures per participating farm were: USD 11,500 as investment cost; USD 4,300 as financial NPV in 5 years; and USD 21,600 as financial NPV in 10 years.

3.3.4 **Innovation Technology Initiatives (ITI):** Three (out of 12) ITI were assessed. The overall financial IRR was estimated at: 18 percent over 5 years, and 35 percent over 10 years. The beneficiary population involved 1,900 families. Average values/beneficiary farm are: USD 230 as investment cost, USD 50 as financial NPV in 5 years and USD 380 as financial NPV in 10 years.

3.3.5 In aggregate, PROSAP II channelled a total USD 419.3 million of which around USD 376.7 million (90 percent of total costs) were related to supporting the provincial subprojects throughout their life cycles: selection, planning and implementation. The beneficiary population included 12,700 farms which received direct benefits (48 percent of them in the subprojects assessed) and 65,600 farms or families which received indirect benefits. The average investment per farm with direct benefits varied widely among subprojects with an average of USD 20,000 – somewhat lower than the provincial subprojects evaluated but still high relative to other World Bank investment projects in the Latin America region. However, some beneficiary farms with provincial subprojects are corporate enterprises with several shareholders and employees so it cannot simply be assumed that the average investment per farm and per family is the same.²⁷

3.3.6 **Project rate of return:** Based on a projection of the above benefits to the total number of direct beneficiaries, and accounting for average complementary project costs, the aggregate ex-post financial and economic IRR are 10 percent and 13 percent, respectively. These are lower than the economic IRR of 17 percent expected at appraisal. Benefits from ANR and ITI were not added to the benefits of the provincial investment subprojects, since they are largely accounted for in the analysis of those subprojects, and statistical significance is limited.

²⁷ PROSAP II also channelled resources to complementary areas associated with rural competitiveness but independent from provincial subprojects and beneficiary population. These include: national subprojects (SENASA, RDI/IDEMI and the ITI). While these investments generate long-lasting benefits, only the ITI were assessed. The impact of the other areas was not assessed in economic terms due to the lack of information for complete assessment of costs and benefits.

3.3.7 **Administrative efficiency:** Contributing to the Modest rating for efficiency, several factors point to administrative inefficiencies, including: (i) delayed completion of provincial subprojects even with a two-year extension, e.g., six out of 10 irrigation subprojects were not completed until the final year and, four subprojects (one national, three provincial) were still incomplete at ICR finalization, to be concluded with counterpart funds (Annex 2); (ii) more than proportional increase in project management costs; (iii) weak M&E for much of the project period; (iv) flow of funds and import restrictions affecting implementation efficiency; (v) challenging and problematic procurement implementation; and (vi) repeated turnover of managers, technical and other personnel on both the Bank and Provincial Government teams.

3.4 Justification of Overall Outcome Rating

Rating: **Moderately Unsatisfactory**²⁸

3.4.1 The Overall Outcome rating takes into account the following:

- **Relevance:** Rated **Substantial**, based on the following: (i) continuing High relevance of PDO as reflected in recent strategy documents of the Government and the Bank; (ii) design deficiencies which decreased the relevance of an otherwise coherent and responsive project, prompting a rating of Modest; and, (iii) a responsive implementation performance marred mainly by weak M&E oversight - largely recouped in the final year by the Bank's more disciplined approach - and some procurement shortcomings. Bank staff turnover is viewed as an internal personnel management issue beyond the scope/control of the Bank team.
- **Efficacy:** Rated **Modest** based on the following: (i) achievements under the three PDO Indicators fell short of targets although additional productive cycles are likely to further boost producers' productive and sales outcomes; and (ii) considerations of scale: the numbers of direct beneficiaries and area covered by the project fell short of PAD expectations.²⁹
- **Efficiency:** Rated **Modest** due to the fairly mediocre economic and financial returns on the three classes of investment instruments, shortfall in the project IRR, and negative factors affecting administrative efficiency.³⁰
- **Sustainability:** Rated **Moderate** taking into account: the heterogeneity of provincial circumstances at the institutional and producer levels; the immense amount of capacity-building; the fact that all subprojects are essentially public utilities with assigned institutions/agencies for O&M. As noted in Section 4.0, ANR sustainability is considered likely, while the institutional growth from project TA and training is more variable among provinces and at a deeper level, administrative systems/laws were not changed.

²⁸ UCAR considers the Overall Outcome rating of MU as unjustified, given its basis in targets and achievements which do not represent the full portfolio of subprojects. The Bank's response is that it evaluated what could be evaluated at the time, i.e., subprojects which were completed and with some operational track record. The late completion of many subprojects is an underlying performance theme of direct relevance to key results/conclusions in this ICR. The ICR agrees however, that additional operational and productive cycles are likely to boost outcomes longer-term due to operational maturity and additional subprojects consolidating/coming onstream.

²⁹ UCAR does not accept the Efficacy rating on grounds that original appraisal targets were not valid or representative due to weak diagnostics at the design stage, and that the ICR penalizes the project for weaknesses it acknowledges in its analysis of the Results Framework.

³⁰ The Borrower asserts that the ICR's Efficiency rating does not take into account the short time elapsed since subprojects were completed, and does not take the PAD analysis into account. The Bank responds that the ICR Annex 3 refers explicitly both to late completion in connection with how/why subprojects were selected for analysis and, to the PAD EFA analysis and assumptions.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

3.5.1 Beneficiaries and targeting: As previously stated, the project had no overt poverty objectives.³¹ Farm size within the command area of large-scale irrigation schemes is highly heterogeneous, and thus sifting out the small and medium-sized producers for targeting purposes is difficult. Further, farm size is not a definitive indicator of poverty status in Argentina. In practice, producers benefiting directly from the provincial subprojects were cultivating/specializing in one or two crops exclusively for market, not household consumption, and did not qualify as poor, being on average more commercially linked and capitalized. Looking at the larger targeting picture, the project financed infrastructure subprojects in eight provinces, two of which were part of the Pampas - not the PAD-targeted Regional Economies - and which received three subprojects valued at some US\$69.0 million.

3.5.2 At the ANR level however, a 2014 UCAR impact evaluation in nine provinces found that most of the 5,000 beneficiaries were small and medium-size producers of which about 50 percent had less than 12 ha, and about 17 percent had less than one ha, farmed intensively. Importantly, over one-half of these were dependent to varying degrees (depending on the province) on off-farm work, mostly on smaller properties or for local businesses.³² Their productive characteristics were more heterogeneous: apiculture, fruit production, livestock/dairying, poultry-raising and grapes. The evolution of their productive indicators was found to be generally positive, exceptionally so in some cases depending on the province, type of production and most importantly, the productive chain in which they were incorporated.

3.5.3 The ANR experience is discussed in detail in Annexes 2 and 5, and several aspects are relevant here. First, the territorial distribution of ANR investments was notable due to UCAR's aggressive diffusion of the mechanism, professionalization of ANR teams, and simplification of access requirements; some 19 provinces were covered (including four of the five comprising the Pampas). The prioritization of proposals was tightly conceptualized in the PAD but was interpreted more widely/inclusively in practice. Beneficiaries came to include: cluster producers; micro-regions; the RDI, ITI and/or producers assisted by the National Food Quality Program (PROCAL); and, beneficiaries of public infrastructure subprojects. Targeting correctly focused on small and medium-sized producers. Second, and indicative of smaller scale, the main source of the required 60 percent beneficiary contribution was "own funds" both for on-farm and off-farm ANR and this involved mostly informal loans from family and friends, reflecting in large part their exclusion from the banking system. There is little detail on the extent to which ANR beneficiaries accessed formal financing; a more detailed and nuanced picture of such relationships would have been important to understand. It is known however, that links to more formal sources of credit enabled some ANR beneficiaries to formulate larger investments of greater complexity. The ANR demonstrated, based on relevant examples, that the producer's profile for the banks can be improved using a guarantee mechanism or by payment of the ANR to the credit entity as a way of negotiating better credit conditions (rate and period). See table below, 3.6.2, and annexes cited.

Beneficiary Financing: ANR

³¹ Other Bank-supported operations in the sector at the time of PROSAP II approval had a specific, small-farmer/rural poverty focus: Small Farmer Development Project (PROINDER, P006041), followed in 2015 by the Socio-Economic Inclusion in Rural Areas Project (P106685).

³² See: Evaluación de Impacto de los Aportes no Reembolsables (ANR), Reporte Final, UCAR/Masello, September 2014.

Subproject	Own Funds		Credit	
	# ANR	%	# ANR	%
Off-farm	14	47	16	53
On-farm	661	69	295	31

Source: UCAR/M&E Unit, 2017 (based on sample)

3.5.4 The following table provides basic information on the numbers of beneficiaries by type of investment and percentage of small, medium and large-scale producers. As noted in UCAR’s Final Report (2017), these numbers are indicative as no study drilled down to characterize project beneficiaries. The beneficiary population – as with PROSAP I – was heterogeneous, with a comparatively larger number of small-scale beneficiaries. The ICR asserts that it is unlikely that these beneficiaries were all “producers”, e.g., all 34,000 beneficiaries of Fire Prevention (Jujuy) and all 14,000 beneficiaries of the Young Rural Entrepreneurs program. Acknowledging the difficulty of “placing” project beneficiaries within the rural spectrum, the Bank and UCAR agreed in 2016 that the National Statistics Institute (INDEC) would lead a project-financed rural household survey, but time ran out and the survey was not conducted (see 3.5.4). Household surveys in Argentina have tended not to cover rural areas, a limitation which the project might have mitigated with its own baselines.

PROSAP II Beneficiaries: All Investments

Type of Investment	No. Subprojects ³³	No. Beneficiaries	Small %	Medium %	Large %
Irrigation	10	6,249	48	30	22
Electrification and gas line ³⁴	5	716	34	51	15
Rural Roads	2	1,084	34	30	36
Productive Development (Livestock and Seeds)	2	4,330	84	12	4
Fire Prevention	1	34,373	73	20	7
National Subprojects	5	32,500	na	na	na
Total:	25	79,252			

Source: UCAR/M&E Unit, 2017

3.5.5 **Gender:** Neither the PAD, nor the Aide Memoires, discussed gender, and no indicators disaggregating by gender were included in the RF. Even so, as part of the Bank’s social safeguards oversight, within the Environmental Impact Evaluation (EIE) prepared for each provincial subproject, gender was first introduced as a cross-cutting theme, but the result was a superficial treatment designed mostly to not widen existing gender gaps in a subproject’s zone of influence. Starting in 2013, a gender module was incorporated in the socio-productive surveys conducted for subproject formulation, to identify/define the composition of beneficiary families and the role of women in production. Measures were introduced: training for women farmers, courses/workshops for technicians/staff, and forums to improve the effectiveness of gender activities. This was followed by the development of a Gender Action Plan (GAP). Contracted specialists analyzed the gender gap and roles in subproject areas and developed an awareness-building and training program. Mendoza Province in 2015 hosted a major seminar on productive experiences with a gender focus,

³³ Three subprojects (1 provincial/2 national) are not counted: Preparation of FAO-DGI Projects/Mendoza; Strengthening of Provincial Operational Capacity; and, SENASA Vegetal Sanitation Laboratory.

³⁴ No data is available for Electrification/Entre Rios, or the Gas Line/Cordoba. Average for this type comprises 3 subprojects.

and gender diagnoses were included in several subprojects, leading to the routine inclusion in subproject EIE of a Gender Equity Annex with action plan.

3.5.6 Social development: The project's expected social contributions were to be through investments in irrigation, sanitary and phytosanitary systems, and through research services for smaller producers, especially indigenous. The Social Safeguards Manual included appropriate procedures. Indicators were to be developed for key social outcomes, disaggregated by social groups and including the indigenous, and would be monitored/tracked. This was not done. The project's experience with indigenous peoples is discussed in Annex 2, Appendix 1 under social safeguards compliance. UCAR requested project financing in 2015 for a socio-economic profile of PROSAP II beneficiaries, using a baseline constructed in 2010 and 2015 from IDB-financed PROSAP subprojects. The Bank's agreement was contingent upon UCAR verifying the similarity between the IDB and PROSAP II investments to legitimize the former as proxies, but no further action was taken.

(b) Institutional Change/Strengthening

3.5.7 The project was a catalyst for significant institutional growth, with some caveats. Studies document mixed results with satisfactory aspects and certain shortcomings importantly due to the heterogeneity of situations and needs, the uneven quality and realism of the services offered in each province, and the variable technical/professional competence and commitment of service providers.³⁵ TA was financed to strengthen provincial capacity to prepare the EPSAs and subsequently to propose and formulate provincial subprojects (under the technical leadership of FAO). The national FCOP subproject was designed/financed explicitly to complement UCAR's regular training plans, by building capacity and equipping the provincial agencies responsible for subproject implementation. Each of the subprojects had an important "soft" component for TA to water user consortia to build institutional capacity to manage their systems and to improve/modernize their productive profile. The longer-term impact of these efforts is unclear but project studies show many positive findings for institutional growth. Annexes 2 and 5.

3.5.8 UCAR, following a restructuring in 2012, evolved into a large and influential institution, well-funded and staffed with skilled personnel. Its performance in coordinating the project within the Argentine federal system demonstrated its sustained growth, attributed to project support and the overall experience. The role of the M&E unit within this context is challenging and it needed stronger support from the project to consolidate and grow. Having one implementing agency per province was sound and merits replication, having clear advantages for the Government and the Bank in concentrating technical and fiduciary responsibilities in a single agency. Controls are needed to avoid unfettered growth in the numbers of staff, with unclear roles or reporting lines, but this was a trade-off given the difficulties in changing provincial behavior. UCAR's pragmatic approach was to boost staffing to help navigate the complex rules of the game without actually changing them. It is unclear to what extent this strengthened institutions.

3.5.9 Simplified conclusions about the institutional growth of water user groups/consortia are difficult given their diversity but an evaluation of project-financed strengthening activities linked to nine of the 10 irrigation subprojects and one rural electrification subproject, showed: (i) notable impact on institutional systems, human capacity, the elements of better management, attitudes to cost recovery/water charges, on access to information, on irrigation programming and level of user

³⁵ See: Desarrollo Institucional para la Inversion (Project UTF/ARG/017/ARG), FAO 2016. Total Bank investment was US\$4.36 million with national counterparts also contributing.

satisfaction; (ii) activities were considered well-targeted to basic needs but the multiple interventions were overly standardized and inadequately responsive to distinct needs/situations; and (iii) scheduling was problematic: water users received training when they were still unready to use the water more efficiently.³⁶ Of critical importance, the formation of water user bodies is not always appropriate or desirable and should not be an absolute requirement. In certain provinces, such consortia are illegal (e.g., San Juan). Participation might need to be fostered by integrating interested users into the state structure.

3.5.10 Characterization of water user consortia as civil associations was a design flaw which, *inter alia*, impeded public control over their institutional life and finances - the irrigation subprojects were essentially public utilities – and affected the efficacy of the overall strategy. The project needed to make the analytical distinction (or avoid disconnect) at the diagnostic, design and implementation stages between normative institutional frameworks as fixed by law, and the decisions adopted, i.e., what could realistically be achieved through institution-strengthening activities. Evidence suggests project formulation excluded legal intervention/participation in the baseline diagnosis and subsequent design, while confusing and imprecise provincial legal statutes contributed to errors/omissions. Correction of these difficulties - structural and general – needs specific interventions at greater scale.

(c) Other Unintended Outcomes and Impacts (positive or negative) NA

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

3.6.1 **Beneficiary survey – ANR:** A survey was conducted of selected ANR using a structured questionnaire, using an experimental design with treatment (TG) and control groups (CG), and covering ANR with agricultural cycles starting 2012/2013.³⁷ Results show: (i) the close link between smaller farm size and membership of a service or marketing cooperative (the larger the farm, the less likely it is to associate); (ii) heterogeneity of productive activities (these included apiculture, dairying, grapes, fruits, vegetables and cattle); (iii) no marked connection between the magnitude of impact and land area of farms or technology utilized (type of productive chain was the key determinant and even small farms were efficient); (iv) very positive productive results in Cordoba, Mendoza, Salta and San Juan; (v) production difficulties affecting both groups in the period (drought, frost, price reductions, rain and/or disease); (vi) 89 percent of the TG assessed as high/very high the influence of ANR on their volume of production; (vii) production and income outcomes were higher for the CG, which included more larger farms; and (viii) bank credit was scarce for the TG and more liberal for the CG. While both groups used mostly personal or family resources for their investments, few TG members contracted formal debt. Barely seven percent of the TG accessed a bank compared to 27.3 percent of the CG. The differences in credit access were not formally analyzed.³⁸

³⁶ See: Evaluación Fortalecimiento a Consorcios de Usuarios – Informe Final, UCAR/Pinto and Andino, March 2017.

³⁷ See: Evaluación de Impacto de los Aportes No-Reembolsables (ANR), Reporte Final, UCAR/Masello, September 2014.

³⁸ The Borrower notes that the ANR were more successful in accessing formal credit than reported in the ICR. Some 40 percent of a sample of agro-livestock producers accessed bank credit, superior to the national average of 10 percent for such producers. The Bank responds that data from the 2014 impact evaluation of the ANR were used, as well as the UCAR BCR, summarized in Annexes 5 and 7, and referenced in ff. 35.

3.6.2 **Stakeholder workshop:** Numerous beneficiary/stakeholder workshops were conducted during the life of the project to disseminate information, promote project investment vehicles and programs, gauge opinion, discuss evaluation results and build capacity and awareness. An important UCAR-sponsored Workshop on Administration and User Consortia in 2016 canvassed users'/stakeholders' opinions on the efficacy of project-financed institutional strengthening (IS). Key messages were: (i) state institutional commitment to IS and the quality of the initial diagnosis of capacity gaps are critical; (ii) specific interventions and incentives are needed to gain the confidence and interest of water user groups, who otherwise perceive IS as a marginal activity of little utility, and water management as a burden, not a benefit; (iii) institutional change and adjustment extends well beyond subproject completion; and, (iv) visits with user groups to observe the impact of IS on other subprojects/water users are valued highly and far more effective than theoretical instruction. See also Annex 6.

4. Assessment of Risk to Development Outcome

Rating: **Moderate**

4.1 **Provincial subprojects:** The provincial subprojects are mostly public utilities, and investments financed rehabilitation and/or improvements to existing systems and structures. Thus, all of them had/have arrangements for O&M in place, including full or partial cost recovery, mostly through entities authorized by or part of, the relevant provincial authority. Further, subproject financing was contingent on provinces signing an agreement committing to O&M of each rehabilitated facility. Argentina has no national water law: water is under provincial jurisdiction, as is the manner in which systems are built, operated and maintained. Sustainability of the provincial subprojects shows different levels of risk depending on the jurisdiction/province. In Mendoza Province, risk is low due to the long-evolving institutional trajectory, technical experience and organizational level of its irrigation services and the cost recovery systems in place. Similarly, for the Colonia Rosa subproject in Salta Province, beneficiaries are organized and committed to sustaining their benefits; and, in San Juan, producer organizations are involved and provincial irrigation services are effective. Outside these provinces, the situation is more diverse, e.g., Catamarca, where the province charges only token amounts for water and provincial irrigation organizations tend to be inefficient. Subprojects where institutions are sound, and producers are organized and have a track record pre-dating the project, demonstrate the maturity likely to foster strong O&M.³⁹ In provinces with lower capacity, sustainability will depend on continued investment in institution-building, social capital formation and civic involvement.

4.2 **Roads and energy:** The sustainability of road and energy subprojects is considered likely but again, the conditions vary by province. While provincial roads authorities commonly manage the O&M of roads, the BCR (UCAR, 2017) suggests that depending on the province, road users' consortia can be a more efficient solution. In Cordoba Province for example, producers associated with the project-financed road rehabilitation are organized, proactive and committed but they have been unable to prevent the Provincial Roads Directorate from assuming control of their road

³⁹ The Bank assumed that strengthened producer organizations would ensure strong O&M. The project's standard approach was to provide IT equipment/training, machinery, motorcycles and O&M training, which was inconsistent with reality and provincial law in many cases, as verified by evaluation and case studies. In some provinces for example, there was no incentive to organize as water/related services were free of charge.

segments. This is not an ideal solution, but beneficiary pressure is likely to promote adequate O&M. Electrification investments and the gas line are likely to be sustained, as their O&M is - on technical and safety grounds - handled by provincial energy authorities and concession firms.

4.3 **National subprojects:** The TSE and SENASA are likely to be sustainable given their high political and economic priority. The JER program is vulnerable because it lacks a permanent institutional anchor, and most of the 400 investments were very small with questionable sustainability (Annex 5). Sustainability of the ANR is high, mainly because beneficiaries self-financed, and demonstrated strong productive results across a wide range of activities. This boosts the incentive for O&M, for which ANR beneficiaries are legally responsible and were trained by the project. Associations established under the pilot RDI/IDEMI need to consolidate and stabilize legally and operationally, reducing informality. Sustainability will depend on the availability of new financing with the emphasis on greater private sector engagement, for which no strategy was developed. Lastly, the ITI have proven capacity to generate value and are sustainable economically and productively, but they depend on the commitment of relevant public institutions. Local governments and beneficiaries show strong ownership but provincial support is harder to discern.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

Rating: **Moderately Unsatisfactory**

5.1.1 Project design featured multiple investment instruments and public/private players. The PAD was unusually comprehensive in its attention to technical aspects, structured M&E, organized technical assistance and capacity-building, demand-driven approaches at all levels, and efforts to ensure that investments were strategically anchored and ready to launch. This complexity reflected confidence that the Borrower could replicate the successes of PROSAP I, but some risks were under-estimated or not perceived, and the analytics/diagnoses governing project design were not well-informed/or realistic (see Section 2.1 for details). The preparation team however, could not have predicted the marked shift in government's approach once UCAR was established as the clearing house for donor financing of provincial, rural public infrastructure, at which point the Bank-financed project became one operation in a large portfolio. While this suggests that the best instrument may have been a Development Program Loan (DPL) or similar, it was not an option at the time because Argentina did not have an agreement with the IMF and more pragmatically, the Argentine government preferred to retain close control over donor-financed investment projects.

(b) Quality of Supervision

Rating: **Moderately Unsatisfactory**

5.1.2 The Bank's supervision performance was mixed. Supervision frequency exceeded Bank norms and focused intensively on facilitating execution of the provincial works which represented the bulk of the loan. The Bank team was generally flexible and responsive to Borrower concerns and project demands. Safeguards supervision was intensive and well-reported: the approach to safeguards moved UCAR, the provinces and beneficiaries onto a new plane of environmental and social awareness. The retroactive introduction of new safeguards requirements had a cost however, disrupting subproject procurement/execution (section 2.2). This might have been foreseen and mitigated. FM performance was consistently strong but procurement oversight performance was marred by repeated turnover of the Bank specialist. Implementation Progress (IP) and Development Objectives (DO) were consistently rated satisfactory up to mid-2015 despite the slow

pace of subproject execution and lack of data to substantiate achievement. The project was restructured three times but none of the restructurings included revising the RF. The Bank's lack of proactivity on M&E – albeit under the pressure of getting the major infrastructure completed - had negative consequences. However, a strong recovery, with the team planning/overseeing the execution of a methodologically sound evaluation plan within a tight time-frame, enabled project achievements to be measured. Multiple rotations of the Bank team leadership and specialists were beyond the immediate control of the team, but were within the broader purview of the Bank.

