



**REVIEW OF THE BANK'S SUPPORT TO AGRICULTURE,  
2002-2014:  
EVIDENCE FROM KEY THEMATIC AREAS**

**Comparative Project  
Evaluation of Direct  
Support to Producers**



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Office of Evaluation and Oversight  
1350 New York Avenue, N.W.  
Washington, D.C. 20577  
[www.iadb.org/evaluation](http://www.iadb.org/evaluation)

**RE-467-1**

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This document was prepared by Héctor Valdés Conroy, Agustina Schijman, and Adriana Molina (translated from the original version in Spanish).

## **ABBREVIATIONS AND ACRONYMS**

APAGRO	Program to Support Agrifood Production
CRIAR	Direct Support Program for the Creation of Rural Agrifood Initiatives
CONEAT 100	Calculation of the Equivalent Area in hectares
FAO	Food and Agriculture Organization of the United Nations
FPPG	Cattle Development Program
IDB	Inter-American Development Bank
IICA	Inter-American Institute for Cooperation on Agriculture
INE	Infrastructure and Environment Sector
MGPAA	Modernization of Agricultural Support Management
OMJ	Opportunities for the Majority
OVE	Office of Evaluation and Oversight
PATCA	Program to Support Food and Agricultural Sector Competitiveness
PD	Productivity Support and Development of New Livestock Products
PDPR	Rural Productive Development Program
PFPAS	Program to Develop Sustainable Agricultural Production
PG	Uruguayan Livestock Program
PROSAP- NRC	Provincial Agricultural Services Program Non-Reimbursable Contributions
PROVIAR	Project to Integrate Small Producers into the Wine Production Chain
PRONEGOCIOS	Rural Business Development Program
SCF	Structured and Corporate Finance Division
TIR	Internal Rate of Return

## I. INTRODUCTION

- 1.1 The Bank has financed several projects that provide direct financial support to agricultural producers to enable them to adopt new technologies and improve their market access. Although the projects differed in terms of their specific characteristics, the model of intervention used was similar: partial subsidies for the adoption of production technologies and/or the implementation of business plans. This note evaluates a number of projects of this kind, approved between 2002 and 2014. To this end, it first establishes an analytical framework for each objective, before conducting a comparative analysis of the projects.

## II. ANALYTICAL FRAMEWORK

### A. Definition of "technology"<sup>1</sup>

- 2.1 Although there is no universally accepted definition of the word "technology", there is a consensus that technology involves applied human knowledge, and is therefore intangible. In gathering information, the OVE team discovered that the word "technology" is used in a colloquial manner, with varying meanings that sometimes have very different implications for determining whether or not a technology has been adopted. Given this situation, this evaluation needs to be grounded on a general definition of the term. Heidegger (1977), for example, defines it as "human activity and a means to an end"; Fischer et al. define it as "the set of theories and techniques that enable the practical use of scientific knowledge"; and Henderson (1974) defines it as "human knowledge applied to human purposes".

- 2.2 **The distinction between machines and technology is important for this evaluation as it directly affects the meaning of "technology adoption".** Technology usually requires the use of specific machines or inputs. As a result, these end up being intrinsically associated with what are colloquially known as "technologies", even where they do not meet this definition. If technology consisted only of machines, technology adoption would consist of acquiring machinery. But the issue of technology adoption is more complex than that. Consider, for example, an irrigation technology that uses a hydraulic pump and a sprinkler gun to distribute  $x$  liters of water over a particular crop,  $y$  times per week. The hydraulic pump and sprinkler gun would be colloquially described as irrigation technologies, when in reality they are only elements of that technology. Knowing how much water should be used, with what frequency, at what time of day, etc., are other elements. The technology is the knowledge that using the hydraulic pump and sprinkler gun in a specific manner to distribute  $x$  liters of water,  $y$  times per week, over the crop will lead to a specific objective, such as attaining a particular level of productivity.

- 2.3 **Machines, and even a number of specific inputs (such as improved seeds), may be part of a technology as they represent encapsulated knowledge—**

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<sup>1</sup> This section is aimed at readers who are not specialized in this field, and who may be using the term in a colloquial manner. OVE feels that this discussion is necessary to explain to these readers the basis for a number of evaluative judgments.

**auxiliary technologies.** In the previous example, the hydraulic pump is the result of knowledge of how to transport water from one location to another (at a specific pressure and volume per second). In other words, it has "encapsulated" that knowledge (a hydraulic technology). Irrigation technology incorporates hydraulic technology (encapsulated in the pump), water spraying technology (encapsulated in the sprinkler gun), and a series of other technologies. This may be another reason why machines are colloquially referred to as technologies: they are the direct result of, and encapsulate, auxiliary technologies. It is important, though, to emphasize that they are just an element of the production technology—the one that is truly intended for adoption by producers. In fact, there is no need for an agricultural producer to learn how a hydraulic pump works. What is important is that he or she knows how to operate it in order to apply the irrigation technology. In other words, the pump is just a means of using the hydraulic technology that it encapsulates, and that use is part of the irrigation technology that the producer knows in detail.

## **B. Barriers to technology adoption**

2.4 **Adopting a technology requires two things: acquiring knowledge and having the means to apply it.** In the example, it is of little use for a producer to have detailed knowledge of how the irrigation mechanism works if he lacks access to water, piping, the pump, and the sprinkler gun. These objects, which are means of applying the knowledge, are also required. Even if the producer knew how to make a hydraulic pump, he would not be able to apply the irrigation technology if he lacked the materials and tools to manufacture it. This implies that if the aim is for someone to acquire a technology, one should ensure that he will acquire both the knowledge (which requires technical assistance) and the means (which requires their purchase).

2.5 **The fact that some technologies require the use of specific machines or inputs has important implications for technology adoption.** On one hand, the fact that a machine is needed hinders technological adoption because economic resources will need to be invested in its purchase. On the other hand, however, this is a private good with benefits that are fully appropriated by its owner. This represents an incentive for making this type of investment. In contrast, a technology that does not require the use of a machine (or at least not one in addition to others commonly owned) can be imitated and its benefits enjoyed simultaneously by several people without any mutual dilution of that benefit. In other words, a technology of this kind would be a pure public good. This can act as a disincentive to its initial adoption, but facilitate its dissemination.

2.6 **There are several factors, or “barriers”, that can hinder technology adoption.** In the most specific case—that of production technologies—their adoption can lead to changes in production levels, as well as new costs, risks, and input and production factor requirements. The degree to which these changes can occur quickly and at low cost is therefore crucial for technology adoption. One approach to classifying barriers to the adoption of production technologies is as follows:

a. **Individual or social dimensions.** The decision to adopt a technology can often be of a personal nature. A high level of risk aversion or an inaccurate

perception of the risk levels involved can inhibit technology adoption. Other hindrances involve cognitive failures (for example, learning difficulties) or even cultural sensitivities in the face of certain technological changes (Tversky and Kahneman, 1992; Mahul and Stutley, 2010).

- b. **Institutional restrictions.** Normally, the impact of these is in relation to market operation (for example, restrictions on imports of machinery required by a technology, or on exports of certain products). However, given that they do not constitute a market failure, it is advisable to classify them separately (Key et al., 2000).
- c. **Financial market inefficiencies.** Technology adoption can be costly, as it requires technical assistance and the means for implementing it (for example, specific machines and inputs). Accordingly, financing may be necessary. Inefficiencies in this market mean that financing may be unavailable, or so costly that the technology investment becomes unprofitable. (Cole et al., 2009 and 2010; Banerjee et al., 2009; Duflo et al., 2008)
- d. **Insurance market inefficiencies.** Adoption of a new production technology can entail additional risks (at least of a financial nature). In the absence of an efficient insurance market, technology adoption may not be an economically optimal decision—in other words, it might not maximize the expected present value of earnings.
- e. **Inefficiencies in markets for factors of production.** Adoption of a new technology may require a new factor of production—labor, land, or productive capital (including inputs)—or a greater amount thereof. If these factors are unavailable or very costly, technology adoption will be impossible or unprofitable (Feldstein and Horioka, 1980; Kelsey, 2013).
- f. **Inefficiencies in product markets.** Adoption of a technology may lead to changes in the quantity or quality of production. If it is impossible to participate in a market in which production may be sold with a sufficient profit margin to recover the technology investment, the technology will not be adopted (Feldstein and Horioka, 1980; Lewis, 1954).
- g. **Inefficiencies in technology markets.** Lastly, technology adoption may be inhibited by failures in the market for technologies itself. These failures include the following:
  - i. *Absence of technical assistance* (extension services) or high cost thereof, which can create an insuperable barrier to acquiring knowledge.
  - ii. *Information asymmetries*, which can lead to low demand for new technologies, whether as a result of a lack of awareness of available technological options, a failure to appreciate their benefits, or insufficient knowledge regarding the quality of extension services (Crespi, Solis, and Tacsir, 2011).

- iii. *Positive externalities*, which mean that a producer investing in a new technology does not appropriate all of the benefits. For example, a new technology that is the same in every practical respect as the one it replaces, except that it does not pollute, represents a cost for the producer adopting it but a benefit for the entire community. Given this situation, there is an incentive to not adopt the new technology and instead wait for somebody else to adopt it so as to benefit from it free of cost (the “free rider” problem).
- iv. *Public goods*. As in the case just mentioned, when a new technology is a pure public good, there is an incentive to not invest in it and wait for somebody else to do so, with the intention of imitating it and thus adopting it free of charge (Hanson and Just, 2001).

### C. Definition of market access

- 2.7 **The expression “market access” is often used in the development field, but there appears to be no precise definition of the term.** Its meaning is obvious up to a certain point. However, two things should be noted. Firstly, access is a question of degree—in other words, it is not an issue of having access to a market or not, but of how good or bad that access is. Secondly, the expression is generally used without any reference to the characteristics of the market concerned—only to the effects that they have on market participants.
- 2.8 **Good market access may be understood as the ability to participate in a sufficiently deep market<sup>2</sup> (as either a purchaser or a vendor) and obtain a (consumer or producer) surplus that is the same as or greater than the one that would be obtained in a competitive market.** This definition allows for the possibility of deriving benefits from participating in markets that are not necessarily competitive. For example, some producers of good x may secure good access to a noncompetitive market for their product if they establish purchase agreements with a monopsonistic buyer. In this case, of course, not all producers of good x can secure good access to this market, unless the monopsonist behaves in a competitive manner.
- 2.9 **A lack of market access is a barrier to technology adoption.** As discussed above, the decision to invest in technology depends on its profitability, which requires the ability to obtain inputs and sell production at satisfactory prices. In other words, it requires good market access.

### D. Barriers to market access

- 2.10 **Inadequate access to a target market is a reflection of failures in that market.** These failures can occur as a result of inefficiencies in the market itself, or due to external factors such as institutional restrictions or inefficiencies in complementary markets. The following is a classification of barriers to market access.

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<sup>2</sup> Markets are “sufficiently deep” when any quantity desired can be bought or sold.



- a. **Institutional restrictions.** A number of institutional restrictions can affect operation of the target market and render it inefficient (or even inexistent), such as trade restrictions or product bans (Porter, 2008).
- b. **Financial market inefficiencies.** In some cases, a producer may need financing in order to access a target market. Inefficiencies in the financial market can therefore affect access to the desired market (Banerjee and Duflo, 2007).
- c. **Failures in the target market.** The economic literature has identified a number of reasons for market failure or inefficiency. Those listed below directly affect market access:
  - i. *Inexistence of a market (distance).* If the market in which an individual wishes to buy or sell does not exist where that individual is located (or is very shallow), he or she will need to travel to reach it. This represents a hurdle—sometimes a substantial one—to market access (Guild, 2,000).
  - ii. *A lack of market convexity (scale).* If the market offers or demands products in fixed quantities, this can prevent some economic operators from accessing it. Often, for example, producers must attain a minimum level of production in order to offer it in the market.
  - iii. *Noncompetitive behavior.* In a noncompetitive market, new suppliers seeking to enter the market face barriers to entry.

