

INTER-AMERICAN DEVELOPMENT BANK
MULTILATERAL INVESTMENT FUND

PARAGUAY

**PARAMETRIC AGRICULTURAL MICROINSURANCE FOR
SMALL FARMERS IN PARAGUAY**

(PR-M1026)
(PR-T1168)

DONORS MEMORANDUM

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PROJECT SUMMARY

PARAMETRIC AGRICULTURAL MICROINSURANCE FOR SMALL FARMERS IN PARAGUAY (PR-M1026 AND PR-T1168)

The project seeks to help maintain the income and asset levels of small farmers in the event of adverse climate conditions that affect their crops. To that end, it will develop a comprehensive model linking agricultural insurance supply and demand, based on strategic partnerships and technological innovations, in order to enable approximately 5,000 small farmers to insure their crops against losses caused by adverse climate conditions. The model will be based on an important technological platform and will develop a parametric¹ agricultural microinsurance product that will be indexed to the amount of rainfall needed to guarantee stable productivity by small farmers. By the end of project execution, a vulnerable population of 5,000 low-income small farmers is expected to have access to this agricultural microinsurance product, which will provide insurance coverage for a total of 15,000 hectares of sesame, corn, and beans (peas) in the department of San Pedro, Eastern Region.

The objective of the first component of the project is to develop, test, fine-tune, and implement a parametric agricultural microinsurance product that provides coverage consistent with the farmers' ability to pay and with other risk factors. This component includes the development of a climate index to help determine the point at which the insurance is cost-effective for clients and insurers alike, the development of measurement infrastructure, climate information analysis, the identification and assessment of climate risks, and the analysis and description of the sesame, corn, and bean market in Paraguay.

The second component of the project is focused on training for producers in agricultural extension practices that promote adaptation to and prevention of the consequences of climate change and in financial education on insurance and consumer protection, as well as on a support program for cultural agricultural practices. The objective of the financial education program is for the farmers to learn about basic aspects of insurance and the specific characteristics of parametric insurance, notions of risk management, and matters they need to take into account to protect themselves as consumers. The training in agricultural practices will ensure that farmers meet the minimum requirements for crop insurance coverage and use methods and systems that support climate change-related risk adaptation and prevention models. Information mechanisms will be implemented for the clients on all the terms and conditions of the product, and awareness campaigns will be designed and implemented for the rural low-income market on the need for and benefits of insurance products and how they work.

Lastly, with the objective of capturing knowledge and disseminating lessons and best practices generated from implementation of an agricultural microinsurance product, the project has a knowledge management and communication component. As part of this component, the project will not only have support and tools developed by the MIF to disseminate knowledge but also access to the knowledge portal of the International Labor Organization (ILO) and will be generating "Emerging Insights" and learning workshops using the methodology implemented by the MIF based on the experience of the ILO

¹ See paragraph 2.4.

Microinsurance Innovation Facility. In order to disseminate the acquired knowledge, documentation will be published on the respective websites of the project executing agency, the participating cooperatives, the Federation of Agricultural Production Cooperatives (FECOPROD), the MIF, Aseguradora Tajy, and the ILO.

ANNEXES

Annex I	Results Matrix IDBDOCS-#38275220-Matriz de resultados
Annex II	Budget Summary IDBDOCS-#38588525-Presupuesto en WORD
Annex III	Matrix of Quality for Effectiveness in Development (QED)

APPENDICES

Proposed resolution

AVAILABLE IN THE DOCUMENTS SECTION OF THE MIF PROJECT INFORMATION SYSTEM

Annex IV	Itemized budget IDBDOCS-#38237538-Presupuesto Tajy
Annex V	Preliminary list of milestones IDBDOCS-#38589348-Lista Preliminar de Hitos.
Annex VI	Diagnostic needs assessment of the executing agency (DNA) IDBDOCS-#38007279-DNA Agencia Ejecutora
Annex VII	Project status reports (PSR), attainment of milestones, fiduciary agreements, and institutional integrity IDBDOCS-#38589400-ANEXO VII: REQUERIMIENTOS PSR ACUERDOS FIDUCIARIOS
Annex VIII	Monitoring and evaluation plan IDBDOCS-#38594040-Plan evaluación Tajy
Annex IX	Procurement plan IDBDOCS-#38593990-Plan de Adquisiciones Tajy
Annex X	Schedule of activities IDBDOCS-#38594000-Cronograma Actividades Tajy
Annex XI	Operating Regulations (including terms of reference for personnel contracts) IDBDOCS-#38306803-Reglamento Operativo
Annex XII	Risk analysis IDBDOCS-#38275230-Analisis de riesgos

ABBREVIATIONS

AusAID	Australian Agency for International Development
FECOPROD	Federación de Cooperativas de la Producción [Federation of Agricultural Production Cooperatives]
GDP	Gross domestic product
ILO	International Labor Organization
MAG	Ministry of Agriculture
MIF	Multilateral Investment Fund
NAIC	National Association of Insurance Commissioners

PARAGUAY
PARAMETRIC AGRICULTURAL MICROINSURANCE FOR
SMALL FARMERS IN PARAGUAY
(PR-M1026)
(PR-T1168)

EXECUTIVE SUMMARY

Country and geographic location:	Paraguay, in the department of San Pedro, Eastern Region		
Executing agency:	Aseguradora Tajy, Propiedad Cooperativa, S.A. (“Tajy”)		
Access area:	Access to Finance and Access to Basic Services and Green Financing		
Agenda:	Microinsurance and climate adaptation		
Coordination with other donors / Bank operations:	There are no other donors working on this issue in Paraguay.		
Direct beneficiaries:	Approximately 5,000 low-income farming families (on 15,000 hectares) who grow sesame, corn, beans (peas), and chia, in the departments of San Pedro, Alto Paraná, and Caazapá. Most of the farmers are men, but given household composition, 40% of the (albeit indirect) beneficiaries are expected to be women.		
Indirect beneficiaries:	Approximately 15,000 family members of the participating farmers		
Financing:	Technical cooperation funding:	US\$794,000	64%
	Trust Fund for Poverty Reduction in Latin America – AusAID: ²	US\$350,000	
	MIF:	US\$444,000	
	Local counterpart:	US\$447,300	36%
	TOTAL PROJECT BUDGET	US\$1,241,300	100%

² Australian Agency for International Development

Execution and disbursement periods:	48 months for execution; 51 months for disbursement
Special contractual conditions:	The following will be conditions precedent to the first disbursement: (i) selection of the project coordinator; (ii) approval of the technical assistance agreement between Tajy and La Segunda; and (iii) evidence that the board of directors has approved the Operating Regulations and put them into effect.
Exceptions to Bank policy:	None
Environmental and social impact review:	This operation has been pre-evaluated and classified according to the requirements of the Bank's Environment and Safeguards Compliance Policy (OP-703). Given that the impacts and risks are limited, it is proposed that the project be classified as a category "C" operation.
Unit responsible for disbursements:	COF/CPR