(c) Justification of Rating for Overall Bank Performance

Rating: **Moderately Unsatisfactory**

5.1.3 Bank performance is rated Moderately Unsatisfactory (MU). This takes into account: a comprehensive and coherent but analytically flawed design affecting quality at entry and subsequent implementation, rated MU; and, supportive and flexible Bank supervision affected mainly by inadequate attention to M&E until the final stage of implementation. While this was compensated by a successful recovery in the final year enabling project achievements to be measured, the rating must also take into account other shortcomings including procurement performance and ratings realism, resulting on balance in a rating of MU.

5.2 Borrower Performance

(a) Government Performance

Rating: **Moderately Satisfactory**

5.2.1 **Government:** The following assessment distinguishes between the performance of the national and provincial governments, based on their relative responsibility for certain elements.

5.2.2 **National government:** Government's creation of UCAR as a front-line sector institution responsible for provincial agricultural development had many benefits and has ongoing sector relevance and potential. Maintaining stable leadership in UCAR/UEC served the project well, as did government's commitment to PROSAP II objectives. The new government which assumed office in 2015 maintained continuity of project funding, did not intervene in UCAR's management of the project, and supported/facilitated the proposed new Bank-supported agricultural risk management operation. That said, counterpart funding was neither adequate nor timely in earlier periods, affecting the payment of suppliers. Government could have fostered inter-sector coordination on the roads and energy subprojects. Bank loan funds were used to finance local counterpart, a practice which persisted for several years despite Bank pressure to desist. Ministerial signature of subproject agreements and associated documents was frequently delayed, while distortions in the INDEC index in an inflationary environment affected works price adjustments.

5.2.3 **Provincial governments:** There were major gains in provincial capacity to propose, formulate, and execute large-scale infrastructure works and understanding of Bank fiduciary requirements. Provincial agencies showed strong growth in safeguards awareness and management albeit residual difficulties in implementing the AAP. The provinces developed a greater understanding of the internal structure and functions of the UCAR/UEC, supporting better quality problem-solving and management. Further, their improved dialogue with each other and with UCAR, on all aspects of PROSAP, reduced the insularity which had suppressed achievement in the past. That said, frequent and disruptive structural change in involved provincial institutions and high rate of professional turnover in the provincial subproject units, negatively affected aspects of the subproject cycle/processing. Further, financial management capacity and procurement administration issues took time and much training/mentoring to overcome.

(b) Implementing Agency or Agencies Performance

Rating: **Moderately Unsatisfactory**

5.2.4 **UCAR/UEC:** The UCAR/UEC's implementation of a project of this complexity within the Argentine federal system took skill. The economic backdrop was generally conducive to project execution although inflationary pressures affected the budgets for approved investments. Over time, UCAR's coordination strength and its ability to have an impact emerged fully, with the idea of concentrating investments around a single development pole. UCAR trained and equipped provincial institutions, ensured that the project was politically well-supported and financed multiple consultants to push/steer the subprojects through provincial bureaucracies. UCAR's Environmental and Social Unit and provincial teams made a valuable contribution to the implementation and monitoring of the social safeguards plans. However, its prioritization and selection of subprojects was opaque despite established criteria. UCAR's teams tended to churn out subprojects regardless of who would finance them or when, reflecting the political economy of federal-provincial relationships. UCAR mismanaged M&E and this, along with problematic procurement management, is the main reason for the Moderately Unsatisfactory rating. The fact that its M&E Unit handles the data requirements of the entire UCAR portfolio may have contributed to the problem. Further, all agreed evaluation products were delivered, reviewed by the Bank and used for the ICR. The M&E Unit also provided rapid and substantive responses to support ICR preparation.⁴⁰

(c) Justification of Rating for Overall Borrower Performance

Rating: **Moderately Unsatisfactory**

5.2.5 This rating reflects governments' generally solid performance – with specific shortcomings – balanced against the UCAR/UEC's astute and dynamic but mixed performance in which M&E failings and procurement were dominant. The latter merit a rating in the negative range despite other positive factors. As per the ICR Guidelines (2014), the overall Borrower performance rating is determined, where ratings are split, by the overall outcome rating of Moderately Unsatisfactory.

6. Lessons Learned

6.1 The project generated many lessons, the most important of which are presented below. They are intended to support similar operations and to be useful at a global level.

The mix of instruments needs to balance investments in hard infrastructure, innovative mechanisms for multiplying/distributing the benefits and “soft” technical assistance and training programs. The complex equation of higher level, sector strategic needs and producers' concerns and situations at the farm level must be considered. Operations mixing different scales and levels of intervention need clear justification and conceptualization, realistic estimates of costs and benefits including their distribution, and special attention to the Theory of Change and Results Framework. Leveraging the benefits of large public infrastructure investments – and other

⁴⁰ The Borrower disputes the Moderately Unsatisfactory rating for its performance, stating that it does not capture UCAR's performance in central aspects of the project: FM, relevance of implementation, environmental safeguards and achievement of the PDO. The Bank team maintains that the Borrower's view represents a different interpretation and understanding of what the Bank's ICR is obligated to assess under its Guidelines, and that the ICR reflects the critical input of the Bank's technical specialists and economists.

instruments - through a matching grant instrument (ANR) remains a sound idea. It should focus on groups and not individuals - to magnify the benefits and promote organized innovation and marketing - and be justified as and focus on, the provision of public goods. ANR producers need to be classified within the small and medium-sized cohort with a degree of capitalization permitting productive modernization. Financial institutions should be involved to crowd in formal credit; their sustained engagement needs systematic outreach.

Leveraging maximum impact from resources allocated for multi-sector public infrastructure investments requires the transparent selection and evaluation of proposals and involvement of key sector institutions. The latter should preferably be concentrated around a single development pole with strong links to sub-national institutions and strategies. Teams need to take into account the political economy underpinning national and sub-national relationships and how this might affect the selection and equitable distribution of benefits. Multi-sector projects need to bring all participating sectors/institutions to the table during project preparation and implementation, making formal provision for joint decision-making and supervision. Institutional involvement beyond the project implementation unit or even the ministerial level on key selection criteria is essential. If the agriculture sector takes the lead, it should abide by the key investment criteria of those sectors, including location, quality and cost. Using a single implementing agency for each sub-national jurisdiction merits replication; there are clear advantages for the Bank and Client in concentrating technical and fiduciary responsibilities in a single agency, and financing institution-strengthening activities.

The identity and characteristics of intended beneficiaries and the distribution of benefits should be analyzed, understood and documented in the PAD. Even in demand-driven projects, it is essential that the targeted beneficiaries be defined, quantified and described based on official, current household and geographic data, and that targeting be carefully designed and operationalized. Where national or regional databases are thin/non-existent or outdated, projects should consider financing their preparation. Also, projects can generate attractive rates of return but the distribution of benefits needs close scrutiny. Future operations need to consider putting a cap on per beneficiary investment cost across investment instruments (which was done for the ANR), with variations based on the definition/segmentation of the targeted population of producers.

Institutional capacity building at sub-national levels needs customization to the unique institutional, legal and administrative situations in each case. This implies significant ex ante analysis and decisions about project expectations and design rooted in a realistic assessment of the legal and administrative context and incentives. Projects should avoid overly-standardized training and technical assistance of uneven relevance/utility, adopt both demand and supply-driven approaches and aim for durable change. Also, the constitution of water user consortia is not always appropriate or desirable and should not be an absolute requirement. Project design should not confuse institutional frameworks as fixed by law, and design decisions about institution-strengthening; the state's legal and customary role needs to be understood. Interested, motivated water users might participate by integrating with the state structure, not as civil associations, and be trained accordingly.

Operation and maintenance is the sine qua non for projects involving a hierarchy of inter-dependent physical investments. Agreements with sub-national entities/governments need early, formal commitment on post-completion roles in and responsibilities for, project works within their sector, which assumes they were involved in their initial selection. Agreements should cover O&M mechanisms - cost recovery/water tariffs - and who will lead the process at all levels. The project should ensure that organized cost recovery has high visibility and broad support, work to establish such regimes during the project lifetime, and plan for their sustainability ex post.

The starting point for M&E must be the connection between the works/investments and outcomes at the producer level; and, systems and practices should be established early and supervised closely. The chain of objectives, the activities capturing those goals and precisely which farmers are being targeted need to be embedded in a comprehensive set of appropriate, measurable indicators. Large infrastructure investments need an individual Theory of Change connected to the master Results Framework (RF). Classes of indicators are needed to measure technology transfer and institutional strengthening as a function of a system's global efficiency. Establishing M&E systems and practices starts at effectiveness and requires close Bank supervision and collaboration with the coordination unit. Early, high quality baseline development is of paramount importance. Formal restructuring of an unsuitable RF should not necessarily wait for the Mid-term Review.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies

7.1 The Borrower's response to the Bank's draft ICR (UCAR letter, September 5, 2017) was reviewed by the Bank team. The ICR text was adjusted and/or footnotes added to reflect the Borrower's viewpoint, taking into account that the ICR is the Bank's independent assessment of the project. See Annex 7.

(b) Co-financiers N/A **(c) Other partners and stakeholders** N/A

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

Components	Appraisal ⁴¹ US\$ m	Actual/ Latest Estimate US\$ m	% of Appraisal
1. Support for Pre-Investment Activities	11.00	14.80	134.54
2. Investment Subprojects for Competitiveness	392.70	371.90	94.70
3. Project Management	19.36	33.20	171.13
Total Baseline Cost	423.06	419.85	99.24
Total Project Cost	423.06	419.85	99.24
Front-end Fee	0.75	0.75	-
Total Financing Required	423.80	420.60	99.24

(b) Financing

Source of Funds	Type of Co-financing	Appraisal Estimate (USD millions) ⁴²	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower	Counterpart	57.30	86.60	151.13
International Bank for Reconstruction and Development	Loan	300.00	300.00	100.00
Local Farmer Organizations	Cost-Share	66.50	34.00	51.12
Total:		423.80	420.60	

⁴¹ As per PAD Annex 5.

⁴² As per PAD, Data Sheet and Section G.

Annex 2. Outputs by Component

2.1 The following shows the status at closing of the project's expected outputs (as per PAD), by Component.

Component 1: Support to Pre-investment Activities (PAD US\$11.0 m/Actual US\$14.80 m)⁴³

(a) Define a guide for the minimum institutional capacity required for provinces to participate in subproject investments: **Achieved**

- An institutional development specialist (FAO) diagnosed 5 critical gaps in each of 19 provinces (Baseline Institutional Diagnosis). Positive attributes and deficiencies were identified.
- Plans and guides were defined/developed to rectify those gaps; an Index was constructed to measure the institutional capacity of provincial entities; annual training plans were institutionalized; provincial scholarships were offered; and technical exchanges were arranged between provinces.

(b) Define an institutional plan for each province to satisfy their specific needs to reach adequate functionality, composition of personnel and requirements for qualifying institutionally to participate. **Achieved**

- The above diagnoses resulted in a participatory investment plan for 19 candidate Provinces designed to reduce specific institutional deficiencies (technical assistance and human resource training, IT and office equipment).

(c) Establish and strengthen provincial working round-tables or other consultative mechanisms to facilitate preparation of the EPSA (*Estrategias Provinciales para el Sector Agroalimentario*). **Achieved**

- 19 EPSAs were prepared, 8 of which were updated between 2012 and 2014 to reflect changes in the operating environment and observations (climate change, national strategic plans, and for provinces to comply with eligibility requirements for other sources of financing).
- Consultative mechanisms for EPSA development included meetings of provincial authorities/functionaries, technical specialists from public agencies involved in research and technology transfer (universities, INTA) and producer organizations.

(d) Identify and prepare subproject profiles based on the EPSAs and, once approved by the Public Investment Council (PIC), formulate full subproject proposals. **Achieved**

- 170 provincial investment subprojects were selected based on priority demand expressed by Provinces during government-sponsored *convocatoria* in 2005 (under PROSAP I).
- Of these, most were assessed as technically weak, prompting production of a Manual outlining steps to prepare a strong profile.

⁴³ See: Final Report on Project: Institutional Development for Investment (UTF/ARG/017/ARG), FAO, 2016. Report describes FAO's specialized technical assistance to the provinces, financed by the Bank loan, to: (i) formulate investment subprojects responding to national and provincial public policy; (ii) conduct sector studies and basic studies contributing to the generation or adjustment of public policies such as the identification of priority areas for investment; (iii) expand and strengthen public and private capacity to intervene in the agriculture and rural sector on diverse technical issues.

- 283 profiles were received under the improved guidelines, 138 of which were selected for formulation resulting in 21 subproject proposals for PROSAP II financing (with remainder to be financed by other donors over time).
- 6 of these were ready for financing at effectiveness, having been developed pre-EPSA, on the basis of government's *convocatoria* (call for proposals) exercise in 2005.⁴⁴
- SAGPyA (later MAGyP) in agreement with the PROSAP II UEC, implemented a mechanism for continuous *convocatorias* until the entire financing available for Provincial Subprojects was committed. One additional subproject entered the portfolio later (the SENASA Vegetal Laboratory Stage IV).

(e) Design, as a pilot, Regional Development Initiatives (RDI) to increase the competitiveness of selected micro-regions (based on the creation or strengthening of Development Consortia which would develop and implement Regional Improved Competition and Development Plans - RICDP).

Achieved

- 18 Development Consortia were developed. In early 2014, to improve the efficacy and efficiency of territorial management, and due to the complexity of the RDIs' multi-province strategy, the Bank was asked to focus RDI execution in intra-provincial micro-regions, reducing the geographic scope of the interventions and improving efficiency.
- To guarantee the legitimacy of and provincial commitment to the implementation of these *Iniciativas de Desarrollo Micro-Regional* (IDEMI), Provincial Governments identified and prioritized micro-regions at government-sponsored workshops/meetings.
- 18 provinces identified and characterized 54 micro-regions and prioritized for intervention at least one case per province, taking into account provincial productive development strategies and UCAR's basic selection criteria: geographic reach; presence and leadership of the political/public sectors; the presence of science and technology institutions; the rural productive matrix; and, regional identity.
- Investments were prioritized in a participatory manner and formed part of the RICDP, then were sent to the Bank for no objection. Due to the reduced geographic area compared to the original concept, consensus and decision-making were faster.
- Of the 5 initial RDIs (comprising 15 micro-regions), 3 had a RICDP. Of the 15 micro-regions involved at closing, 3 were still executing their Plan, 3 had had their Plan approved recently and had started implementation, and 9 had completed their Plan formulation.⁴⁵

(f) Promoting the establishment on a pilot basis, of Public-Private Innovation Networks (IN) to exchange knowledge regarding agricultural practices. **Achieved**

- The purpose of the IN was to exchange knowledge of agricultural practices to improve the competitiveness and market access of small and medium-sized farmers, and to facilitate the link between those farmers and knowledge institutions.
- 12 IN (later renamed Innovation Transfer Initiatives (ITI)), were prepared in collaboration with universities, research organizations and private sector entities.
- Research and dissemination activities were completed but the technology transfer portion remained incipient at project closing in part because project design did not contemplate or finance that phase. Each ITI was evaluated and main achievements, products and results are summarized in Annex 5.

⁴⁴ It is assumed that these subprojects did not flow from an EPSA.

⁴⁵ The PAD does not mention implementation of the RICDP, just their design.

Component 2: Investment Subprojects for Competitiveness (PAD US\$392.7 m/Actual US\$371.9 m)

(a) **Provincial public infrastructure and services subprojects** (to potentially include): (i) irrigation and drainage (target 16); (ii) basic public infrastructure for productive ends (transport, communication and energy); (iii) sanitary and quality promotion and control systems; (iv) infrastructure and services to improve commercial development; (v) land administration activities for productive purposes; (vi) TA linked to these activities (extension, technology transfer and capacity-building). **Achieved**

- The project financed 21 provincial public infrastructure subprojects in 8 provinces (Catamarca (1), Cordoba (2), Entre Rios (1), Jujuy (3), Mendoza (4), Neuquén (4), Salta (2), and San Juan (4)) mainly in irrigation, rural roads and electrification.⁴⁶
- Of these, at closing, 18 were fully completed and 3 were finalizing construction/installation: Electrificación El Redomón (Entre Rios); Riego Arroyo Colorado Santa-Clara (Jujuy); and, Riego Arroyo Villegas (Mendoza). Completion of these three works was being financed by counterpart funds of the jurisdiction involved. See Table below for matrix of subprojects and their completion status.
- Typologies financed: irrigation and drainage (11); rural roads (2); electrification and rural energy (4); technology and market development (2); fire prevention (1); technical assistance (1).
- **Main Outputs:**
 - 233.2 km of canals rehabilitated/modernized
 - 153 km of rural roads improved
 - 1,283 km of electricity line installed
 - 142 km of gas line (*gasoduto*) installed

Origins of the provincial public infrastructure investments: While the public infrastructure subprojects were to be demand-driven and it was not possible to determine a priori specific investments and beneficiaries, on the basis of PROSAP I experiences a pipeline was developed based on SAGPyA's prioritization of 176 subprojects submitted by the Provinces and national institutions from a 2005 call for proposals. Of the US\$1.1 billion in financing proposals received, 86 percent were irrigation and drainage and basic infrastructure. Some 68 were rated top priority but certain inadequacies and a further winnowing for the purposes of PROSAP II resulted in six subprojects which were prepared and ready to implement at effectiveness to jump-start project execution. The BCR (UCAR, 2017) shows that they were implemented by PROSAP II, unlike PROSAP I where a similar, upstream portfolio of 11 subprojects was found at effectiveness to not in fact, be ready for implementation and of which only one ever went ahead.

(b) **National public infrastructure subprojects for competitiveness and agro-livestock productivity** (to potentially include): (i) irrigation and drainage; (ii) transport, communications and energy; (iii) infrastructure for market development; (iv) sanitary control and quality; (v) land

⁴⁶ The PAD estimated (but did not target) 35 provincial infrastructure investments but this was tentative given the demand-driven nature of subproject access and approval criteria.

administration, e.g. updating irrigation cadasters; and (vi) TA for extension, technology transfer, and capacity-building. **Substantially Achieved**

- **Jóvenes Emprendedores Rurales II** (JER -Young Rural Entrepreneurs Program), under which: (i) 77 private local institutions nation-wide established Business Development Centers (BDC); (ii) 4300 business plans were prepared by assisted youth; (iii) 199 youth business ventures received ASNR (non-reimbursable seed capital) totaling ARS 4.8 million; (iv) 297 businesses received prizes (through 25 competitions for ideas and projects) valued at ARS 3.0 million. See Annex 5 summary of the JER evaluation study.
- **TSE Prevention II: Continuation and Strengthening of Vigilance Activities** was completed, helping Argentina maintain its status as free of Transmissible Spongiform Encephalitis (TSE) as verified by the World Organization for Animal Health (OIE). INTA Castelar is one of 7 global reference laboratories for TSE diagnosis (along with Italy, Spain, UK, Switzerland, Japan and Canada).
- **SENASA Vegetal Laboratory Stage IV** was about 65% completed by closing. This work was adjudicated in December 2015 and signed in September 2016. Its Work Plan indicated that it would reach 80% completion by project closing. However, a month before closing it was evident that excavation had only just begun for the concrete foundation. Machinery and equipment had not yet been purchased, implying the need for counterpart financing of some US\$3.7 m to US\$5.1 m, compared to the US\$2.4 m actually budgeted. The Ministry of Agriculture and Industry (MAI) guaranteed that the additional resources will be allocated in the government budget given the priority national status of the laboratory.

(c) **Private on-farm and off-farm investments (group or individual) co-financed through grants** (Non-Reimbursable Contributions – NRC) of up to 40% to eligible beneficiaries, for a private individual or group investment (max. US\$15,000 for an individual producer on-farm investment, and US\$190,000 for a producer group off-farm investment. The remaining 60% would be financed by the beneficiaries (own funds or commercial loan). NRCs were expected to leverage US\$110.5 million in private investments through US\$44.0 million in financial support, benefiting an estimated 4,000 producers. **Achieved**

- 1,723 ANR investments fully completed and another 73 partially completed of a total 2,788 proposals received and 1,914 approved. There was no PAD target for ANR.
- 97% financed were individual/on-farm and 3% producer group/off-farm, valued at US\$17.6 million with counterpart contribution of US\$34.0 million (total US\$51.6 m compared to the PAD estimate of US\$159.0 m, comprising US\$115.0 m in private contribution and US\$44.0 for the grant portion).
- Main types of investments: infrastructure (29.5%); machinery (23.3%); irrigation equipment (16.5%); breeding animals (10%); plantations (8.1%); beekeeping equipment (2.1%); small equipment (2.1%); dairy equipment (1.2%); soil-related material (0.7%); other (3%).
- Total beneficiaries: 5,000
- Average cost per beneficiary: around US\$5,000 (individual) and US\$61,000 (producer group)

Table 1: Participation of ANR by Type of Intervention/Program

Type of Intervention	ANR Projects #	Distribution %	Beneficiaries #	Distribution Beneficiaries
Irrigation and drainage	666	37	1,792	36
Rural Roads	247	14	632	13
PROCAL	140	8	418	8
Rural Electrification	148	21	411	8
RDI/IDEMI	382	6	1,247	25
Phytosanitary Protection	112	5	316	6
Commercial Development	91	1	182	4
Other	10	1	2	neg
Total	1,796	100	5,000	100

Source: UCAR, 2017

(d) **Institutional development subprojects** to include:

National-level: (i) continued development and updating of SAGPyA's long-term development policy framework (processes and procedures to improve the generation, execution and analysis of a long-term rural development policy framework); (ii) promotion of soft skills related to administrative and management capacities; (iii) implementation of a new institutional approach to mainstream PROSAP II's contribution within the SAGPyA structure; and, (iv) establish the operational mechanisms to strengthen coordination between SAGPyA (later UCAR), decentralized agencies and selected financial entities. **Achieved**

- The Ministry of Agriculture, Livestock and Fisheries (MAGyP) was created soon after PROSAP II effectiveness, followed by the establishment of UCAR.
- This new institutional context paved the way for rural sector policies, programs and projects, with institutional capacity strengthened via its strategic coordination of various projects using external financing.
- Diagnostics, studies and projects were conducted linked to the development and strengthening of UCAR's organizational and operational structure, as well as its inter-institutional relationships with provincial and national agencies and with the Ministry of Agro-industry (MAI, formerly MAGyP), and with external donor agencies.
- Analytical studies included: (i) Estudio Institucionalización de la UCAR, Nogueira, 2011; and, (ii) Análisis de la Estructura Organizativa y Funcional de la UCAR y PROSAP, Badui (2012).