### III. IDB SUPPORT IN THE AREA

#### A. Project portfolio

- 3.1 **From 2002 to 2014, the Bank approved 23 sovereign-guaranteed projects containing direct support to producers (Table 3.1).** These are projects with at least one component dedicated exclusively to providing this type of support.<sup>3</sup> As explained in the approach document (RE-467), the sample of projects *to be visited* as part of this evaluation was restricted to those with both disbursement levels above 50% (19 of the 23 projects) and no recent (or imminent) visit by OVE for the purposes of other evaluations (8 projects). Of those eight projects, five were selected with the intention of including all of the Bank's subregions and relative levels of per capita income. These were as follows: AR-L1030, BO-

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<sup>3</sup> In total, 77 projects were identified that offered some type of direct support to producers. Forty-eight of these were classified by the Bank as agricultural sector projects (code "AG"). Of these, 36 belong to the Environment, Rural Development, and Disaster Risk Management Division (INE/RND), 1 to the Water and Sanitation Division (INE/WSA), and the rest to the private sector windows—8 to the Structured and Corporate Finance (SCF) Division and 3 to the Opportunities for the Majority (OMJ) initiative. In most cases, these activities represent a small share of the project, but there is a group of 23 projects that consist essentially of providing direct support for producers.

L1040, GY-L1007, NI-L1020, and UR0141.<sup>4</sup> A further six projects—evaluated as part of other recent OVE work—were included in this evaluation but no further visits were made. Some of the projects selected were linked to other, similar Bank-financed projects in the same countries, thus implicitly or explicitly forming long-term work programs. In those cases, the evaluation encompassed the entire program, even where it was approved prior to 2002 or had low levels of disbursement. The last column of Table 3.1 lists the projects that were ultimately selected.

## **B. Model of intervention**

**3.2 The projects analyzed show considerable variety in their design, but all use a market-based approach.** Projects involving direct support to producers generally try to stimulate technology markets (even creating them temporarily where they did not previously exist), and to avoid distorting them with interventions that affect economic operators beyond those targeted under the project. In situations where the markets for inputs, machinery, and technical assistance are functioning, projects try to stimulate those markets by means of demand, providing largely unfettered financial support to some agricultural producers in terms of the investments supported (e.g. AR-L1030). Where these markets are not functioning, Bank projects have attempted to replicate them on a temporary basis (e.g. BO-L1040).

**3.3 The cases that exemplify these extremes in the model of intervention are AR-L1030 and BO-L1040.** The first consists of the launch of a call for proposals from medium and small producers for partnership-based business plans that could be cofinanced under the project. The business plans must meet certain technical and economic criteria to receive financing, but can include a great variety of goods and services within the different areas of the agricultural sector. The project only provides financing and does not provide (or even assist in obtaining) information, technical assistance, or any other type of asset to beneficiaries. This approach may be understood in the context of Argentina's agricultural sector, in which the markets for inputs, machinery, and technical assistance are sufficiently developed in most rural areas. In the case of project BO-L1040, the intervention creates small, temporary, local markets ("*ferias*") for machinery and agricultural equipment in areas where these markets do not normally operate. The project attempts to ensure that the *ferias* behave as if they were competitive markets, requiring prior approval for suppliers and the products that they offer, and establishing maximum prices consistent with those charged in the cities.<sup>5</sup> The beneficiaries have the freedom to choose agricultural equipment that interests them from the selection on offer at the markets, in the awareness that they will obtain a subsidy of 90%. The intervention also provides technical assistance to the beneficiaries for both the selection and adoption of a technology.

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<sup>4</sup> Project AR-L1030 is not "essentially" dedicated to providing direct support to producers. However, it involves a credit line that includes a series of operations aimed at providing this type of support. Project GY-L1007 could not be visited by the evaluation team. Owing to several unexpected events, it was not possible to organize a visit to the country.

<sup>5</sup> Owing to transportation difficulties, among other factors, markets for agricultural equipment are de facto inexistent in beneficiary communities, though not in the most densely populated and best connected areas of the country, such as the large cities.

**Table 3.1. Operations selected**

	Operation	Name	Year	Amount Approved (US\$ million)	Included in the comparative evaluation
Projects approved before 2002	AR0061	Provincial Agricultural Services I.	1995	322.4	Yes
	UR0137	Programa Aumento Competitividad Ganadero	2000	6.02	Yes
Projects with low disbursement rates (<50%)	AR-L1068	Programa de Desarrollo Rural y Agricultura Familiar, PRODAF	2012	30.0	No
	AR-L1120	Provincial Agricultural Services Program - PROSAP III	2011	230.0	Yes
	UR-L1064	Support for Rural Economic Development	2011	28.4	Yes
	NI-L1067	Programa de Fomento a la Productividad Agropecuaria Sostenible	2012	40.0	No
Projects analyzed in recent OVE evaluations	AR-L1063	Project to Integrate Small Producers into the Wine Production Chain	2008	50.0	Yes
	BO0179	Programa de Apoyo Productivo Rural	2003	1.2	No
	BR-L1152	Programa de Desarrollo de la Región Sur-Occidental del Estado de Tocantins	2010	99.0	No
	DR0138	Apoyo a la Transición Competitiva Agroalimentaria	2002	55.0	Yes
	DR-L1031	Programa de Apoyos a la Innovación Tecnológica Agropecuaria	2010	30.0	Yes
Projects to be analyzed in upcoming evaluations	CO-L1009	Modelos Innovadores de Intervención para el Sector Cafetero	2005	2.4	No
	CR0142	Desarrollo Agropecuario Sostenible	2002	11.1	Yes
	HO-L1010	Programa de Fomento de Negocios Rurales (PRONEGOCIOS)	2007	27.1	Yes
	JA-L1012	Programa de Competitividad Agropecuaria	2010	15.0	No
	PR-L1001	Modernización de la Gestión Pública de Apoyos Agropecuarios	2006	31.5	Yes
	HA-L1003	Programa de Desarrollo de Cadenas Productivas Rurales	2006	17.8	No
Projects considered for the comparative evaluation	AR-L1030	Provincial Agricultural Services II- PROSAP II	2008	200.0	Yes
	BO-L1040	Apoyos Directos para la Creación de Iniciativas Agroalimentarias Rurales	2009	19.9	Yes
	GY-L1007	Programa de Diversificación de las Exportaciones Agropecuarias	2007	20.9	No
	ME-L1041	Programa de Apoyos Directos al Campo	2009	750.0	No
	NI0159	Prog. Reactivación Productiva Rural (PRPR)	2002	54.5	No
	NI-L1020	Program to Support Agrifood Production	2008	20.0	Yes
	PE0234	Programa de Servicios de Apoyo a los Mercados Rurales	2004	13.1	No
	UR0141	Productividad y Des. de Nuevos Prods. Ganaderos	2005	14.2	Yes

- 3.4 **The rest of the operations reviewed fall between these two extremes.** Operation UR0141<sup>6</sup> is the most similar to the Argentine case, but it was narrower in scope. Instead of an open call for proposals, private technical assistance providers were responsible for identifying potential beneficiaries, while financial assistance was provided to beneficiary producers only if they met the targets in the business plan cofinanced under the operation. Project PR-L1001 reinforces the observation regarding market-based approaches, as its intention was to eliminate transfers of inputs (seeds) to producers by the Paraguayan government.
- 3.5 **Alternatives to the market-based approach might involve providing a specific type of support (irrespective of beneficiary demand) or generalized price subsidies for certain specific goods or services.** Only one of the projects reviewed—APAGRO (Program to Support Agrifood Production) (NI-L1020)—had a similar approach to that of providing specific support, and even in that case a number of market-based elements were introduced. The project provided capital goods (animals and fencing materials) to beneficiaries so that they could increase (or, on occasion, commence) agricultural production. However, beneficiaries could choose from among three alternative packages of benefits.<sup>7</sup> In addition, the project transported a number of the beneficiaries to markets so that they could select cows and negotiate their purchase.<sup>8</sup> In this case, the scope of the program was so wide<sup>9</sup> that it seems to have led to substantial increases in cattle prices at the national level.
- 3.6 **In addition to their market-based approach, there is a consensus in the projects that the benefits delivered constitute private goods.** There are two reasons for this. Firstly, the projects evaluated finance the purchase of private goods, such as machinery or equipment (anti-hail mesh, wire, pruners, hydraulic pumps, etc.). Secondly, the technical assistance provided under the project usually supplies information with varying levels of excludability and rivalry. *"Knowledge delivered by extension may be information embodied in products (improved seed, machinery) or it may be more abstract, disembodied information on agricultural practice. There are two broadly applicable types of disembodied agricultural information: general, nonexcludable information (market information or cropping patterns), which tends to be a public good, and specialized, excludable information (fertilizer recommendations for a specific field or farm operation), which tends to be a toll good, with high excludability and low rivalry".*<sup>10</sup> In most projects, the disembodied information delivered is of the second type—in other words, specific knowledge related to an individual plot. Those producers who are not prepared to pay for technical assistance services are excluded from the benefits of this knowledge. Projects UR0137 and UR0141, for example,

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<sup>6</sup> This was the original proposal under the operation, although half way through the execution period it was modified substantially.

<sup>7</sup> The project attempted to target benefits to female heads of household, and was largely successful in doing so.

<sup>8</sup> The most frequently selected main component of the package was a pregnant cattle.

<sup>9</sup> The “program” refers not only to project NI-L1020, but to the entire Programa Productivo Alimentario [Food Production Program], part of which (and a variation thereof) was financed under project NI-L1020.

<sup>10</sup> Anderson and Feder, 2004, p. 43.

financed specific technical assistance for improving the pastures of cattle breeders. In addition, the information provided under most of the projects is tied to private goods. Projects AR-L1063 and BR-L1040, for example, provided technical assistance concerning use of the machinery purchased with the subsidies granted.

- 3.7 **In general, the projects only reduce or eliminate barriers to technology adoption or market access on a temporary basis.** The financing provided constitutes a one-off substitution of the credit to which producers may lack access, and it reduces the risk of the investment (as less money is invested by the producer). The technical assistance provided supplies information to the producers regarding available technologies and the markets which they might be able to enter. It also helps them to produce business plans that they might otherwise not know how to prepare. Finally, the intervention facilitates producer access to the agricultural equipment and machinery market. Thus, market inefficiencies, institutional restrictions, and aspects of a personal or social nature (barriers) that may have caused low technology adoption and insufficient market access remain unaltered by the projects.

#### IV. COMPARATIVE EVALUATION

- 4.1 **This chapter compares various design aspects of the projects with a view to generating conclusions regarding the probable consequences of certain characteristics for project execution and outcomes.** The word “probable” is used here as this analysis is based on case studies that may not be universally applicable. The chapter also evaluates the main outputs and results attained, as well as their sustainability.
- 4.2 **The projects analyzed are of various types depending on their objectives and the type of intervention (Table 4.1).** Some projects financed business plans with the dual objective of enhancing market access and technology adoption (Project to Integrate Small Producers into the Wine Production Chain – PROVIAR; FPPG/PG – Uruguayan Livestock Program). Others also supported these objectives, but financed business plans to foster market access and technology packages for technology adoption, each one through a separate component (Direct Support Program for the Creation of Rural Agrifood Initiatives – CRIAR; APAGRO). Others focused on the objective of market access by financing business plans (although they also sought to increase technology adoption to a lesser extent) (Provincial Agricultural Services Program Non-Reimbursable Contributions – PROSAP-NRC; Rural Business Development Program – PRONEGOCIOS). Lastly, other projects focused on the objective of improving technology adoption by financing business plans (Rural Productive Development Program – PDPR) or packages of technology (Program to Develop Sustainable Agricultural Production – PFPAS; Program to Support Food and Agricultural Sector Competitiveness – PATCA, I and II; MGCAA).
- 4.3 **As a result, no clearly-defined model can be seen in these projects that defines the relationship between the type of intervention and the objective.** Nor can any shift be seen towards this type of definition in the projects analyzed.

In light of this, and to facilitate the discussion, the objective of technology adoption is evaluated first, followed by that of market access. Issues of execution, effectiveness, and sustainability are subsequently discussed in relation to both objectives at the same time. Tables 4.2 and 4.3 (at the end of the document) provide a list of a number of important design characteristics of the projects so as to facilitate comparison among them.

