

AID 211(d) Grant
IDD Project B-414

SMALL-SCALE INDUSTRY DEVELOPMENT
IN PARAGUAY

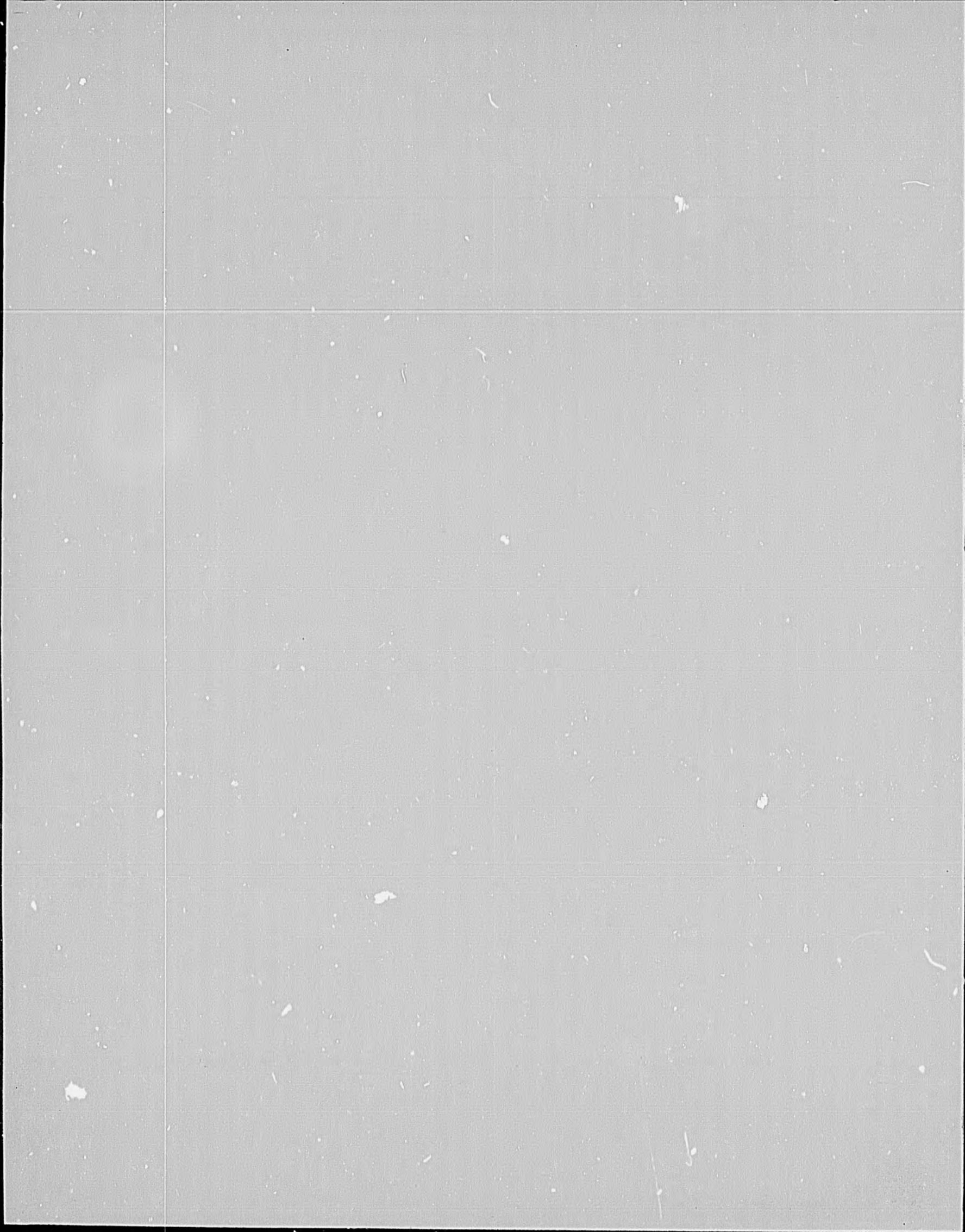
A Case Study

Prepared for the
Agency for International Development

by

Nelson C. Wall
Senior Research Engineer

Industrial Development Division
ENGINEERING EXPERIMENT STATION
Georgia Institute of Technology
February 1974



Tables (Continued)

3. Gross Value of Industrial Production	15
4. Gross Internal Product -- Industrial	16
5. Principal Sources of Industrial Financing	17
6. Summary of Training Activities Outside Paraguay	59
7. Summary of Productivity Workshops	60
8. Summary of Consulting Activities	61

Summary

As a result of three contracts sponsored by the Agency for International Development (AID), the Industrial Development Division was funded to provide direct technical assistance to the Ministry of Industry and Commerce of the Republic of Paraguay. The three contracts covered from March 16, 1970, to June 30, 1973, and represented a total financial outlay of \$120,000.

The prime objective of the total project was to increase investments outside of the capital city of Asuncion and develop export-oriented industries. As a by-product, the Industrial Development Division was able to refine and field test a methodology that was found applicable to the situation of Paraguay and which is presented as part of this case study.

Many accomplishments resulted from this project; some can be identified as being direct results and others are the results of joint actions. Briefly, the following should be highlighted:

1. Twelve feasibility studies were completed on export-oriented industries that had been identified. Entrepreneurs were also identified and assisted during the program period. At present, many of these new industries are in the process of being established or in the process of obtaining funding prior to establishment.

2. Seven prefeasibility studies were completed. Later, through the direct or indirect assistance provided by this program, some of the studies evolved into the establishment of 21 new industries. These new Paraguayan industrial activities represent a total investment of about \$2.5 million, employing over 900 persons. These figures do not include the multiplier effect of the new payrolls or the purchases of local raw materials.

3. Regional Development Centers were established in the cities of Villarrica, Concepcion, Pedro Juan Caballero, Pilar, and Encarnacion. Community audits, community profiles, data centers, and action programs were also completed for each of the centers. Local staff personnel were trained to operate the centers, and they were assisted in finding ways to generate the required funding.

4. Three National Jornadas (National Developers' Meetings) were carried out during the life of the project -- one each at Concepción, Villarrica, and Encarnacion.

5. A new "Regional Development Office" was created in the Ministry of Industry and Commerce to provide the focal point for the program. At the end of the project, this new office assumed the responsibility of continuing with the established activities. The staff for this office was trained both in Paraguay and in Atlanta, Georgia.

6. Technical assistance and on-the-job training was provided to the staff of two other institutions, the Centro de Desarrollo y Productividad and the Centro de Promocion de Exportaciones. Both of these are presently operating under the guidance of the Paraguayan administration.

7. Community self-improvement goals were established throughout the Regional Development Centers as part of the program. The corresponding staffs of the five centers were able to plan for the accomplishment of these goals while in training at the headquarters of the Industrial Development Division in Atlanta, Georgia.

8. Limited assistance and guidance was provided to the investors and operators of new industries in an attempt to avoid negative effects on the existing environment. They also were assisted in general engineering and technical matters of production, layout, operation, and in many other areas.

Full details of these and other activities are provided in the report, as well as definitions of the objectives, methodology, accomplishments, and conclusions.

INTRODUCTION

The Industrial Development Division (IDD) of the Engineering Experiment Station at the Georgia Institute of Technology has recently completed a three-year program designed to assist the Ministry of Industry and Commerce of the Republic of Paraguay in its efforts to create a chain structure of regional development organizations, as well as to generate small-scale industries in rural-urban locations. The main objective of the project was to generate investments outside of the capital city of Asuncion and, if possible, to develop small export-oriented industries.

The project was carried out during the period of March 16, 1970, through June 30, 1973, with a total of 156 man-weeks of service provided over the total calendar time. The project stressed a pragmatic approach in the solution of problems involved in generating small industries in an underdeveloped area.

Throughout the three-year program, well-defined goals and objectives were established, but the IDD international development team also had an unidentified aim which was to attempt to develop a methodology that could be effectively applied to the problem of establishing small industries in other developing areas of the globe.

This international involvement of IDD was the natural result and outgrowth of the successful economic development program that had been implemented in the State of Georgia by IDD since 1956. In 1962, IDD decided to attempt to transfer the experience gained over the years to the developing nations of Latin America. As a result of this decision, the International Development Branch was formed and it was assigned the task of providing pragmatic technical assistance to counterpart agencies in the developing nations.

The international development staff, with over 50 man-years of field experience throughout the world, believed that although there are many schools of thought on how to carry out an industrialization program in a developing nation, the truth of the matter is that little or nothing is known about positive industrialization techniques and proven methodologies that will assure results and which are applicable to the individual country "business climate."

As a result of this point of view, the director of the Paraguayan project and his staff decided that, in addition to the assigned task, they would

research a special segment of the national industry -- the small-industry sector. Most members of the staff were aware of the many problems that are normally confronted by the small-industry sector, but they continued to have an interest in the capabilities of that sector to generate employment and the great weight of the sector in the overall economy of a nation. As experienced researchers, they were also aware of the fact that this developing country had a small internal market, low per capita income, and limited financial resources; nevertheless they knew from experience that small industries usually form the major portion of the national economic structure.

The chapters that follow enumerate the specific results achieved and the conclusions reached by the staff members assigned to this project. It is the purpose of this case study to establish the policies, programs, and procedures utilized which led to a successful development program and which may be applicable in another developing nation.

OVERVIEW OF PARAGUAY

Geographical Summary

The South American continent has two landlocked nations: Paraguay and Bolivia. The Republic of Paraguay is located in the heart of the continent, between the latitudes 19° 18' and 27° 30' South and longitudes 54° 19' and 62° 38' West of the Greenwich Meridian. The country has approximately 157,000 square miles of territory which makes it the ninth largest nation in Latin America.

The country is divided by the Paraguay River which flows in a southeasterly direction and provides a natural transportation system. The eastern portion of the country comprises about 40 percent of the total territory, and the western portion, known as the "Chaco," represents the remaining 60 percent. These two regions are different in climate, soil, and vegetation. The eastern portion is rolling country with fertile plains and heavily wooded highlands. The "Chaco" is covered with marshes, lagoons, and natural forests and used mainly for pasture and grazing. In general, the climate is similar to that of Florida (sub-tropical) with average temperatures ranging from 63° F to 80° F. Rainfall is abundant, especially in the eastern half of the country.

The population census of 1962 reported 1,854,000 inhabitants and present estimates indicate a population of about 2.574 millions in 1973. Of this estimated population, about 20 percent is presently living in the capital city of Asuncion, and it is further estimated that 35 to 40 percent of the total is in urban residence.^{1/} Paraguay is a bilingual country and, although the official language is Spanish, the population retains and uses the Guaraní language.

As indicated before, the Paraguay River, together with the Paraná River, forms a natural system of transportation that leads to the Rio de la Plata and, hence, to the Atlantic Ocean. The Paraguay River is well over 1,500 miles long and some 1,400 miles are navigable. The Paraná River is about 2,900 miles long but it is only navigable for about 1,200 miles. The country has at present

^{1/}D. M. Rivarola and G. Heisecke, Población, Urbanización y Recursos Humanos en el Paraguay (Asunción: Centro Paraguayo de Estudios Sociológicos, 1969), pp. 22, 155, 166.

about 8,000 miles of roads of which some 300 miles are paved. The Presidente Carlos Antonio López Railway, which is owned by the government of Paraguay, operates about 250 miles of existing lines. Other geographic features of Paraguay are shown on the map on the following page.

Political Summary

In the year 1524, a Portuguese named Alejo Garcia discovered Paraguay as a result of the expedition headed by Juan de Solis, who was attempting to find a navigable passage between the Atlantic and Pacific Oceans. Soon thereafter, a Spanish "aventurero" named Juan de Salazar founded the capital city of Asuncion in 1537. The country remained as a Spanish "provincia" under a governor until 1811, when it became an independent nation.

During the years of Spanish government in Paraguay, the pattern of development was very different from the other Spanish colonies in America. Paraguay did not have what the conquerors considered as "richness" (that is to say, gold, silver, copper, and spices), so it could not be used as a source of wealth. Because of this, the Province of Paraguay was used as a starting point for other explorations thus becoming a "secure city."

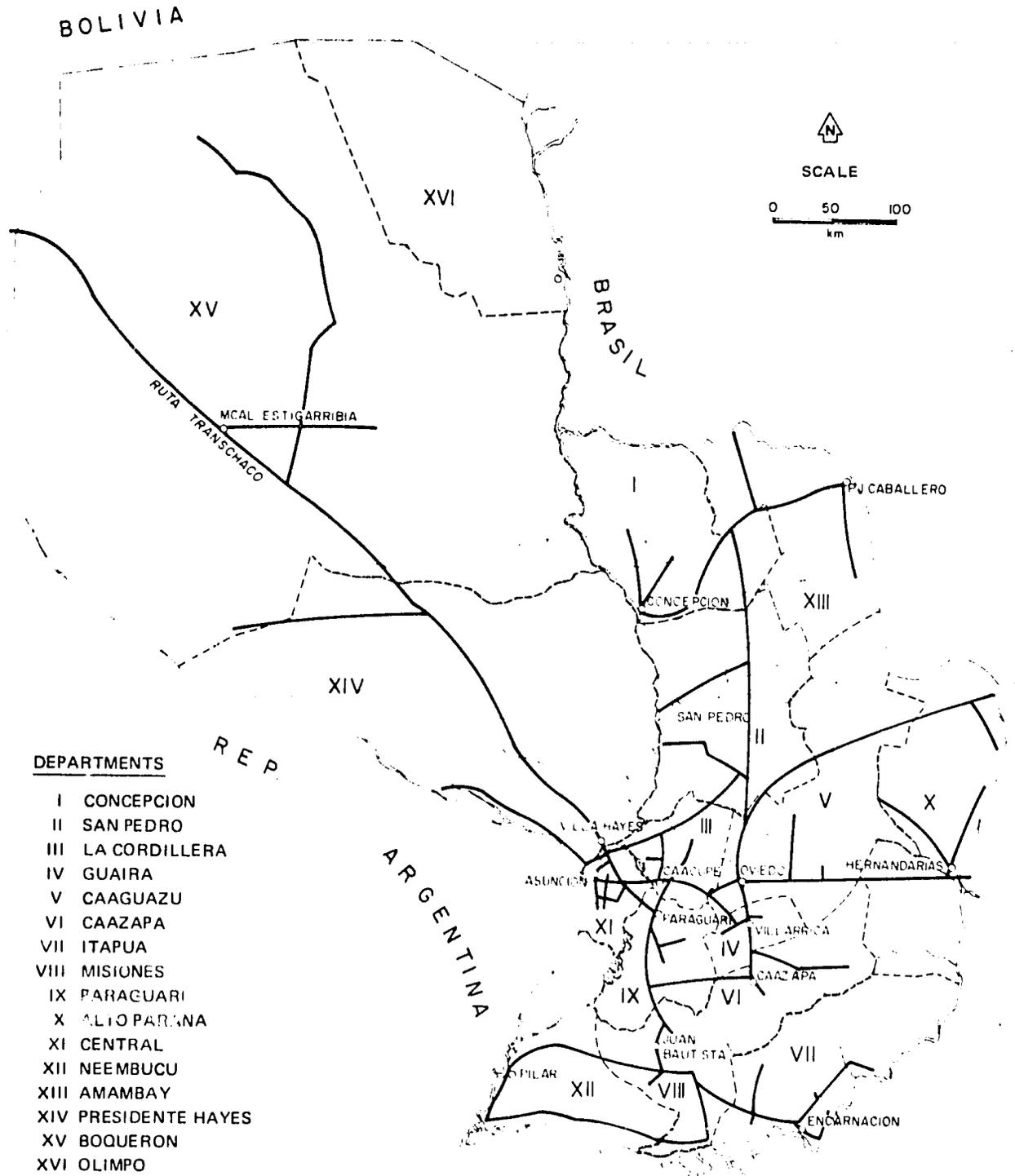
The Spaniards in Paraguay were well isolated from the rest of the colonial empire and proceeded to intermarry with the natives, learning their language and taking up many of their customs. It may be said that, over the years, the conquerors were assimilated by the country.

Following independence in 1811, Paraguay was confronted with the War of the Triple Alliance from 1865-1870 and which just about destroyed the nation. As a result of this war, Paraguay lost large portions of territory to Argentina and Brazil, but worse of all, its population dropped from about 1 million inhabitants to nearly 232,000 in 1872.^{1/} Again, in the Chaco War, between the years 1932-1935, Paraguay lost land to Bolivia and had a population drop estimated at about 40,000 persons.

In 1940, a constitution was adopted which provided three separate branches of government: executive, legislative, and judicial. This republican form of

^{1/}Ibid., p. 12.

REPUBLIC OF PARAGUAY



DEPARTMENTS

- I CONCEPCION
- II SAN PEDRO
- III LA CORDILLERA
- IV GUAIRA
- V CAAGUAZU
- VI CAAZAPA
- VII ITAPUA
- VIII MISIONES
- IX PARAGUARI
- X ALTO PARANA
- XI CENTRAL
- XII NEEMBUCU
- XIII AMAMBAY
- XIV PRESIDENTE HAYES
- XV BOQUERON
- XVI OLIMPO

government was not modified by the new Constitution of 1967. The president is elected for a five-year term and may be re-elected. At present, the Executive Branch is made up of the President, an 11-man cabinet, a State Council, a National Economic Coordination Council, and a Technical Planning Secretariat for Economic and Social Development.

The Legislative Branch consists of the House of Representative with 60 members and the Senate with 30 members. The Judicial Branch is composed of a Supreme Court with five members, a Tribunal of Accounts, a Labor Tribunal, and the lower courts.

Politically, the country is divided into 16 departments (see map on preceding page) of which only three are west of the Paraguay River and form what is called the "Chaco." All work carried out in this program took place in departments east of the Paraguay River.

The Spanish settlers in Paraguay took up farming and cattle raising due to the fact that they found no mineral wealth. As a result of this and the population concentration in the eastern portion of the country, landholdings were limited and, as a result, "minifundia" occurred contrary to what happened in other colonies where the pattern led to "latifundia." This pattern still holds true in the country.