I. DIAGNOSTIC ASSESSMENT OF THE PROBLEM TO BE ADDRESSED BY THE PROJECT

A. Main characteristics of Paraguay's agriculture and insurance sectors

- 1.1 **Agriculture sector and climate risks.** Paraguay is, above all, an agricultural country. According to the Ministry of Agriculture (MAG), the agriculture sector generates nearly 21% of the country's gross domestic product (GDP). The primary sector, including livestock, forestry, hunting, and fishing, employs 25.4% of the country's economically active population. In other words, Paraguay's social and economic growth depends on the agriculture sector. In recent years, a direct correlation has been observed between adverse climate events and a reduction in agricultural GDP and thus national GDP. MAG has estimated that during the 2011-2012 harvest, the total area used to grow the 16 most important crops in Paraguay increased by 4% but total yields in tons per planted hectare for all these crops fell by 28%, compared with the previous harvest. This sizeable drop in farm output was the result of a drought that occurred during the most important phase of crop growth, as explained by MAG.³
- 1.2 As in the rest of the countries in the region, there are two types of agricultural economies in Paraguay: a few large operations producing at commercial scale and for export, and a significant number of small family farms. In all, 63.4% of the country's farms measure less than 10 hectares, and 40.6% operate on one to five hectares of land owned or occupied by small farmers. Land tenure in the department of San Pedro mirrors national patterns, which is to say that family farms predominate. This fact, together with good soil characteristics and the minimal agrochemical requirements⁴ of sesame, are the factors that have made sesame the main cash crop of small farmers in this region since 2004. As a result, today 50% of the farms in the department of San Pedro produce sesame, on farms averaging three hectares in size. It should be noted that most small farmers also plant—or do a rotation with—corn and beans, primarily.
- 1.3 However, in addition to the systemic risks inherent to agriculture, which include potential changes in market conditions, pests, personal or family health, and crop diseases, small farmers also increasingly face risks associated with climate change, such as drought. This climate risk is a real threat in the Eastern Region of the country, where sesame is grown. For example, the area planted with sesame nationwide⁵ shrank by 30.8% for the 2009-2010 season and, more recently, for the 2012-2013 season, by 43.5%, due to droughts that led to declines in output and, thus, in the income generated by small farmers.

³ América Economía, 2 March 2012.

⁴ This means that small farmers can harvest their crop without owing anything to the brokers or agrochemical suppliers, which gives them greater freedom to market their product. USAID, *Sésamo: Innovación en agro-negocios*, Paraguay, December 2009.

⁵ Over 70% of sesame is grown in the department of San Pedro.

- 1.4 Despite their ties to cooperatives that are members of the Federation of Agricultural Production Cooperatives (FECOPROD),⁶ which confers a number of advantages in terms of marketing and access to the training that FECOPROD provides its members, small farmers lack effective strategies for risk management. Indeed, although they rotate their crops and belong to cooperatives that give them access to credit, certain inputs, and technical assistance, they do not have a financial mechanism for transferring risk, such as insurance. In the event of climate changes that affect production, farmers may not be able to repay loans or may have to sell assets to retain their access to credit. Moreover, they may not generate enough income to sustain their household or, in the case of crops grown for export or industry, they may be unable to fulfill contractual obligations, impeding their access to markets. All this translates into economic losses that affect stability and quality of life.
- 1.5 **Paraguay's insurance sector.** As of the end of fiscal year 2012-2013, 35 insurance companies were registered with the Insurance Superintendency of the Central Bank of Paraguay. These firms are governed by Law 827 of 1996. The insurance sector is expanding in Paraguay, with real growth of over 15%⁷ during the past two years. However, it is a relatively small sector, with net premiums of US\$357.1 million, or just 1.2% of GDP, which places Paraguay, along with Bolivia and Honduras, among the countries with the lowest rates of insurance penetration in the region.
- 1.6 **Agriculture insurance sector.** Of the 35 firms registered with the Insurance Superintendency, only seven⁸ offer agricultural insurance. Net premiums generated in the agricultural insurance sector totaled US\$12.3 million,⁹ or 0.02% of the total premiums generated by the insurance sector as a whole. The two largest firms in this sector are Sancor, Seguros del Paraguay, S.A., with a 38.5% share, and Aseguradora Tajy, S.A. de Seguros, with a 38% share. Agriculture insurance has been a recurring topic of interest in the sector since 1985. However, early efforts were unsuccessful, for the following reasons:¹⁰ (a) the rates applied to risks were very high with respect to production costs; (b) the risks covered were not the most significant ones; (c) the claims rate was very low because there was no transgenic material and the varieties, though less productive, were better adapted to adverse climate conditions; and (d) international commodity prices

⁶ Created in 1975, FECOPROD consists of 34 agricultural production cooperatives.

⁷ Measured as growth in net premiums received, expressed in U.S. dollars.

⁸ Of the premiums generated by AIC Seguros, S.A., 69.5% come from the farm sector. However, AIC is a captive insurance firm and, as such, is only authorized to serve the needs of the company ADM, a large producer and exporter of soybeans.

⁹ Not including premiums generated by AIC Seguros, S.A.

¹⁰ Extracted from "Políticas públicas de gestión del riesgo agropecuario en los países del Consejo Agropecuario del Sur," Inter-American Institute for Cooperation on Agriculture, Consejo Agropecuario del Sur [Southern Agricultural Council], and Red de Coordinación de Políticas Agropecuarias [Agricultural Policy Coordination Network], 2010.

were much lower. As a result, the perceived risk was lower. Years later, a new coinsurance group (Mapfre, Seguridad S.A., and Real Seguros) attempted to enter the sector by offering multi-risk coverage, but it too was unsuccessful, mainly owing to the absence of a suitable distribution channel and lack of knowledge and understanding about the workings and benefits of insurance. All these lessons were taken into account by the sector; since 2006 the country has had multi-risk insurance, which is easy to understand but relatively expensive. There has been a steady expansion in this type of insurance, but it is only accessible to the largest farmers and through traditional channels, such as insurance brokers and agents.

- 1.7 **The problem.** This project will attempt to solve the problem of limited access by low-income small farmers to risk management and transfer tools. In natural disasters, farmers who do not have these tools must reduce their consumption and sell productive assets, which plunges them into a cycle of poverty. One of the tools for managing climate-related risk is insurance. However, the agricultural insurance product available in Paraguay is multi-risk insurance, which is expensive, has the potential for moral hazard¹¹ and adverse selection,¹² and is designed for middle- and high-income large farmers. In other words, to date, the insurance sector does not offer any risk management and transfer tool that is designed for poor or low-income small farmers. The main causes of this problem can be summarized as follows: the national insurers' lack of appetite for risk, hence the limited supply of suitable products for the poorest segment of the insurable population, i.e., the absence of an effective product that can guarantee real value for all stakeholders (insurers, brokers, and clients), lack of capacity in the distribution channels, and lack of knowledge about insurance, its usefulness, and conditions of use.

B. Project beneficiaries

- 1.8 By completion, the project is expected to have benefited a total of 5,000 small low-income farmers in the department of San Pedro, Eastern Region,¹³ who own or lease properties of no more than 10 hectares on which they primarily grow sesame and corn (some also grow beans/peas and chia). According to the 2008 household survey, 48.8% of rural dwellers are poor. Their main livelihood is farming, which, aside from the inherent risks associated with prices, productivity, and inputs, is also affected by catastrophic events related to natural phenomena. The living conditions of these farmers are constrained by limited access to

¹¹ This refers to the possibility that the insured will make negative changes in behavior in response to having insurance.