**C. Aspects of project design**

**1. Technology adoption objective**

**a) Diagnostic assessment and identification of the target population**

4.4 **In general, the assessment of the factors (barriers) inhibiting or limiting technology adoption by producers was weak in the operations.** The projects usually include some type of diagnostic assessment of technological weaknesses in agricultural production, as well as analysis of the technologies that the project could offer to beneficiaries (the “menu of technologies”). However, comprehensive assessment of the problem is lacking. We do not know exactly which groups of producers face which barriers to technology adoption.

**Table 4.1. Classification of projects by objective and type of intervention**

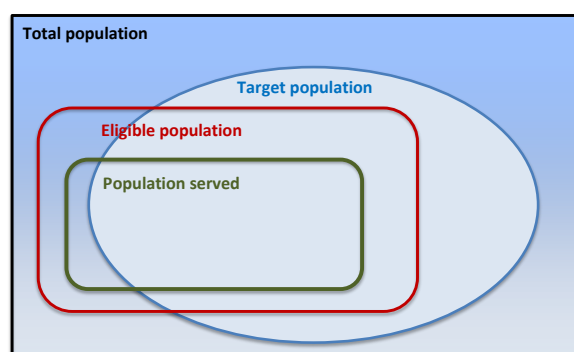
		<b>INTERVENTION</b>	
		<b>Business plans</b>	<b>Technology packages</b>
<b>OBJECTIVE</b>	<b>Technology adoption</b>	PROVIAR (AR-L1063) FPPG (UR0137) PG (UR0141) PDPR (UR-L1064)	PFPAS (CR0142) PATCA I (DR0138) PATCA II (DR-L1031) MGPAA (PR-L1001) CRIAR (BO-L1040) APAGRO (NI-L1020)
	<b>Market access</b>	PROSAP I-ANR (AR0061) PROSAP II-ANR (AR-L1030) PROSAP III-ANR (AR-L1120) PRONEGOCIOS (HO-L1010) PROVIAR (AR-L1063) CRIAR (BO-L1040) APAGRO (NI-L1020) FPPG (UR0137) PG (UR0141)	

4.5 **Weak diagnostic assessments were reflected in the imprecise identification of target populations.** The projects did not specify which groups of producers faced which barriers to technology adoption. Such specification is important for

two reasons. Firstly, because it allows the intervention to be adapted to the needs of each group (for instance, the intervention could be of one kind for producers facing credit access restrictions and of another kind for producers who lack information regarding available technologies). Secondly, an imprecise definition may encompass groups that are so heterogeneous that they include some who do not need the intervention. Most of the projects analyzed defined the target population based on general (sometimes well-specified) characteristics, such as sales levels or the size of land holdings; however, this specificity does not imply precision in identifying the target population. The latter should be identified based on the presence of problems that the projects seek to resolve.

## b) Eligibility criteria

- 4.6 **Imprecise identification of the target population hinders judgment in relation to eligibility criteria.** Eligibility criteria determine the eligible population. If they are well defined, the target population and the eligible population will be the same (Chart 1). This may be unfeasible or extremely costly, and for this reason programs often use simple criteria to define an eligible population that is similar to the target population, at low cost. The aim is to ensure a balance between costs and benefits.



- 4.7 **Some of the projects analyzed were careful to establish eligibility criteria that were strongly correlated with low production capacity and, potentially, with a low propensity to adopt technologies. Others, however, had very general eligibility criteria with an unknown correlation with the inability to adopt technologies.** In the case of Argentina, the eligibility criteria for the NRC involved status as a small or medium-sized producer (based on sales levels, as defined in Argentine law) and participation in a partnership-based business plan. In Uruguay, PG criteria required producers to be classified as livestock breeders and have land holdings of between 300 and 1,250 hectares. In contrast to the cases of Argentina and Uruguay, the eligibility criteria in the projects in Bolivia and Nicaragua were better-defined and consistent with a low-income target population. For example, CRIAR in Bolivia required that producers be poor, relying on social verification mechanisms. APAGRO in Nicaragua required producers to be subsistence farmers, relying on a proxy means test to validate this. Furthermore, both operations limited the maximum value of the subsidy, which may have acted as a self-selection mechanism: for those who do not need

the benefit, the cost of deceiving the project and pretending to be eligible is greater than the benefit.

**c) Parameters for determining the population served**

- 4.8 **A number of specific characteristics of the interventions help to determine the populations served. The degree of consistency between these characteristics and their target populations varied across the programs analyzed.** Specific characteristics of the interventions act as the incentive for the eligible population to participate in the program, and therefore lead to beneficiary self-selection. Several aspects (or parameters) of the intervention are particularly important in this sense.

*Characteristics of the subsidy*

- 4.9 **Whether subsidies are provided in advance or as a reimbursement determines the population served in terms of its trust and liquidity levels.** If the subsidies are provided as a reimbursement, only those members of the eligible population that have sufficient liquidity to finance initial outlays will be able to participate in the program. In addition, only those who are confident that the reimbursement will be paid (or those who are least risk-averse) will want to participate in the program.
- 4.10 **In terms of its level of solvency (and also liquidity), the population served depends on the absolute level of the subsidy and the percentage of the total investment that it represents.** Subsidies normally cover only part of an investment, as beneficiaries who pay part of the investment themselves value it more. The economic literature indicates that there is a positive correlation between charges and the exclusion of those producers least likely to use the assets purchased with the subsidy (Ashraf et al., 2008). The lower the maximum amount subsidized, the poorer will be the members of the eligible population interested in participating in the program, as participation implies non-monetary costs (such as registration and participating in evaluation interviews) that, from the point of view of a richer producer, may exceed the benefits. In contrast, the lower the maximum percentage subsidized, the more solvent will be the members of the eligible population interested in participating in the program. The unsubsidized percentage represents the investment that the beneficiary will need to make. The ability to make that investment is not only a question of liquidity (funds available in the short term) but also one of solvency, as funds invested will only be recovered once the investment generates profit.
- 4.11 **The combination of these three parameters—reimbursement (or advance payment), maximum value, and maximum percentage—is therefore decisive.** In the case of APAGRO, the maximum amount was low for a large producer (approximately US\$1,400) and the maximum percentage high (80%),<sup>11</sup> while the subsidy was delivered as an advance payment. This—together with a statistical procedure to verify income-based eligibility—meant that the population

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<sup>11</sup> In reality, the 20% paid by the beneficiaries was used to create a savings fund that they themselves could use. However, anecdotal evidence suggests that the beneficiaries perceived this as an obligation, meaning that it may have functioned as a mechanism for ensuring commitment on their part.



served consisted of subsistence producers (the target population). The opposite extreme among those analyzed is that of the PROSAP-NRC. In that program, the maximum amount was high (between US\$5,000 and US\$10,000 approximately, depending on the call for proposals), the maximum percentage was low (25%), and the subsidy was delivered as a reimbursement. The program also verified beneficiary eligibility based on tax payments (which indicated producers' sales) and, accordingly, their legal classification as a small or medium-sized producers. The population served could therefore have included producers without solvency or liquidity problems, and of a size that would give them access to financing (either own resources or market financing). Such producers would not have required the subsidy. In a survey of 64 beneficiaries carried out in 2012, 51.6% declared that they would have made the investment even without the subsidy. The situation was initially similar under the PG in Uruguay. In the pilot version of that project, the maximum amount of the subsidy was high (US\$7,000 approximately), the maximum percentage low (25%), and the subsidy was delivered as a reimbursement. This combination of parameters biased selection towards medium-sized producers. These parameters were adjusted in the scaled-up version of the program: the maximum subsidy amount was reduced to US\$4,000, the maximum percentage rose to 50%, and greater liquidity was introduced into the reimbursement mechanism (by reimbursing a greater percentage of the investment once the farm business plan was approved). Despite these changes, the expanded PG appears to have been biased towards larger family producers. The median size of land holdings in beneficiary units was 195 *CONEAT-100* hectares, and the average, 297 *CONEAT-100* hectares, which—according to the 2011 General Agricultural Census—was at the upper limits of the distribution for family producers.<sup>12</sup> Interestingly, the PG and the PROSAP NCRs took opposite paths. The livestock program altered the parameters used in the first phase so as to allow the inclusion of relatively small producers. In contrast, the parameters for the PROSAP NCRs changed over the first four calls for proposals in a way that encouraged the participation of larger producers (increasing the maximum fundable amount and reducing the maximum percentage).

#### *Program dissemination*

- 4.12 **Another characteristic of an intervention that is key for determining the population served is the mechanism used to reach the eligible population.** The effect of dissemination is simple: the wider the dissemination, the more similar the population served will be to the eligible one. The possibilities consist of either mass dissemination mechanisms or selective contact. Some programs used mass media, such as radio advertisements or public billboards (e.g. NRC); however, this would not have guaranteed that the entire eligible population was reached. Other programs also relied on community and local authorities to publicize the existence of the program at community or producer meetings (e.g. CRIAR and APAGRO). Lastly, others availed of private agents to invite eligible producers to participate in the program. Such was the case of the PG, under

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<sup>12</sup> According to the 2011 General Agricultural Census, the average number of *CONEAT-100* hectares owned by family producers is 77, with a standard deviation of 108. Only 14% of family producers had land holdings of 150 *CONEAT-100* hectares or more according to data from the Registry of Family Producers.

which a group of private technical operators previously trained by the executing unit were responsible for preselecting producers in their area of influence and inviting them to participate in the program.<sup>13</sup> The program was designed such that the private operators and the producers would receive payment or reimbursement (subsidy), respectively, only if the investment achieved certain targets. Accordingly, the operators had the incentive to select producers who were more likely to be successful in their investments, who were easier to contact, or who had previous experience participating in the program. In fact, producers close to urban centers—for whom transactions costs were lower—tended to be overrepresented among beneficiaries of the pilot FPPG, and many producers benefited from more than one plan.<sup>14</sup> To avoid these distortions, the Rural Productive Development Program (currently under execution) introduced differential payments for technical operators to encourage them to identify potential beneficiaries outside the main towns in the departments, as well as beneficiaries that had never participated in any similar programs.

#### d) Parameters influencing effectiveness

##### *Technologies offered*

- 4.13 **To maximize the overall objective of increasing productivity, it is important to select technologies that are not very widespread. In general, the operations took considerable care to do this and the technologies financed were suited to the context.** Technologies that are widespread do not usually require any further support, while those that are not tend to offer greater productivity differentials at the moment of adoption (*Handbook of Agricultural Economics*, p. 2347). In some cases, the programs established technology menus to be offered to producers, although the number of technologies varied considerably: only 3 packages were offered under APAGRO,<sup>15</sup> while the PFPAS offered 81. In all of these cases, the Bank carried out a technical assessment of the technologies best suited to the country context. In general, this is a very positive feature, as it can maximize the "productivity differential"; however, it can be the case that projects end up offering technologies that the eligible population does not want. Such was the case of APAGRO, under which subsidies were offered for the main asset of a goat or a sheep, instead of a cow. Although goats and sheep do better than cows in some climate zones, producers preferred cows for the social status that they conferred. In other programs, the Bank did not offer technology menus, but rather broad eligibility criteria relating to the production potential of the different technologies (e.g. PG). This approach ensures that

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<sup>13</sup> The executing unit trained these private technical operators. Once the calendar had been defined for the calls for proposals for management plans, a competitive recruitment process was launched to select the operators. The executing unit also verified the technical, economic, and financial feasibility of each plan. Once the plan had been approved by the executing unit, and the IDB's no objection obtained, execution would then commence.

<sup>14</sup> Beneficiaries located in Montevideo accounted for 13% of the total under the pilot project, compared to 3% of the control group (OVE, 2008).

<sup>15</sup> In fact, APAGRO supplied several productive assets (animals), as well as technical assistance regarding how to care for them and make them produce. This represents the delivery of several technologies, or, at least, three complex technologies such as "how to obtain cow's milk over several years".

technologies can be adopted, but may mean that technologies offering greater productivity differentials are not adopted.