Provincial-level: (a) finance demand-driven institutional development subprojects to address specific needs above the minimal functional support under Component 1, including: (i) strengthening provincial capacity to design, implement and monitor rural development policies longer-term; and (ii) define the roles of provincial public sector agencies in the preparation and implementation of public investments. **Achieved**

- **FCOP** subproject (*Fortalecimiento de las Capacidades Operativas Provinciales*) financed demand-driven subprojects providing equipment, training and technical assistance for the provincial Entities EE (Entidades de Enlace), EPDA (Entidades de Programación del Desarrollo Agropecuario) and EPAF (Entidades para la Administración Financiera). The objective was to generate and establish installed human resource capacity to improve the

Entities' functionality to manage the PROSAP project cycle, and support the definition, design, implementation and monitoring of provincial sector policies.⁴⁷

- **Outputs:** Office equipment for improved work spaces for EE, EPDA and EPAF; modern IT/computer equipment; organizational and procedural manuals/guides; coordination support to improve the dialogue between project actors/stakeholders (mainly EE, EPAF, UEP and UEC); and, strengthening of inter- and intra-institutional coordination.
- **FAO** implemented a US\$4.32 m technical assistance project (Institutional Development for Investment) from 2011-2015, explicitly to train provincial public agencies involved in PROSAP to define, formulate and implement public infrastructure subprojects.⁴⁸
- **Outputs:** Portfolio of subprojects and sector studies for PROSAP II; deepened knowledge and technical capacity in subproject intervention zones; and, national and provincial public policies for sector support to irrigated agriculture, discussed and strengthened.
- Implementation activities supported Provincial Governments in preparing subprojects for innovative investments in irrigation, preparation of strategic studies discussed and validated by relevant sectors and generation of technical capacity of professionals in various relevant themes.
- **Participating institutions included:** Ministry of Agriculture, Livestock and Fisheries (MAGyP), its Secretariat of Livestock, Fisheries and Food (SAGPyA); UCAR; National Institute of Water (INA); National Institute of Agro-livestock Technology (INTA); University of San Martín; and the Ministries of Production of the Provinces of Salta, Rio Negro, Jujuy, Neuquén, Chubut, Catamarca and Tucumán; TRAGSA (Spain); and FLACSO.

Pilot instruments (subprojects):

(a) **Rural Development Initiatives (RDI)** prepared and implemented by Development Consortia based in the PMDC: mobilizing multi-sector interactions between public and private actors; and, strengthening production to market integration through value chain development in five pre-identified geographical areas of intervention. **Partially achieved**

- 3 RDI were prepared and implemented (1 partially); and, 15 IDEMI were prepared, 6 of which were under implementation at closing and 9 were still under preparation. Evaluation studies were conducted for 3 RDI and 1 IDEMI. See below.

(b) **Innovation Transfer Initiatives (ITI):** based on financing goods and activities (equipment, workshops, meetings and visits of experts) needed to apply innovations and strengthen the functioning of Innovation Networks (IN). **Achieved**

- 15 ITI were presented of which 12 were executed, but with interruptions due to execution problems and in two cases because they did not obtain the Bank's No Objection due to entering the active portfolio too late to be financed. See Annex 5.

Component 3: Project Management (PAD US\$19.36 m/Actual US\$33.2 m)

⁴⁷ See: Informe Final de Gestión 2014 – Proyecto de Fortalecimiento de las Capacidades Operativas Provinciales – FCOP, UCAR, 2014

⁴⁸ See: Final Report: Institutional Development for Investment, UTF/ARG/017/ARG, FAO 2015.

(a) **Monitoring and evaluation** of project activities through physical and financial monitoring systems in coordination with the provinces. **Partially achieved**

- UCAR established a system to monitor the project's day to day progress, physical and financial, in coordination with the provinces, but the system was deficient in key respects including the speed and accuracy of provincial data.

(b) **Management Information System** established to record data associated with project implementation including real time progress monitoring. **Partially achieved**

- The MIS was established but had difficulty until late in the project period providing updated information and it is unclear whether real time progress monitoring was established.

(c) **System for Independent Evaluation (SIE)** to monitor subproject performance, managerial efficiency, and beneficiary participation and satisfaction and beneficiary participation and satisfaction. **Not achieved**

- The SIE was not established (see reasons main text Section 2.4). UCAR already had an M&E Unit which was carrying out the functions envisaged for the SIE, and with the freedom to contract specialized consultants when required. SIE was seen as duplicating UCAR's existing functions and causing redundancy.

(d) **Baselines** developed for each subproject prior to implementation **Not achieved**

- Each subproject had a baseline developed but these were not designed to align with the requirements for formal evaluation with the exception of one subproject: Irrigation Rio Metán, Salta Province.

(e) **Conduct evaluations**, focus groups and opinion surveys of beneficiaries; quantitative studies to monitor final and intermediate indicators; conduct a Mid-term Evaluation; and conduct a Final Evaluation at project completion. **Achieved**

- Consultations, focus groups and opinion surveys of beneficiaries and stakeholders conducted (see Annex 5)
- Workshops were organized with project beneficiaries to validate and adjust all evaluations prepared (MTR, Qualitative, ex-post economic evaluation, impact evaluations, transversal and case studies, and the Borrower Completion Report)
- Quantitative and qualitative studies conducted to monitor and update the Results Framework (see Annex 5)
- MTR Evaluation completed and presented to the Bank in 2012 (see project archive)
- Draft Borrower Completion Report (BCR) shared with the Bank, and finalized based on Bank review/comments
- Final evaluation study conducted at project completion

(f) **Strengthening the UEC's administrative and management capacity**, focused on promoting the adoption of the project's new conceptual orientation (participatory design, complementary investments, e.g., ANR, RDI and ITI) **Achieved**

- UCAR supported the adoption of a new conceptual focus based on the PROSAP I experience, bringing important changes such as a territorial/micro-regional approach, manuals, and an institutional restructuring in consultation with the provinces.

(g) Preparation of special studies by PIU: (i) policy development; (ii) experience of operation and maintenance (O&M) under PROSAP II; and (iii) institutional study to prepare structural scenarios to be adopted for mainstreaming PROSAP II in SAGPyA. **Substantially achieved**

- Specific studies were prepared: (a) (i) *Institucionalización de la UCAR y del PROSAP*, R. M. Nogueira, 2011; and, (ii) *Análisis de la Estructura Organizativa y Funcional de la UCAR y el PROSAP: Propuesta de Rediseño Organizativo*, M. T. Badui, 2013; and (b) *Evaluación Fortalecimiento a Consorcios de Usuarios – Informe Final*, UCAR/M. Pinto and M. Andino, March 2017. No information was available on the preparation of policy development studies.

Investment Instruments Financed

2.2 The PROSAP II portfolio totaled 28 subprojects of which 21 were implemented by the Provinces and 7 by the Ministry of Agriculture and Industry (JER, and TSE Prevention), SENASA (Vegetal Health Laboratory, Stage IV) and the PROSAP PIU (FCOP, ANR, ITI and RDI/IDEMI). The following summarizes key aspects of the national, grant-based ANR, the pilot RDI/IDEMI and ITI, and the national FCOP subproject to develop provincial institutional capacity.

ANR (Matching Grants):

2.3 Some 2,788 investment proposals were received for ANR (see Main Text Section 2.1) of which 1,914 were approved, 1,796 initiated and 1,714 fully-concluded by closing with the remaining 73 at an advanced stage of completion by the beneficiaries involved. ANR benefited an estimated 5,000 producers (compared to the 4,000 projected at appraisal). Importantly, responsibility for concluding ANRs still under finalization at closing is fully on the beneficiary. ANR Resources were not disbursed by the Government of Argentina/UCAR in advance, meaning that the ANRs disbursed the grant portion via reimbursement of expenditures incurred and corroborated.

2.4 Some 97 percent were individual, on-farm investments and just three percent were producer group-based, off-farm investments (averaging about 60 members per group). The average investment was US\$5,000 per individual producer and about US\$61,000 per group, and 19 provinces participated. Of the total ANR investments – and based on the 1,796 actually concluded - some 1,061 or 59 percent were linked directly to provincial public infrastructure investments (irrigation, rural roads and electrification), both PROSAP I and II (see Table 4 below). The PAD estimated that some 35 provincial subprojects would be financed – versus the 21 actually financed – and that irrigation would be a high proportion given the central and provincial governments’ concerns about climate change and its potential impacts on Argentine agriculture. Also, the number of provinces involved (19 out of the 23 total) and the types of programs and value chains around which the ANRs coalesced was much broader than envisaged, extending well beyond the Regional Economies – the ANR program was essentially nation-wide – and linked to territorial development initiatives (RDI/IDEMI), phytosanitary protection systems, commercial development and PROCAL. The following tables illustrate this aggregate situation at project conclusion.

Table 3: Approved ANR by Province⁴⁹

Province	# ANR Projects
Buenos Aires	201
Catamarca	7
Córdoba	116
Corrientes	1
Chaco	164
Chubut	128
Entre Ríos	230
Jujuy	24
La Rioja	6
Mendoza	300
Misiones	156
Neuquén	66
Rio Negro	155
Salta	97
San Juan	45
Santa Fe	7
S. del Estero	72
Tucumán	5
Tierra del Fuego	5
Total ANR	1,914

Source: UCAR/M&E Unit, 2017

Table 4: Participation of ANR Interventions

Type of Intervention	# ANR	Distribution %	# Beneficiaries	Distribution Beneficiaries %
Irrigation and drainage	666	37	1,792	36
Rural Roads	247	14	632	13
PROCAL	140	8	418	8
Rural Electrification	148	8	411	8
Territorial Development Initiatives (RDI/IDEMI)	382	21	1,247	25
Phyto-sanitation	112	6	316	6
Commercial Development	91	5	182	4
Other	10	1	2	0.04
Total	1,796	100	5,000	100

Source: UCAR/M&E Unit, 2017

2.4 **Achievements:** Among the achievements of this instrument, the territorial distribution of investments was notable as was the steady increase in the number of beneficiaries. This is due to the UCAR/UEC's aggressive diffusion of the ANR mechanism to the Provinces, the

⁴⁹ This includes 118 ANR approved late and not initiated before closing, and 73 still under implementation (at closing) but expected to be completed within the grace period.

professionalization of the ANR teams, simplification of the access requirements and, the meetings/encounters organized by and with the responsible provincial authorities to work on issues related to the ANR approach and to exchange experiences. In management, the average period between the presentation of SOEs and payment was reduced from 15.6 months to 6.4 months between 2011 and 2016. Execution improved because processing quality and timeliness was improved, mainly due to better quality formulation of subprojects and reduced periods for subproject evaluation. Further, from 2010 to 2015, the under-execution of amounts financed (difference between the amounts solicited and amount executed) was reduced from nine percent to six percent, while the difference between ANR subprojects entering the portfolio and those not executed fell from eight percent to six percent. In the final period of ANR implementation, some 60 percent of the total time for subproject processing and approval was absorbed by the requirement for a Ministerial Resolution. See Annex 3 for summary economic impact results and Annex 5 for a summary of the ANR-related evaluation reports.

2.5 Sources of counterpart financing: There is little detail on the extent to which ANR beneficiaries accessed financing beyond their own and family savings, and this is a pity as a more detailed and nuanced picture of beneficiaries’ relationships with financial entities/banks would have been important to understand. The main source of the required 60 percent was “own funds”, both for on-farm and off-farm ANRs and this is likely to have involved informal loans from family and friends. Several evaluations of the ANR instrument show that links to other, more formal sources of credit enabled beneficiaries to formulate larger investments of greater complexity and helped them put together the required 60 percent. See Table 5.

Table 5: ANR Financing

Subproject	Own Funds		Credit	
	# ANR	%	# ANR	%
Off-farm	14	47	16	53
On-farm	661	69	295	31

Source: UCAR/M&E Unit, 2017 (based on sample)

2.6 Targeting and selection of ANR: The prioritization of proposals for an ANR were initially to be based on its complementarity with a public infrastructure intervention, whether executed or under execution. While “public infrastructure intervention” was a fairly tight concept in the PAD, i.e., signifying a PROSAP provincial infrastructure subproject and most likely irrigation, in practice this came to be interpreted more widely. Those able to access an ANR were: beneficiaries of a specific provincial public infrastructure subproject; Cluster producers; micro-regions; the regional development initiatives (RDI); ITI or producers assisted by PROCAL (*Programa de Calidad Alimentaria* – National Food Quality Program). Provincial Governments, acting through contracted consultants, disseminated the ANR instrument widely to producer organizations, business round tables, municipalities, INTA and universities; supported the formulation of investment proposals for presentation to the UEC; and, assisted producers with approved proposals up to the point of requesting the grant portion. The UEC trained provincial teams, accompanied their activities, disseminated the ANR through various media, and organized proposal “formulation days” which producers were invited to attend for support. Provincial actors worked with ANR guides, and a checklist of required documentation. Screened proposals were then sent to the UEC where they were formally assessed, technically and economically and approved/not. Pilot ANRs were established in the first instance to enable access to an ANR for firms who could not come up with 100 percent of ANR cost, in which case the ANR was ceded to a supplier or a credit institution.

2.7 **Beneficiaries:** By project closing, an estimated 5,000 producers (including groups) had benefited. A 2014 impact evaluation of ANR beneficiaries found that a majority were small- and medium-size producers of which 50 percent had less than 12 ha and just over half were dependent to some extent on off-farm work, mostly on smaller properties.⁵⁰ It was also found that their level of associative activity/adherence was relatively low: some 48 percent of properties were not associated with any form of chamber or organization. Their productive characteristics were/are diverse and involve mainly beekeeping, agriculture, livestock, dairying, poultry-raising and grapes. In this regard, they differed from the direct beneficiaries of the provincial infrastructure subprojects who were on average more commercially linked and better capitalized. The evolution of their productive indicators was found to be positive, influenced by the type of value chain in which they were/are incorporated.

2.8 The great majority (93 percent) obtained the ANR subsidy they requested and, a large part of the beneficiaries financed their portion mostly with their own or family savings, or turned to sources of credit. The level of under-execution of ANRs was quite high in 2016 compared to previous years, associated with the time needed to carry out the investment. In prior years, the average was 13 months from approval to reimbursement but projects entering the ANR portfolio in the final year had only until March 15, thus ANRs approved in September and October of 2016 had insufficient time for this cycle. Responsibility for ex post completion, as stated above, rested solely with the beneficiary.

2.9 **Impact:** A 2017 evaluation (see Annex 5) found positive results/increases for a treatment group in the main productive indicators such as volume of production (73%), total income (146%) and productivity (21%). Beneficiaries interviewed expressed positive views (65% perceived high impact and 35% perceived moderate impact). Similarly, 89% of beneficiaries interviewed said their production had increased and 64% said profitability had improved. See also Annexes 3 and 5.

ITI (Innovation Transfer Initiatives):⁵¹

2.10 The ITI were financed under the Component 2 competitiveness activities as a pilot activity to foment and promote adaptive technological innovation in agro-livestock productive chains. This instrument was not only committed to research and development (R&D) activities but also intended to disseminate results, facilitate adoption and learning by producers, create networks of institutions of science and technology and technology users, and support the development of promotional instruments by local, provincial and national governments. The ITI were to link agro-livestock producers to an instrument for supplying their innovation needs with available/accessible solutions developed through adaptive activities, although in practice they went far beyond adaptive in many cases. The ITI acknowledged the difficulties faced by incorporating/bringing together three key elements: (i) a Science and Technology Institution; (ii) Associations of Agro-livestock Producers with an expressed interest in and commitment to innovation and efforts to adopt it; and (iii) a Province committed to disseminating innovation and including it in its policies promoting competitiveness. This local institutional innovation constituted the “embryo” for the Regional Innovation System.

⁵⁰ See: Evaluación de Impacto de los Aportes no Reembolsables (ANR), Reporte Final, UCAR/Masello, September 2014.

⁵¹ Informe de Evaluación de las Iniciativas de Transferencia de Innovación (ITI) del PROSAP II, UCAR/Guerrero, February 2016

2.11 The benefits of the ITI became evident through the technology transfer projects. Their preparation was initiated through calls for interest/proposals which, once approved, resulted in the establishing of an Ad Hoc Committee comprising the public and private sectors and academia. A total of 15 formal proposals were submitted to an ITI evaluation committee of which 12 were executed (with one later dropped due to execution issues, and two for not obtaining the Bank's no objection due to their late entry into the program), in 11 Provinces. While the impact of most ITI was provincial, in some cases they had regional impact, such as #7 below (Catamarca, Salta and Tucuman) and #6 (Rio Negro and Chubut).⁵² The UCAR/UEC organized results workshops for each ITI upon its completion, and dissemination events with wide participation of the technical community representing key organizations, and an evaluation was conducted (see footnote 33).

Table 6: ITI Implementation Status

No.	ITI	Executed/Not
1	Ensayo de Cultivos de Trufas y Terfezias	Yes
2	Ensayo de Rotación Arroz Peces	Yes
3	Planta Micropropósito de Processamiento de Frutas	Yes
4	Centro de Inseminación para Pequeños Rumiantes	Yes
5	Ensayos de Obtención de Energía Eólica en “venturis vegetados”	Interrupted
6	Innovación en el Malteado y Procesado de Lúpulo para Cervecería Artesanal	Yes
7	Desarrollo Tecnológico de Material de Propagación de Comino y Anís	Yes
8	Desarrollo Tecnológico del Tratamiento Post Recolección y la Producción de Harinas de Frutos Provenientes del Monte Nativo de Santiago del Estero (Pilot Scale)	Yes
9	Desarrollo Experimental de Alimento Balanceado	Yes
10	Desarrollo de la Producción de Semilla de Quinoa	Yes
11	Centro de Innovación e Transferencia de Tecnología Agro-ecológica para Organizaciones de Agricultores Familiares	Yes
12	Bioinoculantes promotores de Crecimiento Vegetal para Mejorar la Producción de Especies de Uso Forestal y Agro-forestal	Yes
13	Mejoramiento Genético y Reproductivo del Rodea Bovino de la Región de Albigasta	Yes
14	Laboratorio de Postcosecha y Agregado de Valor Frutihortícola en los Antiguos en la Provincia de Santa Cruz (Bank No Objection not obtained)	No
15	Transferencia de Tecnologías al Pequeño Productor de Legumbres Secas de los Departamentos Trancas y Burreyacu de Tucumán (Bank No Objection not obtained)	No

Source: UCAR/M&E Unit, 2017

2.12 **Impact:** In terms of the ITIs' economic and productive impact, results of the 2016 study indicate that the ITI not only achieved their objective of defining a series of identifiable commercial products but that this led to the application of new productive techniques, the generation of new products, the incorporation of new management tools and increased associative behavior. A highly

⁵² Catamarca, Chubut, Corrientes, Jujuy, La Pampa, Tucumán and Santa Cruz.

desirable feature was that they enabled beneficiary producers to improve their quality of life by inserting them in a regional development strategy. A factor which made a major difference in the transfer of these innovations was the participation of strong educational and scientific institutions committed not only to research but to the application of its results.

2.13 The initial objectives of the ITI were achieved in terms of ad hoc associations and their linkage to scientific entities, producers and other state entities. The ITI analyzed were completed and ready to explore their commercial potential and enter markets. In fact, producers in the western Pampa had not used – until the advent of the ITI – techniques for genetic improvement through insemination or the embryo implantation. In the case of Santiago del Estero, the processing of forest fruits was marginal before the ITI; and, there was no record of producers processing tropical fruits on the scale introduced by the ITI.

2.14 A major positive of the ITI was their ability to mobilize local capacity represented especially by the universities and scientific institutions in each province and it was highly advantageous that they were institutions from the same territory as the ITI itself providing greater knowledge of the territory and its problems. The intervention of these institutions broke the inertia of many producers by showing them better production techniques, new products and the potential to improve profitability. This linkage is not static and demonstrates significant feedback into producers' information base

2.15 **Sustainability:** In economic/productive terms, the ITI are sustainable: projecting their inputs and associated costs, they are projects which generate value, with positive NPV and other benefits which cannot be captured quantitatively. The study recommended that their social rate of return should be studied in future evaluations to assess their “triple line of benefits”: social, economic and environmental. The study concluded that the ITI were much more than a simple transfer of innovation from the top, but implied a general re-plantation of complete productive systems (La Pampa) or the creation of a product and its market (Santiago del Estero and Misiones). This resulted from working at multiple levels, including: organization and management; reinforcing associative behavior; fiscal formality; and, adoption of new productive techniques.

RDI (Regional Development Initiatives)/IDEMI (Micro-regional Development Initiatives):

2.16 The Regional Development Initiatives (RDI) started as a pilot in five pre-selected regions named in the PAD. Of these five regions, only three developed a Development and Competitiveness Improvement Plan (PDMC) (Albigasta, Valle Calchaquí and Linea Sur) and subsequently established a directorate. The MTR analyzed the RDI process and acknowledged the difficulties of moving ahead due to different laws and regulations at the municipal and provincial levels. To resolve this situation, it was agreed that henceforth the “regions” had to belong to one province only and if possible, one district only. This originated the new name IDEMI (*Iniciativas de Desarrollo Micro-regionales*) or Micro-regional Development Initiatives.

2.17 The IDEMI instrument financed 21 territorial planning exercises. Of the 12 IDEMIs initiated in 2014, three finalized their PDMC and nine were finalizing their PDMC formulation by closing. Another three were set aside for various reasons. The following summarizes evaluation studies of three IDEMIs implemented:⁵³

⁵³ See: Evaluación de las Iniciativas de Desarrollo Regional (IDR), UCAR/P. Pucciarelli, September 2016.

- RDI Albigasta Region:** The objective was to promote regional economic development based on rural production by strengthening local institutions and defining consensual activities between local actors which would improve competitiveness. The strategic idea was to improve those sectors with competitive potential such as the cattle and goat value chain; agriculture (forage oil, fruits); industry (dairy, biofuels, oils); and, creation of firms supporting young entrepreneurs, developing a regional trademark sustainable over time. **Results:** (i) generated a high level of ownership both for the results achieved and institutional gains as well as operating mechanisms; and **shortcomings,** (ii) the Albigasta Region needed to move from an ad hoc association status to a more formal legal status appropriate to its purposes; (iii) it also needed to reduce dependency on public resources and generate more of its resources from the private sector; (iv) it needed to develop an “exit” strategy from public resources in order to consolidate and not deteriorate, institutionally.
- RDI Valles Calchaquies:** This subproject encompassed parts of three Provinces: Catamarca, Tucuman and Salta, and was intended to promote the development of the livestock productive base (goats, sheep, camellidos and cattle); agriculture (vid, peppers, fruits, herbs and aromatics, and Andean crops); and, industry (mining, vitivinicola, tourism, peppers, and artisanal and regional products). Results were mixed. **Results** included: (i) generation of the “Vision” strategy for Valle Calchaquí; (ii) preparation of a final PDMC identifying projects, using participatory, democratic methodologies at the local level; (iii) initial institutional steps to lead an initiative for integrated territorial development; and (iv) creation of a Corporation for the Valle Calchaquí, Catamarca, Salta and Tucumán (CODEVAC), an important legitimization as a central entity for conduction regional initiatives; and importantly (v) execution, via CODEVAC, of four priority projects as well as an ITI, “Technological Development of Propagation Material for Cumin and Anise”. **Shortcomings** included CODEVAC’s difficulties in constituting itself as a space for channeling and linking the resources and interventions of other instruments available through UCAR/PROSAP II, as well as others outside UCAR, both public and private and at different jurisdictional levels. Also, CODEVAC underwent a process of de-legitimization and debilitation as a central organization for conducting regional development.
- RDI Linea Sur:** This RDI covered a region of some 121,800 km² and a population of 37,672 inhabitants in the Province of Rio Negro. Its objective was to retain and expand the population of the Southern Region, improve their quality of life through sustainable economic, social and environmental development. The productive base is livestock, (mainly sheep), forage production, cold storage and ecotourism. **Results:** An Executive Unit for the PDMC was established made up of regional economic and social development agencies, and an operations manager to manage projects under the PDMC. It executed small on-farm subprojects to improve efficiency and rural living conditions including: community infrastructure for cattle fattening; strengthening and integration of regional extension services; and, creation and operationalization of a management unit for development projects in the Southern Region of the Rio Negro. Among the **shortcomings** affecting execution, institutional capacity was crucial in explaining this RDI’s low level of efficiency and effectiveness, fundamentally due to the high turnover in leadership of the Regional Entity (three leaders in one year).