Social Summary

As indicated before, Paraguay is not densely populated. Out of a population of about 2.574 millions, it was estimated that in 1973 the labor force would be about 33 percent of the total or about 849,000 persons.^{1/} Of this economically active population, the projection indicates that about 450,000 will be in agricultural activities, about 104,000 in manufacturing activities, and the balance in other sectors, with about 71,000 unemployed.^{2/} This distribution of the labor force is comparable to the facts presented for 1962 by AID, which showed 52 percent of the active population in agriculture and 15 percent in industrial activities out of 616,640 persons in the labor force

^{1/} Ibid., p. 166.

^{2/} Ibid., p. 172.

and 2.2 million inhabitants.^{1/} It can be seen that no major changes have occurred in these two sectors (agricultural and manufacturing) in the past 10 years and that the traditional sector of agriculture continues to be the largest single source of employment.

It also should be pointed out that, over the years, the percentage of population under 15 years of age has remained fairly constant at about 45 percent of the total. In 1950, the population under 15 years of age represented 44.3 percent of the total and in 1970 this was estimated at 45.6 percent of the total. Life expectancy has been established at 59.4 years and infant mortality at 84 per 1,000 live births.^{2/}

The Labor Code of Paraguay was approved by Law No. 729 of August 7, 1961, and it governs relations between employer and employees. This Labor Code established an eight-hour work day and a 40-hour work week, as well as a system of paid vacation which relates to length of service. All disputes between the worker and the employer must be resolved by the Ministry of Justice and Labor. The Labor Code also establishes health and safety standards, as well as special working conditions for females and minors. Illegal strikes are not permitted under the Labor Code.

The Social Security Institute (Instituto de Previsión Social), created in 1943, administers the social security program. The employer contributes 13 percent of the employees' wages and the employee contributes 6 percent of his wages. All employees are covered by the social security system, including agricultural workers, domestic servants, and teachers. Any worker, upon reaching age 60 and having paid at least 780 weekly installments to the social security program, is entitled to an annual life pension. In case of illness or accident, the social security pays all medical expenses. If the worker is incapacitated over seven days, the social security system pays him 75 percent of his normal wages.

^{1/}U.S. Agency for International Development, AID Economic Data Book, PB 1809 08, December 1968, p. 3, Paraguay.

^{2/}Rivarola, op. cit., pp. 177-179.

Agricultural Summary

The agricultural sector of Paraguay (which includes field crops, forestry, livestock, and fish) represented at least 33 percent of the Gross National Product for 1971.^{1/} Paraguay's exports are heavily dependent on agricultural production or on commodities derived from that sector such as meat products, essential oils, and wood products. Most of the agricultural technicians with whom the author talked indicated that Paraguay in general has excellent land for farming, grazing, and forestry. They also indicated that there exists a great potential for sub-tropical crops as well as livestock.

In traveling over the country by land, it is interesting to note that most of the fields are worked as they were in the U.S.A. at the turn of the century. Animals are the main source of power and, in many instances, human power is the only energy available. Fertilizers as well as mechanical equipment are now starting to be used by some farmers.

In general, the farmers appear to be self-sufficient, well-fed, and housed in the local traditional manner. They also appear to be better off than farmers in some other developing areas of Latin America. As indicated before, most farms are fairly small ("minifundios") and only the people raising livestock in the "Chaco" or in the northern area have spreads as large as 1,000 hectares.^{2/}

The average farmer will plant, either for food or for income or both, any of the following crops: corn, sugar cane, cotton, tobacco, mandioca,^{3/} peanuts, tartago, soy beans, and grapes. Other crops are planted but the ones mentioned above represent the bulk of cash and food crops. In the past four years, the government has been trying to motivate farmers into planting wheat, but the results have not been too good. Other cash crops are to be found in

^{1/}United Nations, Statistical Yearbook 1972, Twenty Fourth Issue, New York: 1973, p. 608.

^{2/}One hectare equals 2.47 acres.

^{3/}The euphorbiaceous plant of the genus manihot also known as mandioca, manioc, yuca, cassava, cassave, casavi, and cuzavi, to name a few. The author has been shown varieties of mandioca planted in Paraguay for industrial use with the following names: cano, concepcion, señora ponga la mesa, yerutí, pomberi, and caballero-i.

forestry products, the major one being round wood for sawmills from lapacho, cedro, petereby, incienso, ivirapita, para todo, and others used by local industry. Other forest cash crops include maté, petitgrain, tung, coconut kernel, and many others.

One of the largest -- if not the largest -- agricultural source of income is ranching. At present, current estimates of livestock in Paraguay are about 5.8 million head with an additional 740,000 horses.^{1/}

Most herds in Paraguay depend entirely on native range grass and, because of this, it takes about four years for the individual steer to reach the desired slaughter weight of about 400 kg. In the past few years, some immigrant cattlemen and the Agricultural Experiment Station have been experimenting with other breeds and modern ranching practices, and these have proven very successful.

Tables 1 and 2, which are copies of pages 25 and 27 of an unpublished report, show the land areas projected for planting and volumes of production anticipated for different crop years. This information was prepared by a team of technical persons working with the Gabinete Técnico of the Banco Nacional de Fomento, Asuncion, Paraguay, in 1969.

Industrial Summary

Industrial activities in Paraguay are fundamentally in the area of processing or transforming agricultural and forestry products. In general, the smaller industries provide products consumed internally, while the larger and more dynamic industries are export oriented. Three principal types of industrial activities are found: (1) Cottage industries or rural artisans are engaged mainly in woodcraft, weaving, and leathercraft. Most of these "industries" are seasonable, and the artisans use this as a means of obtaining an income during the agricultural "off season." These cottage-type industries normally satisfy local needs for given consumer goods. (2) Small industries, in both urban and rural areas, which produce hand-made items, are geared to serve the low-income groups of the area. Most of these small industries have less than five employees and their end-products would be considered "low quality" but within the purchasing power of a given type of consumer. (3) Larger

^{1/}United Nations, op. cit., p. 124.

Table 1
LAND AREA PLANTED
1968-1973

Products	1968	1969	1970	1971	1972	1973
1. Garlic	500	520	540	550	570	590
2. Alfalfa	6,900	7,200	7,500	7,800	8,100	8,400
3. Cotton	35,400	37,500	46,000	51,000	56,000	62,000
4. Rice	8,800	9,200	9,600	10,000	10,400	10,800
5. Peas	6,700	7,000	7,300	7,700	8,000	8,300
6. Potato (Sweet)	13,300	13,700	14,200	14,700	15,300	15,800
7. Pumpkin and Squash	6,000	6,200	5,400	6,600	6,800	7,000
8. Sugarcane (Harvested)	29,200	30,100	31,100	32,100	33,100	34,200
9. Sugarcane (Not Harvested)	8,700	9,000	9,300	9,600	9,900	10,200
10. Onion	4,400	4,500	4,700	4,800	5,000	5,100
11. Strawberry	1,000	1,025	1,050	1,075	1,100	1,125
12. String Bean	8,400	8,700	9,000	9,300	9,600	10,000
13. Mandioc (Harvested)	112,100	114,300	117,100	119,300	121,400	124,300
14. Mandioc (Not Harvested)	33,500	34,100	35,000	35,600	36,300	37,100
15. Melon	4,300	4,400	4,500	4,600	4,800	5,000
16. Corn	238,300	246,000	253,800	261,900	270,300	281,200
17. Peanut	25,200	26,000	26,800	27,600	28,600	29,500
18. Sorghum (Grain)	4,200	4,300	4,400	4,500	4,600	4,700
19. Sorghum (Straw)	5,100	5,200	5,300	5,400	5,600	5,800
20. Soybean	15,300	22,300	29,300	36,300	43,300	50,300
21. Tobacco	12,800	13,100	13,300	13,600	13,800	14,000
22. Wheat	20,000	40,000	60,000	80,000	90,000	100,000
23. Potato	2,950	3,050	3,150	3,250	3,375	3,500
24. Beans	50,900	52,500	54,200	55,900	57,700	59,500
25. Watermelon	12,500	12,900	13,300	13,700	14,200	14,600
26. Vegetables	3,430	3,540	4,650	3,770	3,890	4,000
TOTALS	669,880	716,335	770,490	820,645	861,735	907,015

Table 2
VOLUME OF PRODUCTION PLANNED
1968-1973

Products		1968	1969	1970	1971	1972	1973
1. Garlic	(1,000 Strings)	175	181	187	193	199	205
2. Alfalfa	(Tons)	25,000	26,000	27,000	28,000	29,000	30,000
3. Cotton	(Tons)	28,700	30,000	36,800	45,900	58,800	71,300
4. Rice	(Tons)	22,000	23,000	24,000	25,000	26,000	27,000
5. Peas	(Tons)	4,000	4,200	4,400	4,600	4,800	5,000
6. Potato (Sweet)	(Tons)	126,000	130,000	135,000	140,000	145,000	150,000
7. Pumpkin and Squash	(1,000 Bushels)	12,000	12,400	12,800	13,200	13,600	14,000
8. Sugarcane	(Tons)	1,080,000	1,115,000	1,151,000	1,188,000	1,226,000	1,265,000
9. Onion	(Tons)	17,500	18,100	18,700	19,300	19,900	20,500
10. Strawberry	(Tons)	400	410	420	430	440	450
11. String bean	(Tons)	5,900	6,100	6,300	6,500	6,700	7,000
12. Mandioc	(Tons)	1,570,000	1,600,000	1,640,000	1,670,000	1,700,000	1,740,000
13. Melon	(1,000 Bushels)	10,700	1,000	11,300	11,600	11,900	12,200
14. Corn	(Tons)	286,000	295,200	304,600	314,300	324,400	337,400
15. Peanut	(Tons)	21,400	22,100	22,800	23,500	24,300	25,100
16. Sorghum (Grain)	(Tons)	4,200	4,300	4,400	4,500	4,600	4,700
17. Sorghum (Straw)	(Tons)	5,100	5,200	5,300	5,400	5,600	5,800
18. Soybean	(Tons)	18,400	26,800	35,200	43,600	52,000	60,400
19. Tobacco	(Tons)	16,000	17,000	18,000	19,000	20,000	21,000
20. Wheat	(Tons)	24,000	52,000	81,000	112,000	130,000	150,000
21. Potato	(Tons)	11,800	12,200	12,600	13,000	13,500	14,000
22. Beans	(Tons)	35,600	36,700	37,900	39,100	40,400	41,700
23. Watermelon	(1,000 Bushels)	31,200	32,200	33,200	34,300	35,400	36,500

industries, within the general definition of a "factory" or established industrial unit, are generally export oriented and their end-products may or may not reach the internal market.

In general, it may be said that Paraguayan industrial activities have followed the traditional Latin American pattern of individual ownership, family involvement and employment, fear of government officials, and little or no interindustry relations. The last Paraguayan Census of Manufacturing (1963) reported 5,845 establishments in the country, of which 4,937 were individually owned and 3,681 had less than five persons employed.^{1/} No reliable information is available after 1963, but individuals at the Ministry of Industry and Commerce have indicated to the author that in 1972 there were about 7,000 industrial establishments in the country. Asuncion continues to be the largest industrial center, although some industrial activities may be found in the Departamento de Guairá, Ñeembucú, Concepción, Amambay, Itapúa, and Boquerón.

Among the principal industrial activities in Paraguay, the following predominate:

Meat Processing:	Producing mostly canned goods and frozen meats
Wood Industry:	Lumber, dimensional stock, parquet, and other export types
Vegetable Oils:	Both edibles and commercial oils
Textile Industry:	Cotton ginning, weaving, both cotton and wool
Grain Mills:	Using both local and imported wheat, rice, and barley
Sugar Mills:	Mostly to process local sugar cane, final product for internal market and some for export
Petroleum Refinery:	Using imported crude oil, and all end-products for internal market
Tannin Industry:	Local "quebracho" extract to be used both by local leather industry and for export
Cement Manufacturing:	All for internal use

^{1/}Ministry of Industry and Commerce, Censo Económico 1963, Asuncion, Paraguay, 1963.

Fruit Processing: Nearly all for export purposes
Milk Industry: Practically all for local market
Alcoholic Beverages: Include beer, wine, and rum (caña)

Restricting industry and industrial development in Paraguay are several problem areas, including the following: a) great lack of trained businessmen, entrepreneurs, managers, engineers, and other skills needed in industrial processes; b) small internal market with a low purchasing power; c) limited financing and practically no short-term credit at acceptable interest rates; d) limited raw materials and uncertain agricultural production; e) fledgling infrastructure at the national level; f) practically no marketing systems; and g) general lack of "know-how" in the industrial sector.

In the past, investments in Paraguay were basically governed by two laws: No. 202 of September 7, 1953, which approved Decree Law No. 30 of March 31, 1953 (Ley de Fomento Industrial); and Law No. 246 of February 25, 1955 (Ley de Incorporación de Capitales). The Industrial Development Law No. 202 provided a series of benefits to new industries and their owner firms. Among the benefits offered, there are such things as exoneration of import and/or customs duties for machinery, parts, materials and equipment necessary for the installation and operation of the industrial establishment; exoneration from custom duties and taxes on the exportation of the end products and sub-products of said industry; provision of technical and economic assistance to better production or to assist it in its growth period. Benefits also were offered to existing industries wishing to expand or diversify. A new law was recently enacted which replaces the two mentioned above. Law No. 216 of November 9, 1970 (Ley de Inversiones para el Desarrollo Económico y Social) provides the same general benefits, but it covers both industrial activities and others which may be considered "necessary" or "desirable" by the government.

The Secretaría Técnica de Planificación de la Presidencia de la República and the Ministry of Industry and Commerce have the overall responsibility of establishing the industrial priorities and determining the industrial activities that are best suited for the nation at any given time. The Plan Nacional de Desarrollo Económico y Social has established the industrial priorities and

desirable levels of production for the nation. Tables 3 and 4 present some of this information.^{1/}

Financial Summary

The banking system in Paraguay had in 1970 a total of 12 banks, two of which are "official" and 10 are private. The two government banks are:

Banco Central del Paraguay

Banco Nacional de Fomento

The Banco Central del Paraguay has the responsibility for establishing financial policies for the nation, providing credit of the country, and regulating the private banking activities. The Banco Nacional de Fomento, established in 1962, has the total responsibility for all development financing in all sectors. The private banks carry out the traditional banking role and provide some short-term financing.

The Banco Nacional de Fomento had available in 1970 a \$4 million credit line established by the Inter-American Development Bank (IDB) and a \$12 million credit line provided by the Kreditanstalt Fur Wiederaufbau, both to be used for the purposes of industrial-economic development. Both of these lines of credit provide for loans up to 12 years with two years of grace and interest at about 9 percent to the borrower. The IDB credit line can only finance up to 67 percent of the total project investment; the other line of credit only covers equipment and machinery purchased in West Germany.

Table 5 provides a general summary of available credit for industrial development for 1961 to 1969 in Paraguay.

^{1/}Presidencia de la República--Secretaría Técnica de Planificación, Plan Nacional de Desarrollo Económico y Social 1971-1975, Asunción, Paraguay, Noviembre 1970, pgs. 44-45.

Table 3

GROSS VALUE OF INDUSTRIAL PRODUCTION
(1,000 ₵ VALUE--1967)

	1970	1971	1972	1973	1974	1975
Food Products	17,126,805	18,017,349	18,868,731	19,838,036	20,948,373	22,178,646
Beverages	1,335,077	1,404,892	1,479,086	1,557,940	1,641,782	1,730,952
Tobacco	784,069	815,437	848,421	883,042	919,413	957,628
Textile Manufacturing	2,090,312	2,080,519	2,322,288	2,596,001	2,991,890	3,330,584
Garments and Shoes	1,313,742	1,389,954	1,470,569	1,556,297	1,647,629	1,744,277
Wood Products	1,213,703	1,304,476	1,407,446	1,518,751	1,614,360	1,738,104
Furniture (Wood)	235,945	250,214	265,271	281,039	298,029	316,012
Paper and Cardboard	56,355	59,903	63,658	67,660	71,914	76,422
Newspaper and Printing	346,528	375,707	407,569	442,369	480,422	522,008
Leather	1,240,217	1,305,184	1,382,333	1,478,810	1,600,269	1,760,200
Rubber	9,943	9,690	9,456	9,231	9,013	8,804
Chemical Products	2,615,769	2,764,296	2,916,825	3,082,504	3,261,930	3,457,436
Petroleum Products	1,267,178	1,305,179	1,357,381	1,425,228	1,510,719	1,617,147
Minerals--Non-Metals	949,995	1,052,491	1,186,393	1,351,964	1,576,023	1,886,921
Basic Metals	34,636	36,371	38,173	40,046	41,952	44,143
Metal Manf. Except. Machin.	392,478	427,703	466,910	506,840	553,042	602,573
Machinery	343,563	376,492	412,597	452,246	495,880	533,740
Machine, Tools, Parts and Access.	256,043	281,646	309,810	340,792	374,871	412,358
Transportation	721,822	850,602	928,622	1,015,804	1,113,371	1,222,316
Other Manufactures	199,396	210,686	222,638	235,292	284,690	262,877
TOTALS	32,533,576	34,318,811	36,363,277	38,679,992	41,399,572	44,403,148

Table 4

GROSS INTERNAL PRODUCT--INDUSTRIAL
(1,000 ₪ VALUE--1967)

	1970	1971	1972	1973	1974	1975
Food Products	4,655,066	4,897,115	5,128,521	5,391,978	5,693,768	6,028,156
Beverages	620,277	652,713	687,183	723,819	762,772	804,200
Tobacco	497,649	517,570	538,493	560,467	583,551	607,806
Textile Manufacturing	700,882	697,598	778,663	870,439	1,003,180	1,116,745
Garments and Shoes	452,584	478,839	506,611	536,611	567,608	600,903
Wood Products	594,229	638,671	689,086	743,580	790,391	850,976
Furniture (Wood)	122,007	129,386	137,172	145,325	154,111	163,410
Paper and Cardboard	15,526	16,503	17,538	18,640	19,812	21,054
Newspaper and Printing	209,545	227,190	246,457	267,500	290,511	315,658
Leather	675,670	711,064	753,095	805,656	871,826	958,957
Rubber	5,370	5,233	5,107	4,986	4,868	4,755
Chemical Products	913,426	965,292	1,018,555	1,076,410	1,139,066	1,207,337
Petroleum Products	587,844	605,472	629,689	661,163	700,822	750,194
Minerals--Non-Metal	448,773	497,302	560,571	638,803	744,671	891,570
Basic Metals	17,931	18,829	19,762	20,732	21,718	22,853
Metal Manuf. Except Mach.	110,561	120,484	131,275	142,777	155,792	169,745
Machinery	194,182	212,793	233,200	255,609	280,271	301,670
Machine, Tools, Parts and Access.	158,516	174,367	191,803	210,984	232,083	255,291
Transportation	434,104	511,552	558,473	610,904	669,581	735,100
Other Manufactures	82,889	87,582	92,550	97,811	103,380	109,278
TOTALS	11,497,031	12,165,554	12,905,803	13,783,762	14,789,782	15,915,654