¹² Adverse selection arises from information asymmetry. In this case, farmers know their risks better than do insurers, such that an insurer may take risks that it would not take or would take under different conditions, if it had better information.

¹³ Sesame is grown extensively in this area. This department has the highest poverty rates in the country according to the Program for the Improvement of Surveys and the Measurement of Living Conditions in Latin America and the Caribbean (MECOVI-IDB), executed with the Paraguayan Bureau of Statistics, Surveys, and Censuses (DGEEC).

essential infrastructure such as health clinics, schools, and basic services like electricity, drinking water, and road infrastructure, including rural roads. The beneficiary families have an average size of five members. The gender composition is 40% female (mother/daughters) and 60% male (father/sons), who live and depend primarily on the production of sesame and income generated therefrom. Income levels vary and are limited by and subject to agricultural production, which in turn is determined by domestic and foreign consumer markets, with sizeable price variations from year to year. Income is volatile, fluctuating with international prices and climate conditions. The potential beneficiaries have between one and three hectares of land planted with sesame and other crops in rotation or for own consumption, such as corn, beans, and chia. Some also have cattle (one or two cows) that they can sell if they do not earn enough from their harvest. During the pilot phase, the project will be implemented in the department of San Pedro only, targeting a minimum of 450 families of small sesame growers in the Cuatro Vientos Ltda. and Carolina Ltda. cooperatives. These communities have the support of the Volendam Ltda. and Friesland Ltda. (Mennonite) cooperatives, which provide agricultural assistance and organizational technical support. During scale-up of the project, the plan is to provide index-based agriculture microinsurance to 5,000 small farmers (approximately 15,000 hectares covered by insurance) through other cooperatives that are members of FECOPROD in the department of San Pedro.

- 1.9 **Project timeliness.** In recent years, various public and private institutions have sought appropriate mechanisms for managing risk in the smallholder agriculture sector. Climate-indexed agricultural microinsurance (see paragraph 2.4) represents a new opportunity to improve the competitiveness of the sector, since technically and technologically it is the only climate risk management product with sufficient technical and economic viability to be implemented in the smallholder sector. MAG has been working for several years to make agricultural insurance available for small farm operations, so it has taken a special interest in this project, given its social and economic implications. There is also interest on the part of the State-owned banking sector (Banco Nacional de Fomento) and firms providing inputs and bulking and exporting sesame (BioExport, Shiroswa) in supporting the rollout of an agricultural insurance product for smallholders as a means of safeguarding the repayment of loans made to that sector. Within this context, the Tajy Cooperative is expected to finance the premiums of insurance products to be implemented, in the event that it is necessary.
- 1.10 The cooperative sector, through FECOPROD, has also provided cooperation and support and transferred technology to farmers in this socioeconomic sector (smallholder agriculture), in order to provide tools for climate change adaptation. To this end, FECOPROD has been working with several donors and has a network of meteorological stations that are interconnected through a software administrator known as “Agroclimate,” a program implemented jointly with the University of Florida. At present, this network monitors much of the Eastern Region of Paraguay dedicated to grain/seed production (extensive agriculture).

For this project, a partnership has already been established between Tajy and FECOPROD in order to strengthen this network through/for use in the project described below.

- 1.11 Lastly, Tajy has nearly six years of experience in agricultural risk management, with skilled staff and technical advisory services from the insurance group Grupo Asegurador La Segunda (Rosario, Argentina), which has over 50 years of experience in agricultural insurance in that country.¹⁴ Moreover, the international reinsurers that support Tajy have been insisting on the development of innovative products for the management of agricultural risk. These products must have low or reasonable operating and claims costs but with coverage matched precisely to the risk assumed, and with an affordable premium. Accordingly, the insurer has offered its support to the MIF to develop an index-based agricultural insurance product, or parametric insurance.¹⁵
- 1.12 All these points suggest that the project's opportunities, in terms of fulfillment of its objectives, subsequent sustainability, replication for other crops, and potential partnerships, are complemented by the need for a tool to adapt to adverse climate factors that affect the social and economic development of the smallholder agriculture sector.

C. Contribution to the MIF mandate, Access Framework, and Bank strategy

- 1.13 This project is aligned with the mission of the MIF. The outcomes it seeks are focused on reducing poverty through tools for managing and preventing the risks that affect the farm-based livelihoods of small farmers in Paraguay. In addition, it will contribute to private sector development by strengthening entities in the agricultural cooperative sector. It will also help the insurance sector connect with small-scale clients to provide services that are typically beyond their reach.
- 1.14 **Link to the Agendas.** The project is consistent with the MIF's microinsurance and adaptation agendas, the respective objectives of which are: (i) to increase the number of providers offering microinsurance services on a sustainable basis to meet the needs of the low-income population of Latin America and the Caribbean; and (ii) to make the producers more resilient to extreme climate events that affect their productivity and permanence. This project will help close knowledge gaps in the microinsurance agenda related to the economic impact of agricultural microinsurance on clients, the optimum design, and the financial viability of index-based insurance targeted to small farmers. In addition, this project is related to MIF project BO-M1050, which involves strengthening small sesame growers in order to improve their quality of life, by positioning sesame in high-value markets. During project implementation, adverse climate factors during the winter have been the biggest obstacle to achieving this objective, with climate variation

¹⁴ Grupo Asegurador La Segunda also owns a 10.35% stake in Tajy, in preferred shares, with voice but without vote. MIF funds will not be used to pay for technical services provided by this company.

¹⁵ See paragraphs 2.3 et seq.

having a negative effect during planting of new varieties of sesame optimal for high-value export markets.

- 1.15 **Collaboration with the IDB Group.** The project is aligned with the Bank's country strategy with Paraguay for 2009-2013, which features the Bank's support for the agriculture sector as a crosscutting element in the Strategic Economic and Social Plan in response to the poverty rate in the rural sector. The project complements other Bank actions being pursued, in the form of non-sovereign guaranteed operations by the Opportunities for the Majority Sector, the Structured and Corporate Financing Department, and the Inter-American Investment Corporation. In addition, the project was shared with the IDB's Capital Markets and Financial Institutions Division (CMF) and the Infrastructure and Environment Sector (INE) and no comments were received.

II. PROJECT OBJECTIVES AND COMPONENTS

A. Objectives

- 2.1 **Impact:** The project seeks to help maintain the income and asset levels of small farmers in the event of adverse climate conditions that affect their crops. **Outcome:** The project seeks to develop a comprehensive model linking agricultural insurance supply and demand, based on strategic partnerships and technological innovations, in order to enable approximately 5,000 small farmers to insure their crops against losses caused by adverse climate conditions associated with climate change.

