

PROGRAM FOR MODERNIZATION AND DIVERSIFICATION OF SMALL-SCALE FARMING

(PR-0084)

EXECUTIVE SUMMARY

Borrower:	Republic of Paraguay	
Executing agency:	Ministry of Agriculture (MAG)	
Amount and source:	IDB: (OC)	US\$ 10,000,000
	Local:	US\$ 2,500,000
	Total:	US\$ 12,500,000
Financial terms and conditions:	Amortization period:	25 years
	Grace period:	5 years
	Disbursement period:	5 years
	Interest rate:	variable
	Inspection and supervision:	1%
	Credit fee:	0.75%
	Currency:	currency pool
Objectives:	<p>The overall objective of the program is to increase the level and stability of income for participants in the fruit and vegetable chain by: (i) consolidating private centers to provide marketing services to producers to help them market their fruit and vegetable products more efficiently and effectively; and (ii) promoting the production of fruits and vegetables that meet the requirements of different markets.</p>	
Description:	<p>Program design was based on developing and executing CPSC business plans that will help farmers market their fruit and vegetable products competitively. To implement the business plans, three project components are to be executed:</p> <ol style="list-style-type: none"> a. Technology development (US\$5.95 million). This component includes activities and investments aimed at transforming the technology used in the fruit and vegetable production chain, through technical assistance, training, validation and dissemination of technology and marketing. 	

- b. **Investment in infrastructure** (US\$2.55 million). Given the importance of the demonstration effect in the dissemination of new production systems, this component includes nonreimbursable assistance for farmers investing in half shade and irrigation facilities and in the collective production infrastructure for groups of at least five small farmers to enhance operation of their irrigation systems.
- c. **Institutional support** (US\$1.76 million). This component consists of specific training, activities, consulting services and the provision of laboratory equipment for government agencies providing technical assistance for the implementation of business plan activities considered crucial for exports and for increasing competitiveness on both domestic and foreign markets. The government agencies in question are the National Institute of Technology and Standardization (INTN), which is responsible for agroindustrial product quality control and standardization; the Ministry of Agriculture (MAG), through its Plant Protection Directorate (DDV), Marketing Directorate (DC), and Seed Directorate (DISE); and the Ministry of Foreign Affairs (MRE), which supports private sector efforts to open up new business opportunities, through the Export and Investment Promotion Office (PROPARAGUAY). In addition, computer equipment will be purchased, a consulting firm hired, and training provided to strengthen the Planning Directorate (DGP) of the MAG for program monitoring.

**The Bank's
country and
sector strategy:**

The Bank's strategy for Paraguay focuses on five areas: (i) the financial sector, with a view to enhancing system performance and supporting the development of capital markets; (ii) reform of the State, in order to increase its efficiency in delivering public services and strengthen governability; (iii) modernization of the productive apparatus, in order to boost efficiency in the economy; (iv) support for social sector development; and (v) assistance for rural areas, in order to reduce poverty and improve living standards for the population, particularly the poor.

The proposed program is consistent with the Bank's strategy with regard to support for rural areas with a view to reducing poverty and improving the standard of living of the population since it promotes modernization and diversification of small farming, and marketing of small farm production, which should help raise income among small farmers in the fruit and vegetable subsector and consequently reduce poverty in rural areas.

Environmental and social review:	The program will have a positive environmental impact; including improved use of water, fertilizers, and pesticides at the farm level. No significant adverse environmental impact is expected. The program includes mechanisms to evaluate, minimize, and mitigate the minor, short-term adverse environmental impact associated with the investments. An environmental monitoring and follow-up component will be built into program monitoring and follow-up.
Benefits:	A new approach will be adopted for the production and marketing of small farmer produce and its incorporation into a commercial fruit and vegetable chain. The CPSC will help collect a large enough volume of products to gain competitive access to markets and make it easier for the small farmers to obtain technical assistance services. This will raise the incomes of the participants in the chain and render small farms economically viable. The production of higher quality produce in marketable quantities will in turn generate foreign exchange for Paraguay through exports or import substitution.
Risks:	<p>Delays in procurement of the goods and services for the program. The Ministry of Agriculture has in the past experienced considerable delays in the award of construction, contracts and the procurement of goods, and consulting services, which has had a negative impact on program execution. Accordingly, and as with other agricultural projects in Paraguay, an agreement will be entered into with the Inter-American Institute for Cooperation on Agriculture (IICA), under which the IICA will procure the goods and services needed for the program.</p> <p>Possible fluctuations in the demand for products (varieties) and in medium- and long-term prices. This risk will be mitigated by hiring an international firm specializing in fruit and vegetable marketing to support the program execution. The firm will identify market and price trends so that farmers can make adjustments and maximize their profits. In addition, the business plans incorporate the findings of previously conducted market studies.</p>
Special contractual conditions:	<p>a. Prior to first disbursement, the borrower must demonstrate that it has: (i) appointed the program director and hired the technical team to assist the program executing unit (paragraphs 3.2 and 3.3); (ii) implemented the Operating Regulations (paragraph 3.9); (iii) entered into an agreement with IICA for IICA to procure the goods and services for the program and administer the program resources (paragraph 3.6); and (iv) submitted the annual work plan for the first year of program execution (paragraph 3.36).</p>

- b. Within six months after the effective date of the loan contract, the borrower must demonstrate that it has: (i) hired the necessary staff for the DGP to carry out program monitoring; and (ii) hired the consulting services to help strengthen the DGP (paragraph 3.7).
- c. Agreements must be signed between PROPARAGUAY, the National Institute of Technology and Standardization (INTN), and the MAG so that PROPARAGUAY and the INTN can participate in the program (paragraph 3.29).

Additional clauses will be agreed upon to ensure mid-term reviews of program execution 18 months and 40 months after the effective date of the loan contract, in order to verify progress achieved (paragraph 3.38).

Poverty-targeting and social sector classification:

This operation qualifies as a project promoting social equity, as described in the key objectives for Bank activities set forth in the Report on the Eighth General Increase in Resources (document AB-1704).

Exceptions to Bank policy:

See procurement section below.

Procurement:

The Bank's current policies will apply for the procurement of goods and the awarding of contracts for consulting services to be financed with program resources. Whenever IDB funds are used, the thresholds above which international competitive bidding will be required will be US\$250,000 for purchase of goods and US\$200,000 for the hiring of consulting services. It is recommended that an exception be made to the open competition procedures be allowed so that Inter-American Institute for Cooperation on Agriculture (IICA) can be hired directly (paragraphs 3.5 and 3.6). The IICA will carry out all procurement of goods and services for the program and will administer the program resources, according to Bank procedures. This exception meets the requirements set forth in section GS-403 of the Procurement Manual.

I. FRAME OF REFERENCE

A. General

- 1.1 Paraguay is a landlocked country with a total area of 408,000 square kilometers and a population of 5 million. Almost half the population still lives in rural areas. The climate is tropical and semitropical, with annual rainfall ranging from 1,700mm in the eastern part of the country to 400mm in the west. Average annual temperatures range between 21 degrees and 25 degrees centigrade. These geographical characteristics mean that Paraguay is able to produce some products for Southern Cone markets at times when there is a shortage of local output.

B. Agriculture sector

- 1.2 The agriculture sector is a vital part of Paraguay's economy: it produces almost all the staples consumed in the country, employs approximately 35% of the economically active population, and accounts for 27% of gross domestic product (GDP). Unprocessed and processed agricultural products together account for almost 90% of exports. This sector therefore plays a key part in the well-being of most of the population.
- 1.3 Until the late 1980s, the agriculture sector's moderate growth was based on expanding the land area being used for farming, with rapid deforestation and the colonization of State-owned land, supported by considerable State intervention. That expansion was also based on the introduction of new crops, such as soybeans and wheat, which have become increasingly important over the past three decades thanks to the use of more advanced production technology and now constitute Paraguay's principal exports. Between them, these two products accounted for between 48% and 52% of the total value of exports in the 1990-1998 period.
- 1.4 Family farms or small farms are a major segment in terms of agricultural production, generating approximately 33% of the gross value of the sector's output and producing most of the staples for domestic consumption (76% of the cassava, 75% of the beans, 58% of the corn, and close to 78% of the cotton). Small farmers achieve those percentages despite their low levels of productivity due to the lack of advanced technology and the lack of an effective system for production support services.
- 1.5 Paraguay's small farmers typically: (i) farm less than 20 hectares of land; (ii) have only rudimentary technology; (iii) use mainly family labor; and (iv) produce most of the food they consume. According to the most recent census (1991), there were 247,600 small farms with a population of about 1.3 million, equivalent to 67% of the rural population of Paraguay or 33% of the total population. These figures highlight the social and economic importance of this segment of society.