Table 5
 PRINCIPAL SOURCES OF INDUSTRIAL FINANCING
 (Thousands of \$)

Years	Credit Available Thru B.N.F.			Direct Credit			
	B.N.F.	B.I.D.	K.W.	B.I.D.	Spain	Krupp	ADELA
1961	-	353.6*	-	69.3	-	-	-
1962	0.6	-	-	-	-	-	-
1963	3.1	-	378.0	-	-	-	-
1964	5.1	504.0	-	-	233.1	-	-
1965	9.2	-	-	277.2	-	-	-
1966	10.6	-	-	-	-	-	-
1967	84.9	-	378.0	-	-	201.8	45.4
1968	68.1	-	-	163.8	-	-	-
1969	32.3	504.0**	-	-	90.1	188.8	-

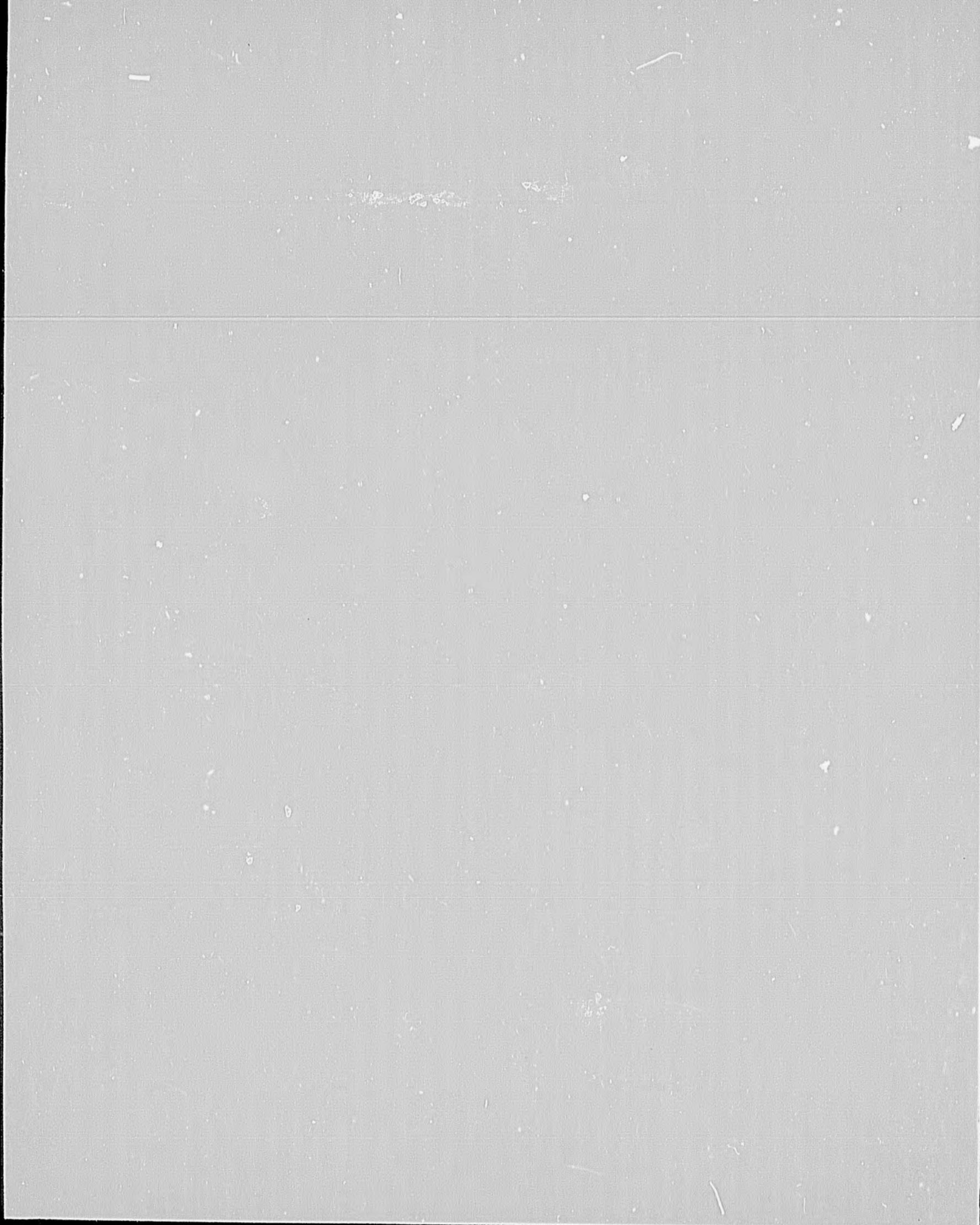
Notes: B.N.F.: Banco Nacional de Fomento
 B.I.D.: Banco Interamericano de Desarrollo
 K. W.: Kreditanstalt Fur Wiederaufbau

*Also for agricultural development.

**Also for tourist development.

Source: Igor Fleicher, Financiamiento de la Pequeña Industria en Paraguay, Organización de las Naciones Unidas, Buenos Aires, Argentina: Noviembre 28, 1970, pg. 7.

At the time this project was being started, the Compañía Paraguaya de Desarrollo, S. A. (COMDESA) had not been created but was being considered by the government of Paraguay and the U.S. Agency for International Development. The new organization, COMDESA, would provide industrial development loans but as a private corporation. COMDESA later played an important role in some of the industrial projects that were developed during the three years of the Georgia Tech program in Paraguay.



PROJECT HISTORY

Project Background

For a number of years, the Agency for International Development (AID) had been providing assistance to the government of Paraguay and the private sector in an effort to accelerate economic activities in that country. It was generally recognized that, during the past decade, Paraguay had made good progress and it continued to work intelligently toward the establishment of a sound base toward future development. It was also recognized that certain problem areas still existed, and the best identified one was the lack of modern technology.

Early in 1968, the Paraguayan National Industrial Development Program for the years 1969-1973 was released. One of the actions incorporated in this program was the establishment of regional development centers for the purpose of stimulating economic growth of potentially rich areas of the nation. The idea was to encourage the concerned communities in urban-rural areas to participate in their own economic development process.

Once the program became known, there were three communities which responded to the stimulus and created their own economic development entities. Representatives of these communities visited the United States, under an AID-sponsored Private Enterprise Promotion Project, for a short observation and study tour of U.S. development institutions. One of the institutions visited was the International Development Branch of the Industrial Development Division (IDD) of the Engineering Experiment Station at the Georgia Institute of Technology.

As a result of this visit to IDD, Mr. Igor Fleischer of the Technical Planning Secretariat was sponsored by AID/Mission Paraguay to participate in a 13-week internship program in economic development that was offered three times a year by the International Development Branch of IDD. Mr. Fleischer came to Atlanta, Georgia, in October 1968 and completed his internship on December 20, 1968. The following year, Dr. Juan Gregorio Silvero of the Ministry of Industry and Commerce participated in the same program and completed it on July 2, 1969.

The two newly trained Paraguayans returned to their home country and became heavily involved in the economic development plan that was being started that year. They also expressed to USAID/Mission Paraguay the limitations they

were facing and the need for additional training and orientation in trying to implement such a program. As a result, IDD was invited to present a proposal to USAID/Mission Paraguay and the Ministry of Industry and Commerce which would provide the required technical assistance.

Following this initial contact, two senior staff members (Messrs. R. W. Hammond and Nelson C. Wall) of the Industrial Development Division visited Paraguay during the month of July 1969 and obtained some first-hand information on the proposed program. During the visit, they also carried out a preliminary evaluation of the proposed urban-rural communities of Concepcion and Villarri-ca. The two staff members also discussed the general program concept with representatives of the Paraguayan Ministry of Industry and Commerce, Technical Planning Secretariat, National Development Bank, Productivity and Development Center, and other development organizations.

From these meetings and discussions, a framework was developed for a pilot program, which was reviewed in turn by representatives of USAID/Mission Paraguay.

Established Assignment

Three separate assignments evolved over the total life of this project and, although each one was slightly different from the other two, all three had essentially the same basic objective. The following summarizes the duration and specific objective of each of the three programs:

Pilot Program

A 30-week program started on March 16, 1970, and ended on September 30, 1970.

Objective. "To assist the Paraguayan government in its efforts to create regional development organizations whose efforts will center on optimum development of potentially rich areas of Paraguay, and to involve the area communities in the economic development process."^{1/}

Year 1

A 12-month work program started on March 29, 1971, and ended on December 17, 1971.

^{1/} USAID/Mission Paraguay, Contract AID/La-622, February 1970.

Objective: "To assist the government of the Republic of Paraguay and the private sector achieve a minimum annual increase by 1973 of 5 percent in the total value of exports and industrial and commercial investments. Emphasis is on increasing economic activities and generating employment in the developing rural areas."^{1/}

Year II

A 12-month work program started on April 20, 1972, and ended on June 30, 1973.

Objective: Same as Year I since this was a continuation of the activities started in 1971.^{2/}

The three projects carried out by the International Development Branch of IDD over the three calendar years had well-defined goals and objectives, but there were other unidentified aims which led to an attempt to develop an industrialization process or technique for this developing nation. The USAID/Mission Paraguay, together with the project director from Georgia Tech, established the following goals to be accomplished by the end of the third year of the project:

1. Establishment of the Department of Regional Development (Oficina de Desarrollo Regional) within the Ministry of Industry and Commerce. At the end of Year III, the department should be able to operate under the leadership of trained counterparts, and foreign technicians should no longer be required to operate this unit.

2. Establishment of five Regional Development Centers in Villarrica, Concepcion, Pedro Juan Caballero, Pilar, and Encarnacion. Staff (executive secretary) should be trained by the end of the project and the centers should be operating independently, without outside technical assistance.

3. Establishment of a "data center" in the Oficina de Desarrollo Regional for the deposit and analysis of basic information acquired both at the regional and national level to be used by the Ministry of Industry and Commerce as well as other organizations in preparing and coordinating the implementation of a program of regional development research.

^{1/}USAID/Mission Paraguay, Contract AID-526-261, March 1971.

^{2/}USAID/Mission Paraguay, Contract AID-526-309, April 1972.

4. Preparation of 25 to 30 prefeasibility studies by 1973-74 by task forces, under the coordination of the Productivity and Development Center (Centro de Desarrollo y Productividad), with emphasis on agro-industrial products. These studies were to be guided by the technical staff carrying out the three-year program.

5. Annual seminars to provide contact with a total of 300 to 500 representatives of regional and national organizations.

6. Completion of five community audits and five labor registrations by the corresponding Regional Development Centers.

7. Appropriate training of the above staff as needed. The five executive secretaries of the centers also were to be trained at IDD in Atlanta, Georgia, under a separate program entitled "International Economic Development Internship Program."^{1/}

General Project Plan

It was necessary in 1970 to evaluate the applicability of the development methodology that the International Development Branch of IDD planned to implement in Paraguay in order to determine if the technique was appropriate. This portion of the problem was solved by using the Pilot Program Phase, and the conclusions and evaluations determined the Project Plan for Years I and II.

The following summarizes the project plan for the Pilot Program and the one for Project Years I and II:

Pilot Program. The project plan included two 10-week periods to be conducted by senior members of the IDD staff plus a practical "task completion" period of 10 weeks which was to be assigned by the project director to the Paraguayan counterparts. Four basic activities were scheduled to be carried out during the 30 weeks:

1. Obtain from pertinent cooperating country officials and private sector representatives in Asuncion, Concepcion, and Villarrica the necessary information on the economic, social, and political situation prevailing in the country, including existing legislation affecting private sector development,

^{1/}Peter Cody, Regional Enterprise Development Memorandum (526-15-950-051.4), USAID/Mission Paraguay, Asuncion, Paraguay, unpublished, 1970.

availability of development credits, existing social and economic infrastructure, and plans for future expansion. This information, together with the data gathered through the community audits, would assist in determining the assets and liabilities of the cities of Concepcion and Villarrica as well as the apparent manufacturing opportunities for the regions.

2. Prepare these two communities for action through their development centers, with the aim of obtaining their cooperation in this program as well as orienting their volunteer members in industrial development methodology.

3. Conduct a series of regularly scheduled visits to the regional "development poles" to provide continued counsel and guidance in planning and implementing the local economic development program.

4. Collaborate with the Ministry of Industry and Commerce and with the designated counterpart so that in the near future these activities may be carried out without any foreign assistance.

Years I and II. The Pilot Program evaluation (both Georgia Tech and US AID/Mission Paraguay) indicated the two pilot communities of Paraguay had responded very well to this phase of the program. The response had been so effective that it was considered appropriate to recommend a continuation and broadening of the original concept. The following program plan was then recommended for the next three years, but only two years were implemented by the sponsor.

1. Regional Development Centers. The Industrial Development Division was now to continue this work and focus on five pre-selected target areas -- Villarrica, Concepción, Pedro Juan Caballero, Pilar, and Encarnación. The activities included extending the existing data base, conducting the community audits, preparing profiles of all five communities, identifying suitable and attainable community self-improvement goals, and identifying new and desirable manufacturing or business opportunities. The Regional Development Centers were to be established at this time with the cooperation of local government officials and the private sector.

2. Liaison with the Ministry of Industry and Commerce. Under the National Industrial Development Plan, the Ministry of Industry and Commerce had established as one of its highest priorities the development of these five target areas. As in most developing nations, the government was interested in

dynamic, harmonious industrial development program involving the creation of export-oriented new enterprises in the rural areas as well as the transfer of appropriate technology. The staff representatives of the International Development Branch of IDD were to work closely with the Ministry of Industry and Commerce personnel, acting as consultants and assisting the Ministry in its efforts to reach the established economic development goals.

Close liaison and coordination of activities were to be maintained at all times with designated Ministry personnel. It was the responsibility of the staff to provide a better coordination of the industrial development activities, provide assistance in the planning of new economic development plans, and maintain a constant flow of communication with all the existing organizations that had a vested interest in the economic development of Paraguay.

3. Technical Assistance to the Direccion de Desarrollo Regional.

This new department was created within the Ministry of Industry and Commerce when the recommendations from the pilot program were implemented. The Direccion de Desarrollo Regional was established as of January 1, 1971, but did not become operational until late March of the same year.

The IDD resident staff was assigned the task of providing the necessary technical assistance to this very important link in the development chain. At the same time, a program of economic and industrial development research was to be initiated if the Ministry of Industry and Commerce could assign the proper counterparts. One of the main objectives of this part of the total program was to establish a Regional Data Center which would collect relevant, pertinent information of an economic and industrial nature.

4. Technical Assistance to the Centro de Desarrollo y Productividad.

This center, which was eventually to become self-supporting, had been growing and expanding its activities. At this time, a need had been identified for the improvement of its industrial promotion program. During this program life, qualified assistance was to be provided to analyze and recommend the most effective way to establish an industrial promotion program.

5. Technical Assistance to the Centro de Promocion de Exportaciones (CEPEX). This center, which was part of the Ministry of Industry and Commerce, was dedicated to generating and promoting export activities in the country. During the project life, qualified assistance was to be provided in the area of export promotion.

6. Seminars and National Jornada. Seminars were to be presented as needed to cover the training required by the counterparts and other personnel as well as the volunteer community groups. A National Jornada (National Developers' Meeting) was also to be presented, involving to the maximum extent possible all organizations interested in the economic development of Paraguay. To this conference all the newly created Regional Development Centers would be invited, and they were to form the core of the program.

7. Feasibility Studies. During the three-year program, technical assistance and guidance would be provided to counterpart staff to prepare a series of manufacturing opportunity studies. These studies were to be export oriented, if possible, and it was desirable that entrepreneurs be identified as part of the process.

Methodology Applied

As has been discussed, the international development team had the research objective of testing a technique that could lead to an industrialization process in a developing country. A methodology had been developed over the years through the practical experience gained in less developed areas of the United States and overseas and, at this time, the staff attempted to continue the research and field test the existing concepts.

The following paragraphs briefly describe the essential steps of the methodology that was applied:

1. Study of Local Resources. It was known that the manufacturing process would require raw materials. These could either be extracted from natural source or they could be produced (grown) by man. The "community audit" would provide the necessary information and would be the source of much more needed data. As a by-product, the audits helped to identify the community problems and generated action programs aimed at solving these problems.

2. Study of the Human Resources. It was necessary to determine the existing skills, availability, cost, and other pertinent information in this area. This information would be used in the future determination of possible manufacturing activities. Specific training programs, both on site and in Atlanta, were established as a result of this activity.

3. Study of the Import-Export Situation. There was a need to determine potential markets, since this would suggest to the researchers possible manufacturing opportunities either for the internal market or for export.

4. Study of the Existing Industries. This was part of the effort to become aware of the total industrial picture and to further determine where there might be an availability of needed skills, entrepreneurial talent, and possible investors. As a by-product, possible plant expansions might be identified in the process.

5. Innovation or Adaptation of Technology. Research would be carried out to determine if any existing technology could be adapted to serve the given study areas. There was a need for innovative technology, but this needed to be geared to local conditions.

6. Preliminary Selection of Possible New Industries. With the information gathered, a listing of all potential industrial activities would be prepared. These new activities needed to conform to the parameters established by the country government and AID.

7. Prefeasibility Studies. The general list then would be systematically culled, and brief prefeasibility studies would be prepared for the remaining industrial activities.

8. Identification of Entrepreneurs. While the prefeasibility studies were being completed, the interested entrepreneurs would be further cultivated and motivated in an attempt to match them to one of the "new" industries being studied.

9. Identification of Sources of Funds. Much as in the case of entrepreneurs, sources of funds also needed to be identified and made aware of the new industrial opportunities being studied, in an attempt to draw their interest and future participation.