*Magnitude of the subsidy*

- 4.14 **To attain the ultimate objective of increasing productivity, it is also important for the subsidy to be of significant magnitude.** The amount of the subsidy is a critical parameter for ensuring complete acquisition of a technology package. If the amount is too low and beneficiaries lack sufficient liquidity or solvency to finance the rest of the investment, technology adoption will probably be incomplete and the desired objectives will not be attained.
- 4.15 **This is not an issue in programs offering a predetermined menu of eligible technologies,** as these programs are designed such that the subsidy (together with counterpart funds) covers the costs of the required assets and technical assistance.<sup>16</sup> Nonetheless, there is a risk of creating incentives for providers to offer goods or services at a price close to the maximum limit for the subsidy, in order to maximize their earnings. This situation appears to have occurred in the case of CRIAR, under which the vast majority of agricultural machinery and equipment packages were offered at a cost that was very close to the permitted maximum. This is not a minor problem, as it can exclude eligible producers who are unable to pay the counterpart funds needed for the maximum subsidy. The problem also affects program efficiency.
- 4.16 In the case of programs financing business plans, the potential problem is that beneficiaries may not adopt the best available technologies, but rather the cheapest ones. (A specialized analysis of the technologies adopted would be needed to verify whether this has occurred, but this lies outside the scope of this evaluation.) However, technical review of the investment proposals put forward by the beneficiaries can reduce this risk.

*Frequency and duration of technical assistance*

- 4.17 **The frequency and duration of technical assistance is another crucial element in ensuring technology is adopted. The operations were very heterogeneous in terms of the role assigned to technical assistance.** As mentioned earlier, technology adoption is not limited to acquiring tools or machines—rather, it requires learning how to use these to attain a specific objective. Whether this learning occurs or not depends on the learning capacity of beneficiaries, as well as the intensity and quality of technical assistance. There is reason to believe that the programs in which technical assistance investment was substantial have been more successful in achieving technology adoption. Firstly, the definition of technology points to the importance of learning and, thus, of technical assistance. Secondly, the information collected by OVE through interviews and direct observation suggests that technology adoption was sometimes incomplete under the projects that offered little technical assistance

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<sup>16</sup> What could occur is that some producers would be unable to pay sufficient counterpart funds and would therefore be excluded from the program (as occurred under CRIAR). However, this potential problem is one of determining the target population and the one served, and not one of effectiveness.

(e.g. BO-L 1040) and whose beneficiaries had low levels of formal education and exposure to new technologies.<sup>17</sup>

- 4.18 Under APAGRO, for example, the technical assistants visited beneficiaries every month over a period of 22 months. As a result, three years after the program had been completed, a good proportion of them had either maintained or increased the number of animals supplied.<sup>18</sup> At the other extreme is the case of CRIAR, under which beneficiaries received technical assistance just once, to explain to them how to use the machinery and equipment they had purchased. In most of the beneficiary visits carried out by the evaluation team, it could be seen that the beneficiaries were not making appropriate use of the machinery and equipment acquired. In the case of the PG, each beneficiary chose the proportion of the subsidy that was to be allocated to technical assistance. The evidence gathered by OVE suggests that the technical assistance was generally of high quality and was provided on a regular monthly basis, explaining why most of the beneficiaries have adopted good management techniques (such as pregnancy testing, separate handling of animal categories, and weaning practices – Rearte, 2011). Furthermore, some beneficiaries continued to hire the extension services even after their business plans had been completed, in an indication of the value placed on the technical knowledge provided.

*Approximation to market conditions*

- 4.19 **All of the operations opted for quasi-market mechanisms to match demand and supply for technology transfer. The characteristics of those mechanisms varied substantially across operations.** All of the operations had mechanisms for providing the eligible population with access to technology providers, but the degree of access depended on the level of development of agricultural markets in the areas of intervention. In the case of CRIAR in Bolivia, the project was based on temporary development of a market for machinery and agricultural advisory services in remote areas in which the market did not exist. Basically, the project organized markets in targeted municipios. A number of suppliers that had been preselected by the executing unit sold agricultural machinery and equipment packages for a maximum price of US\$1,000 at the markets, and competed against each other for demand. Beneficiary producers viewed the different sales stands at the market, obtaining information on the available technology packages. At the other extreme, the PROSAP-NRC in Argentina provided only a cash transfer for partial financing of a cooperative-based business plan. With that subsidy, beneficiaries attended markets

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<sup>17</sup> Despite this, impact evaluations for CRIAR demonstrate significant effects on beneficiary productivity, production, and incomes. This may be a result, among other things, of the fact that technology adoption—although incomplete—was sufficient to produce these effects. Examples of incomplete technology adoption are cases in which hydraulic pumps are used for flood irrigation, but not the gun sprinklers (also acquired as part of the technology package), and cases in which beneficiaries use machines for a while, but then discontinue use because they do not know how to carry out a minimum level of maintenance.

<sup>18</sup> In the case of cows, 10% of beneficiaries had maintained the number of animals and 72% had increased it. In the case of pigs, 39% had maintained the same number, and 34.5% had increased it. In the case of chickens (the least important component of the subsidy), and sheep and goats (substitutes for cows in a few cases), 48.7%, 61.5%, and 71.4% of beneficiaries had reduced the number of these animals.

themselves to purchase the goods and services necessary for implementation of the business plan.

## 2. Market access objective

### a) Diagnostic assessment and identification of the target population

4.20 **As in the case of technology adoption, analysis of the factors inhibiting or limiting market access on the part of producers was weak in the operations.** The operations do not generally include an analysis that would demonstrate suboptimal market access, or a clear justification of the barriers that inhibit producers' improved participation in the chain. In other words, there was generally no assessment of which producers (with which characteristics) faced which difficulties in accessing which markets.

4.21 **Weak diagnostic assessments appear to have resulted in the imprecise identification of target populations.** In the absence of any explicit, precise identification of the target population, eligibility criteria provide an indication of that population and the barriers that it apparently faces. However, a number of the problems encountered during execution showed that those criteria are either inappropriate or that the target population with which they are aligned does not face the needs presumed.

### b) Eligibility criteria

4.22 Projects that seek to improve market access have two main eligibility criteria: membership of the group of beneficiaries for the technology adoption objective, and membership of an organization.

*Membership of the group of beneficiaries for the technology adoption objective*

4.23 **The linking of both objectives indicates the intensity of the problem that the Bank is attempting to resolve.** Those projects that did not include the objective of improving access to desired markets—the PATCA, PDPR, MGPAA, and PFPAS—seem to have based this on an understanding that the target population already had such access, in principle. Omission of this objective would otherwise have reflected a failure in the programs' vertical logic. Those projects that pursued both objectives as linked—under which some producers benefited from both efforts—reveal an assumption that the target population consisted (at least in part) of producers facing both problems. Given that a lack of market access is one of the barriers to technology adoption (see Chapter 1), these programs—APAGRO, CRIAR, PROVIAR—demonstrate a higher degree of relevance in terms of design. This is consistent with the fact that these programs had the most specific eligibility criteria.

*Partnership*

4.24 **Most of the operations promoting market access provided finance for partnership-based business plans submitted by members of small and medium-sized producers' associations.** There are at least three arguments for

working with producers' associations, and all concern the issue of scale. Firstly, producers belonging to an association can attain the minimum level of production demanded in some markets, while—secondly—they can also achieve greater bargaining power in the market. Thirdly, working with associations can be more efficient for the program than in the case of individual producers.

- 4.25 **Alongside these advantages, associations have the disadvantage of requiring a high degree of cooperation and organization for their creation.** In addition, the Bank's fiduciary rules require that associations have legal personality in order to work directly with them. This potentially means that only a select part of the target population will be eligible, thus leaving out a substantial number of producers who—from the point of view of their economic needs—would be eligible. This problem can be especially acute in the poorer countries, in which informal rural associations tend to outnumber formal ones. Furthermore, producers belonging to informal associations—or to no association at all—are probably those who experience greatest difficulty in accessing markets, making this problem of exclusion even more serious. Lastly, in the context of a program of support, the need to work with producers' associations can create an incentive for temporary membership, with the sole aim of obtaining benefits under the program.
- 4.26 **Accordingly, the eligibility criteria based on producers' associations—particularly formal ones—should be approached with caution.** OVE found that the nature of the association requirements were a significant obstacle to execution of relevant activities (e.g. APAGRO and CRIAR), while in the case of other programs they led to the creation of temporary associations apparently formed with the aim of obtaining benefits under the program (e.g. CRIAR).

### 3. Monitoring and evaluation

- 4.27 **The multiple combinations of parameters and eligibility criteria used in projects providing direct support to producers show that the Bank is immersed in a valuable process of learning through experimentation,** aimed at discovering program characteristics that result in the greatest effectiveness, relevance (through adequate targeting), and efficiency. In this context, evaluation (of procedures and impact) becomes particularly important. The Bank has made valuable efforts in this area, especially recently. Between 2011 in 2014, for example, 47% of loans classified as AG (many of which involve direct support to producers) included experimental evaluation techniques in their design, compared to a Bank average of 15%.<sup>19</sup> These are outstanding efforts, which in the medium term are likely to provide robust empirical evidence concerning the effects of the programs and some of their specific characteristics.
- 4.28 However, there were a number of weaknesses over the period analyzed. Some impact evaluations, for example, suffered from methodological limitations owing to a lack of adequate data. This, in turn, was due to the fact that insufficient provision was originally made for carrying out these evaluations. In most cases, in fact, no impact evaluation was included in the original project design (e.g.

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<sup>19</sup> Office of Strategic Planning and Development Effectiveness/ Strategy Development Division (SPD/SPV)

PATCA I, APAGRO, CRIAR, and PROVIAR). Moreover, the results matrices in some projects (e.g. APAGRO, CRIAR, and MGPA) lacked adequate outcome indicators, relying only on the internal rate of return on investments made by the beneficiaries. There is no single, specific way of calculating this indicator, as it is based on a series of assumptions. It is a nonspecific, and therefore inadequate, indicator.

#### D. Execution

4.29 **Generally speaking, the projects reviewed were executed with few delays, and a variety of setbacks were resolved in a short space of time.** This was achieved despite the complexity and demands imposed by the high number of beneficiaries and the need to coordinate the various stages of projects (from beneficiary selection through to verification of the final delivery). In the case that is probably the least complex (PROSAP-NRCs), the executing unit has to issue and publicize the call for proposals; review multiple proposals and select those to be financed; and subsequently review the eligibility of beneficiary expenditures (269 business plans and 2,227 beneficiaries to date)<sup>20</sup> and process the corresponding reimbursements. In the case that is probably most complex (CRIAR), the executing unit has to disseminate program information to communities and local authorities; review the list of potential beneficiaries; organize a *feria* (market) in each beneficiary municipio; supervise preparation of each *feria*; ensure that the machinery and equipment purchased in the *ferias* and the technical assistance are delivered; and issue payment to machinery and equipment suppliers and to the technical assistants. Organization of the *ferias* is a complex task, requiring preapproval of suppliers and each one of the machinery and equipment packages to be offered (including confirming that prices are in line with market prices); verifying that there is only one beneficiary per family and that the beneficiary attends only once; and ensuring that each beneficiary receives a program voucher after paying the 10% in counterpart funds (10% of the total investment: beneficiaries give the vouchers to suppliers upon receiving the machinery and equipment purchased, and the suppliers then submit the vouchers to the executing unit in exchange for payment of the remaining 90% of the investment cost). All of these tasks should be multiplied by the number of subsidies awarded (almost 19,700).<sup>21</sup> Under other projects, such as APAGRO and PROVIAR, technical assistance was provided in the form of multiple visits to beneficiaries over a period of several months, and this added to logistic requirements.

4.30 **All of these activities require a high degree of precision and organization, meaning that substantial resources need to be allocated to project execution.** In addition, it is likely that problems will be experienced in relation to one or more of these multiple activities, thus delaying execution. This undoubtedly occurred in a number of the projects evaluated; however, it was not a critically important factor. This implies two things; firstly, that the Bank has

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<sup>20</sup> Data as of 1 June 2015, from the official program website: [http://www.prosap.gov.ar/ap\\_ResultadosAlcanzados.aspx](http://www.prosap.gov.ar/ap_ResultadosAlcanzados.aspx)

<sup>21</sup> It should be pointed out that there are serious weaknesses in the program's information system. For example, it is impossible to determine the exact number of *ferias* that have been held. Despite this, OVE found no evidence of any substantial problems in relation to delivery of the subsidies.

demonstrated the feasibility of implementing complex projects using quasi-market mechanisms; and secondly, that special emphasis should be nevertheless placed on verifying execution costs for projects, so as to be sure that these are exceeded by their benefits.