- 1.6 Stagnating productivity of the principal small farm crops (cotton, beans, cassava, and peanuts) over the past decade has widened the already significant gap in the living conditions of the urban and the rural population. According to a study conducted in 1993, 73% of all families in the lowest deciles of the income distribution pyramid lived in rural areas. Poverty rates are lower in areas with more diversified economies, such as the central part of the country, and in border areas with more profitable crops, such as soybeans and corn.
- 1.7 In this context, product diversification plays a key role in reducing climate and market risks for small farmers and in raising their family incomes. At the same time, the existing land-ownership structure based on small properties limits the range of feasible forms of diversification. Fruit and vegetable growing is, however, a viable alternative since: (i) it does not require vast tracts of land and allows for more intensive use of small properties; (ii) it is also intensive in its use of the family labor available; (iii) fruits and vegetables have a higher value-added on the market. Moreover, there is an unmet demand for fruits and vegetables in the country, in addition to huge export potential for certain products in regional, European, and North American markets.

C. The fruit and vegetables subsector

- 1.8 Although Paraguay has high quality land, the right kind of climate, and cheap energy and labor, local production only covers part of the fruit and vegetables consumed by the population. To satisfy demand, the country imports unprocessed and processed produce from several countries, mainly from MERCOSUR members. Registered imports of such products totaled US\$14.9 million in 1997. The principal imports are: potatoes (90%), onions (80%), garlic (70%), peppers (30%), bananas, and dessert grapes. Paraguayan vegetable output is highly seasonal, with supply peaking in the winter and fall, and shortages in summer. One of the reasons for this is a lack of varieties resistant to summer conditions, along with a lack of irrigation and shade systems on the farms. Fruit production suffers from the same problems and the fruit supply is also erratic. Both vegetables and fruit are, generally speaking, produced using traditional methods, with little technology, which results in low quality produce.
- 1.9 Registered exports of unprocessed and processed fruit and vegetables totaled US\$7.9 million in 1997. Such exports take place when supply is abundant in the winter and consist of a handful of products, such as tomatoes and sweet potatoes. Nevertheless, a study funded under ATN/CP-5460-PR¹ reveal great market potential for such fruits and vegetables as: bananas, tomatoes, eggplants, zucchini, pineapple, asparagus, peppers, and artichokes. The study identified several cooperatives and a few small agroindustrial enterprises keen interested in taking

¹ Assessment of the export potential for Paraguay's nontraditional agricultural products, Geomar, 1998 (ATN/CP-5640-PR).

part in a technical-assistance program to improve the production and marketing of their products.

- 1.10 **Research.** To date, with the exception of cotton, which is the main cash crop for small farmers, agricultural research in Paraguay has assigned low priority to generating new agricultural techniques to improve the production, quality, and productivity of goods produced by small farmers. The main barriers to generating and adapting technology are the lack of: (i) a policy giving priority to applied research for agricultural diversification; (ii) coordination between research and technical-assistance activities; (iii) a system for transferring technology to extension workers and farmers; and (iv) adequate research funding.
- 1.11 **Marketing.** Fruits and vegetables are poorly marketed in Paraguay, with the result that local farmers sell less than they could. The main problems here are: (i) the lack of official standards for product classification and packaging; (ii) poor quality packaging, resulting in poor presentation and product deterioration; (iii) the virtual lack of collection organizations providing support services to small farmers, who currently depend for sales on truck driver intermediaries who lack the necessary infrastructure; (iv) insufficient refrigeration capacity to preserve fruit and vegetables; and (v) the lack of a system providing up-to-date information on international markets for exports.
- 1.12 **Deficient plant health inspection and quality control.** Plant health inspection in Paraguay is carried out by the Ministry of Agriculture's Plant Protection Directorate (DDV), which has no policy on training and professional development for its technical staff to ensure that they respond appropriately to new and changing conditions affecting both products and market requirements. It has little access to up-to-date information and it also lacks the necessary means of communication. The shortage of budget resources and legal restrictions on its raising and using its own funds to improve services mean that plant health controls continue to be deficient, making it difficult to achieve the standards required by importing countries. Moreover, there are no laboratories in Paraguay equipped to carry out the agroindustrial product quality controls that importing countries demand. Part of the program to support transformation of the agriculture sector (PR-0120), currently being prepared, will address these shortcomings in plant health.
- 1.13 **Seed quality.** The lack of a system for generating and adapting technology and the incipient development of technology for fruit and vegetable growing are also reflected in a lack of suitable genetic material adapted to local conditions. Locally produced seeds lack point of origin and quality controls. Farmers must import high-quality seeds from neighboring countries, or else purchase seeds locally with no guarantee of quality.
- 1.14 **Credit.** The Government of Paraguay has received various bilateral and multilateral loans to finance the agriculture sector (Japan Bank for International Cooperation

(JBIC), formerly OECF; Taipei, China; IFAD; and IDB). These funds reach farmers mainly through the State banking system. In the agricultural sector, the State banks are: (i) the Small Farmer Development Fund [Fondo de Desarrollo Campesino] (FDC), which operates as a second-tier bank for small farmers; (ii) the National Development Bank [Banco Nacional de Fomento] (BNF); and (iii) the Agricultural Development Bank [Crédito Agrícola de Habitación] (CAH). The funds in this system are used to finance crops and land purchases.

- 1.15 It should be noted that the State banking system involves excessive number of institutions handling the funds provided either by the government itself or by bilateral and multilateral loans. With IDB assistance, the Government of Paraguay is currently working on a proposal to consolidate government lending institutions into a single bank, in order to increase operating efficiency, and recently sent the National Congress a bill on this topic.
- 1.16 **Shortcomings in technical-assistance services.** State agricultural extension services and the technical assistance provided by the Ministry of Agriculture suffer from severe structural limitations, in terms of methodology, quality, and coverage. Strategic program planning is weak, operating funds are scarce, and the training received by most of the extension workers is insufficient and out of date. The monitoring and supervision system is inadequate, hampering the achievement of objectives and goals. According to the latest census data, only 11% of Paraguayan small farmers receive technical assistance from the Ministry of Agriculture and those that do find that it consists of isolated, scattered actions with no major impact on productivity or on improvements in the quality of small farm production.
- 1.17 In 1997, Paraguay launched, a pilot program with Bank support, providing technical assistance by hiring firms and NGO as outsourced technical units (UTTs). Currently, the UTTs are working with close to 2,000 farmers in the central area of the country with satisfactory results. Recently, also with Bank support and as part of an effort to decentralize and improve extension services on a very small scale, the Ministry of Agriculture initiated a new attempt to share the costs of technical assistance with organized groups of farmers. Under this scheme, the Ministry of Agriculture provides technical staff and pays their wages, while the farmers cover other costs, such as transportation and the purchase of the necessary materials.

1. Activities in the fruit and vegetable subsector

- 1.18 The government objective is to develop agricultural production that meets the quality standards required by the markets, while at the same time helping farmer organizations to improve product marketing. To achieve this objective, the government designed a conceptual framework to enhance the production and sales of fruit and vegetables produced by small farmers through private marketing service units (CPSCs). The units will make it possible to achieve the volumes needed for better product placement on the markets and to improve access by farmers to

technical-assistance services. The units will be private commercial corporations formed with the participation of farmer committees, agricultural and multipurpose cooperatives, small and medium-sized agroindustrial enterprises, and possibly other private investors. In line with this strategy, the proposed project will adopt this approach as a pilot scheme and organize a minimum number of marketing service units to promote high-quality production and help in marketing it.

D. The Bank's country and sector strategy

- 1.19 The Bank's action focuses on five strategic areas: (i) the financial sector, to contribute to improved system operations and support the development of capital markets; (ii) reform of the State, to increase its efficiency in delivering public services and strengthen governance; (iii) modernization of the productive apparatus, to promote economic efficiency; (iv) support for the social sectors, to promote their development; and (v) support for rural areas, to reduce poverty and improve living standards for the population, particularly the poor.
- 1.20 For agriculture to continue to be the driving force in the Paraguayan economy, a series of short-, medium-, and long-term measures have to be taken so that the private sector can improve its competitiveness both domestically and in the Southern Cone Common Market (MERCOSUR) region. With that in mind, since 1993 the Bank has been discussing with Paraguay the measures necessary to improve competitiveness, which would imply structural changes in sector policy and also involve a reform of the institutional apparatus in the Ministry of Agriculture. However, the political situation in the country has prevented the respective authorities from approving the proposed measures.
- 1.21 Given the constraints within which the reforms must be implemented, the Bank has developed a strategy which allows it, for the time being, to continue supporting the sector with projects designed to raise small farmer income, such as the project for consolidation of rural settlements and the program to support the development of small cotton farms (PRODESAL), while at the same time working on projects that have components which will enable a more advanced group of farmers to gain access to new markets and thereby raise their incomes. Under this approach, certain services and investments can be financed, to improve the lot of those farmers without requiring structural changes in the sector. This strategy calls for strong participation by the private sector in delivering services that can be outsourced or privatized, with the Ministry of Agriculture in charge only of hiring and supervising the outsourced services.
- 1.22 The proposed program is in line with the Bank's general strategic guidelines with regard to support for rural areas to reduce poverty and improve the standard of living of the population, because modernization and diversification of small farming and incorporation of agricultural production into the market economy will help raise small farmer incomes. At the same time, it represents progress over the

previous programs in that it includes private-sector provision of marketing services and allows for increasing private-sector participation in the agricultural development of the country.