B. Description of the model/solution/intervention

- 2.2 The project will develop a parametric agricultural microinsurance product that will provide coverage initially for drought. This coverage will be determined on the basis of the amount of rainfall needed to guarantee stable productivity for small farmers of sesame, corn, beans, and chia.
- 2.3 This approach, based on an external and objective index, resolves many of the obstacles to agricultural insurance in developing countries. Parametric or index-based insurance not only makes it viable for insurance companies and accessible to small farmers but also entails less risk of moral hazard and adverse selection than traditional indemnity insurance.
- 2.4 **Parametric (or index-based) agricultural insurance.** Unlike traditional agricultural insurance, which covers losses following on-site verification of an assessment of actual damages, parametric insurance is based on an objective, external index measured over a period of time. When the minimum or maximum defined parameter is triggered, payments are immediately generated without the need for on-site verification. The index or parameter is constructed using prospective probabilistic and statistical models based on information from meteorological stations and remote sensors such as satellites run by the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics

and Space Administration (NASA).¹⁶ This type of insurance pays out when the threshold index value set ex ante by experts is exceeded. In the case of rainfall and flooding, the index is related to excessive rainfall and, in the case of drought, to lack of rainfall. Payment of compensation is simple, because it can be set in advance as a single fixed payment or it can be determined in proportion to the damage, i.e., by multiplying the insured amount by the index value corresponding to each phenological stage¹⁷ of the crop.

- 2.5 Parametric insurance is an alternative to traditional agricultural insurance and is appropriate in the case of crops with the following characteristics: (i) crops located in areas with a high probability of meteorological risks correlated with climate effects; and (ii) crops that employ a large percentage of the population that depends on agriculture. Administering this type of insurance is easy due to its lower transactional costs, which makes it a viable product for protecting small farmers. Another important characteristic is that, because payments can be issued almost immediately, beneficiaries avoid having to sell their assets or take other action to withstand the risk and make up for the loss in income. Lastly, the data on which parametric insurance is based are public, produced by disinterested third parties, and objective. In other words, there is no opportunity to distort information.
- 2.6 However, there is a significant technical challenge associated with parametric insurance: so-called “basis risk,” which is usually a challenge in the design and implementation of this insurance product. Basis risk refers to the discrepancy that can occur between the real loss incurred by a farmer and the loss determined by the index. Insured farmers can incur losses for which they receive no compensation, or they can receive compensation when no losses have been incurred. Basis risk is essentially caused by hazards that are not necessarily related to the selected index but that could occur all the same, such as pests or diseases, for example, which can lead to catastrophic losses but are not generally captured very well by meteorological indexes. Farmer behavior (e.g. planting date) is very difficult to capture in a set of formulas. This may mean that a climate-indexed insurance contract is particularly sensitive to rainfall during the wrong season. In view of the foregoing, more and more insurance professionals are asking about the date of planting, suggesting the importance of beginning to control the index from planting time.¹⁸
- 2.7 There are three types of basis risk: (a) spatial, e.g. two hamlets or communities that depend on the same meteorological station can incur different losses; (b) temporal, e.g. a certain period of time can elapse between the event and its detection by the index and vice versa; and (c) loss-specific, e.g. the index may be

¹⁶ These satellites report public information and are used and accessible worldwide.

¹⁷ Phenology is the science that studies the relationship between climate factors and plant and animal life cycles. Wikipedia.

¹⁸ This aspect will be duly analyzed by the consultants assigned to construct the index or parameter.

- poorly correlated with real yields and thus fail to take into account all of the factors affecting the crop.
- 2.8 Reducing basis risk is essential to creating an effective product that is easily acceptable by the clients. The most significant way to do this is by properly selecting and developing the index and identifying crop growth phases. The closer the correlation is between the index and yields, the lower the level of basis risk will be. Accordingly, the proposed project calls for compiling a two-year record of climate data to ensure that there is sufficient information. Another way of managing this risk is through the actual contracts. One example is multiple-trigger insurance contracts, which can also avoid moral hazard, even though they focus on real losses. A primary trigger at a smaller scale (community or hamlet) enables a close correlation with individual losses. Because this level of activation could lead to moral hazard, it is coupled with a second trigger at a larger scale (several communities, a cooperative), upon which payment of compensation is contingent, thereby reducing the likelihood of moral hazard.¹⁹ Lastly, technological advances in satellite imaging and telecommunications are quickly lowering the costs implicit in gathering more precise information, which helps reduce basis risk.
- 2.9 It is clear is that the body of statistical evidence is not yet strong enough to indicate that this is the solution to give small farmers access to agricultural insurance. Most pilot programs for climate-indexed insurance have not conducted statistical analyses of basis risk. The lack of quality production data is a major obstacle to calibrating the model. Nevertheless, MAG and FECOPROD statistics on the productivity of the crops that are the subject of the project, specifically sesame, plus satellite information on rain or lack of rain (through images of the vegetation) will be supplemented with two years of pilot gathering of information through the new stations.
- 2.10 In summary, Tajy will use information from the following sources: (a) analysis of data collected by the National Civil Aeronautics Bureau (DINAC); (b) a database of historical climate data will be constructed, based on agro-meteorological information (Agromet) from the National Oceanic and Atmospheric Administration (NOAA) plus three years of project information; (c) use of NASA's Tropical Rainfall Monitoring Mission (TRMM); (d) use of information from the Normalized Difference Vegetation Index (NDVI) obtained via the TERRA MODIS satellite; and (e) rainfall records obtained from meteorological stations and rain gauges plus field observation of the crops.

¹⁹ There is a successful example of a multiple trigger insurance product developed for cotton in Mali.