- 4.31 **The main implementation difficulties related to the socioeconomic context in the countries.** In some cases, problems stemmed from macroeconomic conditions, while in others they were linked to issues of incompatibility between project design and aspects of the societies in which they were implemented. In terms of macroeconomic problems, fluctuations in Uruguay's exchange rate caused producers to lose interest in the livestock program for a time, as transaction costs outweighed the benefits. In Argentina, inflation in recent years has meant that the budget included in the business plans have been valid for less time than it takes to reach the reimbursement stage (the subsidy under the program). In terms of the incompatibility of project designs with the social context, those projects that required beneficiaries to pay counterpart funds in advance faced mistrust and a lack of interest on the part of the eligible population. As the benefits were delivered, and the fact was publicized that the project did effectively deliver those benefits, participation increased steadily.

#### E. Effectiveness and sustainability

- 4.32 **The degree of effectiveness of the projects has varied. However, it is clear that they have been more effective in terms of the technology adoption objective than in relation to the market access one.** Tables 4.4 and 4.5 (at the end of the document) present a list of output and outcome indicators for the different projects analyzed, indicating their baseline values, the values achieved, and the targets originally proposed.

##### 1. Outputs achieved

- 4.33 **As can be seen in Tables 4.4 and 4.5, most of the projects sought to boost technology adoption. In the cases for which information is available, the output targets were exceeded.** The situation is less favorable with respect to the objective of market access, as only one project exceeded targets. Given the nature of these projects, the main output indicator consists of the number of subsidies delivered or beneficiaries served.
- 4.34 Although the number of beneficiaries may have exceeded targets, it is important to question the degree of coherence between the population served and the target population. As discussed earlier, this is not always possible because of the imprecise definition of the target population. However, it can be assumed that there was never any intention to finance producers that would have made the relevant investments even without the subsidy.
- 4.35 **OVE found evidence in at least two programs of the existence of a number of beneficiaries who did not need Bank financial support.** The PG subsidized approximately 1,300 cattle-breeding plans, benefiting approximately 1,100



producers—equivalent to 5% of family producers.<sup>22</sup> Despite this, PG beneficiaries tended to be the largest farmers within the category of family producers. The median size of land holdings in beneficiary units was 195 *CONEAT-100* hectares, and the average, 297 *CONEAT-100*, which—according to the 2011 General Agricultural Census—was at the upper limits of the distribution of family producers. Moreover, using education levels as a proxy for socioeconomic status, the proportion of beneficiaries with third-level education (technical and university) was significantly higher than in the control group. The level of counterpart funding contributed by the beneficiaries is evidence that the producers did not necessarily face barriers to financing. According to data from the executing unit, PG beneficiaries contributed 75% of the value of investments under management plans; in other words, the PG subsidized 25% of plan costs, compared to a ceiling of 50%. This does not necessarily undermine the validity of the subsidy, as it is possible that other types of reasons for not investing were offset by the monetary incentive (the subsidy).

- 4.36 **PROSAP-NRC is the other program that involved beneficiaries who did not need financial support.** According to an impact evaluation of the three first calls for proposals, carried out by the executing unit, more than half of beneficiaries surveyed<sup>23</sup> stated that they would have made their investment even in the absence of program support. Moreover, 39% stated that they had received support under more than one of the program's call for proposals.
- 4.37 **The problem of leakage—providing benefits to people who do not need them—goes hand-in-hand with undercoverage.** Though leakage is common in targeted service programs (such as conditional cash transfers), it is important to minimize this problem in order to channel as many resources as possible to the target population, thus reducing the rate of undercoverage. From an evaluation standpoint, one problem is that many of the projects providing direct support to producers lack a precise definition of the target population, meaning that undercoverage or leakage rates cannot be calculated.
- 4.38 **Efforts to improve market access were largely unsuccessful in many cases—particularly in the case of projects that also promoted technology adoption.** The main difficulty appears to have been in the formation of producer partnerships, which was normally a requirement for receiving the associated benefit. The difficulty of creating such partnerships lies in resolving problems of collective action between the numbers of producers required to attain the desired scale of production. Cultural factors can also present hurdles. In Bolivia, for example, the size of the partnerships required under the project could be seen as conflicting with community-based social structures, by excluding some members of the latter.

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<sup>22</sup> According to the Ministry of Livestock, Agriculture, and Fishing, there are approximately 21,352 producers on the Registry of Family Producers.

<sup>23</sup> The sample consisted of 64 beneficiaries out of a population of 853.

## 2. Outcomes and sustainability

### a) Outcomes

- 4.39 **Impact evaluations have been carried out for several of the projects analyzed, but in only one case was the evaluation planned from the beginning.** As a result, the information used in the impact evaluations creates various methodological limitations that reduce the reliability of the conclusions. This caveat should be kept in mind when reading the following paragraphs. Moreover, the findings relate almost exclusively to efforts to increase technology adoption, except in those cases in which a project pursued both objectives simultaneously.
- 4.40 **Some of the impact evaluations indicate that the projects concerned increased beneficiary incomes.** This was the case under the PG, CRIAR, and APAGRO (although the latter is based on the imputed value of food production). Other projects appear to have achieved increases in production (PROVIAR) and productivity (PATCA I). However, these effects only concern a specific group of beneficiaries. In the case of PROVIAR, the outcome relates to producers that installed anti-hail mesh on their land, and in the case of PATCA I, it relates to rice producers and livestock breeders.
- 4.41 This shows two things. Firstly, some of the technologies adopted have more immediate impact than others. The use of anti-hail mesh to protect vines has an impact as soon as the first hail occurs, allowing the effect to be recorded through an impact evaluation around one year after the mesh is installed. However, the use of other technologies may have observable effects over the longer term. Secondly, there are subgroups within the population served who face very different issues, as revealed by the results of PATCA I. Once again, this underlines the need to emphasize precise identification of the target population.
- 4.42 **Another aspect that is worth highlighting is the importance of technical assistance.** According to the deeper meaning of the word “technology”, technology adoption implies the acquisition and use of practical knowledge. As a result, technical assistance plays a crucial role in technology adoption. Some projects (e.g. APAGRO and PROVIAR) placed considerable emphasis on this aspect, dedicating substantial amounts of time and effort to teaching beneficiaries how to use machinery and equipment or care for the animals purchased. Other projects made little effort in this regard. The CRIAR program, for example, dedicated just one brief session of technical assistance per beneficiary to explaining how to operate the agricultural machinery or equipment acquired. During the visit for this project, OVE met with around 20 program beneficiaries distributed across two different provinces. In most of these cases, the producers did not know how to use the machinery properly or carry out basic maintenance on it.

### b) Sustainability

- 4.43 **OVE believes that the sustainability of technology adoption capacity outcomes under these projects represents a challenge.** In the absence of long-term impact evaluations that demonstrate this, the judgment is based on the

fact that projects did not alter the structural barriers that underlie problems of insufficient technology adoption and market access. Accordingly, once project benefits come to an end, beneficiaries will once again face the same barriers to technology adoption as before.

- 4.44 The operations were designed to promote technology adoption through subsidies for the acquisition of productive capital and technical assistance. This reduced the financial cost of adopting new technologies and may have provided an incentive for more risk-averse producers to invest. It may also have reduced information asymmetries relating to technology options. Nonetheless, the subsidy represents a one-off incentive to producers. Even if this incentive had been sufficient to place producers at the technological frontier, once that frontier expands they would continue to face the same problems that originally discouraged them from investing sufficiently in new technologies. In the opinion of a private stakeholder who participated in the PG: *"PG support lifted restrictions, producers were trained, they received technical advice, but it is all limited to the moment the plan was developed, and then everything returns to the way it was before in most cases."* (Betancur, Fernandez, Rado & Zurbruggen, 2012).

## V. CONCLUSIONS

- 5.1 The projects offering direct support to producers that were analyzed in this evaluation offer important lessons for the future design of similar projects.
- 5.2 **The Bank has made a significant attempt to draw lessons learned from these projects.** As a result, it has shown that it is feasible to implement complex projects in which temporary markets are created on a small scale with a high volume of transactions. This is not an easy task, but some of the projects analyzed managed to achieve it without suffering major delays as a consequence. Nonetheless, implementation costs can be very high, and it is therefore important to measure these and ensure that they do not outweigh the benefits.
- 5.3 **This learning process was accompanied by efforts in the area of monitoring and evaluation.** These efforts need to be consolidated, and the Bank needs to ensure that impact evaluations are included in project designs from the beginning.
- 5.4 **In general, the projects analyzed lacked precise definition of the target population and the specific problems that it faces.** As a consequence, some projects were poorly targeted, supporting producers that probably (or admittedly) did not need the support. In other cases, however, projects targeted groups of poor producers that, although heterogeneous in terms of the economic hurdles that they face, found the support useful for enabling the adoption of new technologies and/or improving market access.
- 5.5 **In all cases, the support provided represents a quick, but brief, solution.** The subsidy provided allows producers to adopt a new technology and even increase their productivity and earnings. However, if the structural conditions

underlying the technology gap do not change, there will be no continuity in technology adoption, and the gap will gradually reappear. As a result, apart from exceptional cases in which progress is sufficient to push producers into a virtuous cycle of productivity and investment, project benefits are unsustainable in the long term. Entry into fast-growing markets could be one factor leading to the aforementioned virtuous cycle. Unfortunately, this is the objective that the projects analyzed were least successful in achieving.

5.6 To improve the future relevance and effectiveness of these projects, and the Bank's understanding thereof, the evaluation team suggests the following:

- Strengthen project diagnostic assessments and use these to precisely define target populations and eligibility criteria.
- Define target populations based on the barriers to market access and technology adoption faced by different groups of producers.
- Assuming that interventions involving direct support to agricultural producers are an economically justifiable option, include robust monitoring and evaluation arrangements in project designs that will establish with certainty which elements of the projects work and which ones do not.
- In designing projects, place as much emphasis on technical assistance as on the productive capital goods to be offered to beneficiaries.
- Seek a way of including elements in the projects to help reduce the structural barriers underlying both the technology gap and inadequate market access. Alternatively, ensure explicit coordination between these projects and others aimed at reducing these barriers.

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## TABLES

Tabla 4.2. Características generales de los programas

Programa	Objetivo general	Población objetivo	Monto aprobado (US\$ millones) <sup>24</sup>	Año de aprobación	% desembolsado (2014)	
Proyecto de apoyos a la transición competitiva – PATCA (DR0138, 1397/OC-DR)	Aumentar la eficiencia de la agricultura dominicana con el fin de mejorar la competitividad del sector agroalimentario y disminuir la pobreza en zonas rurales.	Agricultores en legal explotación de sus predios Se privilegia el acceso a pequeños productores agropecuarios.	31	2002	100	
Programa de apoyo a subsidios para la innovación agrícola - PATCA II (DR-L1031; 2443/OC-DR)	Promover aumentos en el ingreso agrícola de los beneficiarios del programa. Aumentar la productividad de los beneficiarios y el valor de la producción a través de la adopción tecnológica.	Agricultores de pequeña escala con documento de identidad en tenencia legal de la tierra y que no hayan sido beneficiarios del PATCA I.	30	2010	18	
Programa de Apoyos productivos agroalimentarios – <b>APAGRO</b> (NI-L1020; 2055/BL-NI)	Incrementar en forma sostenible los ingresos de las familias rurales de bajos ingresos.	<b>Familias campesinas pobres.</b> En particular, mujeres cabeza de hogar en posesión de buena fé de una superficie entre 1 y 10 manzanas.	20	2008	100	
Apoyos directos para la creación de iniciativas agroalimentarias rurales – <b>CRIAR</b> (BO-L1040, 2223/BL-BO)	Contribuir a mejorar los ingresos de pequeños(as) productores(as) rurales de la agricultura familiar indígena, originaria y campesina con base comunitaria, contribuyendo así a mejorar su seguridad alimentaria.	Pequeños(as) productores(as) rurales de la agricultura familiar indígena, originaria y campesina con base comunitaria	20	2009	95	
Programa de servicios agrícolas provinciales – Componente de negocios agroalimentarios <b>ANR</b> PROSAP I, (AR0061,899/OC-AR); PROSAP II, AR-L1030; 1956/OC-AR) y PROSAP III (AR-L1120; 2573/OC-AR)	Contribuir al desarrollo de las economías rurales regionales, mediante el aumento en la competitividad y las exportaciones agropecuarias en dichas economías regionales.	<ul style="list-style-type: none"> <li>Productores primarios</li> <li>MiPyMEs agroindustriales y/o de servicios</li> </ul>	65.6+PROS AP I monto	2005	100	
				2006	100	
					2008	100
					2010	100
					Convocatoria abierta	95

24

Contando sólo el monto destinado a adopción tecnológica o acceso a mercados en el caso de operaciones con más componentes o actividades.