- IDEMI Crespo and Aldeas Aledanhas:⁵⁴ This IDEMI involved an area of 60,000 has in the Province of Entre Rios with a population of 24,200. Its productive base is agro-livestock and main activities are cereals and oils, swine, dairy and cattle. The small subprojects implemented under this IDEMI included: (i) technology and managerial advances in small-scale swine operations; (ii) flower development in aldeas around Crespo; (iii) development of a technology package for re-using chicken beds; (iv) prototype mobile plant for de-activating chemical containers; (v) pilot plant for treating chicken waste; (vi) effluent processing in pig birthing areas; and, (vii) institutional strengthening and project coordination. Further, the micro-region established an ad hoc association to coordinate efforts to move forward activities identified and prioritized for sustainable development of the micro-region.
- **Results** show that the institutional framework established by this IDEMI is continuing to achieve its objectives. Of fundamental importance was the rapid establishing of an integrated team comprising representatives of public and private entities which enabled the efficient and effective development of activities. This experience is viewed as **highly positive** due to: (i) the institutional framework established for the micro-region; (ii) representation and participation of the political, technical, productive sectors, both public and private, to drive the association; (iii) a solid, professional team for the association to move the micro-region forward; (iv) confidence-building activities; (v) participation of and response from the productive sectors; (vi) implementation, through the Association, of priority projects; and (vii) training and human resource formation for micro-regional development.

FCOP (Strengthening of Provincial Operational Capacity):⁵⁵

2.18 This was an important National subproject to finance: (i) information technology equipment and furniture to train the provincial EE (*Entidades de Enlace* – related agencies), EPDA (*Entidades de Programación de Desarrollo Agropecuario* – Entities for the Programming of Agro-livestock Development) and EPAF (*Entidades para la Administración Financiera* – Financial Administration Entities) in themes not contemplated in UCAR/UEC’s 2010-2011 Training Plan; (ii) contracting of specific forms of TA to constitute and operationalize them; and, (iii) the generation of sustainable installed capacity to increase their functionality. The FCOP subproject sought to strengthen the EE, EPDA and EPAF to manage the project investment cycle under PROSAP and participate actively in the definition of sector policies at the provincial level. Based on the institutional capacity diagnosis of 2009, FCOP had three components: equipment, training and technical assistance:

- Equipment: Intended to provide the three entities with the IT equipment, software, audio-visual and office equipment indispensable for fulfilling their responsibilities to PROSAP. Most procurement was at the national/central level, e.g., IT and furniture, while smaller purchases were managed through price comparison due to their cost and diversity. FCOP was extended due to contracting and cost adjustments which affected overall timing of its implementation.

⁵⁴ See: Evaluación de las Iniciativas de Desarrollo Regional (IDR), UCAR/P. Pucciarelli, November 2016.

⁵⁵ See: Fortalecimiento de las Capacidades Operativas Provinciales (FCOP)

- **Training:** The objective was to create a cadre of personnel in all three entities, trained in key themes associated with the project cycle. It financed activities which complemented those in the UCAR/UEC Training Plan so as not to duplicate that instrument. Provincial demand for FCOP training was strong with many seminars and training events conducted but there was also a decline over time in what was actually implemented due to management changes which in many cases necessitated a re-definition of the strategies for provincial strengthening.
- **Technical Assistance:** This component financed contracted specialists to resolve problems identified by the Entities and whose resolution was expected to improve project efficiency and efficacy. For institutional TA, a work plan was devised to insert the EE/EPDA into the actual provincial structure (in many cases with direct dependence on the Minister) and future challenges related to implementing new and different subprojects. It was observed in various cases, that the Manual of Organization and Procedures requested from each province responded to the need for a formal institutional tool to help the entity in its relationships with other traditional provincial dependencies organized under different administrative procedures. Various jurisdictions which did not solicit FCOP assistance, once they understood what other provinces were receiving, requested collaboration/participation to develop a manual, multiplying the number of jurisdictions participating in this subproject.

2.19 FCOP was originally planned to close in 2011 but was extended to October 2014 due to the 2011 elections resulting in many changes at the provincial level, new strategies, institutional changes especially in provincial teams managing/executing PROSAP II – requiring FCOP training services - and financing delays.

2.20 **Results:** The FCOP evaluation cites the following achievements:

- *Improved working conditions* through improved office space, furniture and IT equipment for the EE, EPDA and EPAF in 18 provinces;
- *Preparation of organizational and procedural manuals*, as demanded by several provinces to improve their management and administrative circuits;
- *Greater knowledge of the tools of management*, especially for planning, M&E and information technology;
- *More detailed understanding of administrative circuits*, focusing on procurement processing which proved vital to the EPDA/EE/UEP and EPAF to successfully execute their subprojects;
- *Greater provincial knowledge and understanding* of the internal structure of the central PROSAP UEC, supporting problem-solving and managerial issues;
- *Improved dialogue between the main provincial actors* involved in PROSAP, and the UEC, greatly reducing provincial “insularity” which suppressed progress/achievement; and,
- *Improved institutional planning* through the preparation and consideration of organigrams and profiles – a form of diagnosis to target resources; and, internal organization of the EE better-aligned to their objectives.

2.21 Table 7 shows the provincial and national subprojects, their completion status, total cost per subproject and number of beneficiaries:

Table 7: Profile of Provincial and National Subprojects

Subproject	Objectives and Activities	Date Completed or Status	Cost USD Million	No. Direct Beneficiaries
Province of Catamarca				
1. Reconstruction and Improvement of Irrigation System – Los Altos	<p><u>Objectives:</u> Improve the quantity, quality and opportunity to access irrigation and potable water, strengthen producers and their institutions to organize irrigation and to improve and diversify/convert their production.</p> <p><u>Works:</u> canal relining; improved functionality of the irrigation network; pipes; perforation and electrification; and improved water distribution structures. Production: mainly tobacco, vegetables, grains.</p>	08/2016	US\$2.76	186
Province of Cordoba				
2. Rural Road Improvements in Dairy Production Area II; and, Distributor on National Route 19 and Provincial Route E-52	<p><u>Objectives:</u> Section I: Maximize/improve transit conditions and security of the road system in the productive axis of La Tordilla-Arroyito-Sacanta, represented by Provincial Route E-52 and these stretches, through an extension of 53 km.</p> <p><u>Works:</u> paving, drainage, restoration and cleaning of ditches in the sandy stretches, horizontal demarcation and vertical signage. Section II: Basic works and sanding of E-52, paving, conservation, drain replacement.</p>	03/2014 02/2017	US\$30.33 (total)	322
3. Gas Line (gasoduct) for Agro-livestock Development in the South	<p><u>Objectives:</u> Diminish the energy costs for agro-industries in the micro-region as a consequence of using Natural Gas.</p> <p><u>Works:</u> Develop the basic infrastructure for gas delivery, consolidating primary and secondary agro-livestock activities economically and socially of the region, favoring local competitiveness and the relative price relationship in the primary sector.</p>	03/2017	US\$20.05	26 direct (estimated 14,000 indirect beneficiaries in seven localities)
Province of Entre Rios				
4. Rural Electrification in Rice Zones El Redomón – Paso de Miraflores	<p><u>Objectives:</u> Expansion of electricity services via conventional aerial lines in the areas of Redomón and Miraflores, fostering competitive development of agro-livestock value chains, mainly in rice by</p>	Incomplete. Being concluded using	US\$18.57	52

	reducing the cost of pumping water to rice fields and promoting innovation. <u>Works:</u> Extension of tri-phasic and mono-phasic branches.	provincial funds.		
Province of Jujuy				
5. Improvement in the Productive Area of San Jose del Bordo	<u>Objectives:</u> Rehabilitate, improve and construct infrastructure to improve the functioning of the irrigation system to assist producers, and strengthen entities responsible for administrating system. <u>Works:</u> improved water intake structures, canal re-lining, bridge rehabilitation.	04/2017 Delayed completion due to need for underground lines, and re-design of aerial lines in Las Charruas Region.	US\$3.32	57
6. Improving Functionality of the Irrigation System Arroyo Colorado – Santa Clara	<u>Objectives:</u> Rehabilitate, improve and construct infrastructure to improve the functioning of the irrigation system to assist producers, strengthen entities responsible for administrating system, and increasing its overall efficiency from 36% to 53%. <u>Works:</u> Headwaters and treatment works (un-silting); re-lining of canals, and pipes for the main canal in the Santa Clara system.	Incomplete Contracting issues required new procurement process. Works being completed with counterpart funds.	US\$3.98	66
7. Strengthening of Provincial Fire Management/Prevention Services	<u>Objectives:</u> Increase the efficacy in combating forest and rural fires, of the Forest and Rural Fire Brigades, by incorporating new infrastructure, equipment, and knowledge necessary to apply appropriate technologies for fire management. <u>Works:</u> Infrastructure and equipment; training and communications; revising the legal norms governing the Fire Brigade to enhance efficiency; installation of geo-referenced system for organizing and analyzing information, and improving planning and prevention; and	04/2017 Delayed but completed with available funds.	US\$2.80	34,373

	implementation of methodologies for natural resources management and appropriate training.			
Province of Mendoza				
8. Irrigation System Modernization – Arroyo Villegas and La Pampa Canal	<u>Objectives:</u> Rehabilitate, improve and construct infrastructure to improve the functionality of the irrigation system, and to deliver technical assistance to producers and to strengthen the entities (consortia) responsible for administering the system. <u>Works:</u> De-silting and re-lining canals, installing pipes, and installing irrigation control systems; TA to improve agricultural practices and productivity; improve institutional/organizational skills of the consortia managing the water systems via equipment, training and TA.	Incomplete Works being concluded using counterpart funds.	US\$3.86	173
9. Integrated Project - Nasciente Chachingo - Pescara	<u>Objectives:</u> Sustainable management of water resources, surface as well as sub-surface, through modernization of the irrigation system, technological support to producers, strengthening of water user organizations, and to provide greater water security and flood protection for the population and public/private infrastructure. <u>Works:</u> Primary water conduction, control and distribution works for the Nasciente Canal; primary conduction, and control and distribution works, and diverse equipment (siphons etc) for the Chachingo Canal/Rama Correa; and, similar works for the Canal Chachingo/Rama Moyano. Feasibility study for works to mitigate and prevent serious, recurrent flooding and infrastructure damage in the main, secondary and tertiary irrigation canals.	10/2012	US\$19.22	1,792
10. Modernization of the Irrigation System – San Martin, Canal Norte Area	<u>Objectives:</u> Sustainable management of water resources, surface and sub-surface, in the area of canals of Inspección de Cauces Asociadas del San Martin and Inspección de la Rama Montecaseros y Cauces. <u>Works:</u> Modernization of the system, technological support to producers and strengthening water user organizations.	10/2012	US\$29.93	2,988
11. UTF/FAO Project	<u>Objectives:</u> Subproject designed to assist Mendoza Province to prepare, formulate and execute subprojects/projects, with FAO technical assistance.		US\$2.74	na
Province of Neuquen				
12. Rural Development (agro-livestock) with Electrification – Central West and Northern Zones	<u>Objectives:</u> Provide electricity in rural zones in the interior of the Provinces, ensuring that its use contributes to increasing productivity of the agro-livestock systems in the area, through vertical and horizontal integration of the sectors involved.	04/2017	US\$28.74	450

	<u>Works:</u> Establishing electricity lines distributed in the Northern Region (Departments of Chos Malal, Minas and Norquin; and in the Center West, in Departments of Zapala, Picunches and Alumine II.			
13. Provincial Livestock and Commercial Development	<u>Objectives:</u> Increase the productivity and the level of commercialization of provincial livestock by improving productive systems, the larger infrastructure and modernization of commercialization systems. <u>Works:</u> (i) Remodeling and expansion of slaughterhouses Buta Ranquil and Tricao Malal; (ii) Remodeling and construction of slaughterhouses Alumine, Andacollo. Loncopue and Anelo; (iii) Construction of lab and training room, Campana Mahuida and Chos Malal; and (iv) Marketing centers in Andacollo, Buta Ranquil and Cochico.	03/2016 09/2016 11/2016 06/2017 (final small works now complete)	US\$13.70 (total)	3900
14. Modernization of Irrigation System – San Patricio del Chanar	<u>Objective:</u> Modernize the irrigation system of San Patricio de Chanar to increase efficiency of irrigation water distribution and application, increase the surface under irrigation, and incorporate infrastructure and technology. <u>Works/activities:</u> 51 km of canals of reinforced concrete; open 2 km of drains; institutional capacity-building of Provincial Water Directorate and Irrigation Consortia of San Patricio del Chanar; improve water planning and distribution, and monitoring of the water table; and, TA.	04/2017	US\$33.48	145
15. Productive Development in Area of Influence of Añelo Canal – Rural Electrification II	<u>Objectives:</u> Increase the electric energy potential in the zone of influence of the Añelo Canal in order to increase irrigation efficiency and bring in land unirrigated at the time. Also, to incorporate infrastructure and technology. <u>Works:</u> (i) 8 km of electricity infrastructure/lines; transformer station; and, distribution network to supply agro-livestock properties; (ii) institutional strengthening of the Provincial Energy Entity through equipment and software; (iii) training, TA and strengthening of producer organizations.	06/2014	US\$8.71	114
Province of Salta				
16. Optimization of Irrigation Area – Colonia Santa Rosa	<u>Objectives:</u> Optimize the Colonia Santa Rosa irrigation area, improving water capture, conduction and distribution of irrigation water, expanding the irrigation system, strengthening entities and institutions responsible for irrigation in the zone and providing TA and training to producers.	11/2013	US\$9.44	110

	<u>Works:</u> (i) weir and water intake system works; (ii) adduction and shredder canal; (iii) main canal, secondary canals and individual works; (iv) aqueduct; and (v) rainfall protection. Also, TA to improve agricultural practices of producers, especially the use of irrigation; and, equipment, TA and training of for water user groups and related institutions.			
17. Improvement of Irrigation Area – Río Metán	<u>Objectives:</u> Improve and increase the supply of water for irrigation and human consumption, strengthen producers and institutions in their capacity to organize irrigation, production and commercialization. <u>Works:</u> (i) infrastructure (pipes for multiple canals, paving rehabilitation in key canals, PVC aqueduct for water supply in Northern areas/other); (ii) TA for producers; and (iii) institutional strengthening.	11/2013 05/2017	US\$2.06	100
Province of San Juan				
18. Development of Areas under Irrigation, Southern Margin of the River San Juan – Canal Céspedes - Sarmiento	<u>Objectives:</u> Improve production in an irrigated area of 9,000 ha and increase by another 3,800 ha the agricultural frontier with products linked to existing value chains in the subproject area. <u>Works:</u> (i) construct a new Sarmiento Canal with capacity of 14 m ³ /s (up from 4 m ³ /s); (ii) complementary works for erosion control around the Cochagual collector; (iii) air conditioning of the secondary distribution network; (iv) improve water quality and reduce maintenance costs by eliminating embankments. Also, improve the central water organization's administration, enabling improved maintenance and conservation of the irrigation and drainage network, and database development including geo-referenced, and provide TA and training to producers.	10/2014 11/2015 10/2016	US\$25.41	632
19. Rural Roads for Agricultural Development of the Area under Irrigation	<u>Objectives:</u> Optimize and improve transit conditions in the secondary and tertiary road system of Valle de Tulum, connecting them to the primary highway, to improve the permanent/continuous transit of agro-livestock production to principal processing and distribution centers existing in these departments. <u>Works:</u> (i) re-open, improve, consolidate and provide signage for 33 existing tracts of the tertiary and secondary network in 5 Departments to integrate them with main urban centers; (ii) equip and strengthen institutional capacity of the Provincial Roads Directorate/other, improving its O&M and repair services delivery and facilitating coordination with Municipalities.	02/2016	US\$11.02	762

20. Rural Electrification for Livestock Development - Department 25 de Mayo	<u>Objectives:</u> Improve potential to feed electric energy in the subproject area for its supply at the rural residential level, permitting at the same time the exploitation of aquifers for pumping water for irrigation and related facilities demanded for livestock production in this area. <u>Works:</u> (i) supply electricity to users on both sides of National Route 20 between Punta del Agua and La Tranca, Dept, 25 de Mayo; (ii) establish an institutional strategy to support goat producers to use new technologies and develop activities to reduce the economic and environmental vulnerability of their productive systems.	03/2017	US\$5.57	78
21. Competitive Development of the Seed Sector	<u>Objectives:</u> Ensure the supply of seed produced in the region in quantity, quality and price to national and international markets, with identity and sanitation characteristics based on market demand. Increase the competitiveness of the seeds sector by providing new support services for their production: technology transfer, training, intelligence, and market promotion; modernize the INSEMI laboratories and installations for seed quality analysis, as well as capacity to offer new services to guarantee varietal identity and seed sanitary quality/health. <u>Works:</u> (i) remodeling of the Seeds Institute laboratory 1 st stage; and (ii) 2 nd stage.	12/2014 10/2015	US\$3.94	430
National				
1. Prevention of Transmittable Spongiform Encephalitis (TSE) – Continuity and Strengthening of Vigilance Activities	<u>Objective:</u> Maintain Argentina’s status as “negligible risk of TSE” and prevent the potential for restrictions on health grounds due to the presence in the country of diseases requiring quarantine. Income of the meat sector increased through savings in the cost of production, reduction of disease-related losses, increased value of production and diversification of external markets. <u>Works/activities:</u> (i) vigilance activities and strengthened diagnostic capacity; (ii) training of institutional personnel and distinct actors in the meat chain; and (iii) communication, information dissemination, and institutional strengthening.	na	US\$3.05	2,500
2. Young Rural Entrepreneurs Program (<i>Jovenes Emprendedores Rurales</i> – JER)	<u>Objective:</u> Promote the creation and strengthening of the businesses of young rural people, to consolidate their permanence in rural areas and reduce out-migration; strengthen rural institutions to conceive and formulate policies, programs and services for rural youth; and, develop entrepreneurial spirit, and promote productive diversification	2015	US\$7.13	14,000

	and innovative activities through the creation of new business ventures. See Annex 5 for further details.			
3. SENASA Stage IV	<p>Objective: Provide a Reference and Control Laboratory with latest technology permitting SENASA to exercise its functions of control and research, and facilitating the mutual recognition by peer organizations of activities carried out by the Vegetal Laboratory.</p> <p>Works: Construction and equipment of a Vegetal Laboratory – Stage IV.</p> <p>Estimated budget needs to complete the works are US\$3.7 m – US\$5.1 m, exceeding the US\$2.4 m budgeted at the time of project closing. MAI assured the Bank that SENASA is a top national priority and MAI support for subproject completion is guaranteed.</p>	Incomplete Works about 65% completed at ICR finalization.	US\$7.95	na
4. Non-Refundable Grants (ANR)	See Annexes 2 and 5	03/15/2017	US\$51.9	5,000
5. FCOP	Federal program of subprojects to finance information technology equipment and furniture to train the EE, EPDA and EPAF in themes not contemplated in the 2010-2011 Training Plan of the UCAR/UEC, to contract specific forms of TA to constitute and operationalize them, and to generate and leave behind installed capacity to increase their functionality. See Annex 2.	2009-2014	US\$1.25	na
Pilots:				
5. ITI	See Annex 5	NA	US\$2.24	6,500
6. RDI/IDEMI	See Annex 5	NA	US\$4.40	6,000

2.19 **PDO Indicator measurement:** The following table explains the measurement methodology agreed in 2016 with UCAR for the three PDO Indicators. Additional information is in the project archive.

Table 8: Measurement of the PDO Indicators

Indicator	Measurement Methodology ⁵⁶	Sources of Information
<p>Increase the volume of sales (%)</p>	<p>Measurement of this indicator presented specific difficulties. It was agreed with the Borrower that an equivalent proxy would be used: “volume of production”. Because production for household consumption was insignificant in all provincial subprojects financed, it is understood that the volume of sales and the volume of production are equivalent.</p> <p>This indicator would be estimated <u>separately</u> for public investment subprojects whose level of maturity permitted observation of the expected results (see next column) and for samples of ANR and JER subprojects which received project financial support.</p> <p>Step by step measurement for each subproject (or sample in the case of the ANR and JER) and for their joint aggregates, included: (i) record total baseline production for all principal products; (ii) record total production at the time of the evaluation for all principal products; (iii) calculate the difference between total production at the moment of evaluation and the baseline for each principal product.</p> <p>The result is the weighted average of the increase in volume of “sales”, the weighting factor being the value of the constant price of each product involved. Subprojects in Mendoza were concluded by October 2012; in San Juan between October 2014 and October 2016 (the latter date representing conclusion of a second phase of the system); and in Salta, between November 2013 and May 2017 (conclusion of a third phase of the investment). Each subproject represents a group of four to five crops including stone fruits, classes of grapes for wine/table, citrus, vegetables, banana, tomato, corn, potato, alfalfa and soybean.</p>	<p>Economic evaluations of the selected public Investment subprojects and samples of ANR and JER subprojects.</p> <p>Data provided by qualified informants, administrative databases, and secondary sources of provincial entities.</p> <p>Public Investment subprojects reporting for this indicator:</p> <p>(i) Irrigation Chachingo- Pescara (Mendoza); (ii) Irrigation Canal San Martín (Mendoza); (iii) Irrigation Colonia Santa Rosa (Salta); (iv) Irrigation Céspedes-Sarmiento (San Juan); (v) Irrigation Metán (Salta)</p>

⁵⁶ Additional supporting information on the evaluation methodology is available in the project archive and in relevant sections of individual studies.