Figure I. Project Business Model

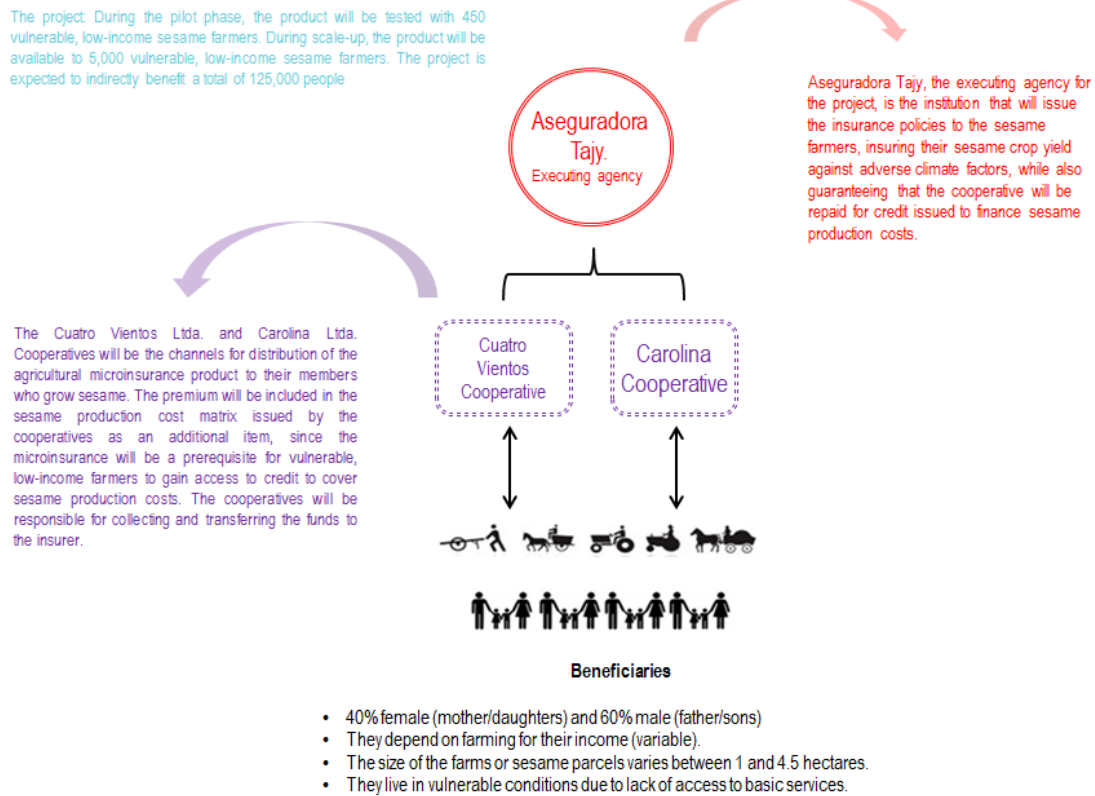
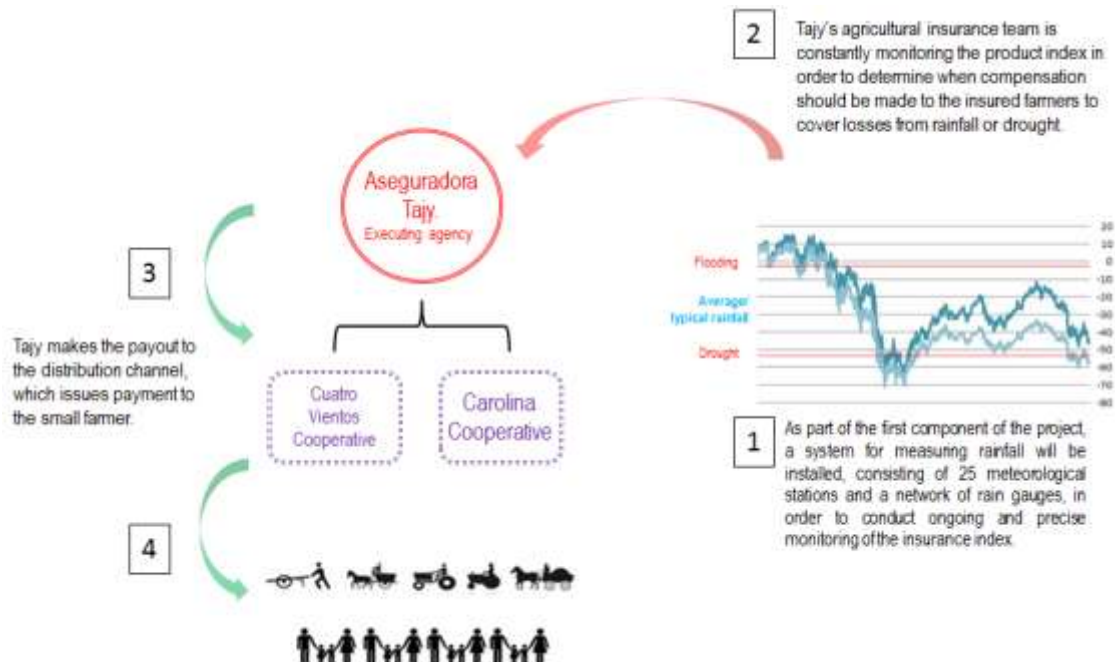


Figure II. How parametric microinsurance works.



C. Components

Component I: Development and implementation of a parametric agricultural insurance product for small farmers (MIF: US\$202,250; AusAID: US\$244,750; Local counterpart: US\$217,000)

- 2.11 The objective of this component is to develop, test, and implement a parametric agricultural microinsurance product that provides coverage (initially) for drought at a cost that is consistent with the farmers' ability to pay, with other risk factors linked to the relationship between the phenological stage of the crop and climate events, and to those related to the value chain and suppliers. The goal is to be able to develop an insurance product with an index that is strongly correlated with the climate and environmental phenomena that farmers face.
- 2.12 This component includes the development of a climate index to help determine the point at which the insurance is cost-effective both for clients and for the insurance company. Developing this index will require the installation of a network of meteorological stations fed by a network of small measurement sensors (rain gauges) and an analysis of at least two production cycles for each crop that the project executing agency intends to insure. The project will take advantage of the 25 meteorological stations already installed by FECOPROD and will finance the installation of 25 more, all of which will provide information to be used to create and validate the index needed for the insurance that is the subject of this project. The information gathered will also provide data for FECOPROD's Agroclimate program (<http://fecoprod.agroclimate.org>), which is collecting weather- and climate-related data for the purpose of helping the federation's members make better climate risk mitigation decisions.²⁰
- 2.13 The component's activities are as follows: (i) development of measurement infrastructure (mini-stations); (ii) analysis of climate information; (iii) compilation of data; (iv) identification and assessment of climate risks; (v) analysis and description of the sesame, corn, and bean markets; (vi) product definition and design; (vii) development of the microinsurance marketing plan; (viii) development of product clauses; (ix) product presentation and negotiation with reinsurers; (x) registration of the insurance plan with the Insurance Superintendency; (xi) development of the control and monitoring system; (xii) analysis of the financial, technical, and operational capacity of the distribution channels; (xiii) technical strengthening of the distribution channels; and (xiv) implementation and monitoring of the pilot plan.

²⁰ Implemented by the Biotechnology Institute at Universidad Católica de Nuestra Señora de la Asunción and the University of Florida, with initial support from the Inter-American Institute for Global Change Research.

Component II: Training and financial education in insurance and consumer protection (MIF: US\$18,700; Local counterpart: US\$39,000)

- 2.14 The objective of this component is to develop two programs. The first will be a financial education and consumer protection program; the second will be a program to provide training in farm practices that support adaptation to climate risks. Information mechanisms will be implemented for the clients on all the terms and conditions of the product (premium, any exclusions, form of payment, explanation of the parameter to be used, ways of interpreting the parameters, a general explanation of how property insurance—agricultural insurance in this case—works, etc.). Awareness campaigns will be designed and implemented, targeting the rural low-income market, on the need for and benefits of insurance products and how they work. Lessons learned from other regions, the preliminary findings of research by the executing agency,²¹ and the focus groups held during the analysis mission with farmers from the department of San Pedro indicate that the public has very limited knowledge about insurance and risk management. There is also a widely perceived need in the distribution channels (cooperatives) for more information on the benefits provided by insurance as a risk management strategy, which should result in greater acceptance—purchase and use—of an insurance product. The training program on farming practices seeks to help small farmers meet the minimum requirements for insurability (that in turn coincide with climate change adaptation practices), which are none other than cultural practices adapted to a specific crop, such as regular rotation, strict protocols for planting, use of agrochemicals, manures, and fertilizers, irrigation, etc.
- 2.15 The component's activities are as follows: (i) hiring of a technical trainer in agricultural insurance; (ii) establishment of a trainer training program; (iii) development of a training program for farmers; (iv) adaptation and development of training materials (videos, games, etc.); (v) implementation of training sessions for farmers; (vi) awareness campaign on the use and benefits of insurance; (vii) agricultural training for risk management; (viii) hiring of a technical trainer in agricultural risk management; and (ix) development of a training program to be implemented jointly with the farmer cooperatives.
- 2.16 Although there are international experts working on parametric models for agricultural insurance for small farmers, they are not familiar with Paraguay's market conditions, geography, and climate. The firm EnsoAg LLC, established by a University of Miami climatology expert, has been working in Paraguay and Brazil in partnership with local universities and is very familiar with the region. It has also worked with FECOPROD and Paraguay's Ministry of Agriculture (MAG) and is responsible for successfully installing the first 25 meteorological stations and setting up a program at FECOPROD that enables the member cooperatives to anticipate climate conditions so they can implement critical