- 1.23 Over the medium and long terms, the Bank will continue its dialogue with the Paraguayan authorities regarding the following aspects of the country's agricultural sector development: (i) assigning priority to land titling and promoting the concept of rational use of rural land; (ii) promoting an increase in the productive capacity of the agricultural sector through the diversification and expansion of crop-farming and the promotion of livestock-farming, in response to market opportunities; (iii) emphasizing the need to preserve natural resources and protect the environment through programs for natural resource preservation, conservation, and restoration and by educating the public of these issues; (iv) guaranteeing the availability of, and access to, credit for farmers; (v) improving information on marketing opportunities for agricultural products through research on foreign market alternatives; (vi) assigning priority to technology adaptation, dissemination, and transfer, by facilitating participation by users and supporting institutions, such as nongovernmental organizations; and (vii) updating the curriculum used in agriculture courses.

E. Experience of the Bank and other international organizations in the sector

- 1.24 To date, the Bank has financed projects in this sector totaling approximately US\$221 million. One of the projects currently under way is the rural settlements consolidation project loans (694/OC-PR and 891/SF-PR), which began in late 1993. Its objective is to develop the outsourced technical assistance model, which is being tested for the first time in Paraguay. The project is 95% complete and is expected to conclude in June 2000. Startup was very slow due to complex bureaucratic procedures for the procurement of services. The local road improvement component has been completed, making it easier to get products to markets. Health posts, primary schools, and water supply systems have been upgraded and expanded. With technical and commercial support from the outsourced technical units, small farmers began to organize in 10 departments for the purpose of marketing products for which there is market demand. In addition, a training program has been carried out on the preparation, management, and execution of farmer support programs for both Ministry of Agriculture staff and independent professionals and technical personnel. Also under way is a component for productive social investment projects in rural areas, which has benefited 200 farmer committees. The main feature of this component is that it finances the facilities needed to process, improve the quality of, increase the value added of, and market primary-sector products, once a financial, technical, and commercial feasibility study has been conducted.
- 1.25 In June 1998, the contract for loan 1109/OC-PR was signed for a project to support the development of small cotton farms (PRODESAL). It was ratified in November

1998. The conditions precedent to the first disbursement were fulfilled in August 1999. PRODESAL is being executed using the outsourced commercial and technical assistance model, originally developed for the rural settlements consolidation project. To avert the problems encountered during implementation of the rural settlement project due to the protracted, complex bureaucratic procedures for the procurement of services, an agreement was signed with the Inter-American Institute for Cooperation on Agriculture (IICA) for the IICA to carry out all the bidding procedures for the procurement of the goods and services required by PRODESAL.

- 1.26 Apart from the Bank, the principal international organizations contributing to the development of the sector are: the World Bank, with a US\$50 million loan to finance a natural resource management program focusing on microwatershed management in the departments of Alto Paraná and Itapúa Norte; the Government of Japan, with a US\$116 million JBIC loan for the agriculture sector, 70% of which is earmarked for agricultural credit, and a technical cooperation grant from JICA for US\$1 million a year to improve the technology used in vegetable farming; the International Fund for Agricultural Development (IFAD), with two loans totaling US\$22.1 million for small farmer credit programs; and the Gesellschaft fuer Technische Zusammenarbeit [German cooperation agency] (GTZ), with a soil conservation and management program.

II. THE PROGRAM

A. Objectives

- 2.1 The overall objective of the program is to increase the level and stability of income of participants in the fruit and vegetable chain. Its specific objectives are to: (i) help consolidate private centers to provide marketing services to producers to help them market their fruit and vegetable products more efficiently and effectively; and (ii) promote the production of fruit and vegetable products that meet the requirements of different markets.

B. Goals

- 2.2 To achieve its objectives, the program has set itself the following goals: (i) strengthen three commercial corporations established as private marketing services units (CPSCs), which will organize marketing and assistance for farmers participating in the agrifood chain; (ii) increase the area devoted to fruit and vegetable production by 950 hectares; (iii) install 330 hectares of irrigation and half-shade facilities for fruit and vegetable production; (iv) increase exports of fruit and vegetables by almost US\$3.2 million a year, starting in the fifth year of program execution; and (v) increase the share of Paraguayan fruit and vegetable products in the fresh food market in Asunción from 78% to 85%.

C. Description of the program

- 2.3 In order to increase small farmer income, exports, and the domestic share of the fruit and vegetable market, the program will support a change in the production and marketing paradigm. Instead of financing increases in production that will be sold as favorably as possible, the program supports the establishment of an integrated marketing system managed by private marketing services units. Each CPSC will prepare a business plan based on a market study that will determine the quantity and quality of the fruit and vegetables that can be sold and will analyze the capacity of the farmers to produce them. The business plan will specify all the steps that need to be taken to attain the quantity and quality of the production required, including the support that small farmers will need. The CPSC will enter into production contracts with cooperatives, farmer organizations, individual farmers, or other partners involved in the production, processing, and marketing of fruit and vegetable products. The program will finance the measures needed to implement the plans of three pioneer CPSCs.
- 2.4 To implement the business plans, three principal components are to be executed: technological development, investments in infrastructure, and institutional support.

1. Technological development (US\$5.95 million)

- 2.5 This component includes activities and investments designed to bring about a technological transformation of the fruit and vegetable chain and is subdivided into three subcomponents: technical assistance, training, and technology validation and transfer.

a. Technical assistance (US\$4.59 million)

- 2.6 The technical assistance subcomponent will consist of short- and long-term activities that will include a flexible package of vigorous measures closely related to demand for changes in technology, production, processing, marketing, and management by the various players in the agroindustrial chain, in order for them to ensure that their products remain competitive.
- 2.7 The main areas to be financed are: (i) *agriculture*: production and post-harvest processes carried out through the outsourced technical units and specific consulting services for soil conservation, pest control, use of pesticides and fertilizers, irrigation and semi-shade systems, business negotiations, and such other topics as may be needed to prepare the business plans; (ii) *management*: financial support for the hiring of CPSC managers; (iii) *fruit and vegetable marketing*: hiring a specialized international consulting firm to support the executing unit in its management of the fruit and vegetable production chain connected with international trade; (iv) *quality certification*: hiring the specialized technical services of local or international public and private institutions, which would be responsible for issuing the quality certificates required by importers in other countries.

b. Training (US\$610,000)

- 2.8 Under this subcomponent, financing will be provided for training the human resources involved in the various phases of the production, processing, transformation, and marketing of fruit and vegetable products, technology transfer and quality control. The support will take the form of participation by farmers and other players in the production chain in courses, workshops, seminars, observation tours, and internships.

c. Validation, dissemination, and promotion (US\$750,000)

- 2.9 This subcomponent will finance three types of activity: (i) hiring technology validation services for the products identified by the CPSC; (ii) disseminating the technologies validated under the program to farmers who are members of the CPSC and nonmembers, by preparing technical information and commercial publicity materials and by providing training and retraining in the new technologies for the specialists in charge of providing assistance to farmers; and (iii) promoting products

in new markets, through agricultural fairs and similar events in countries of the region or other international markets previously identified as promising.

2. Investments in infrastructure (US\$2.55 million)

2.10 Given the importance of the demonstration effect in disseminating new production systems and the need to have a sufficient quantity of products for operation of the processing plants, during the first two years of execution, the program will compensate farmers for investments they make in both collective productive infrastructure and productive infrastructure on their individual farms.

- a. **Collective productive infrastructure.** Collective investments for groups of at least five farmers organized in production committees will qualify for nonreimbursable financial support covering up to 50% of their joint investment, once that investment has been carried out. The investment covers electric wiring, water catchment, water tanks, and the laying of the mains conduits to which the facilities installed on each farm's land will have to be connected.
- b. **Productive infrastructure on individual farms.** Nonreimbursable financing will be granted for up to 35% of the cost of installing individual farm irrigation and shade facilities on up to one-third of a hectare, once that investment has been carried out. Payment will be made on two counts: no more than 25% for the risks associated with technological change; and no more than 10% for institutional innovation in the form of farmer shareholding in the CPSC.

3. Institutional support (US\$1.76 million)

2.11 This component will finance specific technical support and training activities for government agencies in quality control and marketing, both of which are considered crucial for exports and for improving competitiveness in both domestic and external markets, and monitoring.

- a. **Agroindustrial quality control of products and processes.** This subcomponent involves procuring specialized equipment and training National Institute of Technology and Standardization (INTN) staff, to monitor chemical residues in products marketed by the CPSC.
- b. **Health standardization and quality control of plant.** This subcomponent consists of bringing quality control and plant health into line with standards agreed upon in MERCOSUR. The Plant Protection Directorate (DDV) and Seed Directorate (DISE) in the Ministry of Agriculture will be involved. This subcomponent also includes Ministry of Agriculture support for the DDV in dissemination and enforcement of the standards, as well as for quality control of the inputs used for production, including technical consulting and training services. The Ministry will thus be able to certify the genetic identity and plant health status of those materials.