10. Feasibility Studies. This final "study" phase would provide a study geared to the interest of the entrepreneur, the source of funds, and the national needs.

11. Technical Assistance. Pragmatic technical assistance would be provided to aid the entrepreneur in implementing the specific small-scale industry project selected by him.

12. Evaluation. The system being field tested was continuously reviewed and evaluated to determine if the methodology was applicable and also to provide input and ideas for future modifications. As part of the total concept, the program assisted in creating or improving institutions, and they too were evaluated and reviewed.

While this methodology was being field tested, a similar methodology was presented by Messrs. Sachs and Laski in a technical document published by the United Nations.^{1/} Their research was more concerned with the strategy than with the implementation, but the general approach was similar yet more in depth in the area of "goal setting."

Implementation of Program

The actual field implementation of the program was carried out by the international staff, under the direction of the author who served as project director and who was assisted by Mr. George A. Morelos as associate project director. The following persons were involved in the field work over the three calendar years of this activity:

<u>Name</u>	<u>Organization</u>	<u>In Paraguay</u>
Nelson C. Wall	IDD/Georgia Tech	42 weeks
George A. Morelos	IDD/Georgia Tech	65 weeks
Elias Hill	IDD/Georgia Tech	104 weeks
Enrique Ponce	University of Carabobo, Venezuela	26 weeks
Leon Bepaloff	IDD/Georgia Tech	78 weeks
Gaston Parets	IDD/Georgia Tech	12 weeks
Richard Johnston	IDD/Georgia Tech	5 weeks

Pilot Program. In the initial phase, 10 major activities were implemented over the 30-week period scheduled for this portion of the total program. They were as follow:

1. Personal orientation and contact with representatives of the public and private sectors, both at the community and national level.

^{1/} Ignacy Sachs and Kazimiere Laski, Industrial Development Strategy, United Nations, Industrialization and Productivity Bulletin No. 16, Austria, April 1971, pp. 35-48.

2. Execution of community audits for both regional "development poles" utilizing the volunteer members of the development centers once established.

3. Motivation of the selected communities by making them aware of their shortcomings and assisting them in seeking solutions to their problems.

4. Assistance to both pilot development centers in matters pertaining to their organization, operation, financing, and work program.

5. Selection of possible industrial sites in the communities for future use.

6. Identification of possible manufacturing opportunities in the region and presentation of them for future study.

7. Suggestions to the Ministry of Industry and Commerce of actions required in order to provide the necessary development prerequisites and structure.

8. Recommendation of action plans for both pilot communities in an attempt to overcome the apparent disadvantages.

9. Assignment of future tasks to the Paraguayan counterpart and the "development centers" so that the program would continue to function until the next phase.

10. Evaluation of the methodology.

Year 1. After the pilot program had been evaluated by the sponsor, a "three"-year program was initiated. During the first 12 months, the following activities were initiated:

1. Staff orientation and personal contact with the local "power structure" (representatives of the public and private sector), both at the community and national level.

2. Training of the community volunteer groups so that they could carry out the assigned tasks. The training was further extended to the local leadership. Workshops and one-day seminars were presented to other interested groups, such as teachers' association, professional groups, and others.

3. Execution of five community audits for the newly created Regional Development Centers at Villarrica, Concepcion, Pedro Juan Caballero, Pilar, and Encarnacion.

4. Motivation of the community volunteers and general public to make them aware of existing shortcomings and provision of assistance in seeking solutions to the recognized problems.

5. Identification of possible manufacturing opportunities and preparation of prefeasibility studies on seven such opportunities.

6. Initiation of the Basic Data Center at the Direccion de Desarrollo Regional of the Ministry of Industry and Commerce. At the same time, local basic data collections were initiated at the Regional Development Centers.

7. Development of an Industrial Promotion Program, as well as the identification of possible investors and entrepreneurs to match with the prefeasibility studies that were being prepared.

8. Suggestions to the Ministry of Industry and Commerce of different actions required in order to strengthen the Direccion de Desarrollo Regional. Assistance to both the Centro de Desarrollo y Productividad and the Centro de Promocion de Exportaciones.

9. Recommendations of action plans for the communities and other organizations in an attempt to further strengthen the program and overcome some of the apparent problems.

10. Assistance and counseling on the manner of conducting the National Meeting (Jornada) so that interesting programs would be offered and open exchange of ideas would occur.

11. Training of the Executive Secretary of the Regional Development Center in Atlanta, Georgia, under the International Economic Development Internship Program. Preparation of the future regional development plans for the corresponding areas as part of the special training program.

12. Assignment of future tasks to the Paraguayan counterpart and the Regional Development Centers so that the momentum would not be lost and the program would continue to function until the next phase.

Year 11. During the first part of the second year, the sponsor indicated that due to a "change of emphasis" it would be necessary to phase the program out one year ahead of schedule. Unfortunately, the program was then cut short by the sponsor in spite of the success achieved by the prior phases.

The following basic changes were made in order to accelerate the phase out and still accomplish the goals of the program:

1. The Oficina de Desarrollo Regional of the Ministry of Industry and Commerce would assume the role of working with the Regional Development Centers, and the contractor would assist and provide guidance. The bulk of the field visits and internal travel would be carried out by the staff of the Oficina de Desarrollo Regional.

2. The contractor would focus mainly on the preparation of the 12 prefeasibility studies using CDP staff under contract.

3. The contractor would give his best effort to the establishment of new industries, developing entrepreneurs, assisting new investors, and promoting these new manufacturing opportunities.

4. The contractor would start turning over duties to the corresponding counterparts with proper supervision in order to expedite the change-over.

The following major activities were carried out during this last year of the program:

1. Constant staff consultation and guidance with counterpart staff members at the Centro de Desarrollo y Productividad, Ministry of Industry and Commerce, Oficina de Desarrollo Regional, Centros de Desarrollo Regional, and others.

2. Personal contacts with local "power structure" (representatives of the public and private sector), both at the community and national level.

3. Training of the counterparts so that they could carry out the assigned tasks. This individual on-the-job training activity was primarily focused on two units: a) technical staff of the Centro de Desarrollo y Productividad and b) Oficina de Desarrollo Regional.

4. Execution of the 12 feasibility studies (export oriented) with corresponding adaptation to meet local investment possibilities.

5. Direct assistance in the establishment of 21 new industries in the areas of influence of the Regional Development Centers.

6. Consultant services to the Centro de Desarrollo y Productividad in the preparation of the first manufacturing directory for the nation of Paraguay.

7. Development of industrial promotion activities, as well as the identification of possible investors and entrepreneurs in order to implement the feasibility studies being prepared.

8. Suggestions to the Ministry of Industry and Commerce, Centro de Desarrollo y Productividad, and Centro de Promocion de Exportacion of different actions required in order to assume that the counterparts would continue to act on this program once the contractor was phased out.

9. Assistance and counseling on the manner of conducting the third National Meeting (Jornada), so that the program would be meaningful to the participants.

10. Limited training of a high staff officer of the Ministry of Industry and Commerce in Atlanta, Georgia.

11. Assistance in the preparation of a new proposal and plan of work to be presented by the Ministry of Industry and Commerce to an international source of funds. This new program would allow for a continuation of the present program but with great emphasis on the continuation of the institutions built during the past two years.

12. Limited assistance and recommendations to local investors establishing new industries on how to avoid pollution and maintain the local ecology.

Problems Encountered

The goals and objectives of this program have been presented earlier in this document, but if they were to be summarized perhaps the most significant goal was the removal of existing extreme regional income disparities and the integration into national life of these outlying regions. In attempting to implement the program, numerous problems were encountered and for the purpose of this case study a few of these problems should be highlighted as examples.

1. Lack or Insufficiency of Sources of Energy. The lack of inexpensive electrical power was probably the most serious obstacle in attempting to establish an industrial development program. Electrical power would often be available but in limited quantities, at a high price, and with frequent failures in the delivery. Many of the industrial studies prepared for certain areas had to be re-done in order to consider the generation of electrical power

by the industrial user. This problem may be solved in the near future (next decade) when the Itaipu project and the Yacuretá-Apipé project become a reality.

At present, the capacity installed throughout the country is in the order of 150,000 kilowatts, of which the Acaray Hydroelectric Plant produces about 100,000 kilowatts and the balance is generated by previously installed plants in different regions of the country. The Acaray plant is estimated to produce well over 150,000 kilowatts when in full operation. The Itaipu project, which is at present being initiated and will cost over \$2.5 billion, has an estimated preliminary capacity of 10 million kilowatts. Once this hydroelectric project goes on stream, the energy picture will be greatly improved at the national level.

2. Inadequate Marketing Facilities. It has been established that the internal market is small, but this problem is compounded by the lack of marketing facilities. Access to either export market or to the internal market is at best difficult, due to the limits imposed by shortage of paved highways, secondary roads, and drops in the level of the Paraguay River during the dry season. In general, this lack of infrastructure creates an increase in the cost of transportation and leads to an unreliable and often inefficient transportation system.

It is difficult to find reliable market information, and market forecasts establishing demands for commodities both at the local and export level are usually nonexistent. From the industrial development point of view, it is very difficult to determine if a projected industry will have the volumes of raw materials needed, particularly in the case of attempting to utilize native raw materials. The other side of this problem is just as serious -- it is difficult to establish firm delivery schedules of manufactured products either internally or externally.

The producers of agricultural products have few or no storage facilities. Often the harvest must be stored in farmers' homes, and certain crops such as mandioca are left in the field until sold. These problems often create a wide price margin in the distribution chain leading to the market, the middlemen take advantage of the system, and, as a result, the agricultural producer loses his incentives to produce. The products needed by the agricultural producer often are not available or become too expensive because of the inadequacy of the system.

Many of the current plans and developments will help to solve this general marketing problem. The government is in the process of building new roads and paving existing roads, new lands are being colonized, certain government agencies are being restructured, marketing specialists are studying the problems and offering recommendations, and, in general, there is a desire at the national level to resolve some of the problems that create the inadequacies in the marketing facilities.

3. Shortage of Skilled Human Resources. There is very limited supply of people at the managerial and higher levels who are capable of generating and applying new techniques for a more effective method of production. Many persons have had the advantages of higher education and theoretically are capable of carrying out a given task, but the problem is that they are not trained in the actual performance of a task, the pragmatic implementation, or day-to-day routine performance.

There is an abundance of semi-skilled and unskilled labor, but the availability of skilled labor and technical personnel is relatively scarce. The great mass engaged in agricultural and allied activities may suggest that agriculture is in reality a "residual occupation" from which a great labor force could be drawn by attractive industrial wages or commercial work, once they have received appropriate training.

Broadly speaking, the situation in Paraguay is similar to that of other developing countries in this area. There is what the author considers a "poor distribution" of professional skills. There is an abundance of lawyers, economists, and the humanities in general, but, at the same time, there are few engineers, scientists, technicians, and skilled mid-level personnel. This limitation creates a serious problem which restricts any industrial development program.

4. Limited Sources of Capital. One of the most serious problems encountered in Paraguay was that of financing industrial projects. In general, there is a need for a functional industrial credit policy geared to the assurance of availability of funds. Any industrial-type project will require financing of the capital investment together with working capital and, in some cases, export credit.

The Banco Nacional de Fomento has been reorganized and has been trying to improve its operation, but it appears that the bank is limited in its funds

and has a difficult time considering loan requests. It is the author's opinion that the bank also needs additional trained staff in order to shorten the time required to process a loan and also to provide better assistance to its clients.

5. Other Limitations. Brief mention should also be made of a number of other problem areas that limited the full implementation of the economic development program in Paraguay:

- a. Industrial production appears to be too concentrated on primary type goods.
- b. The national economy is very sensitive to conditions of exports or foreign trade.
- c. Need for much larger development of the domestic capital market.
- d. Correction of chronic budget overspending by the national government.
- e. Modification of existing laws that have detrimental effects on exports and other industrial activities.
- f. Limited entrepreneurial interest together with a very small "mass of entrepreneurs," most of whom are already active in one field or another.
- g. Need to accelerate the rate of transfer of industrial technology which will increase the application of technical innovation.
- h. Need for better coordination between government sponsored infrastructure projects and privately financed industrial projects.

PROJECT ACCOMPLISHMENTS

As a preface to a consideration of the specific results that were achieved during the life of the case study project, it is well to summarize the time and funds that were invested in the overall economic development program in Paraguay. A total of three contracts were awarded by the Agency for International Development to the Georgia Institute of Technology. The Pilot Program ran from March 16, 1970, through September 30, 1970; Year I from March 29, 1971, through December 17, 1971; and Year II from April 20, 1972, through June 30, 1973. The total funding for all three contracts was \$120,000.

In very few instances is anyone in a position to claim that a given industry was established as a direct result of his actions or the program for which he was responsible. This holds true in the case of the project that was implemented in Paraguay. The Industrial Development Division was responsible for a great number of actions that led to specific project accomplishments, but so were many other organizations and individuals. The results that are recounted in this chapter, therefore, should be viewed as joint efforts of the project team and of numerous others at the national and local level in the study country.

As of June 30, 1973, and either as a direct or indirect result of these joint activities, 21 new small industries had been established in the project areas of Paraguay. The new industries represent a capital investment of over \$2,500,000 and a direct employment of over 900 persons. This does not include the multiplier effect of the new payrolls and the purchases of local raw materials.

As part of the activities of Year II, 12 additional manufacturing opportunity studies were concluded for new industries that are export oriented and would utilize local raw materials. The potential investors were identified for all of these new studies, and it is likely that additional new industries will develop from this research base.

Industrial Sector

The International Development team, together with the counterpart staff at the Oficina de Desarrollo Regional, assisted in the establishment of the 21 new industries mentioned above. Of the 21, 19 export their total production

and nearly all use nothing but local raw materials. Individual summary reports on all of the new industrial activities follow:

1. Aserradero Paraguay, S. R. L. Located on Lot No. 3217 of the Pedro Juan Caballero industrial zone. Owner: Mr. Pablino Mendoza Espinola (Paraguayan citizen). Products: boards, dimensional building stock, parquet. Market: export, about 10 percent to 20 percent to national market. The export will go to Serrania Deunidade Mattogrosense of Sao Paulo, Brazil. Buildings: a total of 1,308 square meters of covered area plus other facilities such as water tank, storage space, etc. Total construction about \$6 million. The equipment investment totals \$5,570,000. Plant can process 27 cubic meters of raw cut lumber per 8-hour shift, powered by a 200 HP boiler and also using electrical power. In the future plant may go to two or three shifts. On the basis of one shift and 27 cubic meters of lumber per day, the study indicates the plant will produce a total of 20 cubic meters of finished product per day, and this is enough to support the investment. A total of 32 persons will be employed by the plant. Total investment, including buildings, equipment, installation, working capital, and others, is \$13,252,000 (land not included). Company had sufficient funds to cover 76 percent of investment and borrowed 24 percent in Brazil through letters of credit. The land valued at \$5,290,000 was given as part of the loan security. According to the study, at the end of one year of operation the plant will show a net profit of \$2,799,000. Benefits under Law 216/70 for importation of equipment, etc., have been granted.

2. Aserradero Nueva Estrella. Located on Lot 1902 of the Pedro Juan Caballero industrial zone. Owner: Mr. José A. Fleitas Pratt. Products: boards, dimensional building stock, and others. Market: all will be exported to "Walcy" Comercio de Madeiras Ltd. of Brazil with warehouses in Santa Catarina, Paraná, and Matto Grosso. Buildings: a total of 920 square meters of covered area with a cost of \$1,448,000. The equipment investment totals \$6,060,000. Plans call for a production of 70 cubic meters per day (8 hours) of finished units. The necessary raw material per day will be about 90 cubic meters of raw cut lumber. Plant operation will require 35 persons. Total investment of \$12,921,621, including land, equipment, installation, building, working capital, and others. The company has enough funds to carry out the project free of loans. According to the study, at the end of the first year the company will show a net profit of \$24,624,235. Benefits under Law 216/70

for importation of machinery and equipment duty free and other benefits established have been granted.

3. Aserradero San Ramón. Located on Lot No. 1861 at Colonia Vice-Presidente Sánchez, adjacent to Pedro Juan Caballero. Owner: Mr. Ramón Mendoza Espinola. Products: boards, dimensional building stock, frames, and others. Market: over 90 percent will be exported to Brazil, most of it to the general area of Sao Paulo. Building covering about 500 square meters with a total cost of about ₡1,500,000. Equipment has been purchased for a total of ₡2,400,000, and installation cost has been calculated to be ₡1,100,000. The plant will use about 35 cubic meters of raw cut lumber per day (8 hours) to produce about 22 cubic meters of finished products. The employment figure has been established at 21 persons. The study indicates that the total investment is about ₡5,826,000, which includes land, equipment, installation, buildings, working capital, and others. Also, on the basis of the indicated production, the cash flow shows a net profit of about ₡2,900,000 at the end of Year I. The Banco Nacional de Fomento has provided a ₡1 million loan, with the balance generated from company resources. Benefits under Law 216/70 for importation of equipment and tax advantages have been granted.

4. Aserradero El Lago. Located in Pedro Juan Caballero at Cerro León and Alberti Streets. Owner: Mr. Javier A. Alvarez. Products: boards, building dimensional stock, parquet, and others. Market: about 70 percent local and 30 percent export to Brazil through contracts with four buyers in the area of Sao Paulo. Buildings are now ready with about 1,000 square meters of covered area; the cost of construction of buildings and a water tank has been established at ₡1,916,930. The equipment being installed, purchased outside of Paraguay, ran to a total of about ₡3 million. They will require 43 cubic meters per day (8 hours) of raw cut lumber to produce about 30 cubic meters of finished product. For this production, a total of 33 persons will be employed. Total plant investment is ₡5,038,000, which includes land, construction, equipment, installations, working capital, and others. Cash flow estimates indicate a ₡7,078,000 profit at the end of the first year. Total investment was made by the owner; no outside funding was necessary. Benefits under Law 216/70 for importation of equipment and other tax benefits have been granted.