²¹ Since 2011, Tajy has been conducting studies, collecting information, and negotiating with its member cooperatives and the cooperatives in FECOPROD on the best possible way to approach the subject of agricultural insurance for small farmers.

adaptive measures in advance. This same entity would implement the parameter for the insurance product at Aseguradora Tajy. In other words, not only does it possess a unique understanding of the agroclimate conditions in the country but it has also pioneered efforts in this regard in Paraguay, so developing the parameter to be used for the insurance product will be a natural continuation of its work thus far. It is worth mentioning that EnsoAg not only would be supplying the product design but would also be handling the negotiations for obtaining satellite images.

Component III: Knowledge management and communication strategy (MIF: US\$214,600; AusAID: US\$15,000; Local counterpart: US\$22,900)

- 2.17 The objective of this component is to capture the knowledge needed to fill knowledge gaps in the insurance sector and in the microinsurance agenda. In addition, best practices will be disseminated for the benefit of the regional and global community.
- 2.18 The following audiences have been identified for the purposes of disseminating and communicating knowledge and experiences generated by the project: (i) farmer cooperatives and associations; (ii) insurance companies in Latin America and the Caribbean with an interest in developing agricultural insurance for low-income groups; (iii) regulatory authorities for the insurance and agriculture sectors; (iv) other financial institutions that provide credit to small farmers; (v) research institutes looking at the effects of climate on agricultural production; and (vi) project beneficiaries.
- 2.19 These entities generally have the following gaps in knowledge: What is the social and economic impact attributable to insurance? What characteristics should the parameter have in order to guarantee that it can be understood by clients and to minimize basic risk? What compensation will make the product simultaneously valuable to low-income farmers and financially sustainable for insurers? What impact does agricultural microinsurance have on access to and use of financial products, inputs, and technical assistance? Which insurance model is best adapted to the needs of producers to maintain and increase their resilience to climate change?
- 2.20 For purposes of meeting the knowledge needs of these audiences, the following knowledge products will be developed: (i) a project fact sheet, which will be shared publicly on an annual basis and will contain the partial results of execution, as well as the main challenges and how they have been resolved; (ii) a methodology handbook at the end of the intervention, which will summarize the main characteristics of the necessary partnerships and the business model; and (iii) organization of and participation in events to disseminate lessons learned from the project (FOROMIC 2016 and International Microinsurance Conference 2017 or another MIF event related to the PROADAPT project). In addition, this project, like all projects under the MIF Microinsurance Agenda, will have access to the ILO knowledge portal (Microinsurance Innovation Facility). It will generate knowledge products in addition to the MIF's own, using the

methodology transferred by the ILO to the MIF, which is used to generate “Emerging Insights” (encapsulated knowledge that is easy to read and assimilate) and learning workshops (annual summary of lessons and learning), tools that complement the MIF’s own. In order to disseminate the acquired knowledge, the documentation will be published on the respective websites of the project executing agency, the participating cooperatives, FECOPROD, the MIF, PROADAPT, Tajy, and the ILO.

D. Project governance and execution mechanism

- 2.21 The project will be directed and led by Aseguradora Tajy, Propiedad Cooperativa, S.A. For efficient project administration, an ad hoc project coordination unit will be created within Tajy’s agriculture division. Any decisions or agreements by this unit will need to be consulted with and approved by Tajy’s general manager and president. The terms of reference for hiring the project coordinator and assistant who will comprise the project coordination unit are included in the project Operating Regulations, attached as Annex X.

E. Sustainability

- 2.22 Drawing on lessons learned from the pilot phase and knowledge generated during execution, the project is expected to be expanded to other departments and other crops. To that end, Tajy has a strategic partnership with FECOPROD, an entity that not only brings together the 35 largest farmer cooperatives in Paraguay but also has an ownership stake in Tajy. In addition, agreements will be signed with the largest brokers in the country. So far, talks have been held with BioExport, a company that markets the crops to be covered by the proposed insurance. Initially, BioExport will contribute 8,000 clients to the system.²² In principle, the project has the potential to be replicated also with organized micro-producers of other cash crops, such as peanuts and stevia (*ka’a he’e*). Not only will an impact evaluation be performed, but the experience will also be documented in a methodology handbook, the key to other insurers and reinsurers entering this market. Last but not least, the Paraguayan government could be interested in replicating the project’s lessons and achievements nationally. In this regard, the MIF would be playing its typical role of testing products and laying the foundations for the Bank to provide sovereign or non-sovereign guaranteed loans.
- 2.23 Demand for this climate risk management tool is expected to increase insofar as its use reduces the negative effects of volatility in production and eliminates constraints on the investments needed by the smallholder sector. In other words, use of this product will support improvements in the quality and quantity of agricultural supply, in turn making it more sustainable.
- 2.24 One year before the end of the execution period, a sustainability workshop will be held with all participating entities to identify the measures needed to ensure the continuity of project actions once the funding has ended.

²² A signed agreement with BioExport is among the project milestones.

F. Lessons learned by the MIF and other institutions

- 2.25 There is a body of information and lessons on parametric agricultural insurance. However, this information and the main lessons learned primarily concern projects executed in other regions or under very different conditions (including government subsidies) from the ones proposed for this project. Following is a summary of lessons learned in the contexts described that the team regards as applicable lessons: (i) parametric insurance is a new instrument in the market and, as such, is hard for all stakeholders to understand; (ii) it takes a long time to construct the indexes so that the result is an actuarially sustainable product; (iii) the evidence from some markets is mixed: although initial development has largely depended on government subsidies, these become unsustainable over time, suggesting that it is better to develop demonstration effects from the private sector; (iv) this type of insurance depends to a large extent on the availability and reliability of climate data obtained directly or using remote sensors and on access to appropriate technology; (v) the profit motive can sometimes lead to early termination of the pilot projects, before all the relevant models and methodologies have been developed and fine-tuned; (vi) index-based or parametric insurance is better received when it is part of a larger program, e.g. when it is integrated into a value chain; and (vii) sufficient and timely investment is needed to build capacity along the entire insurance value chain.