- c. **Marketing.** This subcomponent includes institutional strengthening (through advisory services and training) of the Marketing Directorate (DC) of the Ministry of Agriculture and the Export and Investment Promotion Office (PROPARAGUAY) with a view to supporting the private sector in developing new market opportunities. Also included is the development of systems for gathering market data; analysis and dissemination of that information; and coordination of Paraguay's participation in fairs, market-exploration trips, and business contacts.
- d. **Monitoring.** This subcomponent includes strengthening the Planning Directorate (DGP) in the Ministry of Agriculture so that it can monitor and evaluate program implementation and impact independently of the executing unit. It will cover the cost of purchasing computer equipment (US\$21,700) and DGP staff and operations for the program (per diem, fuel, etc.). It also includes DGP staff training and the hiring of a consulting firm to support implementation of the monitoring system and its initial operation (US\$190,100).

D. Cost of the program

- 2.12 The total cost of the program is estimated at US\$12.5 million. The following table breaks down costs by source of financing and investment category.

Table II-1
Program costs
(US\$ thousands)

Category of investment	IDB-OC	Local			Total	(%)
		GOP	Ben.	Total		
1. Management and Administration	834	259		259	1,093	8.7
1.1 Management	596	259		259	855	6.8
1.2 Contract management agency	238				238	1.9
2 Technical support	549				549	4.4
3. Direct costs	8,017	500	1,741	2,241	10,258	82.1
3.1 Technology development	4,762		1,190	1,190	5,952	47.6
3.2 Investment in infrastructure	2,000		551	551	2,551	20.4
3.3 Institutional support	1,255	500		500	1,755	14.1
4. Associated costs	500				500	4.0
4.1 Audit of the program	250				250	2.0
4.2 PPEF	250				250	2.0
5. Inspection and supervision	100				100	.8
Grand total	10,000	759	1,741	2,500	12,500	100.0
% by source	80%			20%	100%	

2.13 The main categories of investment are described below:

1. Management and administration (US\$1.09 million)

2.14 This item accounts for 8.7% of the total cost of the program and comprises the following investment categories:

- a. **Management** (US\$855,000). This category includes expenditures for the purchase of equipment for the executing unit (US\$29,000), additional staff (director, coordinator and administrative and financial expert) and operating expenses (per diem, fuels, etc.) for program management.
- b. **Contract management agency** (US\$238,000). This category covers expenditures for IICA's fees (equivalent to 3.25% of the costs it will be handling) for the procurement of the goods and services needed for the program.

2. Technical support (US\$549,000)

- 2.15 This item accounts for 4.4% of the total cost of the program and covers payment of the team of highly specialized experts in fruit and vegetable production, training, dissemination, and environmental protection that will assist the executing unit in evaluating and implementing the business plans, as well as in executing all the program components.

3. Direct costs (US\$10.26 million)

- 2.16 This item accounts for 82.1% of the total cost of the program and includes technology development, investment in infrastructure, and institutional support.
- a. **Technology development** (US\$5.95 million). Covers the cost of technical assistance, training, and technology validation and dissemination.
 - b. **Investment in infrastructure** (US\$2.55 million). Comprises nonreimbursable support for collective and individual investments in irrigation and semi-shade facilities.
 - c. **Institutional support** (US\$1.76 million). Consists of the purchase of laboratory equipment for the INTN and computer equipment for the DGP, the hiring of consulting services, and training in project monitoring, quality control, plant health control, and marketing.

4. Associated costs (US\$500,000)

- 2.17 This item accounts for 4% of the total cost of the program and comprises the following categories of investment:
- a. **Auditing** (US\$250,000). Covers the costs of paying a firm to audit the program.
 - b. **PPEF** (US\$250,000). Comprises the funds needed to complete amortization of loan 1229/OC-PR under PPEF credit line 04/OC-PR to be used to help the National Directorate for Project Coordination and Management (DINCAP) meet the conditions precedent to the first disbursement, including the establishment of the program executing unit and review of the business plans of the CPSC that will participate in the program.

E. Program Financing

- 2.18 The Bank will contribute US\$10 million to the Program, representing 80% of the total cost, a percentage below that indicated in the financing matrix for Paraguay. The Bank contribution will be from the Ordinary Capital and will be disbursed in foreign exchange in accordance with Bank policies. The local counterpart contribution, for an amount equivalent to US\$2.5 million or 20% of the total cost of

the program, will be provided by the Ministry of Agriculture (US\$759,000) and by the private-sector beneficiaries of the program (US\$1.74 million). It should be noted that the program would recognize as part of the local contribution only 34% of the actual amount (US\$5.1 million) to be put up by beneficiaries for the various program components.

- 2.19 The proposed loan would be subject to the following terms and conditions: (i) a variable interest rate; (ii) credit fee of 0.75% per year on undisbursed balances; (iii) inspection and supervision fee of 1%; (iv) a five-year disbursement period; (v) a five-year grace period; and (vi) a 25-year amortization period.

III. PROGRAM EXECUTION

A. Borrower and executing agency

- 3.1 The borrower will be the Republic of Paraguay, and the executing agency will be the Ministry of Agriculture (MAG), through its National Directorate for Project Coordination and Management (DINCAP), which was created in 1986 as a specialized unit to implement rural development projects.
- 3.2 The DINCAP, which will be the program executing unit, has experience executing projects financed by both the IDB and the World Bank. Nevertheless, given this program's particular characteristics, which will work directly in the private sector in activities for the production and marketing of fruit and vegetables for very demanding markets, its current technical capabilities will need to be enhanced by hiring professionals who are highly specialized in the production and marketing of fruit and vegetables. The team will include a technical coordinator with extensive international experience in project management; an expert in fruit and vegetable production; an expert in training and dissemination; an irrigation expert; and an environmental expert. The DINCAP will also hire a firm with international experience in marketing fruit and vegetable products and will enter into an agreement with the IICA for the procurement of goods and services. The DINCAP will also receive support from the following specialized offices of the MAG: DC, DDV, DISE, and DGP.
- 3.3 Appointment of the program director and the selection and hiring of the specialists according to the terms of reference approved by the Bank during its analysis mission will be a condition precedent to the first disbursement. In order to comply with this provision and other conditions precedent to the first disbursement, including review of the business plans, Project Preparation and Execution Facility (PPEF) funds will be used.

1. Functions of the executing agency

- 3.4 The executing unit's principal functions will be:
- a. **Technical management.** The technical functions will involve: (i) managing program execution with regard to the planning, oversight, monitoring, evaluation, approval, and authorization of IICA disbursements to finance the program projects, activities, and tasks; (ii) evaluating and approving the CPSC business plans; (iii) preparing the annual operating plan, which describes the program's activities, results, and budget for the year; (iv) promoting and assisting in the selection and hiring of consultants and consulting firms that will provide technical assistance; (v) overseeing implementation of projects, activities, and tasks delegated or outsourced to third parties; (vi) conducting systematic,

periodic reviews of the progress achieved in the program execution, of the goals attained and program impact on the fruit and vegetable sector; (vii) promoting and disseminating the services and activities offered under the program and the results achieved; (viii) supervising the evaluation of the program's environmental impact and any necessary mitigation measures; and (ix) promoting the participation and mainstreaming of women in the program, by coordinating activities with those of groups working with women in rural areas.

- b. **Administration and accounting.** Using existing structures, the executing unit will ensure financial administration of the program, including oversight and record-keeping of all program transactions requesting disbursements and accounting for expenditures, according to the Bank's disbursement procedures; and maintaining an adequate internal oversight system for accounting and administration of program resources.

2. IICA as supporting agency

- 3.5 Bearing in mind past experience with the rural settlements consolidation program, in which the local bureaucratic procedures (contracts for over US\$15,000 equivalent must be approved by the Office of the President) for hiring services took over a year, jeopardizing the achievement of the program objectives², the IICA would be hired directly to procure goods and services in accordance with the applicable Bank rules and procedures (Procurement Manual, section GS-403). The IICA will be responsible for bidding procedures, prequalification, preselection, and procurement of goods and specialized consulting services, including those of the outsourced technical units and for administration of the respective contracts. The IICA will also ensure technical supervision of technology validation and dissemination.
- 3.6 Among the advantages of having the IICA perform these services are its vast technical experience as an international organization supporting agricultural development; its administrative capacity and flexibility, and the experience it already has working in Paraguay. IICA's fee will be charged to the loan. An agreement based on a model agreed upon with the Bank must be signed by the Ministry of Agriculture and the IICA for administration of the program funds and the hiring of consulting services for the program as a condition precedent to disbursement of the loan. The agreement will stipulate that the Ministry of Agriculture will own copyright; that a special account will be opened in which the loan proceeds will be deposited, and that any interest accruing on that account may only be used for the program. IICA's principal functions are described in the program's Operating Regulations.

² Delays in hiring the services called for in the business plans could lead to the loss of a harvest season, with financial and economic consequences for the farmers and other participants in the fruit and vegetable chain.