5. Industrial Exportadora Paulista, S. R. L. Located on Lot No. 1425 in Colonia Vice-Presidente Sánchez next to Pedro Juan Caballero. Owner: Antonio

Carlos Lima (Brazilian citizen). Products: boards, dimensional building stock, strips, and others. Market: all export to the Importadora Mattogrossense Industrial y Comercial Limitada in Ponta Porã, Brazil. Buildings have been constructed for a total of about 1,416 square meters of covered area at a cost of ¢3,540,000. The necessary equipment, imported from Brazil, cost a total of about ¢2 million, with ¢300,000 for installation costs. With the purchased equipment, they will require about 30 cubic meters per day of raw cut lumber and should produce about 22 cubic meters per day of finished product. A total of about 29 persons will be employed by the industry. Total investment is ¢8,800,000, which includes land, equipment, installation, building, working capital, and others, of which ¢7 million was generated by Mr. Carlos Lima and his two partners, Messrs. Ivo Ribeiro Lima and Francisco Von Atzingen de Almeida. The balance, ¢1,800,000, will be provided for by the Banco Nacional de Fomento. The cash flow indicates sales of ¢22,281,000 and a net profit of ¢3,346,448 per year. Benefits under Law 216/70 for importation of equipment, tax benefits, and others have been granted.

6. Agro-Industrial Amambay, S. R. L. Located in Colonia Vice-Presidente Sánchez next to Pedro Juan Caballero. Owner: six partners, four of whom are from Brazil and two from Paraguay. Products: boards, dimensional construction stock, decking, parquet, and others. Market: all production will be exported to Brazil to three main companies that have arrangements with the producer (A. Martello y Cia. Ltd., Marilia, Sao Paulo; Reunidas S. A., Sao Paulo; Serraria Moraes Pinto, Osasco, Sao Paulo). Buildings are under construction and, when finished, 1,173 square meters of covered area will be available. Buildings and land represent an investment of ¢3,820,000. The equipment, which is being imported, will cost about ¢15,860,000. They plan to produce at first about 80 cubic meters of finished product per 8 hours a day; later production may be increased by going to two or three shifts. To operate the plant will require about 100 cubic meters of raw cut lumber per day and a staff of over 60 persons. Total investment will be about ¢26,135,712, which includes land, buildings, equipment, installation, working capital, and others. This investment will produce about ¢63 million in sales per year with a net profit of about ¢23,280,000 per year. The capital is to be provided for by the six partners (¢10 million) and a loan that they have now negotiated in Brazil for the balance. Benefits under Law 216/70 for the importation of equipment, tax benefits, and others have been granted.

7. Aserradero Luciano Cañete S. R. L. Located in Colonia Vice-Presidente Sánchez next to Pedro Juan Caballero industrial zone. Owner: Mr. Luciano Cañete. Products to be produced are boards, dimensional building stock, and others. Market is to be in Brazil and the owner indicates that he has letters of intention from several buyers in that country. Buildings are being constructed as well as a water tank. When finished, there will be 186 square meters of covered area at a cost of about ₡470,000. The equipment, which will be imported, represents an additional investment of ₡615,000. This is a small plant and will only produce about 9 cubic meters of finished products per day, using about 12 cubic meters of raw cut lumber per day. Eight persons will be employed by this new company. Total investment will be about ₡1,900,000, which includes building, equipment, installation, and working capital (land is not included). The owner will be able to take care of the investment from his personal funds. The study indicates sales of ₡7 million for the first year and a net profit of ₡1,977,000. Benefits under Law 216/70 for the importation of equipment, tax benefits, and others have been granted.

8. Maderera Internacional S. R. L. Located in Capitán Bado, Department of Amambay. Owners: Ademir Rodriguez Das Anjos, Joao Cardoso Da Silva, Maria Barbosa Rodriguez, and Maria de Lourdes Da Silva. Products to be produced are boards, dimensional building stock, door and window frames, decking and others. Market is to be all in Brazil, so it will export 100 percent of its production. Buildings are being constructed as well as other facilities for a total of ₡1,551,000. When finished, there will be 756 square meters of covered area for the plant. The equipment is all being imported and the invoices indicate an approximate investment of ₡3,200,000. The plant will produce about 18.75 cubic meters per day (8 hours), so it will require about 25 cubic meters per day of raw cut lumber. Twenty-seven persons will be employed by this new company. The total investment is ₡7,800,000, all of which came from the owners' personal funds. The total investment includes land, equipment, installation, buildings, operating capital, and others. The study indicates sales of ₡17,250,000 per year and a profit of ₡4,533,723 at the end of the first 12-month period. Benefits under Law 216/70 have been granted.

9. Maderera Paraguaya "Madepar". Located in Colonia Vice-Presidente Sánchez, next to the City of Pedro Juan Caballero. Owner is Mr. Juan Emilio Bianchini (Brazilian citizen). Products to be produced are boards, door frames,

dimensional stock for building trade, hard boards or floor boards, and others. Market is 100 percent export to Brazil and the owner has a five-year contract with CEMIG in Minas Gerais for his production. Buildings are now under construction to house the equipment and other support facilities. When finished, there will be 800 square meters of covered area at a cost of about \$1,800,000. The equipment has been ordered and will be imported at a cost of about \$1 million, which will allow a daily production of about 57 cubic meters representing the purchase of about 80 cubic meters per day of raw cut lumber. The plant will employ 35 persons and the total investment will be about \$5,342,000, of which the owner has had to borrow about 10 percent through the Banco Nacional de Fomento. According to the cash flow calculation, this company should have a net profit of about \$19,203,000 after 12 months of operation. Benefits under Law 216/70 have been granted.

10. Industrial, Comercial, Importadora y Exportadora "San Pablo" S. R. L. Located in Capitán Bado, just outside the municipal limits of the City of Pedro Juan Caballero. The owners are four persons from Brazil: Messrs. Helio Gianini, Rodolpho Amancio Do Nascimento, Joao de Oliveira Martino, and Ampelio Peratti. Products to be produced will be boards, construction dimensional stock, door and window frames, parquet, and other wood products. The total production is to be exported to the area of Sao Paulo where the company indicates they have outlets for their production. Building plans call for a total of over 2,000 square meters of covered area at a cost of about \$6,650,000. The equipment, which is all being imported, represents an additional investment of over \$4 million. The plant is designed to produce 72 cubic meters of finished products per 8 hours a day and will require about 96 cubic meters of raw lumber per day, which will be purchased locally. Employment figures indicate 64 persons needed to operate the plant. The total investment will be about \$24,750,000, of which \$8,726,280 has been borrowed from financial sources in Brazil. The estimated end-of-the-year net profit is on the order of \$20,608,000. Benefits under Law 216/70 for the importation of equipment, tax benefits, and others have been granted.

11. Industrial Guaraní, S. R. L. Located in Vice-Presidente Sánchez, next to the City of Pedro Juan Caballero. Its owner, Mr. Adriano Americo Wordell, has been in lumber business before and represents a group of persons who were not named. Products to be produced are boards, dimensional building stock,

strips, and parquet. All production is to be exported to Madereira Malenza, Ltda. in Curitiba, Brazil. Several buildings are under construction and, when finished, there will be an investment of about ¢2,300,000. The equipment to be installed is also being imported and will cost about ¢5,522,000. The plant should be able to produce about 37.50 cubic meters per day of raw cut lumber which will be acquired locally. Employment will be fairly large, using a total of 53 persons with a yearly payroll of over ¢7 million. Total plant investment is calculated to be ¢18 million, which covers land, equipment, buildings, installation, working capital, and others. This investment will produce a net profit of ¢4,291,000 per year, according to their cash flow. The company has requested a ¢6 million loan from Banco Nacional de Fomento. The balance, ¢12 million, required for the plant was generated by the associated individuals. Benefits under Law 216/70 for the importation of equipment, tax benefits, and others have been granted.

12. Industrias de Maderas Percoá. Located in Vice-Presidente Sánchez, in the same general area as others in this document. The owner is Dr. José Antonio Daher, a Brazilian citizen who also owns a similar operation in Matto Grosso, Brazil, under the name of Madereira Agro Pastoril, Dorados, Matto Grosso. Products to be produced are boards, dimensional stock for construction industry, strips, frames, parquet, and others. All of the production will be exported to Brazil through five different buyers that are listed in the original report. Buildings are being completed to provide a total of 1,900 square meters of covered area at a cost of about ¢5,340,000. The necessary equipment has been ordered in Brazil and represents an investment of over ¢10 million. The plant should produce up to 100 cubic meters per day and will use only local lumber. Employment figures show a total staff of 98 persons with a yearly payroll of over ¢9,300,000. The total plant, land, equipment, installation, buildings, and working capital represent ¢20,526,000, and all of the investment is being covered by the present owner. According to his figures, this investment will provide a net gain at the end of year of over ¢33,626,000. Benefits under Law 216/70 have been granted.

13. Aserradero Nuestra Señora de la Victoria. Located in Colonia Vice-Presidente Sánchez, next to the City of Pedro Juan Caballero. The owner is Mr. Juan Niz Paniagua. Products to be made are boards and dimensional stock for truck body construction. About 50% of the production will be exported to

Brazil. The plans call for two places of business, one of which is the sawmill and the other will be a warehouse and sales office in Pedro Juan Caballero. When finished, both installations will represent about ₡2,774,000. The equipment for the plant is to be brought in from Brazil and represents an investment of over ₡3 million. The sawmill will require about 60 cubic meters of raw lumber per day to produce about 45 cubic meters of finished units. To operate both locations, about 35 persons will be employed and the payroll will be about ₡1 million per year. The total investment will be over ₡9 million, which includes land, buildings, equipment, working capital, and others. Management expects to net ₡10,843,000 after one year of operation from sales of about ₡35 million. Benefits under Law 216/70 have been granted.

14. Industria y Comercio Importación, Exportación María Victoria. Located in Pedro Juan Caballero. Owner is Suehiro Ito and his plans call for total exportation of his products to Aserrería Chavez Nuñez in Sao Paulo, Brazil. Products to be manufactured are boards, construction dimensional stock, and others. The buildings are now being completed and will provide 288 square meters of covered area and a water tank, all of which represent about ₡800,000 in investment. Necessary equipment has been ordered from Brazil and this will be an additional investment of ₡1,070,000. The sawmill will produce some 17 cubic meters per day and will require about 23 cubic meters of raw cut lumber. Some 18 persons will be employed by this company and the payroll is estimated at ₡1,800,000 per year. Total investment will be in the order of ₡3,100,000, including land, construction, equipment, operating capital, and others. At present, no loans have been requested by Mr. Ito. According to his plans, at the end of one year of operation, the company should have a net profit of ₡3,357,000 on sales of ₡13,260,000. All benefits under Law 216/70 have been granted.

15. Industrial Exportadora de Maderas Aquidabán S. R. L. Located in Vice-Presidente Sánchez, just outside of the City of Pedro Juan Caballero. The owner is Mr. Alcindo Moura Duque (Brazilian), who has plans to produce boards, dimensional stock, parquet, frames, and others. The total plant production will be exported to Industria y Comercio Manoel Duque Ltd. of Baurú in Brazil. The plant installation and buildings are now under way. When finished, there will be 1,500 square meters of covered area with an investment of over ₡2,627,000. All the required equipment is being imported from Brazil at an additional investment of ₡4,400,000. Plant capacity is indicated to be around

1,250 cubic meters per month, which will require about 1,700 cubic meters of raw lumber per month. A total of 43 employees are anticipated with an annual payroll of \$5,580,000. The total plant represents a \$11,162,000 investment, which covers land, equipment, buildings, installation, working capital, and others. Management anticipates a net profit of \$5,415,000 by the end of the first year of operation, on the basis of over \$42 million in sales. Benefits under Law 216/70 have been granted.

16. Industria y Comercio Nipo-Paraguay. Located in the City of Pedro Juan Caballero. The owner, Mr. Sussumu Araki, a Japanese, has plans to produce furniture and mattresses. This industry will not be export oriented but since Pedro Juan Caballero and Ponta Porá, Brazil, share a street as a boundary, it is very possible that retail sales will take place on both sides of the street. Three small buildings will be used with a total of about 275 square meters of covered area; two will be fabrication shops and one will be for sales. Plans call for about 6,500 units per year, not counting mattresses. The equipment investment is about \$2,606,000, and 24 persons are to be employed with an annual payroll of about \$3,092,000. All of the investment is being made by Mr. Araki and, at present, no loans have been requested. His plans call for sales of about \$40.5 million. If his calculations prove true, he will have a net profit at the end of the year of about \$10 million. This industry will use local wood for the furniture, but it will need to import metal parts, hardware, equipment, and other items. All benefits under Law 216/70 for the necessary imports and other benefits have been granted.

17. Compañía Industrializadora de Alimentos Sociedad Anónima (CIASA). This is an old established industry in the City of Concepción. At this time, the president of the company is Dr. Adolfo Lailla, who has plans to expand and set up a new flour mill for mandioca, wheat, and others to be used for human consumption, as well as to manufacture animal feed. All production will be for the national market, so it may not be considered an export-type industry, but some of the products replace items that are now being imported. The present facilities will be expanded by 2,600 square meters of covered area at a cost of about \$3,357,000. The mill equipment, laboratory facilities, and silos will require an investment of over \$30 million. Nearly all of the equipment will come from Italy, and the company has a credit line with the equipment manufacturer. The mill capacity is rated at 20 metric tons of wheat per 24 hours of

operation. The company plans for the first year a production of about 4,668,000 kilos of flour. The new installation will require 12 persons to be employed with an annual budget of ₡1,740,000. This study indicates income from sales at ₡69,415,000 with a production cost of ₡65,729,576, which leaves a profit of ₡3,685,424 after an investment of about ₡48 million. All benefits under Law 216/70 for the required imports and others have been granted.

18. Aserradero Callejón Brazil. Also located in Colonia Vice-Presidente Sánchez, just outside of the City of Pedro Juan Caballero. The owner is Mr. Tadashi Todaka, Japanese now living in Paraguay. Plans call for the manufacturing of boards, dimensional stock for the building trade, and similar items. The production will be marketed 50 percent national and the balance to Brazil. Two buildings are being fabricated to provide a total of about 650 square meters of covered area at an investment cost of about ₡1,414,000. Production will be about 11 cubic meters per day from an input of 15.7 cubic meters per day of raw cut lumber. A total of 15 persons will be employed and payroll will be about ₡1,374,000 per year. The equipment being imported, once installed, will represent an additional investment of ₡1,130,000. The total plant will represent a ₡3,724,000 investment, which includes land, buildings, equipment, working capital, and others. Mr. Todaka plans to handle the investment from his private resources and no loans are anticipated at this time. According to the study prepared by the Ministry of Industry and Commerce, at the end of the first year, Mr. Todaka will show a net profit of about ₡1 million. All benefits under Law 216/70 for the required imports and taxes have been granted.

19. Aserradero Hiroshi Maruo. Located in Colonia Vice-Presidente Sánchez, near the city of Pedro Juan Caballero. It is owned and operated by Mr. Hiroshi Maruo. His plans call for the manufacturing of boards, dimensional stock for building industry, and others. Total production to be exported to Brazil through an agreement with Industrias de Madera Peroba (item 12 in this document). Buildings to house the plant are under construction and, when finished, will represent a total covered area of 650 square meters at a cost of over ₡1 million. Equipment being imported will add another ₡1 million to the investment. The yearly production will be about 3,600 cubic meters and all raw lumber will be purchased in the local market. A total of 15 persons are to be employed by this new installation. Total investment will be ₡3,002,000 to be financed by

Mr. Maruo; no loans have been requested. The above investment figure covers land, buildings, equipment, working capital, and others. The study shows a sales figure of ₡9,300,000 per year with a net profit of ₡2,968,000. All benefits under Law 216/70 for this industry have been granted.

20. Adoquines Villarrica. Located outside of the City of Villarrica on the road to Col. Oviedo. This plant belongs to the municipality of the City of Villarrica, but it is being operated not only to serve the city, but also to sell excess paving bricks to the surrounding cities. The plant has been completed and has been in operation for nearly a year. This small industry was created to substitute an import from Brazil (paving blocks) and has been very successful. At present, the plant employs about 20 persons and shows an original capital investment of about ₡5 million. The payroll represents well over ₡2 million per year and a net profit is anticipated in the order of about ₡2 million per year. All benefits under Law 216/70 have been granted to this industry.

21. Aserradero Philippe Desalbres. Located at Curé Sobrado, this enterprise is another sawmill built on the basis of the original Georgia Tech study of manufacturing opportunities. All of the production will be exported to Brazil, and the estimated volume is in the order of 20,000 cubic meters per year. Mr. Desalbres is a nationalized Paraguayan and has recently started building his sawmill. He will have a total capital investment of about ₡20 million, and he does not plan to borrow any money for his enterprise. It is estimated that about 50 persons will be employed with over ₡4,300,000 in the annual payroll. The owner anticipates a net return of about ₡20 million per year. Requests have been made for all benefits under Law 216/70 for this industry.

Community Development

Five Regional Development Centers at the community level were established -- Villarrica, Concepcion, Pedro Juan Caballero, Pilar, and Encarnacion. Each community was organized, volunteer groups were trained, and individual community audits were conducted and published.^{1/}

^{1/} For details of the community audits, refer to the following publications: Wall, Nelson C., Programa Regional de Desarrollo Económico, República del Paraguay, Georgia Institute of Technology, Atlanta, Georgia, Febrero 1972, Apéndices 2, 3, 4, 5, and 6.

A brief summary of other activities follow by communities:

1. Villarrica. The Centro de Desarrollo Socio-Económico del Guairá, with the assistance of the IDD and counterpart staff, has been able to do the following:

- a. Silkworms. Purchase of 50,000 mulberry shoots which were donated to farmers and then planted. This activity developed into a 10-hectares (100,000 square meters) mulberry plantation. The Banco de Fomento assisted the project and established a line of credit of over ₡500,000 per planter. It is anticipated that by the end of this calendar year, there will be over 100 hectares planted and in production. The first silkworms have been brought in, and the Japanese Economic Mission has indicated that they will consider setting up a silk processing plant if the community can extend the mulberry plantations to a total of 1,000 hectares. This is a new agricultural and industrial activity for this rural area.
- b. Credit Union. The first Credit Union was established by the local teachers and professors with guidance from the Regional Development Center. Well over 180 members have joined and paid the initial deposit of ₡1,300 to ₡3,000, depending on income level. The Centro has made a no-interest loan of ₡200,000 to help start the Credit Union. There are over 250 signed members who have not yet made an initial deposit.
- c. Aho-Poí. The Development Center acted to set up the first annual Aho-Poí festival at the community of Yataeity. Over 150 persons were trained on cooperative procedures as well as improvement of this handicraft. Students (architects) at the University have designed new patterns as well as new items such as ties, handbags, slippers, and other non-traditional items.
- d. Hotels. Several local investors became interested in this activity; the Centro assisted most of them at one point or another of the development.
 - 1) A new 50-room hotel with air conditioning, private baths, etc., is now underway. This building was designed by a local architect and is being built behind the new Municipal Palace.