<p>Increase the productivity of land (%)</p>	<p>This indicator would be estimated separately for public investment subprojects whose level of maturity permitted the observation of the expected results (see next column) and for samples of ANR and JER subprojects which received project financial support.</p> <p>Step by step measurement for each subproject (or sample in the case of the ANR and JER) and for their joint aggregates, includes: (i) record the total baseline production for all principal products; (ii) record total production at the time of the evaluation for all principal products; (iii) calculate the difference between total production at the time of evaluation and the baseline for each principal product; (iv) calculate a weighted average for changes in production/hectare, considering as a weighting factor the value of each product (at constant prices at the time of evaluation); (v) calculate the percentage change in the weighted average is calculated in relation to the sum of the production/hectare of the baseline for each subproject multiplied by the value of production.</p>	<p>Economic evaluations of the selected public Investment subprojects and samples of ANR and JER subprojects.</p> <p>Data provided by qualified informants, administrative databases, and secondary sources of provincial entities.</p> <p>Public Investment subprojects reporting for this indicator:</p> <p>(i) Irrigation Chachingo- Pescara (Mendoza); (ii) Irrigation Canal San Martín (Mendoza); (iii) Electrificación Añelo (Neuquén); (iv) Irrigation Colonia Santa Rosa (Salta); (v) Caminos Rurales (San Juan); (vi) Semillas (San Juan); (vii) Irrigation Céspedes-Sarmiento (San Juan).</p>
<p>Increase the productivity of labor (%)</p>	<p>This indicator would be estimated separately for public investment subprojects whose level of maturity permitted the observation of the expected results (see next column) and for samples of ANR and JER subprojects which received project financial support.</p> <p>Measurement for each subproject (or sample in the case of the ANR and JER) and for their joint aggregates: (i) record the baseline production/person-day of labor for all principal products; (ii) record the production/person-day of labor at the time of the evaluation of the principal products; (iii) calculate the difference between the production/person-day of labor at the time of evaluation and the baseline for each principal product; (iv) calculate a weighted average of these changes in production/person-day of labor considering as a weighting factor the <u>value of each product (in constant prices at the time of final evaluation)</u>; (v) calculate the percentage change in this weighted average in relation to the sum of the baseline production/person-day of labor for each product multiplied by the value of the product.</p>	<p>Economic evaluations of the selected public Investment subprojects and samples of ANR and JER subprojects.</p> <p>Data provided by qualified informants, administrative databases, and secondary sources of provincial entities.</p> <p>Public Investment subprojects reporting for this indicator:</p> <p>(i) Irrigation Chachingo- Pescara (Mendoza); (ii) Irrigation Canal San Martín (Mendoza); (iii) Electrificación Añelo (Neuquén); (iv) Irrigation Colonia Santa Rosa (Salta); (v) Caminos Rurales (San Juan); (vi) Semillas (San Juan); (vii) Irrigation Céspedes-Sarmiento (San Juan).</p>

Appendix 1: Safeguards Performance under PROSAP II

Summary: Study on Environmental and Social Safeguards (World Bank 2017)

1.1 The project was rated Category B because negative incremental environmental impacts were expected to be low due to the project's expected focus on the rehabilitation and improvement of existing works, and no subprojects considered Category A would be eligible for financing. It triggered OP/BP 4.01 Environmental Assessment, OP/BP 4.04 Natural Habitats, OP 4.09 Pest Management, OP/BP 4.36 Forests, OP/BP 4.37, Safety of Dams, OP/BP 4.12 Involuntary Resettlement and OP/BP 4.10 Indigenous Peoples.⁵⁷ Specific Environmental Assessments were not conducted prior to appraisal because of PROSAP II's programmatic nature. The project developed the following: Environmental Management Framework; ⁵⁸ site-specific Environmental Management Plans for each subproject; Social Assessment in the Regional Economies, focused on the PROSAP I experience, the social context, diversity and gender, participation frameworks, institutions, stakeholders and social risks;⁵⁹ an Indigenous Peoples' Planning Framework (IPPF); and, a Resettlement Framework. In regard to project investments, each provincial subproject was subject to an environmental evaluation for potential risks and impacts in its zone of influence and a subproject-specific Environmental and Social Manual (ESM) was prepared. The following summarizes performance/compliance under all safeguards triggered, with the emphasis on six subprojects which triggered the Natural Habitats and Safety of Dams safeguards through a 2012 restructuring.

Environmental safeguards: Rated overall as Satisfactory.

- **Natural Habitats:** It was determined that the Livestock and Commercial Development subproject (Neuquén) would affect highland wetlands (*mallines*), the main source of pasture for cattle ranching. Measures included to ensure mitigation of impacts included exclusive use of native species, water resources management and fencing to manage grazing land. The National Institute of Agro-livestock Technology (INTA) conducted an inventory of the *mallines*' ecosystems including maps, studying four pilot areas in six eco-regions, on the basis of which reports and guidelines were prepared and widely disseminated. This was the first such exercise in Argentina and is considered successful and ground-breaking. Separately, three subprojects were identified in and around a critical habitat, Lagunas de Huanacache, Desaguadero and Bebedero, a Ramsar site in the south of San Juan Province whose administration and protection are the joint responsibility of the Provinces of San Juan, Mendoza and San Luis. The subprojects were: Development of Irrigation Area Canal Céspedes-Sarmiento; Rural Roads for Agricultural Development; and Rural Electrification for Livestock Development, all of which in San Juan, for which

⁵⁷ Natural Habitats and Safety of Dams were added by a Level Two restructuring in 2012 due to the Borrower seeking project support for subprojects which, respectively: (i) intervened in areas connected to natural and critical habitats; and (ii) entailed irrigation systems connected to existing dams.

⁵⁸ This would comprise: Environmental and Social Management Manual; independent technical review of procedures and technical experiences under PROSAP I; and, subproject eligibility criteria, to include a "negative list" of ineligible investments.

⁵⁹ SAGPyA expected the project to contribute positively to social development and was to develop indicators of key social outcomes for each Component, including: social participation; social inclusion, capacity-building and empowerment; security and equity for indigenous and other vulnerable groups; and, public consultation and participation. These would be tracked, disaggregated by social groups and include indigenous communities and gender. This was not done.

an Action Plan was developed and implemented by the provincial government. The Action Plan objectives were largely achieved despite several activities remaining incomplete at closing. Achievements included: greater awareness and participation of “users” of the Ramsar site; improved access to water data by institutional and social actors; training in agricultural best practices, especially water resource and forest management; and, other benefits associated with financing sources and TA.

- **Safety of Dams:** Two proposed subprojects: Modernization of Irrigation Systems – San Patricio del Chanar related to the El Chanar Dam in Neuquén Province, and Reconstruction and Improvement of Irrigation System Los Altos in Catamarca associated with the Sumampa Dam reservoir, suggested that the strengthening of associated dam safety mechanisms might be needed, triggering OP/BP 4.37. Both cases required the opinion of the Argentine Dam Safety National Authority (*Organismo Regulador de Seguridad de Represas*, ORSEP) on the dams’ condition, functionality, risks and needs. MAGyP established a time-bound Action Plan to ensure that ORSEP recommendations were implemented before both subprojects started implementation. In the case of Sumampa, important measures to improve dam safety procedures, maintenance and environmental conservation were included in the EIA and EMP and ORSEP signed a cooperation agreement with the Province of Catamarca for regular supervision of dam safety. The related Action Plan resulted in hydrological and sedimentation models for sustainable long-term management of the dam and the irrigation system, improved environmental conditions, O&M and vigilance systems for emergency planning. In the case of the El Chanar Dam, ORSEP concluded that the dam had adequate safety, maintenance and emergency plans consistent with the requirements of OP/BP 4.37 and that no other activities or studies were needed. The irrigation works proceeded as planned.
- **Pest Management** (OP 4.09): While pest management criteria were included in the PROSAP I EMP, the concept of a Pest Management Plan was not incorporated in the ESMP until 2012, followed by a diagnostic study, identification of the legal framework and measures for incorporating this safeguard into the project. Four subprojects (Catamarca, Mendoza, Neuquén and Entre Rios) activated this safeguard. Mitigation measures were inserted into capacity-building and productive processes through technology transfer activities and institutional strengthening. Compliance and performance did not encounter major issues and were assessed as satisfactory.
- **Forests** (OP/BP 4.36): Consideration of native forests came to be treated more uniformly in the subprojects after 2011 when 18 provinces adopted laws for the Territorial Ordering of Native Forests as required under the National Native Forests Minimum Budget Law of 2007 which zoned such forests in three categories based on high, medium or low conservation value, the latter open to transformation with prior preparation of an environmental impact evaluation. Bank and UCAR environmental specialists consulted local authorities, then began to systematically apply specific requirements in relevant subprojects and strengthen authorities’ capacity to understand and apply measures to prevent, mitigate and/or compensate for impacts. Technical assistance and training were provided to four subprojects (livestock, irrigation and rural electrification) in Neuquén, Salta, Entre Rios and San Juan Provinces. Compliance and performance were satisfactory.

Social safeguards: Rated overall as Moderately Satisfactory.

1.2 **Direct benefits:** OP 4.12 was applied to 11 provincial infrastructure subprojects and OP 4.10 to three. Of the over 12,700 direct beneficiaries, OP 4.12 applied to about 1,100 cases, with

only four cases of displacement of people and with zero effects on their means of livelihood/wellbeing. The benefits of applying OP 4.10 reached over 700 people (most in Neuquén) grouped in 63 communities (55 in Neuquén and eight in San Juan), and both safeguards contributed to strengthening the recognition of indigenous peoples as key actors in territories, both directly and indirectly. The following complements information presented in the Main Text Section 2.4.

- **Indigenous Peoples** (OP 4.10): This safeguard was applied to three subprojects: Livestock and Commercial Development and the Rural Electrification II (Neuquén); and in San Juan, the Rural Electrification for Livestock Development. Initial implementation of the IPP was not systematic, there was no pre-established set of processes and participation of indigenous communities was weak even though IPP provisions began to be systematically applied during subproject formulation. By 2015, all subproject EMP included measures to determine the presence of IP, conduct free and informed prior consultation, perform a social evaluation and determine the potential impact of the subprojects. The quality of the conflict resolution program was also high. In some cases, project activities were as much for indigenous peoples as for the general community, i.e., the plans were a pragmatic effort to avoid inequities with other poor and marginalized groups. Overall, progress in embedding indigenous rights in subprojects was slow but important measures were institutionalized over time. The Bank assessed OP 4.10 performance as satisfactory.
- **Involuntary Resettlement** (OP 4.12): Under new Bank requirements, the procurement of subprojects formulated and selected for financing, became contingent on provincial approval of an Affected Assets Plan (AAP). UCAR and the Provinces had to prepare AAP for subprojects already approved and awaiting procurement which caused major delays. Inexperience, lack of guidelines, uneven capacity and buy-in, and most critically, the gap between provincial legal and institutional frameworks and project safeguards requirements created serious difficulties. Notable growth occurred in the Provinces' overall approach to involuntary resettlement under the AAP requirement, especially in Neuquén. Because no financing was included to contract consultants for AAP execution, affected provinces established technical teams to support this process. UCAR's Environmental and Social Unit made an exceptional effort to support the provincial teams in their reporting/analysis of land regularization issues in marginal areas linked to the infrastructure subprojects and vulnerable populations. Seven provinces were still implementing 340 unfinished AAP at the time of ICR finalization, under action plans agreed with the Bank, resulting in OP 4.12 performance being rated moderately unsatisfactory. Performance under OP 4.10 is rated satisfactory.

Conclusions:

1.10 ***Overall, safeguards performance was judged satisfactory by the study but more effective under environmental than social due to the inexperience of social teams and the novelty of certain social safeguards concepts and the practices introduced.*** The most relevant factors explaining positive results of the application of safeguards include: (i) preventative analysis of possible environmental and social impacts through the subprojects' formulation stage; (ii) interactions and relationships established among different subprojects and working groups both at the provincial level and within UCAR; and, (iii) level of commitment achieved among these teams and at the senior leadership level.

1.11 ***The social and environmental sustainability of subprojects and of PROSAP II in general was promoted by subprojects formulated from the beginning taking into account variables such***

as environmental impact, indigenous communities and public consultation. Consideration of safeguards created in many cases the need to operate in ways not originally considered (including under PROSAP I) such as Special Plans and Affected Asset Plans. Over time, these plans generated unforeseen benefits for structural conditions within the system (e.g., resettlement and land tenancy, biodiversity and conservation), e.g., the San Juan Electrification Subproject which provided land titling which in turn, generated a valuable and useful instrument, the geo-referenced territorial system.

1.12 ***Safeguards implementation over-extended in many cases, the administrative and established practices and capacities of distinct provincial entities but also had major benefits.*** Safeguards requirements led to certain institutions such as EPEN (*Ente Provincial de Energía del Neuquén*) using AAP procedures for its other projects not financed by the Bank. Also, in electrification investments, documentation became stronger after implementing safeguards. Firms/authorities sought signed permits for right of way, and agreements to avoid litigation and the need to modify the lines. Similarly, the technical formulation of subprojects improved and new quality standards came to be incorporated.

1.14 ***Safeguards implementation obliged different areas of government to interact so that subprojects gained a more global perspective essential for their success (land, national parks, production and environment).*** Other benefits included: (i) institution-strengthening activities at the provincial level for supervising and execution of safeguards were key for subproject success; (ii) the dissemination activities of UCAR's Environmental and Social Unit resulted in a much broader understanding of the Bank's safeguards policies and a steady increase in trained personnel ready to act on them; and (iii) the Provinces developed teams to act as the safeguards nexus with the UCAR team.

Annex 3. Economic and Financial Analysis

Methodology:

1. During appraisal, a financial and economic analysis was conducted based on a sample of seven provincial investment subprojects with feasibility analysis. Irrigation improvement subprojects were assessed based on representative farm models. Rural road improvement subprojects were assessed based on reduced production losses resulting from investments. Product quality improvement subprojects were assessed based on incremental production value resulting from quality control and certification. Reference was also made to the economic impact of subprojects financed by PROSAPI. However, there was no ex-ante analysis of national components or subprojects for enhancing competitiveness, such as: on-farm investment grants; youth entrepreneurial support; regional development initiatives; and technology innovation initiatives. However, the analysis of provincial subprojects partly captured expected costs and benefits of on-farm investments.

2. For final evaluation, an ex-post financial and economic analysis was conducted for the provincial subprojects which were implemented and operated for at least one production cycle. **Table 1** includes the list of these nine subprojects with their perceived benefits. The subprojects are: (i) Improvement of rural roads in dairy production areas in Cordoba; (ii) Integrated irrigation project *Naciente Chachingo - Pescara* in Mendoza; (iii) Modernization of irrigation system *San Martin - Canal Norte* in Mendoza; (iv) Energy for productive development in Neuquén; (v) Optimization of irrigation system *Colonia Santa Rosa* in Salta; (vi) Improvement of irrigation system *Rio Metán* in Salta; (vii) Improvement of rural roads for irrigated agriculture in San Juan; (viii) Improvement of irrigation system *Céspedes - Sarmientos* in San Juan; and (ix) Competitive development of seed production subsector in San Juan. **Table 2** presents the provincial subprojects with their beneficiary population, area of influence, investment costs and expected financial and economic returns.

3. There was also an ex-post financial analysis for a small sample of on-farm investment grants (ANR - including those of young entrepreneurs); and technology innovation initiatives already implemented and with observed results. **Table 3** presents a summary of the assessed technology innovation initiatives while **Table 4** presents a summary of the assessed on-farm investment grants. The assessed technology innovation initiatives are: (1) Small ruminant breeding and technology transfer in La Pampa; (2) Post-harvest and processing of fruits of native forests in Santiago del Estero; and (3) Polyvalent fruit processing factory in Misiones. The assessed on-farm investment grants include those executed in the following activities: apiculture in Chaco; cattle and sheep production in Chubut; dairy cattle production in Cordoba; dairy, swine and poultry production in Entre Rios; fruticulture in Rio Negro; and, horticulture in Salta.

4. The provincial subprojects assessed were 9 out of 20 funded by PROSAP II, and represent 48% of the overall budget for provincial investment subprojects⁶⁰. The sample of on-farm investment grants involved 24 cases and represent less than 1% of the overall budget allocated to this purpose. However, they were selected randomly from a universe of 608 cases which were fully

⁶⁰ Evaluation reports of the 9 provincial investment subprojects available in Project files. Evaluation: 2016-2017.

executed by 2014 and thus had at least two years of operation (4% of selection universe)⁶¹. Finally, the sample of technology innovation initiatives included 3 out of 12, and represent 16% of the overall budget allocated for these initiatives⁶². The details of these analyses can be found in documents and financial and economic models in Project files.

5. In broad terms, the investments made through provincial subprojects included a wide variety of works and equipment, plantations, grazing management systems and irrigation systems. In turn, the on-farm investment grants sought to improve technology and production with improved production assets such as sheds, equipment, heifers, mulching, drip irrigation systems and other. The technology innovation initiatives financed technical assistance, assets and key inputs for small-ruminant breeding and fruit processing facilities.

6. During appraisal, ex-ante financial and economic Net Present Value (NPV) and Internal rate of Return (IRR) were calculated for the sample of provincial investment subprojects. Analytical parameters included a 12 percent annual discount rate and a 20-year evaluation period. Financial prices were converted into economic prices, subtracting the Value-added Tax (VAT), which is 21% for investment goods and 10.5% for production inputs. The economic price of labour varied from 91-100% depending on the subproject. Further details can be found in project files. The cost-benefit analysis performed for this ICR uses the information from the above-mentioned ex-post analysis of provincial subprojects, on-farm investment grants and technology innovation initiatives. Analytical parameters are similar to those applied at appraisal for provincial investment subprojects. On-farm investment grants and technology innovation initiatives were assessed based on 5 years and 10 years of expected benefit flows. Values in local currency (ARS) were converted into USD at the exchange rate of assessed years, and updated based on the current exchange rate of 15 ARS/USD.

Financial and Economic Analysis

7. As shown in Table 2, the **overall ex-post financial and economic NPV** of the **assessed provincial subprojects** are USD (8.8) million and USD 22.8 million respectively, involving 6,176 direct beneficiary farms with 66,971 hectares – around 10.8 hectares/farm on average. The NPV difference is USD 31.6 million which partially represents the fiscal contributions of productive activities. The **overall ex-post financial and economic IRR** are 12% and 15% respectively. Such returns are lower than those estimated when the assessed subprojects were prepared and approved. However, further improvements are expected in the years ahead and some benefits were not valued in quantitative terms. Thus, the assessed returns should be interpreted as conservative estimates. The aggregate total investment cost was USD 142.9 million of which USD 32.5 million or 23% were counterpart resources from the provincial governments and direct beneficiaries. **Average figures per beneficiary farm** are: USD 23,100 of total investment (USD 5,300 from provinces and beneficiaries themselves) ranging from USD 94,500 in the Cordoba rural roads subproject to USD 10,900 in the Mendoza Chachingo-Pescara subproject; and financial and economic NPV of USD (95) and USD 3,700 respectively – ranging from USD (51,500) and USD (39,700) respectively in the Cordoba rural roads subproject to USD 34,800 and USD 72,100 respectively in the Salta Colonia Santa Rosa subproject. **Average figures per hectare involved** are: USD 2,130 of total investment (USD 490 from the provinces and beneficiaries themselves) ranging from USD

⁶¹ *Evaluación de impacto económico-financiero ex post de los aportes no reembolsables (ANR)*. April, 2017.

⁶² *Estudio de evaluación de una selección de Iniciativas de Transferencias de Innovación (ITI)*. July 2015.

900 in the San Juan rural roads subproject to USD 4,800 in the San Juan seeds production subproject; and financial and economic NPV of USD (9) and USD 340 respectively – ranging from USD (1,500) and USD (1,200) respectively in the Cordoba rural roads subproject to USD 1,700 and USD 1,900 respectively in the San Juan seeds production subproject. Out of the 9 assessed provincial investment subprojects, 5 of them aimed at improving irrigation systems in Mendoza, San Juan and Salta. For these irrigation-related subprojects, **labour use** (employment) was assessed. On average, there was an increase of around 88,600 person-days/year for 4,838 farms – around 18 person-days/farm/year. The best performing subprojects in terms of economic returns were the irrigation improvement subprojects of San Martin – Canal Norte in Mendoza and Colonia Santa Rosa in Salta. The worst performing subprojects were the rural roads subproject in Cordoba and the irrigation subproject of Rio Metan in Salta. The former was affected by unexpected investment cost increases and the latter, by the slow capacity of beneficiaries to reactivate production and administration of the water users' association.

Sensitivity analysis:

8. To **assess sensitivity** of all assessed subprojects, two key factors were considered: delays in benefit generation and investment cost increases. In fact, these two factors were identified as critical risk factors during project implementation. The present ex-post financial and economic analysis already captures some of the effects of such delays in execution and increased costs. To take into account further changes in these two risk factors, switching values were estimated⁶³. Based on this sensitivity analysis, the overall economic NPV of provincial subprojects is reduced to zero: with a delay of 3 years in generating expected benefits; or with a 30% increase of initial negative flows due to higher investment costs. The delay in generating benefits was estimated by shifting the stream of positive net benefits (which starts in year 5) by three years into the future, leaving the three years of delay with zero net benefit. The aggregate negative flows (specifically years 1 to 5) were increased to represent potential higher investment costs – however this factor is less likely as future increases would only be possible with national and/or provincial sources.

Conclusions:

9. As shown in Table 3, the overall financial NPV and IRR of the three **assessed technology innovation initiatives** are: USD 93,700 and 18% in 5 years, and USD 731,200 and 35% in 10 years. Beneficiary population is around 1,900 farms. **Average figures per beneficiary farm** are: USD 230 as investment cost, USD 50 as financial NPV in 5 years and USD 380 as financial NPV in 10 years. All assessed initiatives generate financial returns above the discount rate or opportunity costs even in 5 years, a relatively short project life or evaluation period.

10. As shown in Table 4, the sample of 24 **on-farm investment grants** was assessed under two scenarios: a linear projection of assessed results in the final evaluation; and a 70% of assessed net benefits, as intermediate point between the previous linear projection and the switching value (factor which yields a NPV of zero and an IRR of 12%) – the latter is perceived as a better estimate considering market and climate risks generally faced. In light of the above, **overall the financial NPV and IRR** of the assessed on-farm investment grants is: USD 103,200 and 20% in 5 years; and USD 517,623 and 32% in 10 years. The aggregate total investment cost was USD 275,700 (60% from own resources of direct beneficiaries). **Average figures per participating farm** are: USD

⁶³ The switching value of a key variable or factor is the percentage value relative to the original value that reduces the NPV to zero, and thus generates an IRR equal to the opportunity costs or discount rate.

11,500 as investment cost, USD 4,300 as financial NPV in 5 years and USD 21,600 as financial NPV in 10 years. All the assessed on-farm investment grants seem to generate attractive financial returns even in 5 years.

11. In aggregate, PROSAP II channelled USD 419.3 million in total, of which around USD 376.7 million (90% of total costs) are related to the provincial subproject life cycle: selection, planning and implementation. Such costs involved: pre-investments, provincial subprojects, on-farm investment grants, project management, communication and evaluation. The beneficiary population involved was 12,700 farms with direct benefits (48% of them in the subprojects included in this ex-post assessment) and 65,600 farms or families with indirect benefits. Counterpart resources were 27% of costs related to the provincial subproject life cycle – similar to the proportion observed in assessed subprojects. The average investment per farm with direct benefits varied widely among subprojects with a general average of USD 20,000 – somewhat lower than the provincial subprojects evaluated but still high relative to other World Bank investment projects in the Latin America and Caribbean region. However, some beneficiary farms of provincial subprojects are corporate enterprises with several shareholders and employees. Thus, it cannot simply be assumed that the average investment per farm and per family are the same.

12. PROSAP II also channelled resources to complementary areas related to rural competitiveness, but independent from the provincial subprojects and beneficiary population. Such areas essentially include: national subprojects including support to the National Plant & Animal Health Service (SENASA), regional and micro-regional development initiatives; and technology innovation initiatives. While these complementary investments generate long-lasting benefits, only technology innovation initiatives were included in this assessment. The impact of the other complementary areas was not assessed in economic terms as the available information does not permit a complete assessment of costs and benefits.

Project economic and financial IRR:

13. Based on a projection of the benefits assessed above to the total number of direct beneficiaries (12,700 families), and considering average complementary project costs (essentially pre-investment and management costs), **the aggregate ex-post financial and economic IRR are 10% and 13% respectively.** These are lower than expected since the economic IRR at appraisal was 17%. Benefits from on-farm investment grants and technology innovation initiatives were not added to the benefits coming from the provincial investment subprojects, since: (i) they are to a large extent considered in the analysis of provincial investment subprojects; and (ii) the statistical significance is quite limited.