G. MIF additionality

- 2.26 **Nonfinancial additionality.** Through knowledge derived from the approval and partnerships that the MIF maintains in the industry, there is technical capacity to strengthen the design and execution of microinsurance products in the region. This is crucial because knowledge of the microinsurance market in the region is limited. Thus, the MIF is a repository of knowledge, as a result of the execution of other MIF projects in the microinsurance sector, MIF participation in various knowledge forums and networks, and, most of all, its partnership with the ILO Microinsurance Innovation Facility to generate and disseminate knowledge in Spanish on microinsurance products and the microinsurance market.
- 2.27 **Financial additionality.** The Inter-American Institute for Global Change Research contributed to the costs of the FECOPROD Agroclimate initiative. However, no other donors or development agencies are financing microinsurance projects in Paraguay. Without MIF participation, the executing agency would not be in a position to invest the resources needed to implement the pilot phase and pay for the initial costs of developing this product.

H. Project outcomes

- 2.28 The project will develop a comprehensive model linking agricultural insurance supply and demand, based on strategic partnerships and technological innovations, in order to enable approximately 5,000 small farmers to insure their crops against losses caused by adverse climate conditions associated with climate change. By the end of the execution period, a parametric agricultural

microinsurance product that has been tested is expected to be available. This service is expected to benefit: (i) a total of 15,000 hectares that will be insured by small farmers who grow sesame, corn, beans, and chia in the department of San Pedro; (ii) 5,000 vulnerable low-income small farmers who will purchase a microinsurance product; and (iii) at least 30% of the 5,000 vulnerable low-income small farmers covered by agricultural insurance, who will report satisfaction with the availability and coverage of the product.

I. Project impact

- 2.29 **Impact.** The project will help maintain the small farmers' income and asset levels in the event of adverse climate conditions that affect their crops, as well as the expansion of agricultural land with sustainable management.

J. Systemic impact

- 2.30 The MIF and Tajy will be able to demonstrate that agricultural insurance for vulnerable low-income small farmers is feasible and economically viable, which will create market potential in Paraguay and the region for the development of this type of insurance. Tajy is committed to continuing with project results and solidifying its partnerships at the national and international level so the project can be replicated in other countries of the region. Tajy's financial structure guarantees the counterpart contribution for execution of the project and its sustainability over time.

III. MONITORING AND EVALUATION STRATEGY

- 3.1 **Baseline.** As part of the project, the MIF will finance a baseline study to gather socioeconomic information on the beneficiaries. The information for this study will primarily be related to: income from sesame, other income, investment in sesame production, gender, number of economic dependents, and location. In order to monitor project execution and partial results, staff from the distribution channel (cooperatives) will receive training to effectively collect and capture the necessary information.
- 3.2 **Monitoring.** Technical cooperation resources will be used to design and implement a project monitoring and control system. This system will be housed at Tajy, but the distribution channels will have online access to it. Meanwhile, the distribution channel (cooperatives) will compile information at the client level.
- 3.3 **Evaluation.** The project calls for a midterm evaluation and an impact evaluation. These evaluations will assess project **relevance** (Did the design of the project reflect the needs of the country? Of vulnerable low-income farmers? Of the executing agency?); **effectiveness** (Was the design effective in meeting the planned objectives? What was the cost-benefit ratio achieved with the project, measured as the ratio between the total investment and the results obtained, etc.?); **efficiency** (Did the executing agency do a good job in administering the resources? Was there coordination with other areas of the Bank and other external

- entities? Were the planned and budgeted activities sufficient?); and **sustainability** (What factors affected fulfillment of the project objectives? Is there a sustainability strategy? Was a business case made?).
- 3.4 An impact evaluation of the project will be conducted. The MIF plans to carry out the first impact evaluation in Latin America and the Caribbean on a parametric agricultural insurance product designed for vulnerable low-income farmers. Some evaluations have been performed but involved models that include government subsidies and other regions. The impact evaluation will measure the changes produced or not produced in the client universe that can be attributed to the project. The purpose of the evaluation will be to answer the following question: Does use of a parametric microinsurance product like the one proposed support the stabilization of income and consumption of low-income farmers?
- 3.5 The Development Effectiveness Unit (DEU) team is taking the lead in this area. The insurance company is willing to do the work needed to randomly select control and beneficiary groups. As mentioned previously, the beneficiaries identified to date are the members of the Cuatro Vientos and La Carolina Cooperatives and BioExport, one of the large exporters of sesame in Paraguay. However, neighborhood committees, Financiera El Comercio,²³ and other exporters have also been identified as potential selection pools for the beneficiary and control groups.
- 3.6 **Closing workshop.** In due course, the executing agency will organize a closing workshop in order to meet with the other participating entities to evaluate the results achieved, identify additional tasks to guarantee the sustainability of actions initiated under the project, and identify and disseminate lessons learned and best practices.

IV. COST AND FINANCING

- 4.1 The project has a total cost of US\$1,241,300, of which US\$444,000 (35%) will be contributed by the MIF, US\$350,000 (29%) by AusAID, and US\$447,300 (36%) by the counterpart. The execution period will be 48 months, and the disbursement period will be 51 months.

²³ This entity has already agreed to serve as a selection pool for a control group.

Components	MIF	AusAID	Counterpart	Total
Component 1. Development and implementation of an index-based agricultural microinsurance product for small farmers	202,250	244,750	217,100	664,100
Component 2. Training and financial education in insurance and consumer protection	18,700		39,000	57,700
Component 3. Knowledge management and communication strategy	14,600	15,000	22,900	52,500
Total – Execution components and supervision	235,550	259,750	279,000	774,300
Executing agency / Administrative	65,000	90,250	168,300	323,550
Baseline	15,000			15,000
Midterm evaluation	15,000			15,000
Sustainability and closing workshop	5,000			5,000
Ex post reviews	15,000			15,000
Contingencies	42,750			25,251
Subtotal	393,300	350,000	447,300	1,173,101
% of financing	33.03%	29.40%	37.57%	100%
Institutional strengthening (Advisory services / training in financial management and/or procurement)	5,000			5,000
Impact evaluation account (5%)	20,700			38,199
Agenda account	25,000			25,000
Total	444,000	350,000	447,300	1,241,300

V. EXECUTING AGENCY

- 5.1 **Executing agency.** Aseguradora Tajy, Propiedad Cooperativa, S.A. (“Tajy”) will be the executing agency for this project and will sign the agreement with the Bank. Tajy is the first insurance company under cooperative ownership in Paraguay that is regulated by the country’s Insurance Superintendency.²⁴ Tajy has ISO 9001:2000 certification. Its mission is to provide insurance coverage primarily to Paraguayan cooperatives, their members, and members’ families by offering affordable high-quality products, in line with cooperative principles and values. It has six agencies and a main office, all in the Eastern Region of Paraguay and an agency in the western region. It also has 32 information points at 31 cooperatives and a finance company, Financiera el Comercio. Tajy has 37 shareholders, of which 34 are Paraguayan cooperatives and 3 are international

²⁴ Financial regulation throughout Latin America specifies that regulated financial entities must be set up as corporations. With the emergence of financial cooperatives, the category of cooperatives that are also corporations emerged. In the region’s insurance sector, there are several cases in addition to Tajy. These are Seguros Futuro in El Salvador, Equidad Seguros in Colombia, La Equidad Seguros in Honduras, Seguros Columna in Guatemala, and Sancor in Argentina.

shareholders (All Nations,²⁵ United Kingdom; Cooperativa de Seguros Múltiples, Puerto Rico; and Grupo Asegurador La Segunda, Argentina), which have made capital contributions of over US\$4.5 million as of the close of the 2012/2013 fiscal year. Tajy has a large network of reinsurers, both for agricultural insurance and other assets. Its brokers are Willis and AON, two of the largest brokers in the world. It works with the following reinsurers: Reaseguradora Patria, Navigators, Shelter Insurance, The Co-operators, UNIPOL Assicurazioni, AAC,²⁶ Cooperativa de Seguros Múltiples de Puerto Rico, TransRe, SCOR, Liberty Syndicates, IRB Brasil Re, Partner Re, Aspen Insurance, and Grupo Asegurador La Segunda.