- 2) A local restaurant owner has obtained a \$2 million loan to build 12 hotel rooms with baths and air conditioning over his existing building where the restaurant is located.
 - 3) An existing small hotel obtained a \$600,000 loan and added 10 baths to the existing 10 rooms, as well as ceiling fans and other improvements.
 - 4) Two other hotel projects are now being considered by local investors.
- e. New Industry. With a \$5 million municipal loan that was granted, a small-stone brick (paving block) plant was purchased and installed. The plant is now in operation and employs 20 to 25 persons. The manufactured product is being purchased for street paving and by private citizens for other paving needs (see industrial sector).
- f. Frigorífico Guairá, Sociedad Anónima, Comercial, Industrial, y Financiera (FRIGUSA). The Center has supported this project very heavily and, to date, it still has a very good potential. The overall project is very large and great investments will be required. The Banco de Fomento has shown an interest in this integrated meat processing plant, but as yet many details are still pending. The Ministry of Agriculture, due to the activity of the Centro, has established an experiment station in Villarrica to research and train local people on proper methods of raising hogs and selecting better breeds for the local conditions. This pilot plant is now in full operation and, when last seen, several breed sows had just arrived from Argentina. A preliminary study of the meat packing industry was prepared and published.
- g. Regional Development Office. The Center was able to move into a new office building -- a large one-story building which offers a very comfortable conference or meeting room that can seat well over 100 persons, three private offices, a file room, and one additional room for the foreign technicians. All of the offices have been newly furnished with metal desks, and fans have been installed. The new office is very attractive and is located on a principal street of the community. All of this was carried out with funds raised by the Center.

- h. National Meeting (Jornada). The Second Jornada was hosted by the Centro de Desarrollo Socio-Económico del Guairá on July 17 and 18, 1971. This national meeting was very successful and on the opening night there were over 150 persons present. All of the Regional Centers were represented, as well as the Ministry of Industry and Commerce, Secretaria Técnica de Planificación, Centro de Desarrollo y Productividad, Banco de Fomento, Unión Industrial, and many others. The event was well covered by the news media, including a television newscast.

2. Concepcion. The Asociación Regional de Desarrollo Económico y Social (ARDES) also had a very active year, and the local volunteer staff, together with the IDD and counterpart staff, carried out a number of activities:

- a. Leathercraft. An instructor has been obtained through the Ministry of Education, and this person has established a vocational training program for leathercraft. The idea is to improve the quality of the local craftsmen and, if possible, establish a leather industry in the near future.
- b. Woodworking. At the same time, a woodworking project was initiated, and another instructor was obtained for this vocational training program. The basic plan is to eventually establish both of these activities (leathercraft and woodwork) as industries in the region of Concepcion.
- c. Expanded Industry. Technical assistance was provided during the pilot phase to Hermanos Bordon, a local commercial operation. At the time the company was interested in bottling caña (a type of rum) for the local market area. Assistance was provided in setting up a bottling process, and they have since gone into operation bottling and selling this local product. They are now looking at the possibilities of producing grapes and eventually making and selling wine. The research team explored this idea and prepared a prefeasibility study which was presented to the potential investor.
- d. Regional Development Office. This community also decided to improve the office facilities for the Development Center, and a new office building was obtained. The new facility has a large

conference room that can sit over 100 persons and three offices for the local staff. In another wing of the same building, the two vocational facilities described above have been housed. The meeting room is also being used by other organizations such as professional groups, civic clubs, and others. This was again done with the support of the community and local funding.

- e. National Meeting (Jornada). The First National Meeting of the Regional Development Center was sponsored by ARDES and held in the city of Concepcion on May 31, 1971. The program was well presented and representatives of all the national development organizations were present. The President of the Republic visited Concepcion at that time and spoke at the opening ceremony. Total attendance is estimated to have been well over 200 persons.
- f. New Industries. The counterpart staff from the Ministry of Industry and Commerce, together with ARDES and assisted by the contractor, prepared a prefeasibility study for a local firm to establish a 21-ton per day flour mill. This appears as one of the 21 new industries reported earlier in this document. The study has been approved and the necessary "decree" was issued to provide them with tax "incentives."

The CDP staff, assisted by ARDES and guided by the IDD staff resident, also prepared two different export studies (part of the 12 prefeasibility studies) on the modernization and expansion of two local lime producing plants. The studies cover the installation of two new hydrated lime plants. At the end of Year II, one of the installations was completed and on stream.

Another new industrial project for the area involves more utilization of a unit of CLASA. Three activities were considered:

a) development of a "mandioca" plantation as a source of raw materials; b) design of production schedules to better utilize plant capacity; and c) possible installation of an animal feed mill to utilize sub-products of the plant.

The study of a marble quarry and industrial processing plant has led to the financing of this industrial activity by COMDESA and this project is now being implemented. This published study was

presented to COMDESA, USAID/Paraguay, and other interested parties. This new industry will be of great economic impact to the area of Concepcion and will employ a great number of unskilled labor from that general location.

3. Pedro Juan Caballero. La Junta Regional de Desarrollo del Amambay was newly created during Year I of the program, and this organization's activities have been mainly in the area of organizing and starting to operate:

- a. Organization. The IDD technical staff, together with the counterpart staff from the Ministry of Industry and Commerce, assisted the local group in getting organized and preparing their legal documents, as well as rules and by-laws. An election was held and the Board of Directors was chosen as well as the officers for the year.
- b. Membership. A membership campaign was established and all local businessmen, as well as many private citizens, were contacted to get them to participate in this activity and to contribute to the support of the Center.
- c. Office. An office building was obtained and the Regional office was established. Furniture was purchased as well as supplies. This was all done with community funds.
- d. Executive Secretary. A qualified person was appointed to this position and training was given to him by the technical staff member present at the time. The office became operational during the first quarter of the program year.
- e. Community Audit. Volunteer groups were formed and trained to perform this task. The audit was conducted and finished in a 90-day period of time. The material was later reviewed, edited, and published.
- f. Action Plans. As a result of the audit, certain shortcomings were identified and brought to the attention of the community. The Regional Development Center has the necessary Action Plan to attempt to correct these deficiencies.
- g. New Industries. On the basis of one of IDD's earlier studies titled Factibilidad de Instalar un Aserradero de Mediana Capacidad en Pedro Juan Caballero, published as Appendix 9 of the report Programa Regional de Desarrollo Económico, República del Paraguay,

por el Ing. Nelson C. Wall, Georgia Institute of Technology, Atlanta, Georgia, Febrero 1972, 19 sawmills and woodworking industries have been installed during Year II in the area of Pedro Juan Caballero.

The vast majority of these new industrialists were not in the Punta Porá area at that time and did not, as many believe, simply move their industrial operations across the border. They were really new investors and not relocated industries. For additional details on these industries, refer to the section titled Industrial Sector.

4. Pilar. The second of the newly established (Year I) Regional Development Centers for this program year was established at Pilar. The organization was named Junta Regional de Desarrollo de Ñeembucú.

- a. Organization. The community was organized very early in the program year because some groundwork had been done during the pilot phase of the program. The community responded very well and, in a matter of a few weeks, the group was organized, all legal requirements were completed, an election of officers and Board of Directors had been held, and they were ready to start operating.
- b. Membership. An aggressive campaign was initiated and all local businessmen were contacted, as well as private citizens, educators, professional, and others. A good membership group was thus created and sufficient support was generated to support the Regional Development Office.
- c. Office. A local building was leased to house the Office of Regional Development and, through community action, funds were obtained to furnish the office and purchase the necessary supplies. Although this location is not very large, it is ample for the present needs of the community.
- d. Executive Secretary. A well-qualified person was hired to carry out this very important task. At the time he received basic training from the IDD staff technicians assigned to the project. The office then became active and has been operating well since then.
- e. Community Audit. Volunteer groups, under the leadership of the Executive Secretary and assisted by the IDD staff technicians and

the Paraguayan counterparts, were able to conduct the community audit in a period of about 80 days. This material has since been reviewed, edited, and published.

- f. Community Project. As a result of the audit, it became apparent that the local post office was delaying the mail delivery due to the lack of transportation for the mailman. The Center took it upon itself to collect funds to purchase a bicycle, and it was donated to the post office department as a community gesture.

5. Encarnación. This was the third newly established Regional Development Center programmed for Year I of the project, and the organization decided upon the name of Consejo Regional para el Desarrollo de Itapúa.

- a. Organization. The community was very slow in getting organized. Because of this, it was the last center to be established. The legal documents have been processed and officers have been elected as well as a Board of Directors.
- b. Membership. The membership campaign has not yet produced great results. Some members have been signed but there is still a need for a much larger membership in order to have sufficient income to support the Center.
- c. Office. One room in an office building is being used at present as the Regional Office. Later, if sufficient funds can be generated, the office will be moved to a more desirable building in a better location. There is a need for furniture, equipment, and office supplies but, again, they must wait until sufficient community support is gained to provide the necessary facilities.
- d. Executive Secretary. A full-time Executive Secretary has been named and he has had some previous experience in this field of work. The person was trained by the IDD staff members assigned to the project and later, together with the four executive secretaries for the other Regional Development Centers, traveled to Atlanta and participated in the 12-week internship program offered at the Industrial Development Division.
- e. Community Audit. The volunteers did not participate very actively in this task, in spite of having been motivated for a period of time. As a result of this shortcoming, most of the audit was

conducted by the executive secretary personally, and this delayed the completion of the project. The audit was later reviewed, corrected, edited, and printed.

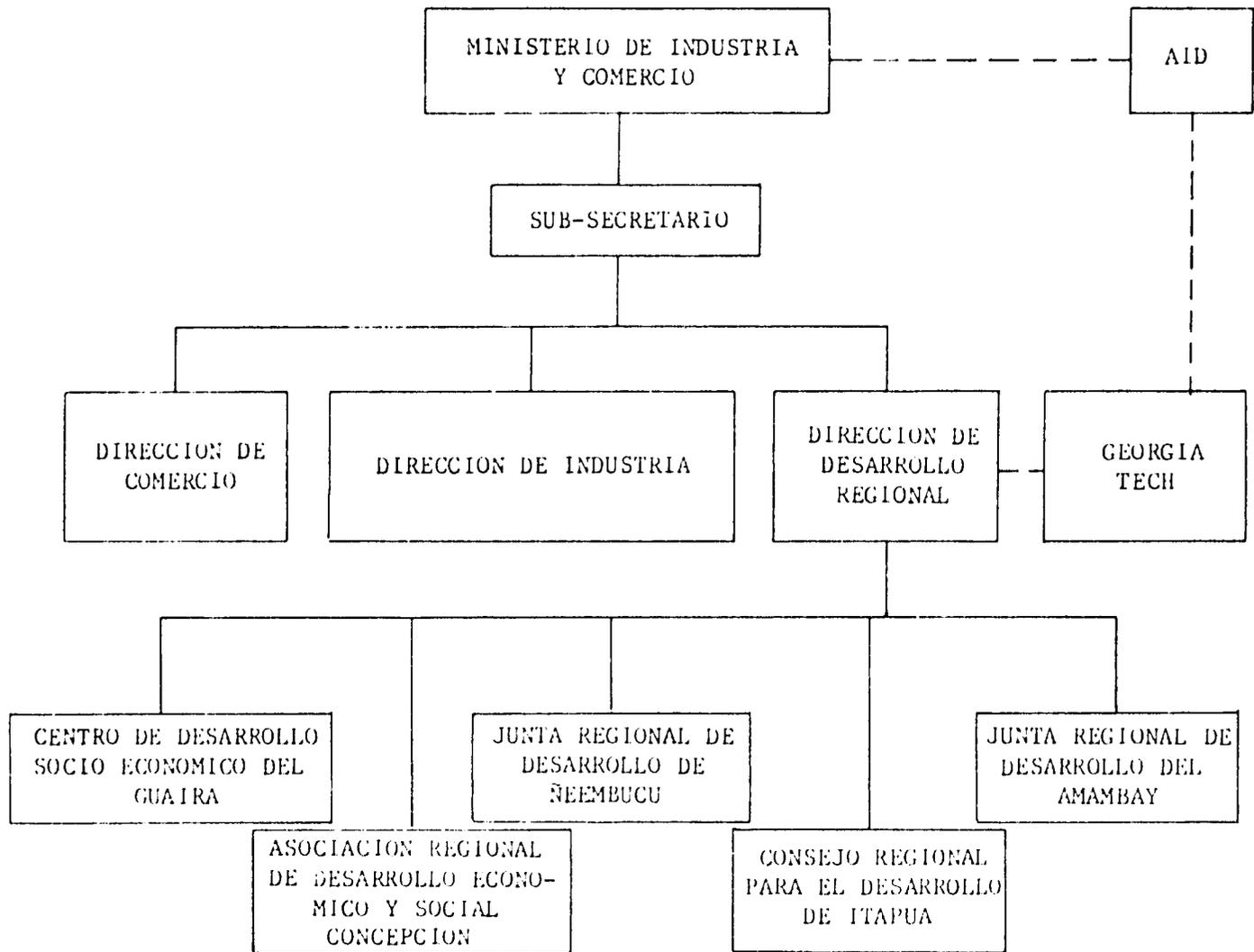
- f. New Industries. No new industries have been established in this area, but assistance was given to four existing industries that were interested in expanding their facilities. A team from the Ministry of Industry and Commerce, together with the resident IDD staff member, worked on these four cases. The companies involved were: Cooperativa de Madereros de Paraná Ltda.; Sociedad Cooperativa Yerbatera y Empacadora Pío XI; Matadero y Frigorífico Miguel Stadesko; and Fábrica Trilladora Esteban Chvailc. The suggestions and recommendations were presented as a formal report by the Ministry of Industry and Commerce counterpart staff and copies were filed with the USAID representatives at the Ministry. All the expansions considered required outside funding and the companies proceeded to request loans from the Banco Nacional de Fomento and other sources.

Ministry of Industry and Commerce

As technicians under contract to assist the Ministry of Industry and Commerce in its economic development activities and as consultants to that Ministry, many recommendations were offered. The major accomplishment was the creation of a Regional Development Office, in the Ministry of Industry and Commerce.

Dirección de Desarrollo Regional. This new department in the Ministry of Industry and Commerce was recommended at the end of the Pilot Program. The Minister of Industry and Commerce acted upon this suggestion, and the department was created as of January 1, 1971. This organization is the central point of the regional development structure that is being created in Paraguay. Due to the importance of this office, much time and effort was given to organization and planning, as well as training of the staff. At present, only four persons have been assigned to the staff: Dr. Juan Silvero, Director; Dr. Arsenio Ramón Niro, Statistician; Mr. Carlos Adolfo Brites, Basic Data; and Mr. Cipriano Martínez, Secretary. Two of the four staff members, Drs. Silvero and Niro, have successfully completed the International Economic Development Internship Program offered by the Industrial Development Division in Atlanta, Georgia.

1. Organization. Working closely with the Ministry of Industry and Commerce, the project director assisted in establishing the basic organization of this new department within the guidelines of the ministry. The organization diagram is as follows:



As indicated before, the organization has been implemented and the office is now functioning regularly. It is located in two rooms in the Ministry of Industry and Commerce, and there are plans to move it to a larger office in the near future. The Ministry is also planning to purchase furniture and equipment for the operation of this new office.

2. Regional Data Center. Mr. Richard Johnston of the IDD staff went to Asunción, Paraguay, and carried out a training program for Mr. Carlos A. Brites of the Department of Regional Development, in order to start the basic data collection. This is a special collection of all economic data available, including reports, studies, and publications. A newspaper clipping collection was also started as well as special files on the five development regions. The Industrial Development Division donated a complete set of its reports and other pertinent data as a start for this collection. During his stay, Mr. Johnston also provided training to the executive secretaries at each of the five Regional Offices so they could initiate individual regional data collections.

3. Field Work. A counterpart, either Dr. Silvero or Dr. Niro, accompanied the IDD staff at all times as they have carried out the field work in the five target communities. The purpose of this was to fully train the counterparts so that in the future they may be able to continue this program independently. During the program years, both counterparts have had the opportunity of carrying out certain tasks by themselves as well as assisting in the community motivation activities and have taken an active part in the national meetings, both in Concepcion and Villarrica.

4. Research Studies. Another major activity of the staff was the preparation of 21 studies, one for each of the industries shown under the section Industrial Sector. Under the guidance of the International Development team, the counterpart staff prepared studies to be presented by the investors in requesting the benefits authorized under Public Law 216/70 of the Republic of Paraguay. In all 21 cases, the incentives were granted by the Executive Branch and the investors were benefitted by them. Copies of the studies were filed with AID representatives at the Ministry of Industry and Commerce.

5. New Development Centers. Under the guidance of the contractor's resident staff, the counterpart staff established a second generation of

development groups around the five basic Regional Development Centers: Mbocayaty and Colonia Independencia in the Villarrica area; Coronel Bogado in the Encarnacion area; Horqueta in the Concepcion area; Capitán Bado in the Pedro Juan Caballero area; and General Diaz in the Pilar area. Others were also established but are not listed because they are outside the five primary targets.

6. General. During Year II, under the new phase-out date, it was necessary to accelerate the program so that the counterpart staff could assume total responsibility of this department by June 30, 1973. In order to do this, the sponsor and the project director agreed to turn over the operations to the counterpart staff and let the contractor assume the role of consultant. All day-by-day field work responsibility was then assigned to the counterpart staff, as well as the constant contact, assistance, guidance, and monitoring of the Regional Development Centers. USAID/Mission Paraguay further assisted the counterpart staff by providing them with limited funds to cover their travel expenses to the interior of Paraguay.