Table 1. Perceived Benefits of Public Investment Projects

Province	Provincial Sub-Project	Qualitative benefits	Quantitative benefits
Córdoba	Improvement of rural roads in dairy production areas	Improved access of nearby communities	Reduced loses of dairy producers
		Lower operation costs of vehicules serving nearby agroindustry	Reduced loses of milk agroindustry
			Reduced freight costs for producers
			Reduced movilization costs of producers
			Reduced costs of input delivery to producers
		Reduced road maintenance costs	
Mendoza	Integrated irrigation project Naciente Chachingo - Pescara	Certainty on provision of irrigation water	Greater water availability
		Reduced risk of floods	Incremental productivity
Mendoza	Modernization of irrigation system San Martin - Canal Norte	Certainty on provision of irrigation water	Greater water availability
		Reduced risk of floods	Incremental productivity
Neuquen	Energy for productive development	Improvement in Quality of Life of producers and employees	Access to electricity
			Reduced production costs
			Increased crop area for agriculture
Salta	Optimization of irrigation system Colonia Santa Rosa	Reduction of environmental pollution	Greater water availability
		Certainty on provision of potable water	Incremental productivity
		Reduced ground water pumping and thus	Recovery of abandoned crop land
		Reduced pressure on the acuifer	Reduced operation and maintenance costs
Salta	Improvement of irrigation system Rio Metan	Certainty on provision of irrigation water	Greater water availability
		Certainty on provision of potable water	Incremental productivity
		Strengthened water user association	Recovery of abandoned crop land
San Juan	Improvement of rural roads for irrigated agriculture	Improved access of nearby communities	Reduced loses of dairy producers
		Lower operation costs of vehicules serving nearby agroindustry	Reduced product loses during transportation
			Reduced freight costs for producers
			Reduced movilization costs of producers
			Reduced costs of input delivery to producers
		Reduced road maintenance costs	
San Juan	Improvement of irrigation system Cespedes - Sarmientos	Strengthened water user administration	Greater water availability
			Incremental productivity
			Increased crop area for agriculture
San Juan	Competitive development of seed production subsector	Widened opportunities for seed export markets	Improved quality of seeds produced
			Reduced costs of seeds production

Table 2. Scale and Expected Financial and Economic Returns from Public Investment Projects (USD)

Province	Provincial Sub-Project	Direct beneficiaries (Farms)	Area involved (Ha)		Investments			Ex-ante Analysis				Ex-Post Analysis			
			Without Project	With Project	WB Resources	Provinces and beneficiaries	Total	Flows for 20 years at 12%				Flows for 20 years at 12%			
								Financial Returns		Economic Returns		Financial Returns		Economic Returns	
			NPV	IRR	NPV	IRR	NPV	IRR	NPV	IRR					
Córdoba	Rural Roads in Dairy Region	322	10,761	10,761	23,648,972	6,911,010	30,559,982	1,167,411	13%	1,770,413	14%	(16,582,040)	1%	(12,797,008)	2%
Mendoza	Irrigation Chachingo - Pescara	1,792	5,135	6,215	14,702,129	4,850,207	19,552,336	2,998,864	15%	2,005,369	15%	(3,035,557)	10%	2,061,145	14%
Mendoza	Irrigation San Martin - Canal Norte	1,864	17,285	17,285	22,483,855	7,385,054	29,868,909	4,208,720	15%	3,192,861	14%	4,215,572	16%	10,251,193	22%
Neuquen	Rural Electrification Canal Añelo	114	555	3,867	6,987,754	1,789,481	8,777,235	3,083,938	14%	4,197,100	15%	313,581	15%	359,289	17%
Salta	Irrigation Colonia Santa Rosa	110	5,889	7,310	7,140,386	2,462,268	9,602,654	19,062,639	46%	20,515,762	43%	3,823,513	15%	7,932,380	23%
Salta	Irrigation Rio Metan	96	561	543	1,677,801	441,509	2,119,310	710,591	20%	683,290	18%	(18,333)	12%	(178,574)	11%
San Juan	Rural Roads for Irrigated Areas	762	13,152	13,152	9,620,782	2,296,453	11,917,235	5,502,005	17%	5,364,570	18%	10,239,860	18%	10,386,392	20%
San Juan	Irrigation Cespedes - Sarmiento	976	6,819	6,967	20,828,374	5,508,269	26,336,643	13,504,590	17%	14,295,999	18%	(994,224)	11%	3,122,692	16%
San Juan	Seed Production Subsector	140	871	871	3,307,046	891,991	4,199,037	11,212,797	29%	11,483,825	30%	1,450,442	16%	1,615,080	17%
Aggregate		6,176	61,028	66,971	110,397,099	32,536,242	142,933,341	61,451,556	28%	63,509,189	28%	(587,187)	12%	22,752,589	15%
	Per-Farm Averages				17,875	5,268	23,143	9,950	28%	10,283	28%	(95)	12%	3,684	15%
	Per-Hectare Averages				1,648	486	2,134	918	28%	948	28%	(9)	12%	340	15%

Table 3. Expected Financial Returns from Technological Innovation Initiatives or TII (USD)

Province	Technological Innovation Initiatives (TII)	Direct beneficiaries (Farms)	Public Investment Costs	Flows for 5 years		Flows for 10 years	
				VPN	IRR	VPN	IRR
La Pampa	Small Ruminant Breeding and Technology Transfer	500	141,028	43,068	21%	16,059	36%
Santiago del Estero	Post-harvest and processing of fruits of native forest	400	122,766	29,025	18%	18,238	38%
Misiones	Polyvalent fruit processing factory	1,000	173,789	21,600	16%	14,447	33%
	Aggregate	1,900	437,583	93,693	18%	48,744	36%
	Per-Farm Averages		230	49	18%	26	36%

Table 4. Actual Investments and Expected Economic Returns from On-Farm Investment Grants (USD)

Province	Activity	Farms	Investment			Linear projection of results				70% of Net Benefits			
						5 years		10 years		5 years		10 years	
			Grant	Own resource	Total	VPNF	IRRF	VPNF	IRRF	VPNF	IRRF	VPNF	IRRF
Chaco	Apiculture	8	49,022	71,465	120,487	85,436	40%	186,968	48%	26,756	22%	97,829	32%
Chubut	Cattle and sheep	3	10,667	21,167	31,833	71,458	41%	169,341	50%	23,975	22%	92,493	34%
Cordoba	Dairy cattle	2	9,333	18,167	27,500	14,549	20%	102,207	36%	(8,894)	7%	52,467	26%
Entre Rios	Dairy, Swine, Poultry	4	14,597	23,622	38,219	68,460	34%	221,744	46%	15,318	17%	122,617	32%
Rio Negro	Fruticulture	3	7,158	10,737	17,895	28,996	66%	83,562	77%	15,846	44%	54,042	57%
Salta	Horticulture	4	16,735	23,029	39,764	98,796	44%	195,857	50%	30,233	22%	98,175	32%
Overall		24	107,512	168,186	275,699	367,695	38%	959,679	48%	103,234	20%	517,623	32%
	Per-Farm Averages		4,480	7,008	11,487	15,321	38%	39,987	48%	4,301	20%	21,568	32%

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Marcelo Hector Acerbi	Senior Environmental Specialist	LCSAR	
Alexandre Arrobbio	Practice Manager	GGO18	
Jose Maria Caballero	Lead Agriculture Economist	LCSAR	
Jorge Caballero-Ceruti	HQ Consultant ST	GEN07	
Rita E. Cestti	Practice Manager	GWA04	
Matthew Cummins	Junior Professional Associate	LCSAR	
Alfonso Grana Jonas	HQ Consultant	GEN04	
Andres Mac Gaul	Senior Procurement Specialist	GGOGI	
Juan Martinez	Sr Social Scientist	GSU02	
Matthew A. McMahon	HQ Consultant	GFADR	
Glenn S. Morgan	Adviser	OPSPF	
Reynaldo F. Pastor	Chief Counsel	LEGLE	
Karen J. Ravenelle-Smith	Program Assistant	GGO15	
Marcelo Enrique Sili	E T Consultant	LCSSD	
Alvaro Soler	Snr Rural Development Specialist	GFADR	TTL
Supervision/ICR			
Alvaro Soler	Snr Rural Dev. Specialist	GFADR	TTL (1)
Ayat Soleiman	Snr Rural Dev. Specialist	GFADR	TTL (2)
Renato Nardello	Snr Rural Dev. Specialist	GFADR	TTL (3)
David Tuschneider	Snr Rural Dev. Specialist	GFA04	TTL (4)
Julia Navarro Espinal	Consultant/Agricultural Economist	GFA04	Co-TTL (4)
Jorge Caballero-Ceruti	HQ Consultant	GEN07	
Francis V. Fragano	Consultant	OPSPF	
Alfonso Grana Jonas	HQ Consultant	GEN04	
Juan Martinez	Sr Social Scientist	GSU02	
Beatriz Brigida Nussbaumer	E T Consultant	LCSAR - HIS	
Carlos Alfredo Peixoto Garcia	HQ Consultant	GFADR	
Anna Roumani	HQ Consultant	GFA04	ICR Preparation
Dino Francescutti	Agricultural Economist	FAO/CP	
Alejandro Roger Solanot	Snr Financial Management Specialist	GGO22	
Natalia Bavio	Financial Management Specialist		
Daniel Chalupowicz	Financial Management Specialist		
Juan Carlos Serrano Machorro	Snr Financial Management Specialist		
Keisgner De Jesus Alfaro	Snr Procurement Specialist	GGODR	
Ricardo Lugea	Procurement Specialist		
Marcelo Osorio	Procurement Specialist		
Oscar Chinaa	Procurement Specialist		
Ana Grofsmacht	Procurement Specialist		
Martin Sabbatella	Procurement Specialist		

Lilian Pederson	Snr Social Safeguards Specialist		
Juan Martinez	Snr Social Safeguards Specialist		
Claudio Daniele	Environmental Safeguards Specialist	LCSSEN	
Frank Fragano	Environmental Safeguards Specialist	LCSSEN	
Ruth Tiffer Sotomayor	Sr. Environmental Safeguards Spec.	LCSSEN	
Elba Gaggero	Environmental Safeguards Specialist	LCSSEN	
Marcelo Hector Acerbi	Snr Environmental Safeguards Spec.	LCSSEN	
Glenn Morgan	Lead Environmental Specialist		
Ana Bucher	Climate Change Specialist	ENV	

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY08	24.77	176.62
FY09	12.44	40.21
Total:	37.21	216.83
Supervision/ICR		
FY09	8.29	67.72
FY10	15.66	95.72
FY11	28.01	140.28
FY12	13.38	114.59
FY13	20.19	160.58
FY14	23.91	126.67
FY15	20.17	118.63
FY16	25.95	161.48
FY17	15.81	138.34
Total:	171.37	1,124.01

Annex 5. Beneficiary Survey Results

5.1 The project financed an extensive list of studies (see partial list in Annex 9) focused both on investment typologies as a class or on specific, selected investments as examples/case studies. The following summarizes several of these studies including the impact evaluation finalized in June 2017 which assessed the results of six provincial infrastructure investments (see summary A below). The ICR Main Text also refers extensively to these studies as sources of evidence for project achievements and for the window they provide onto diverse issues affecting project implementation.

A. Impact Evaluation (UCAR, June 2017)

5.2 As generally agreed, and based on analyses by the World Bank supervision missions of March and September 2016 and February 2017, the design of an impact evaluation of PROSAP II activities encountered a series of challenges due to information limitations. First, it is noted that PROSAP II was still under execution at the start of 2016 and thus, some subprojects were not finalized and this limited the selection of examples for impact evaluation. On the other hand, the information available, baselines and administrative/secondary data for impact evaluation were also limited and there was no ex ante impact evaluation plan which explicitly contemplated the use of quantitative methodologies which would permit causal attribution.

5.3 Most of the subprojects had some initial information available, whether from a survey or secondary data which would permit characterization of the target population and provide an approximate quantification of variables governing the operation of the project. However, as mentioned, this information was not generated with the explicit objective of conducting an evaluation with causal attribution of changes in the targeted variables, and this was the principal restriction encountered at the point of designing the evaluations. Likewise, in some subprojects the heterogeneity of beneficiaries makes ex ante definition of the causal chain between products, results and expected impacts complex for the construction of impact variables to evaluate. In the case of irrigation subprojects this definition results, in general, in a much clearer situation because the expectation is basically an increase in area cultivated and production under irrigation.

5.4 As a function of this situation, a selection of PROSAP subprojects was made which could be evaluated considering the existence of information from secondary sources or the possibility of generating the information for the evaluation taking into account time and budget constraints. The subprojects selected were the following: (i) Irrigation Systems Improvements in Mendoza and San Juan. (Subprojects: Chachingo and CSMN in Mendoza, and Irrigation CS in San Juan); (ii) Improved Irrigation Area of Rio Metán (Salta); (iii) Road Improvements in the Milk Production Area (Córdoba); and (iv) Rural Electrification: Productive Development in the Area of Influence of the Añelo Canal (Neuquén).

Principal results of projects selected:

A. Mejoramiento de Sistemas de Riego en Mendoza y San Juan (Irrigation San Martín/Canal Norte; Irrigation Chachingo-Pescara (Mendoza); and Irrigation Canal Céspedes-Sarmiento (San Juan))

5.5 The evaluation report was prepared with data of the National Institute of Vitivinicultura for the years 2002 to 2015. To evaluate the impact on variables of interest, a difference in difference (double difference) methodology was used. The methodology consists of calculating the difference between the differences pre- and post-treatment for beneficiary producers and the differences pre- and post-treatment for the non-beneficiaries. Data for the assignment of the treatment are at the

locality level instead of producer level. According to PROSAP irrigation specialists, except in the case of works in the Department of Rivadavia, in all other works there are localities benefited which cover very large areas and which contain producers who were not benefited by the project works. Consequently, the results must be interpreted as a lower limit of the effects of interest, that is to say, the impact of the investments is at least the levels reported and could be higher.

5.6 **Impact:** The central conclusion of this evaluation is that for the three PROSAP II irrigation subprojects evaluated, the impact in both provinces, on average, was statistically significant and of a magnitude of 6.95 percent for the increase in production and a 7.97 percent increase in yields for the treatment group. Discriminated by Province, results were not significant for Mendoza Province and of a magnitude similar to the average for San Juan. In terms of the diversification of varieties cultivated, the results are marginally significant and of low magnitude.

B. Río Metán Improved Irrigation Area (Province of Salta):

5.7 The general objective of this subproject was to improve and increase the supply of water for irrigation and human consumption, strengthen the producers and institutions involved in irrigation organization, increase the intensity of agro-livestock production and strengthen its commercialization, in the Metán locality in the south-east of Salta Province. The Project financed: (i) infrastructure works to increase water conduction capacity and water quality, and to minimize the risk factors in both the stability of the canal as well as in the quality of the water, to increase the surface area cultivated; (ii) technical assistance support for agricultural development; and, (iii) improved functionality of the Irrigation Consortia in operational and organizational terms.

5.8 Specific goals of the project were to increase the area cultivated, increase yields per hectare, improve product prices, reduce the costs of O&M and reduce future investment costs in water for human consumption. The assumption was that these improvements would be causally linked to the increased water available (quantity and quality), improved water resource management, improved application of water on-farm and better agricultural practices, and the training and strengthening of institutions. The direct beneficiaries of the subproject were 100 properties corresponding to 102 producers, totaling 4,000 ha. Total subproject cost was US\$2.047 million of which the Bank loan financed 81 percent.

5.9 **Methodology:** For the evaluation, an initial baseline structured survey/questionnaire was applied to beneficiaries and non-beneficiaries (treatment and control groups) in 2011, at the point of initiating the subproject; the baseline sample was 95 beneficiaries and 58 non-beneficiaries. Propensity Score Matching was applied to ensure comparability under “common support” criteria. This process resulted in 67 treatment (983 ha) and 57 control (761 ha). In July 2016, an identical survey was applied to the same producers. Due to the availability of baseline and follow-up survey at subproject completion, the impact evaluation used a difference in difference method (DID), comparing variables before and after for a treatment and control group to identify the change in the TG compared to the CG which could be attributed to the project, using as a control a group of farmers with similar characteristics. (The study explains the methodology in detail).⁶⁴

5.10 **Impact:** Some of the results expected were not achieved or were achieved only partially and at a slower pace than anticipated due to: (i) at the time of subproject initiation, lack of water

⁶⁴ Differences in differences is a statistical technique used in econometrics and quantitative research in the social sciences, that attempts to mimic an experimental research design using observational study data, by studying the differential effects of a treatment on a treatment group and a control group.

and abandonment of farm properties, and commonly, the selling off of land for extensive production of grains/other crops; and (ii) weakened status of the Irrigation Consortia at the start of the subproject due to climate-related, extreme water deficits. However, the subproject developed its activities and delivered almost all planned products on time and to a good standard. The works increased the security and quality of the water supply and improved conduction levels. The organization of the Irrigation Consortium improved even though problems persisted. Charging and payment for water improved as did the level of participation of farmers in the consortium.⁶⁵

5.11 However, in general terms and based on the analysis, the area cultivated in the zone diminished for producers in the treatment and non-treatment group due to contextual economic variables, as well as because of climatic problems. Further, it was not possible to causally attribute differences in results in terms of area cultivated or time worked on farm, to the project. These results could be affected on the one hand by variability in the context and on the other hand, by the lack of availability of sufficient data to control for non-observed facts. Similarly, the data limitations affecting construction of variables for results associated with the level of income and productivity should be mentioned, because it was not possible to assign prices or determine quantities produced due to the large quantity of data lacking in the survey documents. In summary, the impact evaluation models used presented high levels of standard error and it was not possible to clearly identify impact with statistical significance in terms of the absolute values for the area cultivated or hours worked on-farm.

C. Road Improvements in the Dairy Production Area (Province of Cordoba):⁶⁶

5.9 A first phase of this subproject was funded by PROSAP I which consisted of asphaltting two road segments in the locality of La Tordilla and Arroyito in the San Justo Department of Cordoba Province, to benefit a total of 322 milk producers in the zone of influence: (i) between the localities of Arroyito and La Tordilla coinciding with works on the same stretch under PROSAP I; and (ii) a segment between Orroyito and Sacanta towards the south. Due to gradual deterioration, a second phase of this subproject was funded by PROSAP II, consisting of asphaltting the same road segments. Without this second phase the situation could have reverted to the original access problems. The area is important for provincial milk production with a significant number of producers and milk receiving plants. The region has experienced a strong transition to intensified, input-based agriculture, translating into a marked increase in productivity and the size of dairy operations and in the high level of daily utilization of these road segments by trucks transporting fluid milk from dairies to industrial processing plants. The problems affecting the road network were in direct proportion to the size of production units, and there were growing problems of transitivity and the number of rainy days, with producers having to use smaller vehicles than ideal, alternative routes and other measures which increased the cost of transporting milk and other agricultural products in this region. The subproject objective was therefore to “contribute to increasing the profitability of the milk production sector and sustainability of productive systems, by ensuring permanent access of rural roads through works to generally improve their surface traction conditions and subsequent maintenance”. This related to the project development

⁶⁵ Notably, at subproject outset, 4 of 10 producers (in both groups) had agro-livestock activities as main source of income, and where agro-livestock activities were secondary, the proportion of retired/pensioned persons was higher for the treatment group. At end-subproject, the proportion of pensioners/retired had increased in both groups.

⁶⁶ See: Evaluación de Impacto del Proyecto “Mejoramiento de Caminos en el Área de Producción Láctea”, Guerrero, May 2017

objectives via transitability and to a higher set of objectives related to profitability and production sustainability.

5.10 Methodology: A DID methodology was applied (see above). The impact of the road was assessed based on the effect of having or not having the road segments in good condition. The investment made by PROSAP I generated the impact to start with. Since the initial investment was not asphalt, its economic life would have ended a few years after it was made, likely reverting to the original situation. With PROSAP II's investment in asphalt, the initial impact was maintained against a without-project situation where the road would have the seasonal access problems of the past. Thus, the impact of the PROSAP I investment is a proxy for the impact of the PROSAP II investment.

5.11 The main restriction encountered by the evaluation was the absence of data at producer level as no baseline has been done, nor monitoring. Thus, the empirical database needed to be constructed ex-post. For this reason, the team used information for the evaluation on milk deliveries to the dairy cooperative which operates in the zone, with a sample of 80 treatment and control producers in the zone as a function of distance to the improved road. An important factor which needs to be taken into account and which inter alia, delayed initiation of the analysis, was the climatic and economic situation affecting the national and regional dairy sector in the first semester of 2016 with serious impacts on primary production, to the point where production in the second semester nationwide declined 16 percent over the same period in 2015. These difficulties translated into the deterioration of other indicators critical to milk production, including the quality of the primary material at the farm level in provinces affected by flooding. Of major importance, however, was the difficult "context" for collecting baseline data through direct surveys for the evaluation, with producers hampered by these climatic conditions as well as by devaluation of the currency in early 2016. Further, even if it was feasible to reach a reasonable number of producers (limited by the budget allocated to the survey), few had data on production for up to 10 years. Another limitation was the lack of disaggregated data at the provincial and national levels for the evaluation.

5.11 The study opted to contact a large dairy cooperative in the region of the road works and obtain data on milk collection within the influence area of the roads. A complicating factor for the geo-referencing methodology used was that SanCor aggregated only 50 percent of the dairy farms in the area and the other 50 percent were distributed between other firms.⁶⁷ SanCor however, had existed for 70 years in the region and had substantial basic information on its member producers. The sample selection, facilitated by geo-referenced data, resulted in 81 dairy farms which in October 2016 produced 180,000 liters/day with a range of 200 to 10,300 liters/day per productive unit. This sample was divided into treatment and control groups based on the distance from the project-financed road improvements. Due to budget, climatic and economic conditions at that time, it was impossible to obtain data directly from producers so SanCor's in-house data was used as well as interviews with its staff.

⁶⁷ Also, within the latter 50% were firms who purchased directly from milk producers and other cases where a cooperative acted as intermediary, all of which indicates the intense competition for milk in recent years where firms and producers establish privileged seller/buyer relationships independent of the characteristics of the production system and in such cases, there is virtually no historical information.

5.12 **Results:** Significant effects were encountered: as a function of being near the road (less than 15 km) farmers increased their milk production some 51.5 percent with project while those more than 15 km from the road saw increases of 33.7 percent. The analysis showed that in the case of production volume, there was an average incremental production of 7,370 liters/year/ for each km closer to the improved road. In other words, there was an average increase of 198,000 liters/year in the short term (2005-2011) and for the period 2005-2014, the average production increase was 208,000 liters/year. As a function of land productivity, producers closer to the focus roads increased their productivity by 38.7 percent while those further away saw productivity increase 24.5 percent. Based on the production results, an economic impact was calculated showing an estimated additional Net Income of US\$ 7,227/year/dairy farm, and based on the 322 dairy farms which were the target population, this is equivalent to US\$2.33 million/year.

D. Rural Electrification: Productive Development in the Area of Influence of the Añelo Canal (Province of Neuquén):

5.14 This subproject sought to increase the potential for electricity access in the zone of influence of the Añelo Canal – an area of about 4,200 ha - to increase irrigation efficiency and bring in additional land under irrigation by incorporating infrastructure and technology. The subproject also benefited a complementary area of farms located to the east of the Añelo Canal and to which the plan was to extend electricity supply lines. Subproject works were started in 2009 and completed in 2012. During the development of these works, there was a significant change in the zone - the discovery and initiation of the exploitation of the Vaca Muerta Shale Gas deposit, which implied an important change in local economic activity, linked strongly to the provision of services for oil exploration companies. Also, the change in relative prices, in particular the increased price of land in the Añelo area, put agro-livestock activities in the zone of the subproject works at a significant disadvantage.