3. Program monitoring

- 3.7 Given that the type of organization proposed in the program for marketing farm products is innovative in many respects for Paraguay, program execution will be monitored through the DGP in the Ministry of Agriculture. Within six months after the effective date of the loan contract, the executing agency must submit evidence that: (i) the DGP has the staff necessary to carry out its monitoring duties (a technical coordinator and experts in finance, information systems, statistics, and economics); and (ii) it has hired the consulting firm that will support the strengthening of the DGP. The firm will: (i) establish and launch the monitoring and evaluation system and train DGP staff through courses and seminars, within 18 months after being hired; and (ii) conduct technical audits of the system implemented to identify any necessary adjustments and organize refresher seminars for the technical staff, from month 18 to month 36. The DGP's primary responsibilities will be to: (i) compile the production, financial, socioeconomic, and environmental data and information necessary for measurement of the program impact; (ii) evaluate the quality of the technical and commercial assistance provided for the CPSC, for cooperatives that are members of the CPSC, and for individual farmers, including the organizational approach and strategy adopted and the effectiveness of the mechanisms for participation by beneficiaries, the training courses, and the technology validation and transfer projects; and (iii) to assess the effectiveness of the components for compensation for investments in infrastructure and for institutional support.

B. Status of the program preparation

- 3.8 The program calls for three business plans for the respective by the CPSC sponsored by the Del Norte (Concepción), Coronel Oviedo, and Nikkei cooperatives. Of these three, the Nikkei plan has been fully reviewed and found to meet the eligibility requirements set forth in the Operating Regulations. On the basis of a preliminary analysis, the Concepción and Coronel Oviedo plans appear to be feasible and they are currently being revised to optimize investment and production plans. A preliminary version of the Operating Regulations and the terms of reference for program consultants has been drafted.

C. Operating Regulations

- 3.9 The Operating Regulations that will govern program execution were tentatively agreed upon with the Bank. The final version of the Operating Regulations must be submitted to the Bank's satisfaction and must have entered into force as a condition precedent to the first disbursement of the proposed loan. The Regulations establish the eligibility criteria, the responsibilities of the respective parties, and the conditions under which beneficiaries may participate. The main features of the Operating Regulations are outlined below.

1. Eligibility criteria

a. CPSC eligibility

- 3.10 To participate in the program, the CPSC must be formally established as commercial corporations with unrestricted capital made up of contributions by cooperatives, producer organizations, individual producers, and other partners involved in the production, transformation, and marketing of fruit and vegetable products, and must meet the following requirements: (i) be legally established and registered in accordance with corporate law currently in force; (ii) have a structure and the capacity to efficiently market growing volumes of fruit and vegetable products in local and foreign markets; (iii) have a fruit and vegetable production and marketing strategy approved by the partners in the commercial corporation; (iv) cover all their operating and technical assistance costs over the long term and distribute any profits they might generate among the partners; (v) set quality standards for the products to be delivered by members; and (vi) provide production support services, such as technical assistance, training, and the development and introduction of new products, that could contribute to more efficient marketing of the products.

b. Producer eligibility

- 3.11 To qualify for participation in the program, the producers must: (i) belong to producer organizations linked through business plans to a CPSC; (ii) be current in their financial commitments; (iii) own no more than 20 hectares of property duly registered according to current legislation; and (iv) produce fruit or vegetables.

2. Business plans

a. Content

- 3.12 The CPSC will prepare business plans, which are projects based on a diagnostic assessment identifying all the actions and expenditures needed to cover production, processing, and marketing of fruit and vegetables for local and international markets. Investments under a business plan will be carried out in packages containing: (i) a strategic plan indicating the business rationale the products or product varieties selected and the markets targeted; (ii) an agricultural production program, detailing areas to be planted and projected output, together with supporting scientific background on the productivity and quality expected in the different items selected; (iii) documented commitments by the producers and the CPSC regarding delivery of products and services; (iv) projected farming, processing or transformation, and commercial costs, together with sales revenue estimates; (v) technical assistance and training needs for each phase of the farming and agroindustrial process; (vi) funds needed for investment in irrigation and semi-shade infrastructure on the land owned by farmers who are members of the

committees taking part in the program; (vii) funds required for investment in facilities and equipment for product processing and transformation; (viii) technological validation requirements for the items called for in the plan or to be included in subsequent years; (ix) a basic marketing plan for the production generated and business promotion needs; and (x) lists of suppliers of principal inputs, especially material of proven quality.

b. Financing of the business plans

- 3.13 Financing under the business plans consists of program resources and local counterpart funding provided by the beneficiaries. The sustainability of the activities and the model to be implemented under the program depend on the beneficiaries undertaking to cover their costs in order to gain access to the technical assistance and training. Currently, this is not the case in Paraguay, which is why the program incorporates a cofinancing arrangement that eventually be phased out so that these activities can be included in the cost structure as the CPSC market increasingly higher volumes of products and can absorb those costs. By the fifth year of execution of each component, the beneficiaries will be covering 100% of those costs.
- 3.14 For each activity and beneficiary, a fixed or gradually decreasing percentage has been established, depending on each beneficiary's ability to pay, as a way of encouraging participation in the technical assistance and training activities, while at the same time avoiding making such activities free of charge and establishing the practice among farmers and their organizations of using such services, which they currently do not do in Paraguay.
- 3.15 The financial support provided under the program for its various components will be granted on a nonreimbursable basis. The resources that the beneficiaries are to contribute as the counterpart funding for the program must be paid prior to startup of the activities for which financing is requested. The breakdown of the financing varies from one program component to another, as can be seen in the following :

Table III-1
Beneficiary contributions to cover the cost of services

Type of Services	Percentage participation for each year of the program				
	Year 1	Year 2	Year 3	Year 4	Year 5
Management support	20	40	60	80	100
Long-term technical assistance	5	20	40	60	100
Specific technical assistance	30	30	30	30	30
Producer training	20	20	20	20	20
Non-producer training	40	40	40	40	40
Validation and dissemination services, quality control and business promotion	10	10	10	10	10
Collective infrastructure	50	50	-	-	-
Infrastructure on individual farms	65	65	-	-	-

D. Execution mechanism

- 3.16 The CPSC will submit their business plans to the executing unit for its approval and financing. Once a plan has been approved, the CPSC will submit its annual program of activities, which will provide the basis for selection and hiring of the manager, the outsourced technical unit to support for CPSC, the short-term consultants, and the training and validation activities. Also under the plan, the CPSC and the producers will make the respective individual and collective infrastructure investments. The plans will be revised each year so that any necessary adjustments can be made. Although once the business plan has been approved, the producers and the CPSC will know the amount of transfers they will receive under the program, they will not have access to the funds until they have actually made the investment, in the case of infrastructure, or until they have deposited the amount they are due to pay as beneficiaries in a bank account opened by the executing unit, in the case of services. Through its specialists, the executing unit will supervise execution of the various program components. The main aspects of execution of the program components are described below:

1. Technological development

a. Technical assistance

- 3.17 Technical assistance is divided into four areas (agriculture, management, business, and quality certification). Its goal is to maintain and enhance the competitiveness of the different agents involved in the fruit and vegetable chain. For the first three areas of technical assistance, both long-term and specific consulting services will be provided, only specific services in the case of quality certification.

- 3.18 Once the business plans have been approved, prior to implementing them, the CPSC must hire a general manager to support administration and an outsourced technical unit to provide the technical assistance services to the producers who belong to the CPSC. The managers and outsourced technical units will be hired by the CPSC through international competitive bidding for a period of four years, subject to the results of annual performance evaluations. Both the executing unit and the IICA will provide support for the selection and hiring process. The managers must be professionals highly qualified in business administration, preferably with international experience.
- 3.19 The outsourced technical units must provide the producers with a technology package that will ensure an adequate level of productivity and quality in production systems. Emphasis will be placed on the use of irrigation and semi-shade systems, integrated pest management, the use of agricultural chemicals, crop rotation, and soil conservation. The outsourced technical unit suppliers must demonstrate that their field experts master both Spanish and Guaraní. The teams in the field must be coordinated by an expert in rural technology transfer in the field. To be able to attend to CPSC needs in terms of the quantity, quality, and range of products required, the outsourced technical units will prepare, with the participation of the beneficiaries, an annual technical assistance plan, specifying the inputs needed, training in special topics, etc.
- 3.20 This component also calls for hiring a firm with international experience in marketing fruit and vegetable products. The firm will be hired by IICA at the request of the executing unit through an international competitive bidding for a period of four years, subject to annual performance evaluations. The firm will send an expert in fruit and vegetable marketing to live in Paraguay for the duration of the contract. The firm will support the executing unit and the CPSC through its resident expert and its offices abroad in: (i) identifying business opportunities and new market openings; (ii) marketing, particularly for fresh and processed exports; (iii) identifying and meeting the quality and marketing standards of the different markets; and (iv) forecasting changes in demand (variety) and in the prices of the goods produced.
- 3.21 The consulting services for specific technical assistance will be hired by IICA at the request of the executing unit through national or international competitive bidding, depending on the degree of specialization required. The CPSC will submit a request to the executing unit for approval. The executing unit will draw up the terms of reference and budget for the consulting services required, indicating the counterpart portion to be paid by the CPSC, which will deposit that amount in the specified bank account before IICA selects and hires the consulting services.

b. Training

- 3.22 Training services for the program will be hired following the same procedures as those used to procure the consulting services for specific technical assistance described in the above paragraph.

c. Validation, dissemination, and promotion

- 3.23 Each year the executing unit will issue a call for proposals for the CPSC to submit technology validation, dissemination, and promotion projects, with the proper justification; implementation mechanisms, expected benefits, possible social and environmental impact, an itemized budget, and a schedule for physical and financial execution. Once a project is approved, the executing unit will sign a contract with its sponsor.