Centro de Desarrollo y Productividad (CDP)

The program included limited technical assistance to the established Centro de Desarrollo y Productividad. This center was quite different from the other organizations included in the program since it was designed with the idea that it become self-supporting in a period of five years terminating in 1973. The Center received constant technical assistance and guidance from Mr. Elias Hill. At present, there exists a well-trained professional staff that is capable of carrying out in-depth research projects provided some technical guidance is available.

Complete details on this center and the activities carried out are included in the published report by Elias C. Hill, Final Report, Centro de Desarrollo y Productividad, Georgia Institute of Technology, Asuncion, Paraguay, June 1973.

1. Research Studies. Under the guidance of the resident staff member, the Centro de Desarrollo y Productividad conducted 12 studies on possible manufacturing industries with export potentials. These studies appear as part of a report titled Regional Enterprise Development -- Republic of Paraguay, Georgia Institute of Technology, Atlanta, Georgia, September 1973. Details may be found

in Appendices 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13. The following list provides the individual titles of these studies:

- Instalación de una Planta de Extracción de Aceite de Soja y Elaboración de Alimentos Balanceados en Villarrica, Paraguay
- Planta Extractora de Aceites Vegetales por el Método de Solventes
- Instalación de una Planta Extractora de Aceite de Soja en el Area de San Juan Bautista Misiones, Paraguay
- Instalación de un Secadero para Madera Salida en Pto. Presidente Stroessner, Paraguay
- Instalación de una Planta de Aprovechamiento de Huesos en Tablada Nueva, Paraguay
- Instalación de Secaderos para el Secado Artificial de Madera de Guatambu en Cachimbo, Paraguay
- Ampliación y Modernización de la Industria Calera Itapucumi, Concepción, Paraguay
- Ampliación y Modernización de la Industria Calera en Pto. Risso, Paraguay
- Fabricación de Tractores de Mano (Mono Ejes), Zona Central, Paraguay
- Ampliación de una Planta de Procesamiento Integral de Raíces de Mandioca, Concepción, Paraguay
- Industrialización de Mármol de la Colonia San Lázaro, Paraguay (2 Volúmenes)
- Instalación de una Planta para la Elaboración de Aceite de Petit Grain, Paraguay

2. Manufacturers' Directory. The staff of the CDP, guided by the resident staff member, completed and published the first Manufacturing Directory for the Republic of Paraguay. Copies of this publication may be obtained through the USAID Mission in Paraguay.

3. In-House Training. A special program of in-house training was conducted on "technical report writing." In order to do this, a one-week seminar was presented by the project director to all members of the staff of CDP. A handbook was prepared to serve as a future guide in this area and was used as a textbook during the seminar. The handbook was published under the title of La Redacción de Informes Técnicos, Georgia Institute of Technology, Atlanta, Georgia, Julio 1972.

Centro de Promoción de Exportaciones (CEPEX).

The Centro de Promoción de Exportaciones was created as a dependency of the Ministry of Industry and Commerce. The center assumed responsibility for all export matters and coordination of activities with the Consejo Nacional para la Promoción de Exportaciones. A full-time staff member was assigned to this center and a counterpart staff assisted him in carrying out the following activities:^{1/}

1. Creation, organization, and establishment of the Centro de Promoción de Exportaciones. The technical assistance was to be completed by 1973.
2. Training of the counterpart staff that had been assigned to the center by the Ministry of Industry and Commerce.
3. Preparation of an "export policy," adapted to national conditions and oriented toward the eventual attainment of best possible results in the international market within the shortest time possible.
4. Study, analysis, and determination of the advantages provided by the LAFTA agreement to Paraguayan products. This information was also used as input in the selection process for appropriate manufacturing opportunities.
5. Studies to determine new products to be exported (non-traditional exports) and to which nations.
6. Studies to increase export of Paraguayan products to U.S.A., Europe, and Japan.

Training Programs

The training programs were interrelated to include the counterpart staff at the Ministry of Industry and Commerce, Regional Development Centers, Centro de Desarrollo y Productividad, Centro de Promoción de Exportaciones, and interested individuals in general. In order to simplify the system, nearly all training programs were channeled through the Centro de Desarrollo y Productividad, and they acted as the sponsor if the training was to be done outside the country.

^{1/} Leon Bernaloff, Final Report-Centro de Promoción de Exportaciones, unpublished, 1972.

Detailed lists providing the name of individual participants, country where training was offered, and type of training received are presented as Appendix 1 of this report. The training activities conducted outside of Paraguay are summarized in Table 6.

Table 6

SUMMARY OF TRAINING ACTIVITIES
OUTSIDE PARAGUAY

<u>Year</u>	<u>Number of Participants</u>	<u>Total Weeks of Training</u>
1969	16	324
1970	6	271
1971	8	161
1972	<u>11</u>	<u>138</u>
TOTAL	41	894

In addition to the formal training programs listed, many informal workshops and individual on-the-job training activities took place during the contracted period of time. About 3,000 hours of formal training program were offered in Paraguay for a total of 179 courses which were taken by 4,300 participants between 1969 and the first half of 1973. The workshops were not as carefully recorded, due to the nature of the program, but those listed in the USAID/Mission Paraguay records are summarized in Table 7.

Table 7

SUMMARY OF PRODUCTIVITY WORKSHOPS

Industrial Sector	Participants		Duration Months
	Individuals	Companies	
1. Shoe Industry	25	18	2
2. Furniture (Wood)	27	15	9
3. Packing	27	19	2
4. Construction	38	26	1
5. Leather-Tanning	15	3	1
6. Essential Oils	19	10	1
7. Garment Industry	29	16	2
TOTAL	180	107	18

Additional Activities

As in any in-depth program, innumerable additional activities were performed in the period of time the three contracts were implemented. Some of these are considered significant enough to warrant being highlighted as part of the accomplishments.

In the process of working in the five selected communities of Villarrica, Concepción, Pedro Juan Caballero, Pilar, and Encarnación, the international development staff needed to become generally familiar with the whole country, in order to really gain an insight into the problems, customs, people, and other important factors. At all times, the members of the staff kept records of their activities and these were recapitulated in their weekly reports to the project director.

As part of the general services offered, the international development staff and the counterpart staff also provided limited technical assistance to existing industries. In some instances, the industry contracted with the Centro de Desarrollo y Productividad and, in many cases, there were no contracts and the service was provided free of charge. The lists presented in Appendix 2 only show the companies that contracted with the Centro de Desarrollo y Productividad for their services. The funds obtained in this manner did not revert to Georgia Tech but went to CDP and were used as part of their income. The consulting activities are summarized by year in Table 8.

Table 8

SUMMARY OF CONSULTING ACTIVITIES

Year	Contracts	
	Sold	Completed
1969	24	24
1970	13	13
1971	15	14
1972	16	16
1973*	2	1

*Partial data first quarter 1973 only.

As indicated in the geographical summary, Paraguay has 16 departments and these, in turn, have a total of 155 municipalities. Thirty-six are classified as Class I municipalities, and 119 are classified as Class II. During the total program time, 64 of these municipalities were visited, and to some degree the staff worked with persons in these areas. Of the 36 Class I municipalities, a total of 27 were visited (75 percent) and of the 119 Class II, 37 were visited (31 percent). The names and locations of these municipalities are listed in Appendix 3.

In 1971, six persons came to Georgia Tech to participate in the International Economic Development Internship Program. The participants were the five executive secretaries who had been appointed by the Regional Development Center and a member of the staff of the Oficina Regional de Desarrollo at the Ministry of Industry and Commerce. As part of his training, each participant developed a five-year development program for his respective community. The full text of each individual plan may be found in publication entitled Programa Regional de Desarrollo Económico de Paraguay, Georgia Institute of Technology, Atlanta, Georgia, Febrero 1972.



CONCLUSIONS AND RECOMMENDATIONS

The International Development Branch of the Industrial Development Division at Georgia Tech had the responsibility for carrying out this program of technical assistance to the Ministry of Industry and Commerce of the Republic of Paraguay. After over three calendar years of active field work in the rural areas of Paraguay, the project director and his staff arrived at the following conclusions and recommendations:

1. The Paraguayan economy continues to be characterized by slow growth in the different productive sectors, limited expansion in the industrial sector, and growing interest in the export sector. The nation continues to have a high rate of population growth accompanied by an increase in the demands of the national market. Over the past years, service industries have started to come into being and some now are present in the rural areas. Basically, the nation will continue to depend on its agriculture and cattle for the major share of its income. Much additional technical assistance will be required to generate a stronger industrial sector in the next 10 years, as desired by the government of the nation. On the basis of available data as well as present knowledge, the staff is under the impression that the general economic level has improved in the recent past, although it continues to be relatively low and could be further improved.

2. As indicated, the country is predominantly active in agriculture, forestry, and cattle. In contacts with rural areas, it has been determined that at least 50 percent of the active labor force is employed in one of these three areas. Should future industrial development programs be established, more attention should be given to the individual development of these sectors in the hope of better utilizing available raw materials. Much needs to be done in this primary field, and in future industrial programs it may be desirable to consider such activities as mineral extraction and beneficiation (metal and non-metal), hog raising and processing, poultry farming and processing, as well as others.

3. Like many other developing nations, Paraguay is struggling to achieve planned, orderly growth and economic development. There is a need to generate a large number of jobs to satisfy population needs, and one of the most promising solutions appears to be through industrialization programs. The

industrial sector of the nation is characterized by small manufacturing activities and, in some cases, handicrafts or cottage industries. These small industries are typically managed by one individual who may have certain strengths but usually does not have all the necessary skills to efficiently operate a small-scale industry. This is the area where assistance could be provided. Many of the existing small enterprises are in dire need of good pragmatic technical assistance in such basic areas as: improved product design, packaging, quality control, substitute components, plant layout, and others. Some assistance is now available through the Instituto Nacional de Tecnología y Normalización, but an in-depth program of technical assistance to industry is needed over a number of years to help improve this situation.

4. If it is assumed that in order to create the necessary new jobs the nation must accelerate the industrialization process and that the generation of small-scale industries is a basic element of this process, then this activity must be supported and strengthened. The development of small-scale industries requires the bringing together of many basic factors, such as an entrepreneur, required capital, technical expertise, and reasonable assurance of a profit. If the process is to be accelerated, there is a need to establish a continuing program staffed with experienced and pragmatic developers to provide the catalyst that make the basic factors interact. Potential industrialists lacking experience require constant assistance in determining if the industrial concept is feasible, profitable, and technically sound. This assistance must be provided in a continuing manner over a number of years if any success is to be achieved.

5. A common development problem is encountered in Paraguay: technicians who have been trained in a high technology nation (U.S.A.) must deal with problems associated with local technology which is at a low level, especially in the rural areas. There is a need to find better ways to adapt, modify, and adjust the techniques that are available to the needs of this developing nation. More field research needs to be conducted in the future and appropriate notes kept on all cases so that they may be later studied in the hope of identifying appropriate techniques to apply in other similar situations.

6. When considering manufacturing opportunities, researchers must carefully consider the problem of capital intensive versus labor intensive industries. There is a need to find a better mix of the main ingredients,

i.e., capital, labor, know-how, available land, etc., to provide a better situation for the making of the desired product. This is especially true in a developing country where the philosophy is: produce the product at a competitive price while using the maximum amount of labor possible with the least capital investment. While working on this project, it would have been desirable to have had more time available to research out these different concepts and hopefully start collecting additional case histories for future analysis. At this time, there continues to be a lack of good data on the spectrum of technologies applicable within a given industrial activity that will provide the variables needed in the different economies.

7. In the particular case of Paraguay, it is necessary to deal with a small market with a low income level. The typical large-scale industry cannot be established in this type of environment. There is a need to identify industrialization technologies that will lend themselves to small industrial operations geared to available economic levels. Another important problem identified by the IDO staff is the lack of technical information. There is a need to work closer with the few existing units that have technical information available so that a better flow can be established between these units. Technicians in the future should attempt to pass on their personal experiences to the local technicians so that they can consider these new inputs. Eventually, a central collection of technical information needs to be created to carry out this function of dissemination. Until this can be done, however, persons assigned to this type of program need to help create this flow.

8. Another area that continues to need attention is that of the existing manufacturing activities. In the rural parts of the nation, there are many small industries in operation. Action is needed to assist them through the application of industrialization technology in order to improve the product as well as the plant facilities. When doing this, the foreign technicians must bear in mind that if the modifications suggested are not relevant to the needs and the available resources, the manufacturer will not implement them.

9. During the life of this program, the contractor has developed an approach to rural area industrialization. This has been field tested and has proven successful as indicated by the number of new industries established and jobs created. This approach promises a greater future and, because of this,

the methodology and technology were transferred to the Paraguayan counterparts. The counterpart staff and organizations that have been established have the basic know-how, but they still need additional experience. As a result of the early phase out, there is a possibility that some of the institutions built during this program may not be as successful as expected, due to the lack of motivation, leadership, funding, or other problems.

SELECTED BIBLIOGRAPHY

Books

- Bhagwati, Jagdish N., Economics and World Order, from the 1970's to the 1990's, New York, New York: The MacMillan Company, 1972.
- Brandenburg, Frank. The Development of Latin American Private Enterprises, Washington, D. C.: The National Planning Association, May 1964.
- Bryce, Murray D. Desarrollo Industrial, New York, New York: McGraw-Hill Book Company, Inc., 1961.
- Cabral, Guillermo A. Semblanzas de Concepción, Asunción, Paraguay: Imprenta Comuneros, S.R.L., Julio 25, 1970.
- Da Ponte, Alberto, Atlas de la República del Paraguay, Asunción, Paraguay, Instituto Geográfico Militar, 1945.
- Fleischer, Igor, Financiamiento de la Pequeña Industria en Paraguay, Asunción, Paraguay, United Nations, 1970.
- García Francia, Sabas, Financing of Small-Scale Industry in Developing Countries, Buenos Aires, Argentina: United Nations, 1970.
- Pincus, Joseph. The Economy of Paraguay, New York, New York: Frederick A. Praeger, Inc., 1968.
- Rabinovitz, Francine F. and Trueblood, Felicity M. Latin American Urban Research, Beverly Hills, California: Sage Publications, 1971.
- Rivarola, D. M. and Heisecke G. Población, Urbanización y Recursos Humanos en el Paraguay, Asunción, Paraguay: Escuela Técnica Salesiana, Febrero 14, 1969.
- Seminario Sobre Transferencia e Innovación de Ciencia y Tecnología, Medellín, Colombia: Editorial Bedout, S. A., Agosto 31, 1972.
- Statistical Yearbook, 1972, New York, New York: United Nations, 1973.

Official Publications

- Agency for International Development, Developing Small Industries -- A Case Study of AID, Assistance to Nigeria 1962-1971, Washington, D. C., 1972.
- German Development Institute, Problems and Strategies of Regional Planning in Developing Countries, Berlin, West Germany, 1971.
- Hill, Elias C. Final Report, Development and Productivity Center, Paraguay, Asunción, Paraguay.

Ministerio de Hacienda, Censo de Población y Vivienda 1962, Asunción Paraguay, 1965.

Ministerio de Industria y Comercio, Producción Industrial-Paraguay 1964-1968, Asunción, Paraguay, 1970.

Ministerio de Industria y Comercio, Paraguay -- Tierra de Oportunidades, Asunción, Paraguay, 1965.

Ministerio de Industria y Comercio, Ley No. 246 y No. 202 de Fomento Industrial, Asunción, Paraguay, 1955.

Organization of the American States, America en Cifras 1972, Washington, D. C., 1972.

Secretaría Técnica de Planificación, Plan Nacional de Desarrollo Económico y Social 1971-1975, Asunción, Paraguay, Noviembre 1970.

Secretaría Técnica de Planificación, Oportunidades de Inversión en la Industria, Asunción, Paraguay, 1970.

Secretaría Técnica de Planificación, Sector Industrial Paraguayo, Asunción, Paraguay, Agosto 1964.

United Nations, Small-Scale Industry in Latin America, New York, New York, 1969.

United Nations, Summaries of the Industrial Development Plans of Thirty Countries, New York, New York, 1970.

Wall, Nelson C. Desarrollo de la Empresa Privada -- República del Paraguay, Georgia Institute of Technology, Atlanta, Georgia, December 1970.

Wall, Nelson C. Programa Regional de Desarrollo Económico -- República del Paraguay, Georgia Institute of Technology, Atlanta, Georgia, Febrero 1972.

Wall, Nelson C. Regional Enterprise Development, Republic of Paraguay, Georgia Institute of Technology, Atlanta, Georgia, September 1973.