5.12 This subproject did not have surveys/questionnaires at the producer level or a baseline to permit the identification of the initial situation of the treatment and non-treatment groups, which made it difficult to design the evaluation in order to attribute changes causally to the subproject. Satellite information was therefore used to evaluate the impact of the subproject, as a substitute for information from a baseline or final set of data, but it was necessary to limit the result variable to changes in soil use. Analysis of the data shows an increase in the area cultivated controlling for proximity to the electricity poles (treatment group = <150 meters from the line, and control group = >150 meters) equipment and lines implemented by the subproject. Models of difference in difference were used which indicate that the area cultivated on farms was affected positively by proximity to the subproject. Regression analysis was used to determine causality.

5.13 **Impact:** A positive impact was estimated on the area cultivated by beneficiary producers, of approximately 2 additional hectares (on average) in 2016 compared to 2007. Considering that the average number of hectares cultivated by beneficiary producers is 188, this implies an aggregate increment attributable to the subproject of about 376 hectares within the zone of influence of the subproject. Taking into account that aggregate data shows a total increase of area cultivated in this zone of 929 hectares between the years of 2007 and 2016, some 40 percent of this increase would be the impact attributable to the PROSAP II subproject.⁶⁸

⁶⁸ The evaluation reports that energy consumption within the subproject Añelo productive zone of influence increased from 6,868 kw/hour in 2012 to 17,487 kw/hour by 2013 and to 87,934 kw/hour by 2014, an overall increase of 1,280%.

Other Evaluations

Young Rural Entrepreneurs Program:⁶⁹

5.14 The following captures the main conclusions of an impact analysis applied to a representative sample of 151 beneficiaries of the PROSAP II-financed national Young Rural Entrepreneurs Program, using a quantitative methodology, triangulating collected data with other qualitative sources including interviews with program coordinators and beneficiaries. Findings are as follows:

- The program engaged with over 10,000 young people averaging 31 years of age (and 24 percent over 36), providing technical support to prepare business plans, and in competitively selected cases, seed capital and technical assistance.
- Some 80.7 percent of beneficiaries classified their trainers/mentors as very good and another 15.7 percent as good.
- Some 51 percent expressed high satisfaction with the program overall and another 38.9 percent were satisfied.
- Networks were established with local and provincial organizations with agreements signed and under execution.
- Competitions under the project “brand” fomented entrepreneurial behavior and enabled selected proposals to be financed/implemented, using seed capital.
- The report cites 10,192 “participants” of which 5,726 were trained, 5,200 contested for financing of which just 400 (about eight percent) were selected.
- Businesses were diverse in productively and technologically with about equal proportions in the primary sector (32 percent), industrial (29 percent) and services (31 percent).
- Gender equity was stressed: 46.1 percent were female and 53.9 percent of beneficiaries were male.

5.15 Certain aspects of the program drew criticism/comment from surveyed beneficiaries:

- Training tended to focus on young people with technology skills and higher cultural level; some 25 percent had completed a tertiary education, 84 percent had completed a secondary education or higher, and 83 percent were working.
- The program lacked standardized, formal monitoring of the businesses initiated; such monitoring tended to be ad hoc, offered as a goodwill gesture by trainers and coordinators.
- Database networks able to link beneficiaries to sources of services, information and inputs were weak.
- Similarly, the program lacked courses in basic planning tools (management software, cost estimation, i.e., the tools to support administration of their businesses).
- Much greater use could be made of online training tools, which remains incipient. As some 75 percent of those surveyed had access to a computer, the potential for online courses was

⁶⁹ Evaluación del Proyecto de Jóvenes Emprendedores Rurales, Informe Final, UCAR/Grondona and Masello, October 2013

- evident. Further, training menus need to be adapted to the distinct productive and technological profiles of individual business ventures.⁷⁰
- The program needs a mechanism for scaling up businesses or linking them to incubators for technical, financing or other support.
 - The Centers for Entrepreneurial Development (CED) were assigned resources without adequate formal criteria and there was no system for measuring the impact of these centers.

Economic and Financial Impact Evaluation - ANR⁷¹

5.16 Methodology and analytical approach: The analysis used a longitudinal, quantitative approach to understand the financial and productive evolution of the cases selected, using retrospective interviews with beneficiaries. Project documents were reviewed, secondary sources explored, and a structured questionnaire was applied to a sample of ANR investments implemented in 2012-2014 to ensure that a track record of impact could be assessed. (See report for detailed discussion of sampling methodology and constraints and limitations). The analysis also attempted to detect extraordinary events (climate, prices, marketing issues) affecting production or manufacturing in a given year so that this could also be applied to the counter-factual, without-project situation. The final sample was 54 cases (see report for detailed discussion of sampling methodology, constraints and limitations), covering nine provinces.⁷²

5.17 Due to the uneven and/or imprecise data available from beneficiary producers, a mixed approach was needed to determine costs and inputs for most of the cases. A 10% discount rate was used and all data on incomes and costs was dollarized. Types of constraints affecting field work included: logistical due to the distances between concentrations of producers; variety/diversity of products and technology used by ANR beneficiaries; and, while initially it was assumed that the data collection process would adapt to each type of production, adaptation proved ineffective due to the pronounced differences between farms producing the same crop. A major issue was the lack of formal recordkeeping by producers. A wider issue was that in Argentina, there is no central source of data on the prices of intensive production such as horticulture and no monitoring of the cost structure of such production. Information is dispersed among provincial entities, INTA and certain specific databases. Another difficulty was the inability of reviewing records of the labor involved on farms; many farms under-declare the amount of labor used and interviews were not always successful in determining exactly how much labor was being used. Other factors also made analysis of the cases difficult including quantifying positive monetary externalities, e.g., agro-ecological conditions, product quality improvements, managerial improvements or efficient use of agro-chemicals. Finally, some ANR investments were found to have been discontinued. The report made a series of recommendations.

5.18 Recommendations: Certain difficulties associated with conducting an analysis of the impact of the selected ANRs indicate weaknesses in their execution and monitoring:

⁷⁰ See: Evaluación del Proyecto de Jóvenes Emprendedores Rurales, Informe Final, UCAR/Grondona and Masello, October 2013.

⁷¹ See: Evaluación de Impacto Económico-Financiero ex post de los Aportes no Rembolsables - Informe Final, UCAR/Grondona and Masello, 2016

⁷² Provinces were: Chaco, Chubut, Cordoba, Entre Rios, Mendoza, Misiones, Rio Negro, Salta, and San Juan. Productive chains covered were: beekeeping, livestock, dairy, chickens and dairy, wine/grapes, agriculture, horticulture.

- There is strong documentation of the “delivery” of the ANR but no active monitoring of beneficiaries, or records of results obtained from the investment. However, that had improved in the final year with monitoring of the ANR portfolio.
- Joint monitoring of projects in cooperation with beneficiaries is essential and should be included as a component in each investment to permit better diagnoses of projects financed, possibility of scaling them up etc. The costs of such monitoring are justified.
- Producers need help in establishing accounts of their costs and income as they have serious difficulties in organizing such information. The benefits would include not only better evaluation of impact but also help producers manage their farm businesses.
- A low-cost option would be to provide farmers with templates for monitoring their production, sales, and input expenses and providing records to support approval of further public or private investments in the future. Projects have the obligation to facilitate this crucial practice.
- Local authorities have a key role in identifying less well-endowed producers with fewer prospects of accessing credit and TA; these farmers should be the target population for the ANR.
- More formalized and technically advanced producers generally have available other tools to finance capital investments and it is desirable that they not be the recipients of subsidies.
- That said, the majority of producers analyzed and who were part of the defined ANR target population, did not have the capacity to access formal financial markets. The study estimated that barely 15% of surveyed beneficiaries would be able to access the public or private banking system.
- In general, the most successful cases of reconversion of small producers were from the cooperatives (Group ANR), which enabled them to improve their access to financing, improve their agricultural practices, gain access to assistance and lower their input costs. Promoting increased association of small producers remains a pending emphasis/focus in the locations visited by the survey team.
- There is a conflict between the bureaucratic requirements for accessing an ANR and producers’ ability to resolve/fulfill these requirements. The more modern, technologically advanced producers are generally better-informed about available programs, subsidies and other instruments, displacing those who have more to gain from participating in the ANR.
- It is recommended that the targeting strategy for ANR focus more on less formalized small-scale producers, less capitalized and without access to credit. Local authorities need to proactively locate this population, and more carefully evaluate producers’ profiles, as well as working with public credit agencies to ensure that the beneficiary population aligns better with the goals of the ANR.
- The productive variety and geographic extension of the ANR, aggregated in a better and more continuous information system would permit the understanding of their different production systems and the data obtained will be a key input in the formulation of new projects and support adjustments of projects under execution.

Impact Evaluation of the ANR:⁷³

⁷³ See: Evaluación de Impacto de los Aportes no Reembolsables (ANR), Reporte Final – Resultados de Evaluación, UCAR/Masello, September 2014.

5.19 **Methodology:** This evaluation sought to characterize the impact of the ANR on a group of productive farm properties in distinct provinces; and, analyze the main results as a function of the groups, productive chains as a function of each province. The study was primarily quantitative using transversal time sequence. A structured questionnaire was applied to a sample of ANR with agricultural cycles starting in 2012/2013. The study design was experimental with a treatment group of ANR beneficiaries, and a control group who had presented a proposal between 2011 and 2012 for participation, but had not been selected. The provinces included were the same nine listed in footnote 66 above. ANR projects sampled were those implemented in 2011-2012. Taking into account two conceptual criteria (type of investment implemented, and size of the farms), a sample was stratified. The adjusted sample was 59 ANRs out of the 196 actually financed in those provinces, at that time. Activities covered included: irrigation, infrastructure, machinery, cooling equipment, beekeeping/honey, mallas antigranizo, and enmaderación and the size of farms ranged from 0-2 ha up to 500 ha or more. The control group was 19 with similar profile in terms of farm size. Beneficiary cases were weighted based on total projects in each province. Challenges facing the survey team included locating the beneficiaries and reconstructing the evolution of their indicators. In the case of the control group, because they had not participated, they were very difficult to locate and some cases required substitution.

5.20 **Results:** In terms of the characteristics of the farm properties:

- 73% were personal owners, 12% were societies and the remainder other forms of social holding. About 50% had properties not exceeding 20 has and 17% had less than 1 ha.
- There were major differences in size of landholding by province ranging from Cordoba with 100% with 51 ha or more to Tucuman where 100% had 5 ha or less. Viewed overall, 35.5% had up to 5 ha, another 27.9% had from 6-50 ha and 36.5% had 51 ha or more.
- In terms of occupation, 52% worked off-farm: 42% in business and services firms, 22% as administrative workers (main state), and 17% were caregivers.
- In Cordoba and Salta, no beneficiaries worked off-farm, mainly in Cordoba due to the dynamism of farming activities and in Salta, due to the lack of dynamism of the labor market where their farms were located.
- In aggregate, 51.3% worked off-farm; and 48.7% did not. There was a close association between small farm size and work off-farm, linked strictly to productive factors.
- There was also a close link between smaller farm size and membership of a service or marketing cooperative; the larger the farm, the less likely to associate.
- There was a major heterogeneity of productive activities: some 17.8% were involved in apiculture, 11.9% in fruits, 11.2% in grapes, 8.9% in grapes/fruits, 7.7% in vegetables and 6% in dairying, 6% in oilseeds/dairy and 6% in cattle/dairy. The remaining 24.5% were in various combinations of these activities.
- Grouped: 30% belonged to the agricultural chain; 29% to grapes/wine; 18% to dairying; 18% to apiculture and 8% to livestock.
- In terms of production, the 59 ANR beneficiaries produced 639,000 kg of product valued at US\$1.7 million of which costs represented 26% of the sales price. If the cost is compared to the income from the principal activity, the costs were 46%.
- If the average income for the primary activity is compared to the income projection at the time of ANR preparation, the real income was on average 46% higher. Taking into account an average annual inflation rate of 15% the average real income would be just 18%.
- Agricultural activities had highly positive results in Cordoba, Mendoza, Salta and San Juan: (i) agriculture in San Juan (+368%); wine grapes/wine in Mendoza (+277%) and Salta (+226%); agricultural production Mendoza (+70%), Tucuman (+47%) and Salta (+11%); and dairying in Cordoba (+38%).

- Importantly, the study did not show a marked association between the magnitude of the impact and the land area of farms or the technology used on farm; the greatest difference was associated with the type of productive chain.
- Even small farms – grapes/wine, agriculture and dairy – were very efficient.
- Some 74% of the cases had issues affecting their production, mainly drought and frost, price reductions, rains and disease/pests.

5.21 Comparison with Control Group:

- Despite immense logistical and other issues, the survey team managed to interview 20 members of a Control Group. No CG was accessible in Cordoba or Entre Rios.
- CG members were present in all the same activities as the Treatment Group, except for dairy and chicken/poultry-raising.
- The chains compared were thus: apiculture, agriculture, livestock, and wine/grapes.
- In farm size, only 11% of the CG were on farms of up to 5 ha, compared to 47% of the Treatment Group; for farms of 51 ha or more, 63.2% of the CG versus 24.1% of the TG.
- Both groups experienced problems during their productive campaigns.
- Productive indicators are similar between the two groups, both for total production and for income, but a bit higher for the CG – one has to remember that there was a higher proportion of larger farms within the CG. See table below:

Table: Productive Results: Treatment vs Control Group

Case Type	Average Total Kg Produced by all Producers	Average Income by Primary Activity	Average Unit Price per Kg of Product	Average total Cost of Production	% Incidence of Cost on Income from the Primary Activity
Beneficiary	3,239.5	10,607.3	11.01	5,260.6	49.6 %
Control	4,779.0	14,680.3	15.42	7,757.1	52.8 %

Source: UCAR/Masello, 2014

- For most of the TG and CG, their share of the ANR investment was obtained from their personal savings or with family support. Bank credit was scarce: barely 3% accessed a provincial bank, 2% the National Bank and 1% a private bank. Almost all TG members did not contract any debt for their ANR investment.
- In the case of the CG, 9.1% accessed the National Bank, and 18.2% a provincial bank.

5.22 Impact

- All beneficiaries interviewed stated that their investment had had an impact on their farming operation: 64.6% said it had a high impact and 35.4% said the impact was moderate.
- At the specific provincial level, 100% of beneficiaries in Entre Rios and Salta classified impact as high and the range in the high category for the other seven provinces was 74.3% (Chaco) to a low of 50% in San Juan and Tucuman.
- Overall, averaging the nine provinces, 64.5% claimed high impact and 35.5% moderate impact.
- Some 89% assessed as high or very high, the impact on volume of production.
- Some 64% assessed as high or very high the impact on profitability.
- In terms of the profitability of individual production chains, see table:

Table: Evaluation of Impact on Profitability by Production Chain

Productive chain	Impact on Profitability				
	Very High %	High %	Low %	Very Low %	Total %
Apiculture	20.0	45.7	34.3		100.0
Agriculture	6.7	61.7	31.7		100.0
Livestock	55.6	11.1	33.3		100.0
Dairy		65.7	34.3		100.0
Poultry Raising		100.0			100.0
Wine/Grapes	19.3	35.1	29.8	15.8	100.0
Total:	13.7	49.7	32.0	4.6	100.0

Source: UCAR/Masello, 2014

Table: Evaluation of Impact on Profitability at the Provincial Level

Province	Impact on Profitability				
	Very High %	High %	Low %	Very Low %	Total %
Cordoba		65.7	34.3		100.0
Chaco	20.0	45.7	34.3		100.0
Chubut	21.7	34.8	43.5		100.0
Entre Rios	50.0	50.0			100.0
Mendoza	14.8	42.6	27.9	14.8	100.0
Misiones	33.3	66.7			100.0
Salta	40.0	60.0			100.0
San Juan		100.0			100.0
Tucuman		50.0	50.0		100.0
Total:	13.8	50.0	31.6	4.6	100.0

Source: UCAR/Masello, 2014

Evaluation of the Strengthening of User Consortia⁷⁴

5.23 An evaluation was conducted of PROSAP II institutional strengthening (IS) activities for water user consortia/groups benefiting from nine irrigation subprojects and one rural electrification subproject in six Provinces (Catamarca, Jujuy, Mendoza, Neuquen, Salta and San Juan). The evaluation sought to determine: (i) level of user satisfaction with system operation and programming; (ii) improved level of participation; (iii) increased percentage of payment for irrigation water; and (iv) improvements in water conduction and distribution efficiency. The evaluation was based on project documents/archive, interviews with staff and producers involved in each subproject, and development of a conceptual framework for the organizational situation of each corresponding water user group, the goal being to identify strengths and weaknesses between verified institutional characteristics and normative projections. Each subproject was treated as an individual case study. This effort was supported by a Workshop on Administration and User Consortia sponsored by UCAR in August 2016. The overall impact of the project's strengthening

⁷⁴ See Evaluación Fortalecimiento a Consorcios de Usuarios – Informe Final, UCAR/Pinto and Andino, March 2017

activities was assessed.⁷⁵ The following presents a summary of the general conclusions across the 10 subprojects studied. Specific stakeholder/water user group opinions on the IS experience expressed at this workshop are summarized in Annex 6.

5.24 **General conclusions:** Simplified conclusions, given the immense diversity of situations and capacities, is difficult. Each region with a subproject has distinct agro-economic characteristics, different laws, divergent attitudes and traditions among users/interested groups, and specific institutional issues, all requiring particular approaches. Certain aspects commonly occur however, and provide the following guidance:

- There was notable impact on institutional systems, which were strengthened in terms of human capacity and the primary elements for better management. Improvements were noted across the board in water charges, consortia's access to information, irrigation programming, and a generally higher level of user satisfaction.
- Institutional strengthening activities were in general well-targeted to basic needs in each case, and introduced managerial efficiencies, although in some cases the content of the institutional strengthening project was overly-standardized and did not take into account highly distinct situations, e.g. identical strategies for consortia not yet constituted and others already consolidated. This situation requires a methodological model for prior diagnosis, establishing the objectives and activities up-front.
- Activities designed to strengthen the administration of goods and services needed for water consortia's development, had a strong impact and provided basic managerial tools.
- Greater precision is needed in the definition of which types of institutional activities will be financed to avoid resources being assigned to other activities not strictly related to institutional strengthening objectives, e.g., cleaning drains, installation of water meters and IT systems, purchase of goods and equipment and payment for human resources associated with the works themselves.
- A unified focus incorporating institutional strengthening with technical assistance can be beneficial.
- There was commonly a dis-association between institutionality as fixed by law and the decisions adopted, both at the diagnostic stage and the design and implementation stages of the IS projects. The characterization/configuration of the water user consortia as civil associations was a flaw with negative impacts including impeding public control over their institutional life and finances. This situation indicates a much wider set of issues associated with the training of the state legal community, the imprecise and difficult to interpret legislation in many provinces, as well as the formulation of subprojects which do not take legal aspects into consideration during the diagnostic and design stages. These issues go well beyond the purview of a single project and need interventions at greater scale.
- In some cases, IS projects have not been effective in changing subsequent behavior even when well-implemented and adequately formulated, whether because planned activities

⁷⁵ Preliminary results were discussed with key actors in PROSAP/UCAR at a subsequent workshop.

were not carried out or actions were introduced which were not foreseen initially, or did not reflect/or were not justified by, the initial diagnosis.

- The constitution of water user consortia is not always appropriate or desirable and should not be an invariable requirement. Some provinces do not legally permit water user consortia, e.g. San Juan, but rather foster participation by integrating interested users into the state structure. Similarly, the constitution of a consortium may be legally but not socially possible, at least initially. IS strategies may need tailoring to such situations.

Annex 6. Stakeholder Workshop Report and Results

6.1 A Workshop on Administration and User Consortia was sponsored by UCAR in August 2016. The overall impact of PROSAP II institutional strengthening (IS) activities was assessed. The following summarizes stakeholders' opinions spanning the 10 public infrastructure subprojects studied (nine irrigation and one rural electrification):

- Institutional facilitators: The use of institutional facilitators to improve institutional strengthening activities is useful but must carefully consider the professional profile and experience of the persons selected, vis a vis the subproject and the development needs of each user group.
- State institutions: State institutions proved of little importance due to their constant changes of structure and personnel and in many cases, inadequate involvement in the IS project, which impacted unfavorably on the participating water user groups.
- Lack of ownership: Key actors and interested groups often perceived the IS project as something outside their immediate interest, planned and executed on the margins of their regular activities, contributing to weak commitment. This needs specific interventions.
- Inadequate institutional diagnosis: Deficient institutional diagnosis up-front can mean that IS project activities skew towards the works and assign inadequate attention to institutional aspects.
- Incompatibility with the local vision: The provincial "vision" is often disassociated from IS project objectives. Traditional management of water prevents key actors and interested groups from appreciating positive changes under modernized irrigation regimes/systems.
- Strategy needs to look beyond one subproject: Institutional change needs to look beyond an isolated infrastructure subproject. The period after the physical subproject is executed is critical for institutional adjustment to the new reality of improved structures.
- Incentives for participation: Incentives are needed for beneficiaries to engage in water management/use so that they do not view this as a burden, but rather as a valuable benefit.
- Exchanges of experiences: Visits with user groups to observe the effects and institutional growth and effectiveness of other subprojects and water user groups, are of high value and more effective than theoretical instruction.
- Protocols for execution and penalties: Execution protocols are needed to secure local commitment to institutional results, with penalties for non-performance. This aspect should be mentioned in the agreement for IS activities.
- Indicators: Institutional strengthening indicators need to be re-designed to cover the diverse situations diagnosed.
- Methodology for institutional diagnosis: Such methodology needs to be developed to reduce flaws in the initial stages of IS projects, along with a mechanism for evaluation which allows an assessment of the efficacy and efficiency of IS activities, and eventual correctives.

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

A. Executive Summary of Borrower Completion Report (UCAR/M&E Unit, June 2017)

Informal Translation

Background:

1. PROSAP is the principal public investment instrument of the Argentine Ministry of Agroindustry (MAI) and one of the main tools for promoting the country's regional economies. Its operations depend on resources of the National Government, Provincial Governments and loans provided by the International Bank for Reconstruction and Development (IBRD) and Inter-American Development Bank (IDB), the Latin American Development Bank (CAF) and the Fund for the Development of Countries in the River Plate Basin (FONPLATA), as well as other donors.
2. The IBRD Loan 7597 (PROSAP II) constituted the second phase of PROSAP, whose first phase comprised IBRD loans 4150-AR (USD 105 million) and IBRD 7425-AR (Additional Financing of USD 37 million), complemented by three IDB loans (899/ OC-AR 1, OC-AR2 y OC-AR3). This first phase benefited 9 provinces with a total of 22 subprojects of which 14 were provincial and the other 8 national. PROSAP II was approved by the IBRD Board of Directors in 2008 and became effective on May 11, 2009. While its original closing date was March 30, 2015, delayed approvals, procurement and implementation times of certain subprojects required an extension of the closing date to March 15, 2017.

Objectives and Components:

3. The Development Objective of PROSAP II was to increase productivity and profitability of small and medium-sized agricultural producers in order to contribute to improving their agricultural competitiveness especially in the Regional Economies. To achieve this objective, the Program strategy contemplated technical assistance (TA), activities to strengthen capacity and direct investments which would Help improve longer-term productivity, as well as competitiveness and Access to markets.
4. To achieve this objective, the program was structured in three components: (i) Support to Pre-investment Activities; (ii) Investment Subprojects to improve competitiveness; and, (iii) Project Management, requiring for their implementation a total of USD 420.5 million of which the IBRD financed USD 300.0 million.
5. The program concentrated mainly on supporting subprojects to improve agricultural competitiveness such as infrastructure and public services (irrigation and drainage systems, basic public infrastructure with productive goals, sanitary promotion and control as well as quality systems, infrastructure and services to improve commercial development, and coordinated, integrated technical assistance linked to these activities). In addition, the program contemplated private investments on-farm and off-farm through non-reimbursable matching grants (ANR).
6. Likewise, in this second phase of the program, pilot instruments were activated such as Regional Development Initiatives (RDI) based on the integration of value chains in determined areas, as well as Innovation Transfer Initiatives (ITI) generated through the activities of innovation networks at the provincial level with public and private actors. In parallel, the program promoted Institutional Development to consolidate the gains achieved and to ensure that project activities were implemented.