2. Investment in infrastructure

- 3.24 As indicated above, the program will provide nonreimbursable financial support during the first two years of program execution, to offset the risks taken by the producers when they adapt new technology for fruit and vegetables production with irrigation and semi-shade techniques. Eligible investments will be those carried out by producers for collective irrigation infrastructure (electric wiring, water catchment, water tanks, and the laying of mains pipe to which the facilities built on individual farms will be connected and irrigation and semi-shade facilities on individual farms. The financial incentive will amount to no more than 50% of the collective investment outlays, with a ceiling of US\$10,000 per producer committee composed of at least five farmers and up to 35% of individual farm investments in irrigation and semi-shade facilities, with a ceiling of one-third of a hectare per farmer.
- 3.25 In order to qualify for funds, a producer must: (i) belong to a production committee with at least five members; (ii) have at least two years experience growing fruit or vegetables; (iii) demonstrate that at least 50% of family income is from the fruit and vegetable business; (iv) be linked to a CPSC through a business plan; and (v) demonstrate that the investments have been made using his or her own funds or loans, but in no case using resources associated with grants from any source.
- 3.26 The executing unit will receive application's for the financial incentive throughout the year. Such applications be made using a standardized form and must specify: cost structure and sources of financing; name of the outsourced technical unit responsible for the technical assistance; production plan; investment management plan; mechanisms for operating the collective irrigation systems; and a statement of whether or not the applicant wishes to be a shareholder in the CPSC. The executing unit will evaluate the application, and, if it is approved, will inform the beneficiary of the terms and expenses recognized under the program, and give the farmer the

green light to go ahead with the investment works. Once the investments are completed, the executing unit will inspect them and verify the quality of the material used, whether the investments are operational, and the itemized costs incurred.

- 3.27 Once the investment carried out has been approved, the executing unit will reimburse the beneficiary for up to 25% of the recognized expenses, according to the following procedure:
- a. **Community investment.** The production committee will grant a power of attorney to a representative, authorizing him or her to receive the incentive offered under the program.
 - b. **Individual farm investment.** Farmers carrying out investments using their own funds will be reimbursed directly by the executing unit. Those who had banks or cooperatives finance their investments will receive a disbursement made out to the creditor they name.
- 3.28 The farmers who stated that they wished to become shareholders in the CPSC to which they are connected will receive up to an additional 10% for institutional innovation. This disbursement will be made directly to the CPSC, which will formally grant the farmer shareholder status.

3. Institutional support

- 3.29 This component consists of activities to strengthen government agencies in areas that are fundamental for exports and to improve competitiveness in domestic and external markets and strengthen the DGP in its monitoring of projects carried out by the MAG. The consulting services and training activities planned in this component must be indicated in the annual operating plan for the program to be drawn up by the executing unit. IICA will be in charge of procuring the goods and services required. The Ministry of Agriculture will sign an agreement with INTN and PROPARAGUAY, establishing the conditions under which each of those agencies will participate in the program before they may actually participate.

E. Procurement

- 3.30 IICA will be in charge of procuring goods and hiring consulting and technical assistance services for the program, according to the rules and procedures of the Bank, which will be part of the loan contract.
- 3.31 International competitive bidding will be required for the procurement of goods in the amount of US\$250,000 or more, and consulting services for US\$200,000 or more. The program does not include any financing for construction work. With these thresholds, 69% of the bidding to be held under the program will be

international. The procurement of goods and services will be grouped in packages as indicated in the procurement plan attached as Annex III-1.

F. Execution period and disbursement schedule

- 3.32 The program execution will be five years, since it is estimated that by the second year all the targeted farmers will have joined the program, to bring their fruit and vegetable production up to the quality standards required by the markets, for which they will need to receive at least four years of technical assistance.
- 3.33 The disbursement schedule for the program is shown in the table below. It is consistent with the Ministry of Agriculture's current execution capacity and the availability of local counterpart funds. It should be noted that by year 5, only a small part of the technical team will be working in the executing unit.

Table III-2
Disbursement schedule (in US\$ thousands)

Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total
IDB	2,281	3,853	1,911	1,665	290	10,000
LOCAL Total	453	928	469	383	267	2,500
Min. Ag.	151	152	152	152	152	759
Beneficiaries	302	776	317	231	115	1,741
Total	2,734	4,781	2,380	2,048	557	12,500
%	22%	38%	19%	16%	5%	100%

G. Disbursements and revolving fund

- 3.34 The Bank will advance 5% of the loan amount in the form of a revolving fund. These funds will be handled in a special bank account in the program's name, and semiannual reports on the status of these funds will be submitted with 60 days after the end of each six-month calendar. The project team recommends that only after the mid-term evaluation should the Bank consider whether or not an ex-post review should be conducted of the documentation supporting requests for disbursement.

H. Environmental concerns

- 3.35 The environment and social impact brief (ESIB) for the program was approved by the Committee on Environment and Social Impact (CESI) on February 5, 1999. The environmental impact assessment (EIA) was disclosed to the public on August 9 and sent to the Public Information Center (PIC) on August 17, 1999. The environmental summary for the program was approved by CESI on October 4 and forwarded to the PIC on October 18, 1999. Each component will address environmental concerns in both its design and its execution. Through its

environment expert, the executing unit will be responsible for evaluating and monitoring the environmental and social aspects of the program.

I. Program monitoring and evaluation

- 3.36 Program monitoring will be based on compliance with the annual work plans (AWPs) drawn up by the executing unit. These plans will focus on the annual investments called for in the business plans of each CPSC and the activities for institutional support and administration to be undertaken each year. They will include the activities, goals, investments, and actions of each CPSC, as well as consolidated data on investments in institutional support and administration. Beginning in the second year of program execution, the AWPs will be based on results obtained in previous years. Presentation of the revised AWP for the first year of execution will be a condition precedent to the first disbursement.
- 3.37 Supervision and monitoring of program execution will be carried out through the Bank's Country Office in Paraguay. The executing agency will submit an initial report to the Bank, which will include an updated version of the logical framework (Annex III-2), the AWP for the first year of execution, and the semiannual progress reports, which will serve as a basis for program management. The reports will contain an updated, itemized schedule for execution of the CPSC business plans, including analysis of any problems that may have affected execution, the measures taken to mitigate them, and plans for the next six-month period.
- 3.38 The Bank and the borrower will also carry out a mid-term evaluation of the program at month 18 and month 40 of program execution. The evaluation will be based on the semiannual reports prepared by the program executing unit and the annual and special reports prepared by the DGP 16 months and 38 months after program startup. The special reports will contain the main conclusions and recommendations regarding execution of the different program components to take, and the outcome of any corrective measures taken.

J. Auditing

- 3.39 The executing unit must submit annual financial statements on the program throughout the program execution period within 120 days after the end of each fiscal year. The statements must include an opinion by an independent firm of auditors acceptable to the Bank, in accordance with the Bank's external auditing requirements. The costs of the audit will be charged to the financing provided by the Bank.

IV. FEASIBILITY AND RISKS

A. Technical feasibility

- 4.1 The proposed program is technically feasible given that the technology and inputs needed for fruit and vegetable production already exist in the country and in the region and the Ministry of Agriculture's shortcomings with respect to dissemination and technical assistance will be remedied by outsourcing technical assistance services through the outsourced technical units model already used to good effect in Paraguay.
- 4.2 Marketing is the program's weakest point, but will be remedied by hiring a consulting firm with international trade experience. The firm will be responsible for providing advisory services, making any necessary contacts, and resolving the impediments to the marketing of fruit and vegetable products in local and international markets. By training local staff, the program will help to generate local capacity to respond to the marketing requirements and difficulties that may arise after the program is completed.
- 4.3 Incorporating small farmers into the fruit and vegetable production, processing, and marketing chain is an innovative approach in Paraguay. The hiring of highly qualified professionals to manage the CPSC, the training to be given to participants in the agroindustrial chain, and the mechanisms for offering incentives for private investment and the introduction of modern technology are all factors that will help ensure the success of the program.

B. Institutional feasibility

- 4.4 The Ministry of Agriculture's proposed mechanisms for program execution have an appropriate organizational structure and the necessary internal procedures for internal oversight. The DINCAP will be the executing unit for the program, with support from the specialized offices of the MAG and with the IICA participating as the entity in charge of the procurement of goods and services. The DINCAP has experience and the necessary capacity to carry out administrative management, accounting and financial oversight, and planning and monitoring of the program activities. Moreover, it will have a team of highly qualified professionals with experience in the technical activities required for program execution.
- 4.5 Considering the innovative aspects of the program, its execution will be monitored, for which purpose the Planning Directorate (DGP) in the Ministry of Agriculture will be strengthened by hiring a consulting firm to support implementation of a monitoring system and to train the DGP staff.