Programa	Objetivo general	Población objetivo	Monto aprobado (US\$ millones) <sup>24</sup>	Año de aprobación	% desembolsado (2014)
Proyecto de Integración de pequeños productores a la cadena vitivinícola – PROVIAR (AR-L1063; 2086/ OC-AR)	Mejorar la rentabilidad y estabilidad de los ingresos de los pequeños productores que participan en la cadena vitivinícola.	<ul style="list-style-type: none"> <li>Pequeños productores primarios vitivinícolas</li> <li>MiPyMEs de viñateros</li> </ul>	50	2008	100
Programa de desarrollo ganadero - FPPG (UR0137; 1299/OC-UR)	Aumentar la competitividad de la ganadería a través de la adopción de innovaciones por parte de los agentes privados en toda la cadena productiva, con énfasis en la incorporación de criadores pequeños y medianos al proceso de innovación	Criadores con entre 300 y 1250has CONEAT-100	7.7	2000	100
Programa de desarrollo y productividad de nuevos productos agropecuarios - PD (UR0141; 1643/OC-UR)	Fortalecer la cadena ganadera con énfasis en el aumento de la productividad y desarrollo de pequeños y medianos productores ganaderos y en una mejor inserción comercial externa	Criadores de hasta 1250has CONEAT-100 (calidad promedio de los suelos del país, establecido por norma de la Comisión Nacional de Estudios Agronómicos de la Tierra)	15.8	2005	100
Programa de Desarrollo Rural Productivo - PDPR (UR-L1064; 2595/OC-UR) Ganadero	Contribuir a mejorar los ingresos de pequeños y medianos productores agropecuarios, buscando incrementar su productividad a través de la adopción de nuevas tecnologías	Productores de hasta 1.250 ha CONEAT 100 (calidad promedio de los suelos del país, establecido por norma de la Comisión Nacional de Estudios Agronómicos de la Tierra)	28.4	2011	64
Programa de Desarrollo de Negocios Rurales - Pronegocios (HO-L1010; 1919/BL-HO)	Aumentar el ingreso de los hogares rurales en condiciones de pobreza y extrema pobreza, incluyendo los hogares y aldeas focalizadas en la iniciativa de protección Red Solidaria.	Hogares rurales en condiciones de pobreza y extrema pobreza, incluyendo los hogares y aldeas focalizadas en la iniciativa de protección social Red Solidaria. Deberán estar inscritos en una organización constituida legalmente. El grupo de productores deberá ser constituido con un mínimo de 20 productores y demostrar que cuenta con habilidades y capacidades para implementar proyectos propuestos presentados como planes de negocios	23	2007	93
Modernización de la gestión pública de apoyos	Contribuir a la mejora de la productividad y el aumento de ingresos de los	Pequeños y medianos productores agropecuarios, principalmente los más	35	2006	85



Programa	Objetivo general	Población objetivo	Monto aprobado (US\$ millones) <sup>24</sup>	Año de aprobación	% desembolsado (2014)
agropecuarios (PR-L1001; 1800/OC-PR)	pequeños y medianos productores agropecuarios del país.	pobres con cédula de identidad. (comp. 2: beneficiados por el componente Apoyo a la Zafra 2003-2004 de la operación 1109/OC-PR)			
Programa de fomento de la competitividad y sostenibilidad de la producción agropecuaria - PFPAS (CR0142; 1436/OC-CR)	Incrementar los ingresos y mejorar la calidad de vida de las familias de los pequeños y medianos productores agropecuarios, a través del fomento de la competitividad de los sistemas de producción agropecuaria sobre una base económica y ambientalmente sostenible.	Pequeños y medianos productores agropecuarios	11.15	2002	100

Tabla 4.3. Comparación del diseño de los programas

		PATCA I	PATCA II	APAGRO	CRIAR	Prosap I, Prosap II, Prosap III: ANR	PROVIAR	FPPG-PG	P DPR	Pronegocios	MGFAA	PFPA S
Identificación	Problema	Clara identificación y justificación - Nivel tecnológico agregado bajo en el sector	continuación PATCA I - Clara identificación y justificación del problema	Clara pero corta identificación - Acceso limitado a capital productivo, baja productividad de pequeños productores	Clara identificación y justificación - Falta de acceso a servicios de innovación tecnológica	Identificación clara con poca relación a la propuesta de proyecto -sub ejecución y bajo impacto potencial de propuestas de inversión pública	Identificación clara del problema. Caída en el consumo y producción de uvas y derivados, crisis pequeños productores	Identificación clara - criadores pequeños con desfase tecnológico	Identificación clara siguiendo lecciones de las operaciones anteriores	Identificación clara en mecanismo de respuesta propuesto-áreas muy remotas y limitaciones importantes de infraestructura	Clara identificación y justificación - brecha tecnológica entre la agricultura moderna y la tradicional	Clara identificación y justificación - altos costos de producción y necesidad de adoptar nuevas tecnologías productivas y diversificar la producción
	Causas (barreras)	Identificación de las barreras pobre y con poca claridad	Identificación de barreras, falta mayor claridad	Identificación implícita y pobre de las barreras	Identificación implícita de las barreras sin mayor aclaración	Pobre identificación de las barreras	Pobre identificación de las barreras sin mayor aclaración, solo listado	No se identifican claramente las barreras	No se identifican claramente las barreras	Identificación implícita de las barreras sin mayor aclaración	Pobre y con poca claridad en la identificación de las barreras	Clara identificación de las barreras, sin mayor desarrollo en el análisis
	Población Objetivo	Agricultores en legal explotación de sus predios Se privilegia el acceso a pequeños productores agropecuarios.	Agricultores de pequeña escala con documento de identidad en tenencia legal de la tierra y que no hayan sido beneficiarios del PATCA I.	Familias campesinas pobres. En particular, mujeres cabeza de hogar en posesión de buena fé de una superficie entre 1 y 10 manzanas.	Pequeños(as) productores (as) rurales de la agricultura familiar indígena, originaria y campesina con base comunitaria	<ul style="list-style-type: none"> <li>Productores primarios</li> <li>MiPyMEs agroindustriales y/o de servicios</li> </ul>	<ul style="list-style-type: none"> <li>Pequeños productores primarios vitivinícolas</li> <li>MiPyMEs de viñateros</li> </ul>	Criadores con entre 300 y 1250has CONEAT-100	Criadores hasta 1250has CONEAT-100 (calidad prom. suelos del país-norma de la Comisión Nacional de Estudios Agronómicos de la Tierra)	Hogares rurales en pobreza y extrema pobreza, incluyendo hogares y aldeas focalizadas en iniciativa de protección social Red Solidaria.	Pequeños y medianos productores agropecuarios, principalmente los más pobres con cédula de identidad.	Pequeños y medianos productores agropecuarios

		PATCA I	PATCA II	APAGRO	CRIAR	Prosap I, Prosap II, Prosap III: ANR	PROVIAR	FPPG-PG	P DPR	Pronegocios	MGPA A	PPFAS
Elegibilidad		Máximo 50 ha. (3,15 ha) para la mayor parte de las tecnologías incluidas en el Menú Inicial y de 100 tareas (6,3 ha) para aquéllas de bajo costo unitario y fácil adopción, como cerolabranza.	i) posean ID; ii) tenencia formal de la tierra; y iii) no beneficiarios del PATCA 1. En distritos de Riego, presentar la boleta y/o constancia de pago de agua y/o evidencia de estar inscrito en el Padrón de Regantes	(i) que los miembros de la asociación fueran beneficiarios del BPA; (ii) un compromiso de cofinanciamiento mínimo el 10%; (iii) análisis de rentabilidad, impacto ambiental y social de los planes	(i) producción para sustento, (ii) habiten en la zona de intervención (iii) se encuentren ocupando legalmente el predio (hasta 35 ha); y (iv) figuren en el Padrón Comunal (PC)	debe existir una asociación de pequeños y medianos productores primarios con un plan de negocios a financiar, puede incluir PyMe, incluir patrocinador	productores primarios ii) empresas participantes liderando el plan con presencia activa en los mercados; y iii) planes deberán con acuerdos comerciales con instrumentos legales	Criadores individuales con explotaciones menores o iguales a 1.250 hectáreas CONEAT 100. Hasta un 10% de beneficiarios cuya explotación exceda el límite anterior	Grupos, conformados con al menos 70% de productores familiares. Planes de gestión: (i) responder a demanda de productores; (ii) viables técnicamente ambiental y socio-económico; y (iii) implementación en base a metas verificables y medibles.	Los proveedores de servicios empresariales deben tener constitución legal, solvencia financiera, capacidad de operación, etc.	Explotaciones de hasta 50 ha. que no estén en áreas protegidas. Para agricultura familiar: tope máximo de 3 ha. Por productor.	Proyectos que resuelvan problemas de fallas tecnológicas en sistemas de producción, con impacto ambiental positivo
Diseño	Porcentaje y monto del subsidio (max)	Máx. 80% US\$3.000	60% a 85% US\$850 a US\$3.650	80%, US\$1.400	90% US\$900	25% a 50%; US\$15.000 a US\$70.000	50% US\$20.000	FPPG: 75% US\$7.000 PG: 50% US\$4.000	P DPR: 50% US\$8.000	Proys. Cadenas: 50% US\$50.000 a US\$500.000 Proys. Microneg: 80% US\$20.000 a US\$50.000	50%; US\$1.300; apoyos a agricultura familiar: US\$17/ha., max 3 ha.	AT: 50% (90% orgs indígenas) Proy. Inv: 20% a 30% US\$1.600 a US\$2.200
	Timing del pago del subsidio	Reembolso en \$	Reembolso en \$	Cupón a benefs; Pago a proveedores	Cupón a benefs; Pago a proveedores	Reembolso en \$	Cupón a benefs; Pago a proveedores	Reembolsos en \$	Reembolso en \$	Desembolsos siguiendo plan de negocios	Reembolso en \$	Adelanto VERIFICAR
	Existencia de condicionalidad	20% a 50% previo al apoyo	41% a 67% previo al apoyo	20% posterior a subsidio	10% por adelantado	50% - 75% por adelantado	50% contrapartida posterior	mínimo 50% previo al apoyo	mínimo 50% previo al apoyo	30% o 50% previo al apoyo	50% previo al apoyo	10% o 50% para asistencia técnica, 70% o 80% de la inversión
	Mecanismo de Difusión	AMPLIA medios públicos de difusión	AMPLIA medios públicos de difusión	AMPLIA medios públicos de difusión	AMPLIA medios públicos de comunicación, radio	POCA	AMPLIA eventos de promoción y pautas publicitarias	MEDIA internet, talleres para los participantes de los planes	MEDIA página internet, talleres para los participantes de los planes	MEDIA talleres de divulgación	AMPLIA Campañas públicas	AMPLIA seminarios, medios publicitarios