Evaluation Results:

7. Final evaluation of PROSAP II concluded that the performance of the program was satisfactory. As can be seen, results indicators of the subprojects evaluated show in all cases positive variations in respect to their baselines with an effectiveness range of 40% to 208%. For the subprojects evaluated, the lowest range of effectiveness in relative terms have a clear explanation in the presence of diverse external and internal factors which impacted negatively on the Theory of Change, both economic and productive.
8. The analysis conducted showed substantial advances towards the achievement of Project development indicator targets: (a) achievement of 60% of target for increased gross value of production (sales volume); (b) achievement of 80% of the target for increased productivity of labor; and, (c) achievement of 80% of the target for increased productivity of land.
9. In the case of impact, a series of evaluation studies was conducted which demonstrated causal evidence for changes in the variables from the implementation of PROSAP II. In regard to irrigation subprojects, based on a sample of three executed in the provinces of Mendoza and San Juan, it is seen that all of them had positive and quantitatively important effects for the producers benefited. Specifically, beneficiary producers experienced an increase in their production of 6.95% and 7.97% in yields compared to a control group. In regard to roads infrastructure, the subproject Road Improvement in Dairying Areas of Córdoba Province showed results consistent with the development pattern of milk production in the region. In particular, the upturn experienced starting in 2004 was able to be sustained over time thanks to the availability of transitable roads on a permanent basis, favoring access to producers' productive establishments and ensuring the regular outflow of product to processing centers/markets. Finally, the analysis of the subproject Rural Electrification (Añelo, Province of Neuquén) demonstrated a positive impact of 40% on the total land area cultivated in the subproject area.
10. In regard to the Results Framework which covers a set of indicators aligned to the types of subprojects financed under the Program, all demonstrate satisfactory results: (i) 115% of the target for increase in yields; (ii) 19 EPSAs implemented; (iii) 46% for the target for incremental ha under production; (iv) 85% for the target for increase in water conduction efficiency for irrigation subprojects; (v) 467% for the target increase in vehicle transit as measured by Annualized Average Daily Transit; (vi) Argentine sanitary status maintained for *Encephalopathia*; (vii) 102% for the target, increased on-farm investment associated with improved public investment; (viii) 90% for the target, creation of provincial capacity to design, implement and evaluate agricultural strategies and projects.

Disbursements:

11. In regard to disbursement, the Project encountered a moderate gap between what was planned and what was actually recorded during implementation. This situation was related principally with external factors and difficulties in the development and management of certain subprojects which obligated the program to request extension of the closing date the justification for which received the Bank's no-objection.
12. **Factors affecting Project Implementation – External:**
13. In regard to external factors which influenced deviations between what was programmed and effectively executed, and also in the results achieved, institutional changes were important at the national and provincial levels in delaying subprojects. This was not only at the level of

government but also in the lending entity (four changes of Project manager, five in the procurement specialist, and three in the environmental specialist), and in public organisms providing technical support. This slowed down the rhythm of execution and formulation. Other notable themes were the management of procurement and the circuits for payment in some provinces; distortion of the INDEC indices in an inflationary context which created serious problems for determining price adjustments for works; bank guarantees required by the IBRD; delayed signature of agreements and ministerial resolutions; delayed no-objections by the IBRD; and, climatic contingencies which affected not only work plans/timing, but produced major damage in some subprojects.

Factors affecting Project Implementation – Internal:

14. In terms of internal factors, the most important were problems in design of the subprojects (mismatch between the subprojects formulated and implemented in the investment portfolio); the time elapsed between the design stage and execution which worked against the strong performance of the subprojects; the disconnect between some of the national subprojects and the general themes/objectives of the Program; and, contracting and procurement requirements difficult to achieve when dealing with small amounts of financing and locations with scant availability of suppliers, even more so during inflationary periods.

Safeguards:

15. The performance of the Project in regard to environmental and social safeguards was satisfactory and demonstrated a notable qualitative improvement over the previous situation. The work agenda followed best practices established in this subject. The environmental and social perspective was integrated into the subprojects from the start of their preparation. In the same manner, and as part of UCAR's general strategy, the gender perspective was incorporated in subproject preparation, despite not having been a priority theme for the Program, while indigenous peoples were attended in the subproject's zones of influence.
16. Compliance with environmental safeguards and environmental management of PROSAP were very satisfactory, a result rooted mainly in UCAR's institution-strengthening and formation of human resources in the application of safeguards which were soon disseminated to the Project teams in the provincial administrations.

Monitoring and Evaluation:

17. In the same way, we highlight management of monitoring and evaluation (M&E). The daily monitoring of Project activities had as their basic pillars the utilization of three information systems, at the central level and in the provinces and Program sub-executors: UEPEX (accounting and financial administration), SEPA (administration of contracts for works, goods and services) and SIIG (monitoring of physical execution). In addition to monitoring, PROSAP II moved ahead on a system of independent evaluation through the contracting of consultants or external firms, from which multiple evaluations were carried out (diagnostics, mid-term, results, impact and ex post economic) which were very useful for correcting errors/deviations and improving performance.

Sustainability:

18. In regard to sustainability, PROSAP II as a mechanism for programming and promoting agro-livestock development, is not a permanent institutional entity and thus not sustainable as such. However, analysis of the opinions of interviewees, showed that there is a high likelihood that that benefits will be consolidated longer-term (and as demonstrated in PROSAP's own

continuity for over two decades, moving through important crisis periods such as occurred in 2001). Through its activities, the continuity of PROSAP is guaranteed in operations financed by IDB, the Bank of Latin America (CAF), and FONPLATA, and by those Operations which are currently at the prioritization stage for later formulation and approval (PROSAP with financing from the Saudi Arabian Development Fund, and PROSAP-FONPLATA 2 and 3). In addition, the consolidation of the name “PROSAP” in practically all provinces, as a Brand-name associated with rural development through investments in infrastructure works, has been transformed into a highly-demanded program by producers and provincial governments. As a function of this, the sustainability of PROSAP as a mechanism for the programming and promotion of agro-livestock development is evaluated as “high”.

19. The sustainability of the subprojects differs according to their type and characteristics. In this sense, the sustainability of the national subprojects for animal health are evaluated as “high”, due to the level of strategic priority assigned to them by the Government of Argentina in recent years. However, sustainability of the JER subproject is uncertain, due to the fact that its continuity is not anchored in a permanent institutional “location” within the Ministry of Agroindustry.
20. The provincial infrastructure subprojects have different levels of sustainability depending on the jurisdiction, characterized by different levels of development and capacity. In provinces with a higher level of institutional development and greater technical and economic capacity, and which can count on organized, committed beneficiaries, sustainability of the subprojects is high. In contrast, in other provinces with lower relative levels of development, subproject sustainability will depend on continued investment by the provincial and national governments, on the development of institutional capacity and social capital to strengthen associative behavior and the organization of beneficiaries.
21. In regard to the ANR, these are considered to have high sustainability, because the investments carried out were privately-owned (individual or collective), and there exists their commitment to finance - using their own resources - the operation and maintenance of their investments. In the case of the IDR/IDEMI their sustainability is considered probable, due to the fact that the associations established are consolidating over time and moving towards a more stable legal status. In the case of the ITI, sustainability is high, but they still depend on the continued commitment of public participating institutions. Also, ownership of the ITI is high at the level of local government and the beneficiary population.
22. En materia de sostenibilidad ambiental, los entrevistados consideran que el esquema destinado al monitoreo ambiental es eficaz y sostenible. Estos han sido institucionalizados y permiten en conjunto con las “actas ambientales de inicio de obra” garantizar el compromiso y las obligaciones de las contratistas en temas de salvaguardas ambientales.

Lessons Learned:

23. In regard to lessons learned, the program identified a considerable number, of which the most notable to be taken into account for future operations are the following:
24. Technical capacity to prepare, implement and evaluate subprojects for public Investment are in general limited and in this context, there is heterogeneity in these capacities at both the provincial and national levels. As discussed in the Mid-term Review evaluation of PROSAP II, the creation of a Project Formulation Unit contributed to improving this situation. Also noted is the physical integration of the areas for Project Formulation and Management in the offices of UCAR as a necessary step for better articulation of both.

25. The participation of local and/or provincial actors at certain timely stages of the design favors the development of ownership of the activities developed during the implementation stage. On the contrary, the execution period is affected negatively when prolonged delays are experienced between the formulation and implementation stages. Carrying out transition workshops or specific types of communications activities could counteract this effect.
26. Design of the IDEMI must be bounded by their aspirations, concrete in their activities to be developed and with a clearly-defined and manageable life cycle within the periods established by the program.
27. It is necessary in future operations to take into account the sustainability of the operation and maintenance of the works and Project a repayment consistent with this proposition and with the rational use of the natural resources, in this case water, taking into account the heterogeneity of each region (cultural, productive, institutional, organizational etc).
28. Execution of the ANR depends in large part on the correct targeting of the population. As a function of restrictions in financial markets, the marked de-capitalization of small rural producers and the technology gap between small and medium producers, the ANR producer needs to be categorized within the agro-livestock PYME. That is to say, that the products need to be formalized, operate in formal markets, be bankable, have originated from a planning process (within the framework of a PROSAP public work or competitiveness initiative) and the producer can count on a certain level of capitalization which permits them to modernize their capital.
29. Based on the project experience, the ANR demonstrated that the producer's profile in regard to the banks can be improved, as a guarantee or derived from payment of the ANR to the credit entity, as a way of negotiating better credit conditions (rate and period). The ANR linked to credit can promote investment by linking the beneficiary to a credit operator within the banking system. The strategic linking of the ANR with local financing initiatives enables the strengthening of those sources, in this way expanding the supply of credit instruments for ANR producer beneficiaries, generally excluded from the banking system.
30. The efficacy of subprojects/projects is highly related with institutional and technical maturity of the beneficiary organizations. It depends in large part on the level of consolidation and modernization which these institutions (e.g., UCAR and PROSAP) have reached/achieved.
31. In terms of budget, the creation of UCAR has permitted the concentration of external credit of the Ministry of Agroindustry in a single unit which encompasses all programs and projects with international financing. This has permitted more agile budget management whose impact is demonstrated in improved execution.

B. Borrower's Comments on the Bank's draft ICR



Ministerio de Agroindustria
Presidencia de la Nación



BUENOS AIRES, 5 de septiembre de 2017.
NOTA UCAR N° 3537-03

Ref: Ref: Programa de Servicios Agrícolas Provinciales
(PROSAP 2, Préstamo BIRF 7595-AR). Borrador de
Informe de Conclusión de Ejecución (Implementation
Completion Report-ICR)

Señor
David Tuchsneider
Gerente de Proyecto
Departamento de Desarrollo Sostenible
Región de América Latina y el Caribe
Banco Mundial
S. / D.

Me dirijo a usted a efectos de remitirle los comentarios de esta Unidad para el Cambio Rural al Informe de Cierre (ICR) del PROSAP II.

Consideramos que el ICR contiene inconsistencias entre las calificaciones de evaluación y los hechos que las sustentan, por ser estos ambiguos y/o contradictorios entre sí. Existe una visión parcial que contradice o desconoce situaciones, hechos o decisiones que la UCAR tomó con el pleno acompañamiento y/o aprobación del Banco, las cuales se detallan a continuación, haciendo referencia en cada caso, al párrafo o página correspondiente en el ICR:

(2.1.2) Diseño del proyecto. No es correcto aseverar que el diseño del proyecto no tuvo en cuenta los determinantes jurídicos, políticos y sociales de la gestión organizada de la infraestructura hídrica, ya que estos habían sido similares al momento de la ejecución del PROSAP I, la cual fue considerada exitosa por el mismo Banco.

(2.1.2) Criterios de selección. La cartera de subproyectos (SP) se conformó en la medida que las provincias presentaron a la UEC, en el marco de una convocatoria abierta, propuestas de inversión acordes a los objetivos de desarrollo del PROSAP; quedando formalmente en manos del Banco la decisión final sobre la aprobación o rechazo de las mismas. En función de lo anterior, y **dado la clara selección traccionada por las demandas provinciales, enmarcada en un complejo entramado de condiciones de elegibilidad, con la presencia del Banco como supervisor y garante de todo proceso, no es admisible para la UCAR la afirmación acerca que la selección de subproyectos se realizó de forma discrecional.**

(2.1.2) La conformación definitiva de la cartera de SP provinciales, estuvo en línea con la mayor demanda de obras de rehabilitación de sistemas de riego en las provincias, como consecuencia del estado de obsolescencia de la infraestructura. Es por ello que, teniendo en cuenta además el punto anterior, no existió tal sesgo en la selección de "grandes" SP de riego.

(2.1.2) La EPSA es el instrumento que se diseñó para priorizar las inversiones, el cual contempló un análisis multivariable. La selección de proyectos en cada provincia correspondió al Ministerio relacionado con la producción, y es por eso que se establecieron criterios propios y productivos.

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Convocar a otros ministerios no agropecuarios no resulta un aporte toda vez que el aporte técnico y los recursos humanos se consiguen en ese ámbito.

(2.3.3) Monitoreo y Evaluación. Si bien la UCAR coincide con las dificultades mencionadas en la implementación del sistema de M&E, el mismo comenzó a reportar resultados satisfactorios a partir de la Revisión de Medio Término del año 2012 (2.2.3), y no en los últimos 18 meses como sugiere el ICR. En dicha oportunidad, la UCAR presentó resultados de los subproyectos más maduros del PROSAP II, que en aquel entonces eran los únicos que estaban en condiciones de hacerlo, ya que el resto se encontraban en plena ejecución, o no habían iniciado. Asimismo, a partir de entonces, se presentaron evaluaciones de resultados que fueron bien recibidas por el Banco, así como una evaluación de impacto de proyectos de riego de PROSAP I. Por último, a partir del año 2016, la UCAR implementó un Plan de Evaluación, que incluía varios estudios, que el Banco recibió en tiempo y forma, y que evaluó de manera satisfactoria, debido a que estos permitieron estimar el logro de los objetivos de desarrollo.

(2.4.7) Adquisiciones. La UCAR coincide en los hechos mencionados que afectaron la gestión de las adquisiciones del Programa, y que con posterioridad fueron subsanándose como resultado del trabajo conjunto con el Banco. Sin embargo, cabe destacar que el Coordinador Ejecutivo ejerció sus funciones relacionadas a la gestión de las adquisiciones en el marco de sus competencias como tal, descartando cualquier otra interpretación que deja abierta el citado párrafo.

(2.4.8) Gobernanza. En el ICR no se relata de acuerdo a los hechos, ni se destaca positivamente el rol activo que jugó la UCAR en la identificación de posibles irregularidades en la gestión de un contrato de obra, ni en la resolución satisfactoria de las mismas, promoviendo con su intervención, no sólo la investigación del caso, sino también la continuidad de la obra a través del lanzamiento de un nuevo proceso licitatorio.

(2.4.8) En relación al punto anterior, cabe destacar que en US\$ 1.100 millones de inversión, el PROSAP tuvo dificultades con tres certificados por valor de US\$ 240.000 que se devolvieron. El proceso se informó desde la UCAR, solicitando desde aquí la cooperación del Banco. Como respuesta se obtuvo una Auditoría Técnica de baja calidad, a manos de un técnico sin experiencia en obras, y una intervención de la Oficina de Integralidad del Banco sin ningún aporte que nos permitiera mejorar nuestra gestión. La resolución del conflicto insumió mucho tiempo y dinero del estado nacional.

(2.5.1) ANRs. Sólo 73 productores sobre 1796 productores que iniciaron sus planes de inversión no los concluyeron, en un 100%. Esto representa apenas el 4%. Por otra parte no es real que los ANR no traccionaron inversiones apalancadas con crédito. Tal como lo evidencia el ICR el 40% de los productores de la muestra analizada logró realizar la inversión gracias al acceso al crédito, lo cual es superior al promedio nacional de 10% de productores agropecuarios que acceden al crédito bancario.

(2.4.5) Administración financiera. En un país federal como la Argentina, el sistema de pagos descentralizado, se implementó de acuerdo a las normativas nacionales y provinciales. Un sistema centralizado no permitiría deslindar responsabilidades, ya que la UCAR estaría asumiendo obligaciones y riesgos que corresponden a las provincias en su rol de co-ejecutores.



(2.5.4) Nuevas operaciones. No es correcto aseverar que el Gobierno Argentino acordó no financiar una tercera fase de PROSAP, ya que luego que el BIRF comunicara su decisión, fueron aprobadas nuevas operaciones PROSAP con BID y CAF que están iniciando su ejecución.

(3.1.4) Relevancia de la implementación. Las razones fundamentales de las extensiones del plazo de implementación del PROSAP II, no tuvieron que ver con el tipo o complejidad del proyecto o la condición de las provincias sino a requerimientos que en materia ambiental y social impuso el Banco en forma posterior a que los proyectos de factibilidad fueran elaborados, y a los efectos de la devaluación de la moneda que determinó la liberación de mayores fondos.

(3.2) Alcance de los objetivos de desarrollo. Eficacia. La evaluación realizada, y la correspondiente calificación de "modesta" en términos de eficacia, se fundamenta en la utilización de metas ex ante establecidas en el PAD que no tienen validez y representatividad alguna, dado el débil diagnóstico realizado en la etapa de diseño. Es decir que a pesar de las debilidades que el mismo ICR menciona en relación al diseño del PROSAP II y específicamente al PAD, se eligen sus metas, para castigar el desempeño del Programa.

(3.3) Alcance de los objetivos de desarrollo. Eficiencia. De la misma manera, se evalúa "modesta" la eficiencia del Programa, sin considerar el escaso tiempo transcurrido desde el cierre de la operatoria, y teniendo nuevamente en cuenta y sin contemplación alguna, las métricas del PAD.

(3.4) Justificación de calificación global de resultados. La UCAR no está de acuerdo con la calificación de "moderadamente insatisfactorio" otorgada a los resultados globales mostrados por el Proyecto, y considera que la misma está sesgada negativa e injustificadamente por metas de escala y alcance que no tienen relación con la cartera definitiva de subproyectos del PROSAP.

(5.2.2) Evaluación del desempeño de la agencia implementadora. La calificación de "moderadamente insatisfactorio" no representa en modo alguno las calificaciones obtenidas en aspectos centrales del Programa (administración financiera, relevancia de la implementación, salvaguardas ambientales, y relevancia y alcance los objetivos de desarrollo).

Consideramos, por los argumentos presentados, que el ICR emite juicios de valor sobre el PROSAP II que no están sustentados en los hechos o en información verificable, por lo que el Informe de Cierre no resulta un aporte que contribuya a una adecuada evaluación del Programa.

Sin otro particular saludo a usted atentamente,


Dr. ALEJANDRO GENNARI
Coordinador Ejecutivo
UCAR - PROSAP

Annex 8. Comments of Co-financiers and Other Partners/Stakeholders

N/A

Annex 9. List of Supporting Documents

Bank

Project Appraisal Document (PAD), Report No. 43000-AR, August 25, 2008

Legal Agreement

Project Concept Note

Minutes of Negotiation

Integrated Safeguards Data Sheet (ISDS)

Supervision Aide Memoires (19)

Financial Management Supervision Reports

Financial Management Input to Financial Management Rating in ISRs

Procurement Post Reviews

Audit Reports

Implementation and Status Reports (ISR)

Evaluación Transversal de los Resultados y Efectividad de la Implementación de las Salvaguardas Ambientales y Sociales Aplicables – PROSAP II BIRF 7597-AR: Informe Final, World Bank, March 2017

Economic and Financial Analysis, FAO/Francescutti, June 2017

Borrower

Borrower Completion Report (UCAR, June 2017)

Mid-Term Review Report (UCAR, 2012)

Final Report on Institutional Development for Investment - PROSAP, FAO 2016

Evaluación Fortalecimiento a Consorcios de Usuarios - Informe Final, UCAR/Pinto and Andino, March 2017

Evaluación Transversal de los Componentes de Asistencia Técnica, Informe Final, UCAR/Belmonte and Martin, March 2017

Informe Final de Gestión 2014: Fortalecimiento de las Capacidades Operativas Provinciales (FCOP), UCAR.

Informe Final: Evaluación de Impacto de Proyecto “Mejoramiento de Caminos en el Área de Producción Láctea, UCAR/Guerrero, December 2016.

Evaluación desde la Perspectiva de los Beneficiarios, de los Proyectos de Inversión Privada apoyados mediante Aportes no Reembolsables (ANR), Informe Final, UCAR UEC/Masello, February 2012

Evaluación de Impacto de los Aportes No Reembolsables – Resultados de la Evaluación (ANR), Reporte Final, UCAR/Masello September 2014

Evaluación de Impacto Económico-Financiero ex post de los Aportes no Reembolsables (ANR), UCAR/Grondona and Masello, April 2017

Evaluación del Proyecto de Jóvenes Emprendedores Rurales, Informe Final, UCAR/Grondona and Masello, October 2013

Informe de Evaluación de las Iniciativas de Transferencia de Innovación (ITI) del PROSAP, UCAR/Aguirre, (Draft) February 2014

Evaluación de Impacto de Proyectos de Riego en las Provincias de Mendoza y San Juan, UCAR, March 2017

Evaluación de Resultados – Fase Cualitativa: Proyecto Desarrollo Áreas de Riego en Margen sur del Rio San Juan-Céspedes Sarmiento, Provincia de San Juan, UCAR, July 2015

Evaluación de Resultados – Fase Cualitativa: Proyecto Modernización Sistema de Riego Área San Martín – Canal Norte, Provincial de Mendoza, UCAR, July 2015

Evaluación de Resultados – Fase Cualitativa: Proyecto Integral Naciente Chachingo-Pescara, Provincia de Mendoza, UCAR, July 2015

Evaluación de Impacto del Proyecto de Electrificación Rural en el Canal de Añelo – Neuquén, UCAR/Leme, May 2017

Evaluación de las Iniciativas de Desarrollo Regional (IDR) – Región de Albigasta, Informe Preliminar, UCAR/Área de Control de Gestión/Unidad de Seguimiento y Evaluación, June 2016

Evaluación de las Iniciativas de Desarrollo Regional (IDR) – Región del Valle Calchaquí, Informe Final, UCAR/Área de Control de Gestión/Unidad de Seguimiento y Evaluación, September 2016

Evaluación de las Iniciativas de Desarrollo Regional (IDR) – Microregión Crespo y Aldeas Aledanas (MiCrA), Informe Final, UCAR/Área de Control de Gestión/Unidad de Seguimiento y Evaluación, November 2016

Evaluación de las Iniciativas de Desarrollo Regional (IDR) – Región Línea Sur de Rio Negro, Informe Final, UCAR/Área de Control de Gestión/Unidad de Seguimiento y Evaluación, December 2016

Evaluación de las Iniciativas de Desarrollo Regional (IDR), UCAR/Pucciarelli, November 2016

MAP: Second Provincial Agricultural Development Project (P106684)