C. Financial feasibility

- 4.6 The local counterpart funds required for the program would total US\$2.5 million over a period of five years. Of that amount, 30% – US\$759,000 – is considered a direct contribution from the Ministry of Agriculture budget. The annual outlay totals close to US\$150,000, or less than 0.3% of the ministry's budget. No difficulty is foreseen in the timely payment of the counterpart funds for this operation. It should be noted that the remaining 70% of the local counterpart contribution would consist of contributions by the producers making productive investments under the program. Cash flow projections indicate that the producers will have sufficient financial capacity to pay the counterpart funds required for participation in the various program components.
- 4.7 The initial investment required to set up the CPSC was minimized by making use of existing facilities (collection centers, cold storage facilities, offices, etc.) and by gradually planning out funding for the investments proposed in the business plans, the volume of sales achieved by the CPSC increases. No problems are expected with to the execution of the investments, because the cooperatives making up the CPSC have sufficient experience and financial capacity to carry out the kind of investments proposed.

D. Socioeconomic feasibility

- 4.8 The purpose of the program is to redirect government intervention toward investment in technology, diversification of agriculture, and the development of new markets and agricultural infrastructure that will enable small farmers to develop new products with a greater value and higher economic rate of return. The program is expected to help lower the main risks of fruit and vegetable production, so that small farmers will be encouraged to give it a larger share in their production systems and thereby raise their income levels.
- 4.9 A survey of 367 farmers in the areas with the greatest potential for fruit and vegetable development showed considerable willingness (demand) on the part of the farmers to introduce new products with greater value-added, such as vegetables, in their production systems. In addition, several meetings with groups of farmers were held in order to obtain their input for program design, at which their willingness to cooperate was confirmed. It should be noted that the producer cooperatives that would take part in the program have already been identified and a sufficient number of farmers have expressed interest. In determining the scale of the program, care was taken to ensure that the period necessary for incorporation of the producers and program execution was consistent with the institutional development capacities of the CPSC. No difficulties are therefore expected in achieving the program goals.

- 4.10 In preparing the program, three business plans were devised for the CPSC for the del Norte (Concepción), Coronel Oviedo, and Nikkei cooperatives. Analysis of the business plans for the Concepción and Coronel Oviedo cooperatives showed that they would both have the financial and economic rate of return necessary to qualify for the program. Nevertheless, in both those cases it was recommended that their business plans be revised in order to optimize the investments and production plans.
- 4.11 Analysis of the Nikkei business plan showed that the total cost of the plan, which would involve 280 farmers by the end of the fifth year of execution, would be an estimated US\$2.8 million. Of that, US\$1 million would be for individual farm investments, US\$300,000 would be for the CPSC, and US\$1.5 million would be for technical assistance and training.
- 4.12 The Nikkei business strategy calls for: (i) selling long-life tomatoes directly to supermarkets in Paraguay's major cities and cities in northern Argentina, as this would significantly reduce losses from marketing through wholesalers which represent close to 40%; (ii) expanding sales of current varieties of melon (honeydew and Japanese melon) on the domestic market, and introducing new varieties for off-season sales in Europe (the Ogan variety), the United States, and Canada (galia and canteloupe), at a higher mark-up and consequently higher prices for the farmers; and (iii) introducing Tommy Atkins mangos on European markets, since only 5% of them are sold on the local market.
- 4.13 In order to increase the volume of marketable tomato and melon, the Nikkei cooperative, which is the leading cooperative in the CPSC, will enter into a strategic partnership with the Ypacaraí cooperative in the "Central" department, by signing a marketing contract. This commercial partnership will give Ypacaraí more reliable marketing outlets for the 200 farmers that belong to it. Moreover, the Nikkei Cooperative's business strategy would be enhanced due to the higher volumes of products it can market, thereby reducing unit costs and better responding to external market requirements.
- 4.14 Agroindustrial investment will total US\$300,000 for expansion and modernization of the existing packaging plant in Fernando de la Mora, at which fresh fruit and vegetables are selected, washed, dried, classified, and packaged. The members of the Nikkei CPSC need to make major investments in irrigation and semi-shade facilities on individual farms. According to the proposed plan, by the fifth year, the Nikkei farmers will have 64 hectares under irrigation and with semi-shade. That combination would allow them to have at least two harvests a year of such products as long-life tomatoes, melon, and peppers. Individual farm investments will total an estimated close to US\$1 million. The main benefits will be an increase in productivity and quality and a reduction in physical losses in marketing. The economic internal rate of return (EIRR), which estimates inputs and benefits at efficiency prices and does not take into account either financial costs or subsidies,

was calculated as 13%. The financial rate of return for the CPSC was calculated to be 20% for marketing activities and 51% at the farm level.

E. Social equity and poverty reduction

- 4.15 This operation qualifies as a project that promotes social equity, as defined in the key objectives for the Bank's activities set forth in the Report on the Eighth General Increase in Resources (document AB-1704). The program does not include specific performance indicators with which to measure poverty reduction and improved social equity.

F. Environmental and social feasibility

- 4.16 Execution of the program is expected to have a positive environmental and social impact. The program will promote regulating on-farm water usage, by introducing a drip irrigation system, which will also lead to better use of pesticides and fertilizers. Fewer pesticides will be needed thanks to better management and control of pests and diseases and to efforts to comply with international restrictions. The use of biological and cultural pests controls will be encouraged. The introduction of new varieties of crops will be monitored through the technology validation and quality control components of the program.
- 4.17 The negative environmental impact of the program, which concerns the investments on individual farms and infrastructure projects at the CPSC level (such as collection centers), will be minor, short-term, and easily mitigated. The program includes mechanisms to assess, minimize, and mitigate any adverse environmental impact of the projects under each of the CPSC business plans, in accordance with Law No. 294/93 on environmental impact. The CPSC will be equipped with a laboratory to test the quality of wastewater from the collection centers and to monitor the presence of any heavy metals or other pesticide residues. The laboratory will also help enforce the quality standards of the processed products before marketing.
- 4.18 The beneficiaries of the program will be existing small and medium-sized fruit and vegetable producers, and committees and cooperatives with farms of up to 20 hectares. On average, five persons per family will benefit directly from the production and marketing of higher-value products. Irrigation and the development of collection centers will alleviate the burden on women – irrigation is currently done by hand – and will open up for them at the collection and marketing centers job opportunities. The program will not discriminate against the participation of women producers as beneficiaries of the different components, including technical assistance, training, infrastructure subsidies etc. Efforts will be made to ensure that the proportion of women farmers benefiting is not lower than the percentage of women among the potential beneficiaries of the program. Since most of the fruit and vegetable farms in the program will be between 0.3 and 0.5 of a hectare in area,

no substantial changes in family subsistence farming are expected. The program will not have any negative impact on indigenous groups.

- 4.19 An environment specialist will be hired for the executing unit to ensure compliance with environmental procedures for defining ways to classify and assess the environmental impact of the projects carried out under the program (mainly infrastructure and technology validation). An environmental monitoring component will be included as an integral part of program monitoring and follow up.

G. Risk

- 4.20 The main risks will be delays in the procurement of goods and services and possible fluctuations in the demand for the products and sales prices. With regard to the delays in the procurement of goods and consulting services associated with the bureaucratic practices of the Ministry of Agriculture, the approach taken in other operations in the agriculture sector in Paraguay will be followed and an agreement will be entered into with IICA, under which IICA will procure the goods and services needed for the program. As for possible fluctuations in the demand for products (varieties) and in medium- and long-term sales prices, this risk will be mitigated by hiring an international firm specializing in fruit and vegetable marketing to support the program. Among other activities, the firm will identify market and pricing trends so that the farmers can adjust to the changes and maximize their profits. It should also be noted that the business plans incorporate the findings of previously conducted market studies.

**LOGICAL FRAMEWORK: FARM OUTPUT MODERNIZATION AND DIVERSIFICATION PROGRAM
(PR-0084)**

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	HYPOTHESES
Level and stability of income in the fruit and vegetable	1.1 Growth of the share of the Paraguayan Fruit and Vegetable in the domestic market from 78% to 85%. 1.2 Foreign exchange revenue from exports increases by US\$3.2 million per year. 1.3 Fewer shifts in small farmer income.	National data and surveys of the fruit and vegetable sector.	The macroeconomic framework and agricultural policy become favorable for investors.
are formed to replicate the 3 pilot CPSC, using the same concept.	1.1 1,500 small farmers produce under contracts related to Centralized Private Marketing Services Units (<i>Centrales Privadas de Servicios de Comercialización</i>). 1.2 1,000 producers are incorporated as shareholders in the CPSC. 1.3 Sustainability (positive cash flow) of the CPSC achieved by year 5.	Program monitoring system applied to Business Plan execution. Infrastructure installed and running.	Willingness of cooperatives to form a trading company ready to assume managerial and business role.
RESULTS			
Plans Implemented	3 CPSC implement their Business Plan		
LOGICAL DEVELOPMENT Technical Assistance	1.1.1 3 CPSC were assisted obtaining a major improvement in the quality of services. 1.1.2 1500 farmer producers were assisted obtaining a major improvement in the quality of services. 1.2.1 100 workers, 60 technicians and 3 CPSC managers were trained in management, agroindustrial technology and marketing; 1500 farmers.	System for monitoring the program and surveys.	Willingness of the CPSC to contract technical assistance services. Beneficiaries seek out courses to pay to enroll.
Training			