## Oferta de Bienes y Asistencia Técnica

	PATCA I	PATCA II	APAGRO	CRIAR	Prosap I, Prosap II, Prosap III: ANR	PROVIAR	FPPG-PG	PDPR	Pronegocios	MGPAA	FPFAS
<b>Bienes o Asistencia Técnica</b>	Ambos	Ambos	Ambos	Ambos	Ambos	Principalmente bienes	Bienes (la asistencia técnica podía incluirse en el plan)	Ambos	Ambos	Bienes	Ambos
<b>Cantidad y frecuencia de Asistencia Técnica</b>	No hay info clara	Acompañamiento para uso y adopción de tecnologías	Alta 1 visita mensual por 22 meses	Baja asesoría por demanda para selección de T y una vez para manejo y adopción	No	Media asistencia para la formación de grupos o legal	No	Capacitación para el uso y adopción de tecnologías	Asistencia técnica para implementación satisfactoria del plan de negocios	El subsidio incluye el costo de la asistencia técnica requerida	Alta Acompañamiento durante aplicación y adopción de la tecnología 1-2 años
<b>Control de precios</b>	Control del precio tope de los bienes y servicios	Control del precio tope de los bienes y servicios	No	Control del precio tope de los bienes y servicios	No	No	No	No	No	Establece un tope máximo del costo de los bienes. equivale al monto para finca de 5 ha.	No
<b>Control de menú de bienes y servicios</b>	Si. Bienes y servicios ofrecidos por proveedores de menú predeterminado	Si. Bienes y servicios ofrecidos por proveedores de menú predeterminado	Si. Menú predeterminado	Si. Bienes y servicios ofrecidos por proveedores de menú predeterminado	No	Si. Bienes y servicios ofrecidos por proveedores de menú predeterminado	No	No	No	Si. Bienes y servicios ofrecidos por proveedores de menú predeterminado	No
<b>Relación oferta-demanda de tecnologías</b>	Acerca la demanda a los oferentes de tecnologías	Acerca la demanda a los oferentes de tecnologías	Acerca la oferta a los productores	Creación de un punto medio de encuentro entre oferta y demanda	Acerca la demanda a los oferentes de tecnologías	Acerca la demanda a los oferentes de tecnologías	Acerca la demanda a los oferentes de tecnologías	Acerca la demanda a los oferentes de tecnologías	Acerca oferentes de servicios (proveedores de servicios empresariales) a los productores agrícolas.	Acerca la demanda a los proveedores de tecnologías	Acerca la demanda a los proveedores de tecnologías

		PATCA I	PATCA II	APAGRO	CRIAR	Prosap I, Prosap II, Prosap III: ANR	PROVIAR	FPPG-PG	P DPR	Pronegocios	MGPA A	FPFAS
Asociatividad		No	No	1. Incentivo asociado a subsidio. 2. Requisito segundo componente	Requisito segundo componente	Requisito del subsidio	Requisito del subsidio	Si. De los \$4000 de subsidio , hasta \$3600 destinados a acciones prediales y \$400 a acciones institucionales o colectivas	Si. no necesariamente con personería jurídica y mínimo de 5 participantes	Requisito del subsidio	No	Requisito del subsidio
Acceso a mercados		No	No	Componente 2; separado	Componente 2; separado	Junto con Adopción Tecnológica	Junto con Adopción Tecnológica	Componente 2; separado	No	Junto con Adopción Tecnológica	No	No
M&E: Seguimiento y Evaluación	<b>Principales indicadores de resultado</b>	Indicadores de competitividad y uso de tecnologías	Cambio porcentual del ingreso neto promedio y cambios en productividad de factores	TIR	TIR	Múltiples indicadores de rendimiento por ha, y # beneficiarios	Múltiples indicadores productividad, utilidad bruta	Múltiples indicadores de aumento en exportaciones, tasa de extracción y # beneficiarios	Múltiples indicadores incluyendo aumento en ingreso promedio por ha,, rendimientos	Múltiples indicadores, incluyendo aumento de ventas con planes con TIR igual o sup. 12%	TIR más indicadores de resultado intermedios e uso de tech.	Múltiples indicadores incluyendo ingresos agrícolas e impacto ambiental
	<b>Evaluación de impacto planeada</b>	No. Se dejaba abierta la posibilidad	Si	No. Se dejaba abierta la posibilidad	No. Se dejaba abierta la posibilidad	No. Poco seguimiento e información insuficiente para realizar evaluaciones precisas y detalladas	No. Se dejaba abierta la posibilidad	Incluye evaluación final del programa sin aclarar que sea de impacto	Si	Incluye seguimiento y evaluación, evaluación intermedia. Sin evaluación de impacto	No. sistema de seguimiento o y evaluación, sin evaluación de impacto ex post del programa	sistema de seguimiento y evaluación. Ev. medio término y ev. final - evaluación de impacto
	<b>Hay evaluación de impacto?</b>	Incluye seguimiento de indicadores pero no evaluación de impacto	Todavía no	Si	Si	No	Si	Si	Evaluación indendiente Paolino, 2004	No	No	Evaluación final, no de impacto

Tabla 4.4. Indicadores de producto y resultados para adopción de tecnología

Operación	Propósito	Indicador de resultado o producto	Línea de Base	Meta	Actual
APAGRO- NI-L1020	Contribuir a mejorar los ingresos de las familias campesinas rurales pobres de Nicaragua.	Numero de beneficiarias que han implantado al menos una de las tecnologías apoyadas por el Programa.	0 (2009)	11,000 (al finalizar el proyecto)	11,543 (10,923 completos).
		Tenencia de la tierra Acceso a tierra no propia	92% 33.3% (2011)		93.9% 42% (2014)
		Familias que reportan acceso a infraestructura productiva	228 familias (2011)		447 familias (2014)
		Prod.: Valor de la producción agropecuaria total bruta	1610 US\$ (2011)		+492US\$ (2014)
		Prod.: valor de la producción agropecuaria por hectárea	925 US\$ (2011)		+427US\$ (2014)
		Prod. valor de la producción pecuaria	353 US\$ (2011)		+428 US\$ (2014)
		Valor del consumo de leche	2.84US\$ (2011)		+1.88US\$ (2014)
		Proteínas producidas por la familia Proteínas compradas	-1.79 4.87US\$ (2011)		+6.38US\$ -4.2US\$ (2014)
		Ingreso Total Neto de los hogares	1216 US\$ (2011)		+969 US\$ (2014)
	Ingreso fuera de la unidad familiar	27.4US\$ (2011)		-10.8US\$ (2014)	
		TIR del programa con 10.923 protagonistas atendidas por el programa		12%	20.97%
CRIAR-BO- L1040	Apoyar a pequeños productores rurales para implementar tecnologías agroalimentarias que contribuyan a mejorar su producción y productividad	Número de beneficiarios que han implantado al menos una de las tecnologías apoyadas por el proyecto, de acuerdo a los parámetros del mismo.	0 (2008)	13.600 beneficiarios al finalizar el proyecto	19.678 beneficiarios en 39 municipios (2014)
		Probabilidad de trabajar cultivos no tradicionales de mayor valor agregado Prob. Destinar tierras a cultivos no trad.	0.67 ha con cultivos tradicionales		+9% +10% (2013)
		Probabilidad de adoptar riego tecnificado Extensión de tierra con acceso a riego tecnificado	23% 13% (2012)		+5% +3% (2013)
		Gasto en insumos y maquinaria	91% usa maquinaria y equipos (2012)		+36% insumos +63% maquinaria (2013)
		Vulnerabilidad en seguridad alimentaria	58% hogares con índice de inseguridad		-7% (2013)

Operación	Propósito	Indicador de resultado o producto	Línea de Base	Meta	Actual
			alimentaria (FAO) hogares tratados		
FPPG-UR0137	Promover innovación de gestión productiva en la cría	Planes prediales aprobados e iniciados	0 (2000)	350 (2004)	860 (2005)
		Número de criadores pequeños y medianos que participan de planes innovadores en gestión productiva	0 (2000)	500 (2004)	980 (2005)
		Número de productores que llevaba registros físicos	70% promedio (2001)		25 puntos porcentuales (2003)
		Número de productores que llevaba registros económicos	78% promedio (2001)		18 puntos porcentuales (2003)
		Parámetro de Eficiencia Reproductiva	50.32 promedio (2001)		+6.7 puntos porcentuales para prod.cría (2003)
		Aumento anual promedio del ingreso			cercano a US\$5.200 entre 2001 y 2003 <sup>25</sup>
PG-UR0141	Aumento de la productividad de los pequeños y medianos ganaderos	Productores beneficiarios que completan sus planes exitosamente e incorporan innovaciones productivas <sup>26</sup>	0 (2005)	1.100 (2010)	1.157 planes finalizados (2011)
		Tasa de extracción de equilibrio de los beneficiarios aumenta, al menos, un 10%	18,4% (2005)	20,2% (2010)	15,5% (2011)
		El PER de los beneficiarios aumenta un 12%	0,364 (2006)	0,405 (2010)	0,358 (2010)
		El % de señalada de los beneficiarios aumenta al menos un 15%	59,6 (2006)	68,54 (2010)	51,9 (2010)
		Nacimiento de terneros			+11-15 cabezas entre 2009 y 2010 <sup>27</sup>
AR-L1063 - PROVIAR	Productividad e ingresos de los pequeños productores vitícolas mejoradas	Cantidad de productores integrados a la cadena de valor	800 (solo lo están parcialmente los 800 cooperativizados)	1800 integrados a partir (PIN) con 60 establecimientos (2014)	2700 (2014)
		Aumento uva para elaboración de vino aumenta	150qq/ha	220 qq/ha. (2014)	n.d

<sup>25</sup> Evaluación de impacto realizada por OVE (OVE 2008)

<sup>26</sup> Dado que el proyecto se reformuló en 2006, estos indicadores se basan en la versión reformulada del UR0141, tal como se presenta en los últimos informes de seguimiento (2011 – 1er periodo)

<sup>27</sup> Evaluación de impacto recientemente finalizada (BID 2014)

Operación	Propósito	Indicador de resultado o producto	Línea de Base	Meta	Actual
		Aumento uva para elaboración de mosto	250qq/ha San Juan 155 qq/ha en Mendoza	400 qq/ha en San Juan 280 qq/ha Mendoza (2014)	n.d
		Uva de mesa	130 qq/ha	162 qq/ha (2014)	n.d
		Uvas para pasas	200 qq/ha	264 qq/ha (2014)	n.d
		Utilidad bruta anual de productores de uva para vino no cooperativizados asciende	U\$S500/h a	U\$S1300/ ha/año (2014)	n.d
		Utilidad bruta anual de productores de uva para mosto no cooperativizados asciende	U\$S500/h a	U\$S1300/ ha/año (2014)	n.d
		Utilidad bruta anual de productores de uva de mesa no cooperativizados asciende	U\$S2100/ ha	U\$S3700/ ha/año (2014)	n.d
		Utilidad bruta anual de productores de uva para pasas no cooperativizados asciende	U\$S1500/ ha	U\$S3200/ ha/año (2014)	n.d
		Aumento en producción			+7.8% Kg. Promedio (7.9% Kg/ha mayor) (2013)
		Aumento en producción con mala antigranizo			+36% ha (35%en rendimient o) (2013)
PROSAP I		Planes de negocio			75 (conv.1)  68 (conv. 2)
		# Beneficiarios directos			598 (conv.1) 575 (conv.2)
AR-L1030 - PROSAP II		Planes de negocio			80 (conv.3)  46 (conv.4)
		# Beneficiarios directos			711 (conv..3) 352 (conv. 4)
	Propiciar el incremento, en forma sostenible, de la cobertura y calidad de la infraestructura económica rural y de los servicios agroalimentarios	Incremento en el valor de las ventas de empresas agroindustriales productivas por la ejecución de los planes de negocios receptores de ANRs	n.d. (n.d)	+30% (n.d)	n.d. (n.d)