- 5.2 Tajy specializes in life and assets insurance. As part of its life insurance line, it offers group life insurance for employees and workers, group debt cancellation, and family protection. As part of its assets insurance line, it offers personal accident, automobile, fire, and other miscellaneous insurance, such as surety, civil liability, shipping, and agricultural insurance. Like the other insurers in Paraguay, its services are mainly oriented towards large farmers, using indemnity insurance, as opposed to a parametric model.
- 5.3 Tajy is a small insurance firm, holding 2.75% of the total assets of the insurance sector in Paraguay, which consists of 35 firms reporting total assets of US\$458 million as of the close of the 2013 fiscal year and total direct premiums of US\$269 million, of which US\$15.1 million (5.6%) were generated by Tajy. Between 2010 and 2013, the firm's assets grew by 173%, from US\$4.6 million to US\$12.6 million. In the same period, premiums received increased from US\$4.9 million to US\$15.1 million. Tajy has a strong and growing business in the agriculture sector. As of end-2013, this sector accounted for 29.5% of its premiums, an increase of 56% in premiums received for this type of insurance. The company's performance in the agriculture sector was disadvantageous at end-2012 following a severe drought that year, which led to claims payouts on the order of US\$9.1 million, 170% more than in the 2011 fiscal period. Yet, despite the unusually large claims payout in the agriculture sector, the company remained profitable in 2012 (18% return on equity and 7% return on assets). As of end-2013, its earnings stood at US\$1,625,474, and its return ratios increased significantly.
- 5.4 The company's main financial indicators are as follows:²⁷

²⁵ Allnations is the capital fund created by the International Cooperative and Mutual Insurance Federation to support cooperatives.

²⁶ AmCOMP Assurance Corporation, a Florida-based company.

²⁷ Team calculations based on Tajy's financial statements, prudential indicators from the National Association of Insurance Commissioners (NAIC), and general information on the industry obtained from the Central Bank of Paraguay.

Financial indicators	2011	Weighted industry average	2012	Weighted industry average	2013	Weighted industry average
Return on equity	17%	20%	18%	30%	26%	27%
Return on assets	6%	n/a	7%	n/a	13%	n/a
Gross risk rate ²⁸	349%	n/a	269%	n/a	243%	n/a
Net risk rate ²⁹	257%	n/a	211%	n/a	184%	n/a
Net claims rate	43%	43%	44%	42%	40%	40%
Operating expenses / premiums earned	47%	41%	48%	42%	48%	43%
Composite indicator ³⁰	79%	n/a	82%	n/a	79%	n/a

5.5 **Execution.** Tajy will establish a project coordination unit along with the structural elements needed to execute project activities and manage project resources effectively and efficiently. It will also deliver status reports on implementation of the project. Details on the structure of the executing unit and the requirements for the project status reports can be found in Annex VII in the technical files for this operation.

VI. PROJECT RISKS

6.1 During the analysis mission, the MIF technical team, working together with the agricultural technical team at Tajy, identified the following risks facing the project that may impede its implementation and thus achievement of its proposed objectives.

Risk	Mitigating factor
Occurrence of an extreme climate variation that makes the project unsustainable for the insurance company	For this potential risk, the mitigating factor is the knowledge that in such cases, governments typically support the affected communities, often drawing on international resources.
The index is constructed using incomplete data and thus the index and any eventual damage are poorly correlated.	To mitigate this risk, the project calls for two years of climate- and crop-specific data to be collected and fine-tuned, plus one year for a pilot phase.

²⁸ This indicator simulates a high credit risk scenario in which the company would have to assume the risk associated with 100% of its premiums written, even when it has ceded a portion of them. The warning limit suggested by NAIC is 900%.

²⁹ This indicator is calculated in the same way as the gross rate, but taking into account only the premiums retained as a proportion of technical assets, i.e., it is the net figure after premiums are ceded. The upper limit established by NAIC is 300%.

³⁰ Given a premium, the expectation is that the costs associated with claims, fees, and expenses should not exceed the income generated by the premium, taking into account the financial return generated from investing it, **which means that this rate should not exceed 100%.**

Risk	Mitigating factor
There is little interest on the part of reinsurers to assume part of the risk against which the project executing agency is providing insurance.	Tajy has 15 reinsurers, of which 7 are international firms that specialize in agricultural reinsurance. In addition, the project calls for workshops and information events for all stakeholders on the project, the product, and its scope.
Small farmers may not have a good understanding of the insurance coverage, which will be tied to a predetermined climate scenario.	Experience in other regions has shown that the parametric product is hard to sell and to explain. Accordingly, the project includes plans for a program to train staff at the cooperatives so they, in turn, can provide financial training and education to the members of the cooperatives.
Farmers may fail to apply the best farming techniques to their crop, and the claims rate may be higher than expected, or the insurance product may not compensate the farmers due to poor crop management and thus the product will not gain acceptance among the beneficiary population.	The Tajy team and FECOPROD will be reviewing the cultural practices of the members of the cooperatives through a program financed by the project that will provide training on agricultural risk management and climate change adaptation.

VII. SOCIAL AND ENVIRONMENTAL IMPACTS

- 7.1 The project was submitted to the corresponding review process established by ESR and was approved and classified as a category “C” operation.

VIII. ATTAINMENT OF MILESTONES AND SPECIAL FIDUCIARY ARRANGEMENTS

- 8.1 **Results-based disbursements and fiduciary arrangements.** The executing agency will commit to the standard MIF arrangements regarding results-based disbursements, procurement, and financial management, as specified in Annex VIII, as well as the following special arrangements specific to this operation.

IX. ACCESS TO INFORMATION AND INTELLECTUAL PROPERTY

- 9.1 **Access to information.** This document does not contain confidential information relating to one or more of the 10 exceptions of the Access to Information Policy and, therefore, may be disclosed to external Bank audiences.
- 9.2 **Intellectual property.** All knowledge and communication products, as well as other materials produced during execution of the project, are the property of the IDB/MIF. However, the executing agency may request authorization to use and disseminate these products, in view of its commitment to make them available to the public and to promote the transfer of knowledge to other interested institutions.