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	HYPOTHESES
ification, Dissemination, and notion	<p>1.2.2 1500 farmers, 60 OTU technicians were trained in Management, Technology, Natural Resources and Environment.</p> <p>1.3.1 24 promotion projects were co-financed.</p> <p>1.3.2 90% of the three certification initiatives were co-financed, up to US\$85,000 per CPSC.</p> <p>1.3.3 90% of CPSC dissemination costs co-financed.</p>		CPSC seek to use available fu
MENT IN INFRASTRUCTURE	2.1 100 ha. are implemented the first year and 230 ha. the second year.	Information and monitoring system for the program.	Availability of accessible cred investment in infrastructure. Producers respond to the incre look for ways to use the funds
TIONAL SUPPORT	<p>3.1 Health standards and quality of fruit and vegetable production implemented</p> <p>3.2 Quality control for fruit and vegetables implemented.</p> <p>3.3 Government supports marketing efforts for fruit and vegetable production.</p>	<p>Intermediate evaluations of the program carried out by the Bank and annual monitoring reports prepared by the DGP.</p> <p>Contract with IICA signed.</p>	Close coordination and cooper between DINCAP, CPSC, far MAG offices involved in the p

EXECUTION INDICATORS
PR-0084

COMPONENTS	ACTIVITIES	INDICATORS	COSTS
BIOLOGICAL DEVELOPMENT	COSTS OF THE COMPONENT		US\$5.95 million
	1.1 Organization of the CPSC (PPF)		US\$0.25 million
	1.1.1 Applications for the years 2000, 2001 and 2002 on presentation of the CPSC support projects.	<ul style="list-style-type: none"> Technically and financially feasible Business Plans. 	
	1.1.2 Evaluation and approval of the Business Plans	<ul style="list-style-type: none"> Groups of producers committed to Business Plans identified. 	
	1.1.3 Monitoring the development of Business Plans	<ul style="list-style-type: none"> Quantified outcomes of applying Business Plans. 	
	1.2 Technical Assistance		US\$4.59 million
	1.2.1 Identification and organization of groups of fruit and vegetable growers and other enterprises in the subsector in order to obtain program support in the field of technical assistance.	<ul style="list-style-type: none"> Beneficiaries informed and identified. Updated list of technical experts, consulting agencies, NGOs, and other groups able to give technical assistance. 	
	1.2.2 Public bidding to identify and hire the services of a consulting agency which will provide technical assistance.	<ul style="list-style-type: none"> Technical assistance service contracts signed. International consulting agency hired. 	
	1.2.3 Evaluation of applications, approval and selection of technical assistance services.	<ul style="list-style-type: none"> Number of applications evaluated, approved and rejected. 	
	1.2.4 Signing of contracts with private sector experts and groups within 90 days of the bid.	<ul style="list-style-type: none"> Time used in the hiring of services. Number and frequency of coordination meetings. 	
	1.2.5 Monthly technical coordination meetings with the groups' private sector participants.	<ul style="list-style-type: none"> Reports of each assisted group and zones, level of compliance and average deviation from plan. 	

COMPONENTS	ACTIVITIES	INDICATORS	CO
	<p>1.3 Training</p> <p>1.3.1 Bidding and execution of the annual training plan for group technical assistants.</p> <p>1.3.2 Bidding and execution of the annual training plan for producers, workers and other agents of the farm products chain.</p> <p>1.3.3 Bidding and execution of the annual training plan for technical assistants helping groups of fruit and vegetables growers.</p> <p>1.3.4 Bidding and execution of specific technical assistance services identified in the Business Plan.</p> <p>1.4 Certification, marketing and promotion</p> <p>1.4.1 Invitations for the presentation of technological certification projects.</p> <p>1.4.2 Evaluation, approval and signing of the certification contracts within 90 days of the closing date for the presentation of projects.</p> <p>1.4.3 Bidding and hiring services for the dissemination of certified technology.</p> <p>1.4.4 Planning of promotional activities in international fairs and business negotiations.</p> <p>1.4.5 Bidding and hiring of technical assistance services in subjects related to techniques which are useful in promoting farm products.</p>	<ul style="list-style-type: none"> • Number of beneficiaries informed and number of applications presented. • Number of farmers, seedbed owners, workers and other. • Number of trained technical assistants. • Number of technical assistance consortia or firms trained. 	<p>US\$0.61 m</p> <p>US\$0.75 m</p>
COMPONENTS IN STRUCTURE	<p>COMPONENT COSTS</p> <p>2.1 Evaluation, approval, verification and payment of subsidies within the periods established in the operational guidelines, which envisages 1500 beneficiaries.</p> <p>2.2 Inspection of 330 ha equipped with irrigation and shade facilities.</p> <p>2.3 Authorization to pay 1500 small farmers.</p>	<ul style="list-style-type: none"> • Number of projects checked. • Bonds issued. • Investment costs are within the parameters set by the subsidy. • Inspections carried out. • Period between the approval of the audit and disbursement of the subsidy/incentive. • Timely budgetary execution of the compensation for farmers' investments. 	US\$2.55 m

COMPONENTS	ACTIVITIES	INDICATORS	CO
UTION-BUILDING	COMPONENT COSTS 3.1 Agroindustrial quality control. 3.1.1 Bidding and acquisition of equipment to assemble the Quality Control System in the INTN. 3.1.2 Hiring of consulting services to support the training of INTN personnel in the certification of materials. 3.2 Standardization and health control. 3.2.1 Bidding and hiring of consulting services to support the DDV in the process of sanitary quality controls. 3.3 Business development 3.3.1 Hiring of consulting services in order to support the training of the Directorate of Marketing and PROPARGUAY personnel in the development of support systems for the private sector. 3.4 Monitoring 3.4.1 Strengthening the DGP so that it can independently monitor the program, by hiring a specialized firm.	<ul style="list-style-type: none"> Budgetary execution of equipment procurement. Consultants hired. Activities carried out and number of technicians trained. Number of consultants in relation to activities carried out. Activities carried out and number of technical staff trained. Consulting firm hired and activities completed. 	US\$1.76 m US\$0.40 m US\$25 mil US\$0.20 m US\$0.91 m
AGEMENT AND ISTRATION	COMPONENT COSTS 4.1 GoP's hiring of IICA services. 4.2 Bidding and acquisition of equipment for the Executing Agency. 4.3 TOR adjustment, bidding and hiring of personnel for the Executing Agency. 4.4 Bidding and hiring of consulting services to revise and adjust the initial Business Plans. 4.5 TOR adjustment, bidding and hiring of an international consulting agency to advise on the development of Business Plans.	<ul style="list-style-type: none"> Contract signed by IICA. Rendering of accounts to the Bank regarding the procedure and the expenses incurred in fitting out the Executing Agency. Staff hired by the Executing Agency. Consultants hired and Business Plans revised. Budgetary execution of all Program activities. 	US\$2.44 m

PROVISIONAL PROCUREMENT TABLE

ITEMS	PACKAGES	FINANCING		FINANCING	COST US\$000	PROVISION DATE
		IDB	LOCAL			
Consulting Services						
Consulting Services, International Markets for Fruit and Vegetables	1	100	0	Sign/CI	795.0	2000
Monitoring of the Program, Consulting Services	1	100	0	Sign/CI	190.1	2001
Technical Assistance (OTU)	3	63	37	Sign/CI	2,846.0	2001
Management Support for CPSC, Consulting Services	3	40	60	Individ/CI	900.0	2001
Training	Sundry	74	26	CN and CI	608.0	2001/04
Case-by-Case Technical Assistance	Sundry	70	30	CN and CI	509.0	2001/04
Quality Certification, Consulting Services	Sundry	90	10	CN and CI	194.0	2001/04
Consulting Services, Executing Agency	1	100	0	Individ/CI	400.0	2000
Consulting Services, Executing Agency	5	100	0	Individ/CN	550.0	2000
Engaging of Auditor	1	100	0	Sign/CI	250.0	2001
Institution- Building Consulting Services	Sundry	100	0	CI and CN	450.0	2000/03
Certification, Marketing and Promotion, Consulting Services	Sundry	90	10	CN	750.0	2000/04
Equipment						
Laboratory Equipment	Sundry	100		LPI	400.0	2001

PROPOSED RESOLUTION

PARAGUAY. LOAN /OC-PR TO THE REPUBLIC OF PARAGUAY
Program for the Modernization and Diversification of Farm Production

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Republic of Paraguay, as Borrower, for the purpose of granting it a financing to cooperate in the execution of a program for the modernization and diversification of farm production. Such financing will be for the amount of up to US\$10.000.000, or its equivalent in other currencies, except that of Paraguay, which are part of the Ordinary Capital resources of the Bank, and will be subject to the "Special Contractual Conditions" and the "Financial Terms and Conditions" of the Executive Summary of the Loan Proposal.