Operación	Propósito	Indicador de resultado o producto	Línea de Base	Meta	Actual
	Realizar proyectos de promoción de inversiones en cadenas productivas	Número de empresas agropecuarias productivas y micro empresas agroindustriales que reciben ANRs y fortalecen sus cadenas productivas.	0 (n.d)	250 (n.d)	n.d
AR-L1120 – PROSAP III	(Fin del programa) El programa busca contribuir al desarrollo de las economías rurales regionales, mediante el aumento de la competitividad y las exportaciones en dichas economías regionales.	Rendimientos por ha. mejorados en las cadenas beneficiarias: apícola (kg./col/año)	15 (n.d)	18 (+5 años)	n.d <sup>28</sup>
		Rendimientos por ha. mejorados en las cadenas beneficiarias: frutícola (Tn/año)	5.5 (n.d)	6.32 (+5 años)	n.d
		Rendimientos por ha. mejorados en las cadenas beneficiarias: Láctea (L/ha/vt/año)	2500 (n.d)	2900 (+5 años)	n.d
		Rendimientos por ha. mejorados en las cadenas beneficiarias: Ganadera (Kg/carne/ha/año)	70 (n.d)	80 (+5 años)	n.d
		Rendimientos por ha. mejorados en las cadenas beneficiarias: Vitivinícola (Tn/ha)	6 (n.d)	7 (+5 años)	n.d
		US\$ invertidos en mejora de la finca del productor neto de subsidio	0 (n.d)	20.000 (+5 años)	n.d
		# de beneficiarios productores primarios (hombres) que reciben el apoyo financiero	800 (n.d)	1600 (+5 años)	n.d
		# de beneficiarios productores primarios (mujeres) que reciben el apoyo financiero	736 (n.d)	1472 (+5 años)	n.d
DR0138-PATCA I	Aumentar la eficiencia de la agricultura dominicana con el fin de mejorar la competitividad del sector agroalimentario y disminuir la pobreza en zonas rurales.	Al menos 3.500 productores elegibles por año adoptan por lo menos una de las tecnologías ofrecidas.	n.d	3.500 productores por año. 13.500 productores en total	13.711 agricultores beneficiados
DR-L1031-PATCA II	Aumentar el nivel de ingreso agrícola y la productividad de los productores agrícolas beneficiarios a través de la adopción de tecnologías	Diferencia del cambio porcentual en la productividad total de los factores entre beneficiarios y los no beneficiarios.	0% (2010)	3% (+4 años)	n.d
		Diferencia del cambio porcentual del valor de la producción agrícola promedio (producción de leche y/o cabeza de ganado para los ganaderos) por hectárea entre beneficiarios y los no beneficiarios.	0% (2010)	25% (+4 años)	n.d
		Diferencia del cambio porcentual de los rendimientos agrícolas o ganaderos, promedio por hectárea entre beneficiarios y los no beneficiarios	0% (2010)	25% (+4 años)	n.d
		Diferencia en el cambio porcentual de los costos agrícolas y ganaderos, promedio por unidad producida entre beneficiarios y los no	0% (2010)	-10% (+4 años)	n.d

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El equipo de evaluación no pudo conseguir información para verificar el cumplimiento de las metas trazadas para estos indicadores

Operación	Propósito	Indicador de resultado o producto	Línea de Base	Meta	Actual
		beneficiarios.			
		Diferencia en el porcentaje de adopción tecnológica entre beneficiarios y grupo de control en zonas no beneficiadas (Efectos directos del programa).	0% (2010)	80% (+4 años)	n.d
		Diferencia en el porcentaje de adopción tecnológica entre los no beneficiarios (elegibles y no elegibles) en zonas beneficiadas y los no beneficiarios (elegibles y no elegibles) en zonas no beneficiadas (Efectos de derrame del programa).	0% (2010)	10% (+4 años)	n.d
		Número de apoyos tecnológicos entregados a los agricultores elegibles en zonas seleccionadas aleatoriamente.	0 (2010)	9.400 (+4 años)	n.d
		Número de apoyos tecnológicos entregados a beneficiarias elegibles jefas de hogar	0 (2010)	940 (+4 años)	n.d
		Número de productores que reciben asistencia técnica para la adopción de nuevas tecnologías.	0 (2010)	7.500 (+4 años)	n.d
		Número de productores capacitados en buenas Prácticas Agroambientales	0 (2010)	5.000 (+4 años)	n.d
HO-L1010-Pronegocios	Aumentar el ingreso de los hogares rurales en condiciones de pobreza y extrema pobreza, incluyendo los hogares y aldeas focalizadas en la iniciativa de protección Red Solidaria.	PSERs identificados y capacitados en requerimientos de PRONEGOCIOS	0	40 (al finalizar el Programa)	n.d
		PSERs capaces de organizar grupos asociativos y preparar planes de negocios adecuados según los requerimientos de PRONEGOCIOS	0	20 (al finalizar el Programa)	n.d
PR-L1001-Modernización de la gestión pública de apoyos agropecuarios	Contribuir a la mejora de la productividad y el aumento de ingresos de los pequeños y medianos productores agropecuarios del país.	Número de beneficiarios que utilizan al menos una de las tecnologías del menú de opciones	0	12.700 (2013)	n.d
		Porcentaje de beneficiarios de las dos primeras campañas agrícolas que recibieron apoyos a la adopción tecnológica incluidos en una muestra representativa estadísticamente aceptable que obtienen una tasa interna de retorno mayor a 12% de los beneficios netos generados, en un horizonte de análisis de 10 años.	n.d	80 (2013)	n.d
		Beneficiarios que reciben apoyos directos desconectados para compensar la caída del ingreso	0	78.000 (2013)	88.346 (2007)
CR0142-PFPAS	Incrementar los	Sistemas productivos agropecuarios y agroforestales sostenibles introducidos	n.d	Al menos 11.000 ha para al menos 4.000 familias de productores	61.542 ha. 18.707 familias (2011)

Operación	Propósito	Indicador de resultado o producto	Línea de Base	Meta	Actual
	ingresos y mejorar la calidad de vida de las familias de los pequeños y medianos productores agropecuarios participantes sobre una base económica y ambientalmente sostenible.			s directamente beneficiadas (al finalizar el programa)	
		Agricultores miembros de organizaciones de productores capacitados para participar en el Programa	n.d	320 cursos completados para 6.000 productores (+3 años). 2.400 productores capacitados (+3 años).	4.214 productores capacitados
		Extensionistas del MAG asignados a las ASA capacitados en temas de recursos naturales, producción agropecuaria conservacionista, y producción orgánica.	n.d	680 horas de cursos, seminarios y otros (final del programa)	81 ASAs con centros de información instalados
	Información sobre el programa difundida para despertar interés de productores potenciales participantes:	giras de intercambio de información	n.d	40 giras (final del programa)	31 giras
		talleres de evaluación de resultados de experimentación	n.d	176 talleres (final del programa)	n.d
		Fincas Integrales Didácticas montadas	n.d	88 fincas prestando 176 días demostrativos y días de campo a los productores interesados. (final del programa)	133 Fincas integrales didácticas, 95 días demostrativos.

Tabla 4.5. Indicadores resultados y producto componente de acceso a mercados

Operación	Propósito	Indicador de resultado	Línea de Base	Meta	Actual
APAGRO-NI-L1020	Mejorar la gestión empresarial de familias campesinas beneficiarias del BPA.	Número de beneficiarias capacitadas en Educación financiera básica	0	5.500 (al finalizar el proyecto)	6,963
		Número de empresas productivas campesinas constituidas	0	20 (al finalizar el proyecto)	30

Operación	Propósito	Indicador de resultado	Línea de Base	Meta	Actual
		Participación de las mujeres en proyectos u organizaciones	19% (2011)		66% (2014)
		Porcentaje de familias protagonistas que venden leche	1.2% de 571 en verano (2011)		5.9% de 571 en verano (2014)
			0.7% de 571 en invierno (2011)		8.57% de 571 en invierno (2014)
		Porcentaje de familias protagonistas que venden cuajada	1% de 571 en verano (2011)		4.7% de 571 en verano (2014)
			1.22% de 571 en invierno (2011)		7.52% de 571 en invierno (2014)
		Porcentaje de familias protagonistas que venden huevo	29% de 571 en verano (2011)		31% de 571 en verano (2014)
			10.8% de 571 en invierno (2011)		25.5% de 571 en invierno (2014)
CRIAR-BO-L1040	Apoyar emprendimientos productivos conducidos por grupos de pequeños productores rurales de comunidades campesinas, indígenas y originarias para mejorar sus capacidades de organización y gestión, producción y acceso a mercados.	Número de beneficiarios que participan en emprendimientos productivos apoyados por el proyecto	0	4.000 (al finalizar el proyecto)	2.542 productores asociados (2011)
		Número de emprendimientos productivos operando	0	80 emprendimientos (al finalizar el proyecto)	50 planes de emprendimiento productivo (2011)
		Probabilidad de vender la producción Probabilidad de vender mayor producción	25% share destinado a ventas (2012)		+7.5% +4.3% de la prod. (2013)
		Ingresos agrícolas por venta de productos	619.65 USD/hogar (2012)		+54% - 231US\$ (2013)
PG-UR0141	Mayor integración de pequeños y medianos productores	Planes de negocios aprobados y ejecutados	0 (2005)	30 (2010)	13 (2011)
		Productores familiares que participan en los planes de negocios	0 (2005)	3.000 (2010)	1.362 (2011)
		Venta neta de terneros			+4.35 cabezas promedio por año

Operación	Propósito	Indicador de resultado	Línea de Base	Meta	Actual
					(2010) <sup>29</sup>
AR-L1030 – PROSAP II	Propiciar el incremento, en forma sostenible, de la cobertura y calidad de la infraestructura económica rural y de los servicios agroalimentarios	Incremento en el valor de las ventas de empresas agroindustriales productivas por la ejecución de los planes de negocios receptores de ANRs	n.d. (n.d)	+30% (n.d)	n.d. (n.d)
	Realizar proyectos de promoción de inversiones en cadenas productivas	Número de empresas agropecuarias productivas y micro empresas agroindustriales que reciben ANRs y fortalecen sus cadenas productivas.	0 (n.d)	250 (n.d)	n.d
AR-L1063- PROVIAR	Del nivel de fin: Ingresos de los pequeños productores vitícolas mejoradas Del nivel de propósito: Pequeños productores vitícolas más y mejor integrados a la cadena vitivinícola	Capacitación, asistencia técnica y legal para la formación y/o fortalecimiento de grupos asociados	0% de los grupos de productores interesados asistidos	80 grupos de productores interesados asistidos al tercer año (+5 años)	194 grupos de productores asistidos, 358 eventos de promoción (2014)
		Grupos asociativos formalizados asistidos en la preparación de planes de negocio de acuerdo a reglamento operativo.	0 planes de negocios formulados	60 planes de negocios formulados para grupos asociativos elegibles (+5 años)	4511 registrados, 186 establecimientos registrados (2014)
		Planes integrales de negocio financiados	0 planes integrales de Negocios asociativos integrados financiados	60 planes de negocios asociativos integrados, involucrando aproximadamente a 60 establecimientos y 1800 productores, en proceso de ejecución financiera (+5 años)	2.528 pequeños productores con al menos el 70% del ANR ejecutado. (2014)
		Planes de negocio asistidos técnicamente y monitoreados.	0 planes de negocios asociativos	60 planes de negocios asociativos integrados siendo asistidos técnicamente y monitoreados (+5 años)	199 planes de negocios (PINs) formulados (2014)

Operación	Propósito	Indicador de resultado	Línea de Base	Meta	Actual
HO-L1010-Pronegocios	Aumentar el ingreso de los hogares rurales pobres a través del financiamiento de negocios rurales sostenibles.	Planes de negocios (de articulación a cadenas) aprobados	0	70 a 90 al finalizar el Programa y 30 al final del segundo año de ejecución del Programa.	201 PNS para ejecución contratados Al segundo semestre implementación (2014)
		Productores y trabajadores participando en planes de negocios (de articulación a cadenas)	0	20,000 al finalizar el Programa y 10,000 al final del segundo año de ejecución del Programa.	n.d
		Micro-negocios rurales aprobados con sus respectivos planes de negocios	0	100 al finalizar el Programa y 50 al final del segundo año del Programa	n.d
		Productores y trabajadores participando en micro-negocios.	0	2,500 al finalizar el Programa y 1,500 al final del segundo año de ejecución del Programa.	n.d
		Aumento en el nivel de ingreso anual de los beneficiarios	Lps. 957/mes - Línea de Pobreza	25% a mitad de la ejecución y 50% al final.	n.d