Appendix 1-A

PARTICIPANTS TRAINED OUTSIDE OF PARAGUAY

<u>Name</u>	<u>Country</u>	<u>Duration</u>	<u>Field of Training</u>
Ramón V. MARINI	Mexico Productivity Center	20 weeks	Industrial Management
Fermín LEZCANO Torres Rubén A. BORDABERRY	Brazil Getulio Vargas Found.	52 weeks	
César ESTIGARRIBIA	Colombia Universidad del Valle	52 weeks	Industrial Management
Bias CHAMORRO Marciano CHAROTI José JIMENEZ B. Pedro I. RIQUELME	Colombia	4 weeks	Export Promotion
Ceferino ROMAN Cabrera	Mexico	18 weeks	Finan. of Econ. Dev.
Andrés GIMENEZ Fonseca Ramiro J. DOMINGUEZ José R. HERRERO Miguel VACCHETTA P. Rufino FERNANDEZ	U.S.A.	6 weeks	Loyola Lead. Training
Juan Gregorio SILVERO	U.S.A. Georgia Tech	19 weeks	Industrial Development
Igor FLEISCHER	U.S.A. Georgia Tech	13 weeks	Industrial Development
	<u>FY 1970</u>		
Cesar JURE Yunis	U.S.A. Georgia Tech	88 weeks	Industrial Engineering
Luis A. RAMIREZ	Colombia Universidad del Valle	52 weeks	Business Management
Daniel FRETES Ventre	U.S.A. Syracuse University	52 weeks	Business Administrat.
Miguel A. GONZALEZ Erico	Perú ESAN	48 weeks	Business Administrat.
Miguel Angel ARANDA	U.S.A. Georgia Tech	19 weeks	Econ. Dev. Program

Appendix 1-A (Continued)

<u>Name</u>	<u>Country</u>	<u>Duration</u>	<u>Field of Training</u>
<u>FY 1970</u>			
Santiago DIGALO A.	Brazil Getulio Vargas Found.	12 weeks	Financial Management
<u>FY 1971</u>			
César E. RIART Luis FONTCLARA Gustavo A. VARGAS	Perú ESAN	48 weeks	Business Adm.
Jorge S. MIRANDA Teófilo MIRANDA Juan RUIZ DIAZ Vicente RICCIARDI	U.S.A. and Venezuela Georgia Tech	3 weeks	Regional Enterprise Development
Victor R. SOSA	U.S.A. and Venezuela	5 weeks	Commercial Un. Congress
<u>FY 1972</u>			
Arsenio R. NIRO Guillermo CABRAL Andrés GIMENEZ Fonseca Basilio ACOSTA Camerón Federico BACIGALUPO Jorge M. GRANADA	U.S.A. Georgia Tech	13 weeks	Regional Enterprise Development
José E. ARANDA	Brazil Getulio Vargas Found.	40 weeks	Financial Adm. & Capit. Markets
Gustavo A. VARGAS	U.S.A. World Trade Institute	8 weeks	Export Development
José M. Hernán VARGAS	U.S.A.	8 weeks	Export & Trade Deve.
Eladio CARDENAS Hugo CABALLERO	Perú	2 weeks	Savings & Loan Seminar

Appendix 1-B

COURSES AND SEMINARS
CONDUCTED IN PARAGUAY
1969

<u>Name of Courses</u>	<u>Duration (Hours)</u>	<u>Participants</u>
1. Professional Salesmanship Techniques	12	67
2. Sales Management	15	27
3. Tourist Guides	35	91
4. Budgeting at Management Level	15	28
5. Cash Flow Analysis	15	28
6. Credit and Collection Administration	12	28
7. Human Factor Waiting on the Public	12	48
8. Dynamic Administration for Industrial Management	36	30
9. Human Relations	18	78
10. Job Evaluation	15	15
11. Industrial Costs	15	51
12. Business Management	15	43
13. Management and Organization of Transport Firms	24	26
14. Personnel Selection	12	13
15. Memory Development	10	119
16. Financial Administration	18	24
17. Psychology Applied to Sales	15	37
18. Operation Investigations	40	37
19. Warehouse Administration	18	45
20. Market Study and Investigation	15	25
21. Dairy Improvement	36	25
22. Psychology and Sociology in Personnel Administration	15	18
23. Speed Reading (for executives)	15	49
24. File and Document Management	15	45
25. Sales Techniques (Automobiles)	20	15
26. Sales Techniques (Household Goods)	22	15
27. Sales Techniques (Automobiles)	20	11
28. Memory Development	10	30
29. Oratory for Executives	10	30

Appendix 1-B (Continued)

<u>Name of Courses (Continued)</u>	<u>Duration (Hours)</u>	<u>Participants</u>
30. Women in Modern Society	10	30
31. Dynamics and Commercialization Expansion	15	30
32. Window Dressing (Decoration)	15	30
33. Specific Projects	10	50
34. Industrial Costs	30	50
35. Human Relations	30	30
36. Warehouse Organization	10	15
37. Salesmen	20	25
38. Salesmen	20	25
39. Dealing with the Public	8	10
40. Salesmen Training	10	25
41. International Commerce OEA CICOM	10	25
42. Exports Development INTAL-MIC	10	75

Appendix I-B (Continued)

COURSES AND SEMINARS
CONDUCTED IN PARAGUAY
1970

<u>Name of Courses</u>	<u>Duration (Hours)</u>	<u>Participants</u>
1. Modern Business Organization	30	18
2. Modern Business Organization (Interior)	30	54
3. Professional Salesmanship	15	37
4. Analysis of Accounting Statements	25	23
5. Analysis of Accounting Statements (Interior)	25	62
6. How to Organize a Firm's Sales Department	15	28
7. Management Techniques in Sales	15	22
8. Tourist Guides	45	38
9. PERT/CPM	25	32
10. The Human Factor in Dealing with the Public	15	35
11. Credit and Collection Management	15	11
12. Sales Management and Marketing	15	15
13. Salesmen Training	15	15
14. Analysis of Accounting Statements	30	31
15. Filing Techniques in Modern Business	15	17
16. Office Administration	15	15
17. Human Relations	20	26
18. Professional Salesmen	15	18
19. Modern Business, Its Organization and Administration	30	9
20. Publicity, Problems and Solutions	15	11
21. Sales Management Within Drugstores	15	14
22. Personality of the Executive Secretary	12	17
23. The Human Factor in Bank Management	10	40
24. Sales -- Automobiles	15	56
25. Doctor's Visit -- Professional Ethics	15	37
26. Memory Development	10	20
27. Market Investigation	15	16
28. Business Tax	15	32
29. Integral Training for Salesmen	20	15

Appendix 1-B (Continued)

<u>Name of Courses</u>	<u>Duration (Hours)</u>	<u>Participants</u>
30. Business and Bank Credits	12	19
31. Salesmen Training (Interior)	10	36
32. Business Organization and Management (Interior)	10	40
33. Leadership, Motivation and Group Dynamics	15	30
34. Business Breakeven Point	15	10
35. Personal Dynamics	10	19
36. International Seminar	20	18
37. Business and Communications	15	27
38. Auditing	30	42
39. Credit Bureau-GVC	20	21
40. Secretarial Techniques	15	40
41. Warehouse Administration	15	10
42. Cost Accounting	30	26
43. Decoration, Means to Originate Sales	16	19
44. Training Salesmen	20	10
45. Introduction to Business Consulting Techniques	93	22

Appendix 1-B (Continued)

COURSES AND SEMINARS
CONDUCTED IN PARAGUAY
1971

<u>Name of Courses</u>	<u>Duration (Hours)</u>	<u>Participants</u>
1. Business Games	15	10
2. Personal Dynamics for Secretaries (Executives)	25	25
3. Memory Development (2 Sessions)	60	54
4. PERT/CPM	30	27
5. Tributary Legislation	15	87
6. Analysis of Accounting Statements	15	17
7. Speed Reading (2 Sessions)	40	31
8. Analysis of Cost Accounting Systems	15	24
9. Sales Practice (2 Sessions)	40	37
10. Simultaneous Translation (2 Sessions)	30	17
11. Methods for Audit Control	15	38
12. Sources for External Financing (BID)	20	25
13. Design and Graphic Arts	30	51
14. Communication Techniques Within a Firm	15	21
15. Public Relations	20	18
16. Leadership Motivation and Group Dynamics	15	22
17. Wives of Executives	15	18
18. INDA--Sale of Share of Capital Stock	25	34
19. Solution to Problems and Creativity	20	18
20. Organization and Management of Small Business	30	18
21. Credits and Collection	15	11
22. Decoration, Sales Motivation Media	20	24
23. Basic Finance for Executives	15	14
24. Human Relations	30	15
25. Supervision and Administrative Leadership	15	12
26. Sales Practice for Salesmen Selling at the Counter	20	19
27. Sales Supervision	15	18
28. Documents Administration and File System	24	18
29. Techniques and Promotion Function	15	14
30. ABC -- Document Filing	15	36

Appendix 1-B (Continued)

<u>Name of Courses</u>	<u>Duration (Hours)</u>	<u>Participants</u>
31. Technical Assistance (ANDE -- Maps)	40	46
32. Capital Profitability	15	15
33. Colegio de Economistas -- Techniques on How to Prepare Investment Projects	40	52

Appendix 1-B (Continued)

COURSES AND SEMINARS
CONDUCTED IN PARAGUAY
1972

<u>Name of Courses</u>	<u>Duration (Hours)</u>	<u>Participants</u>
1. Corporate Tax -- New Law	15	15
2. Sales Forecasting	15	13
3. Accounting for Administrators	15	10
4. Work Legislation	15	22
5. Human Relations	25	16
6. Financial Analysis	20	25
7. Collection Improvement Techniques	15	21
8. Sales for Store Salesmen	15	40
9. Sales -- Inplant	20	40
10. Business Administration (Long Duration)	400	16
11. Work Administration	15	27
12. Letter Writing	20	62
13. PERT/CPM	20	14
14. Better Use of Cement for Highways	40	76
15. Tax Legislation Changes	15	32
16. How to Improve Attention and Services to the Public in State Department Offices	15	11
17. Modeling Techniques	15	13
18. Productivity Workshop -- Wearing Apparel	20	39
19. Retail Salesmanship	15	18
20. Cash Flow Analysis	15	16
21. How to Finance Your Business in Paraguay	15	10
22. Home Decoration	15	21
23. Street Salesmanship	15	36
24. Modern Management	15	11
25. Analysis of Financial Statements	15	15
26. Radio Technician	30	27
27. Accountancy for Non-Accountants	15	23
28. Cost Control	15	27
29. Sales Manager	15	37

Appendix 1-B (Continued)

COURSES AND SEMINARS
CONDUCTED IN PARAGUAY
1973*

<u>Name of Courses</u>	<u>Duration (Hours)</u>	<u>Participants</u>
1. Retail Shop Management and Improvement	40	16
2. Credit and Collection, Operation in All of Its Dimension	20	13
3. Taxes -- Interpretation and Practical Application	20	13
4. T.W.I.	80	36

*January through March only.

Appendix 2

CONSULTING CONTRACTS
1969

<u>Type of Concern</u>	<u>Service Rendered</u>
1. Plastic Company	Plant layout and material handling system
2. Editorial Azeta ABC	General diagnosis
3. Canned Fruit Manufacturer	Law interpretation assistance
4. Metal Product Manufacturing and Finishing Plant	Complete reorganization
5. Tannery Plant	Plant layout
6. Customs Department -- R. Port	Inplant training and recommendations, material handling and storage tech.
7. Wood Manufacturer	Export assistance
8. Barge System Study -- River Paraná	Prefeasibility study
9. Poultry Farm	Feasibility study -- facility expansion
10. ADACHE	General assistance -- city markets
11. Pharmaceutical Company	General assistance
12. Ice Cream Distributor	Market study
13. Retailer Shop -- Electro-domestic Equipment	Manager and salesmen selection
14. Spirit Liquor Bottler	Reorganization of sales channels
15. Milk Processing Plant	Selection of a sales manager
16. Haberdashery Shop	Floor salesmen selection
17. Pharmaceutical and Drugstore	Sales rationalization
18. Auto Spare Parts Distrib.	Sales channels reorganization
19. Automobile Assembly Plant	Salesmen selection
20. Automobile Dealer	Salesmen selection
21. Plastic Manufacturer and Const. Mat. Dealer	Manager selection
22. Importer-Exporter	Salesmen selection
23. Importer-Exporter	Manager and adm. assistant selection
24. Meat Packer	General organization of operations
25. Office Machine Dealer	Salesmen selection

Appendix 2 (Continued)

CONSULTING CONTRACTS
1970

<u>Type of Concern</u>	<u>Service Rendered</u>
1. Garment Manufacturer	Change of whole garment production system to a progressive line system; modification of cutting system from single units to industrial cutting
2. Hardware Dealer	Complete diagnosis of operations and systems
3. Financing Company	Determination of better methods to increase savings and loans operations
4. Retail Firm	Floor sales personnel training
5. Soap Plant	General diagnosis
6. Plumbing Contractor and Parts Distributor	General organization of their sales force and general organization of their warehouse to support the sales program
7. Distributor, Consumer Goods	Personnel selection
8. Construction Firm	General administration organization of the firm
9. Fruit Packing Plant	General diagnosis of operations
10. Plastic Manufacturer and Construction Material Dist.	Permanent advisory program
11. Lumber Sawmill Complex	Feasibility study--expansion of operations and its present operations
12. Motor Vehicle Dealer	Sales department reorganization
13. Peanut Butter Manufacturer	Sales department reorganization

Appendix 2 (Continued)

CONSULTING CONTRACTS
1971

<u>Type of Concern</u>	<u>Service Rendered</u>
1. ADELATEC	Part of a navigability study
2. Cattle and Milk Farm	Specific project for the provision of meat, milk, and food products
3. Lumber Mill Concern	A market study in the Republic of Argentina and Brazil for possibilities of exporting Paraguayan wood to these countries
4. Motel	Feasibility study to construct and equip a motel in the City of Asuncion
5. TV Channel	A general diagnosis of TV channel operation and viewers
6. Drugstore -- Wholesaler of Cosmetics and Pharmacy Prod.	Organization of the sales department and training of the sales staff
7. USAID Official	A small market consumption study for soft drinks
8. Lumber Mill	Electrification and production expansion study
9. Lumber Mill Concern	A plausibility study for a chip board plant
10. Meat Packing Plant	A general study and diagnosis of the firm
11. Fruit Packing Plant	A general diagnosis of all operations
12. Construction Firm	Housing development pre-project
13. Construction Firm (PAP)	General administrative organization, sales force and warehouse systems
14. Citrus Processing Industry	A feasibility study to install a modern fruit packing plant export oriented
15. Regional Development Program	Six prefeasibility studies

Appendix 2 (Continued)

CONSULTING CONTRACTS
1972

<u>Type of Concern</u>	<u>Service Rendered</u>
1. Engineering and Construction Firm	General organization of administrative and office procedures
2. Central Bank	Survey and analysis to determine capital market possibilities in Paraguay
3. Pharmaceutical Wholesaler	General managerial control systems improvement
4. Sports Development Association	Organization of office procedures
5. Industrial Directory	Investigation and preparation
6. Leather Tanning Firm	Sales division organization and salesmen training
7. Construction Firm	Feasibility study for an underground parking lot
8. Pharmaceutical and Cosmetic Manufacturer	Implementation of improvements to obtain benefits of Public Law 216 (plant expansion)
9. Frozen Meat Packing Plant	Organization of administrative procedures and establishment of cost control systems
10. Petroleum Company	Personnel selection
11. Export Company	Personnel selection
12. Wood Products Manufacturer	Financial analysis presentation for a loan request
13. Food Processing Plant	General study to obtain benefits of Public Law 216 on a future expansion
14. Petroleum Company	Personnel selection
15. Marble Quarrying and Processing Plant	Complete feasibility study
16. Development Program (Regional Development Program)	Twelve export-oriented feasibility studies

Appendix 2 (Continued)

CONSULTING CONTRACTS
1973

<u>Type of Concern</u>	<u>Service Rendered</u>
1. Sliced Veneer Manufacturing Plant	Feasibility study for a plant with a production capacity of 10 m ³ /day
2. Aviculture Cooperative	Enlargement of installations and facilities



Appendix 3

DEPARTMENTS AND MUNICIPALITIES IN PARAGUAY
Class I (**) and Class II (*) Municipalities Contacted

CONCEPCION

**Concepción
**Horqueta
*Belén
*Loreto
San Lázaro
San Carlos

SAN PEDRO

San Pedro
*Lima
*Rosario
*Itacurubí del Rosario
*Unión
*San Estanislao
Antoquera
*Gral. Elizardo Aquino
Nueva Germania
Tacuatí

CORDILLERA

*Caacupé
Atyrá
*Tobatí
Altos
*San Bernardino
Emboscada
Arroyos y Esteros
Eusebio Ayala
Caraguatay
Juan de Mena
Santa Elena
Isla Pucú

CORDILLERA (Continued)

Valenzuela
Piribebuy
Nueva Colombia
Primero de Marzo
Itacurubí de la Cordillera

GUAIRA

**Villarrica
Itapé
*Félix Pérez Cardozo
*Coronel Martínez
*Mbocayaty
*Yataity
Borja
*Pumí
*Gral. Eugenio A. Garay
Natalicio Talavera
*Independencia
Iturbe
San Salvador
Mauricio José Troche
José Fassardi

CAAGUAZU

**Coronel Oviedo
**San José
**Caaguazú
*Carayaó
*Ihú
*San Joaquín
Curuguaty
Ypejhú

Appendix 3 (Continued)

DEPARTMENTS AND MUNICIPALITIES IN PARAGUAY
Class I (**) and Class II (*) Municipalities Contacted

CAAGUAZU (Continued)

Dr. Cecilio Báez
Igatimí
Nueva Australia

CAAZAPA

Caazapá
Maciel
Yegros
San Juan Nepomuceno
Dr. Moisés S. Bertoni
Buena Vista
Tabaí
Yuty
Gral. Higinio Morinigo
Abaí

ITAPUA

**Encarnación
*Jesús
*Trinidad
*Cármén del Paraná
San Cosme
**Coronel Bogado
Gral. Artigas
*Honenau
*Gral. Delgado
Capitán Meza
San Pedro del Paraná
Cambyretá
Obligado
Fran
*Capitán Miranda

ITAPUA (Continued)

Capitán Vicente Matiauda
Bella Vista

MISIONES

**San Juan Bautista
**San Ignacio
*San Miguel
*Florida
*Santa Rosa
San María
Santiago
*San Patricio
Ayolas

PARAGUARI

**Paraguarí
Pirayú
**Carapeguá
*Roque González
*Quiindy
*Caapucú
Acahay
Ybycuí
Quyquyhó
Ybytimí
Caballero
Sapucaí
Escobar
La Colmena
Mbuyapey
**Yaguarón
Tebicuary mí

Appendix 3 (Continued)

DEPARTMENTS AND MUNICIPALITIES IN PARAGUAY
Class I (**) and Class II (*) Municipalities Contacted

ALTO PARANA

Irela
Ñacunday
*Hernandarias

CENTRAL

*Ypacaraí
*Areguá
**Capiatá
**Fernando de la Mora
Guarambaré
**Itá
**Itaguá
**Luque
Limpio
Ñemby
**San Lorenzo
San Antonio
Ipané
Villeta
Villa Elisa
Mariano Roque Alonso
Nueva Italia
**Lambaré

ÑEEMBUCU

**Pilar
Oliva
Alberdi
Franca
*San Juan Bta. de Neembucú
Guazú cuá
Isla Umbú

ÑEEMBUCU (Continued)

Tacuaraz
Humaitá
Paso de Patria
Desmochado
Mayor José D. Martínez
Laureles
Yabebyry
Cerrito
Gral. José E. Díaz

AMAMBAY

**Pedro Juan Caballero
Capitán Bado
Bella Vista

PRESIDENTE HAYES

Villa Hayes
Benjamin Aceval

BOQUERON

Mariscal Estigarribia
Puerto Pinasco