

6. BASIC DEVELOPMENT PLAN

6-1 Objectives

The development plan's basic objectives is to develop the country's textile industry by producing more textile goods to substitute for imports as well as for export purposes. The attainment of this goal will help stabilize the economy, improve the industrial structure, increase employment and introduce new technology into this country.

6-2 Basic Development Policy

The basic development policy may be itemized as follows:

(1) Full use of Domestic Resources

Make full use of cotton and other domestic resources in order to increase value added.

(2) Promotion of Private Enterprises

The main subjects of development are private enterprises. They should be helped to expand the textile industry under free competition.

(3) Necessary Government Aid for Development of Private Enterprises

In order to promote the textile industry, the government should give administrative, financial and technical aid to private enterprises.

(4) Facilitating Technology Transfer from Advanced Countries in Textile Industry

The first step in the development is to improve the country's textile technology. So it is necessary to introduce necessary technology into this country under the technical guidance of advanced countries so as to quicken the pace in technology transfer.

(5) Impacts of Development on Other Sectors

Development will be carried out in such a way that it will have impacts not only on the textile industry, but also on other sectors.

(6) Adoption of A Development Method that will Result in Minimum Social Conflicts

Adjustments to methods of development will be made to minimize the development's unfavorable effects on the existing socioeconomic system or to avoid the concentration of such effects on a certain specific sector.

6-3 Basic Development Strategy

In order to attain the objectives, the following strategies will be taken in line with the above-mentioned basic policy.

(1) Basic Strategies

1) Enhancement of I.N.T.N's functions

Along with the expansion of the staff and facilities efforts will be made to strengthen I.N.T.N.'s functions, standardize products, inspect exports, provide technical service and carry out publicity activities, all under the technical guidance of advanced countries in the textile industry, so as to advance the country's textile technology.

2) Rehabilitation of Existing Textile Companies

Activities will be launched to enlighten managers and technicians of textile companies, rehabilitate textile companies, improve operating techniques and products quality, lower production costs and strengthen competitive power.

3) Improving Structure of Textile Industry

After existing textile companies have been rehabilitated, further steps will be taken to rearrange individual production departments in small textile companies and to install production equipment for common use so as to push forward rationalization of business and improve the structure of the textile industry. These steps are as follows:

- a. Specialization to weaving process
- b. Installation of new spinning, weaving and dyeing and finishing facilities for common use.

4) Production of Textile products for export purposes

New spinning, weaving factories will be set up to strengthen the country's competitive power in export trade. Textile products will be exported in the order of cotton yarn, cotton fabric and finished products.

At first, these products should be exported to neighboring countries and then to Europe as our final target market. At the same time, converters should be fostered to enlarge the market.

(2) Carrying out of Basic Strategy

The above-mentioned basic strategy will be carried out in three development phases as follows:

1) The first phase (preparatory period: 1982—1986)

- a. Enhancement of I.N.T.N.'s functions.
- b. Enlightening all people concerned with the textile industry.
- c. Rehabilitating existing textile companies.

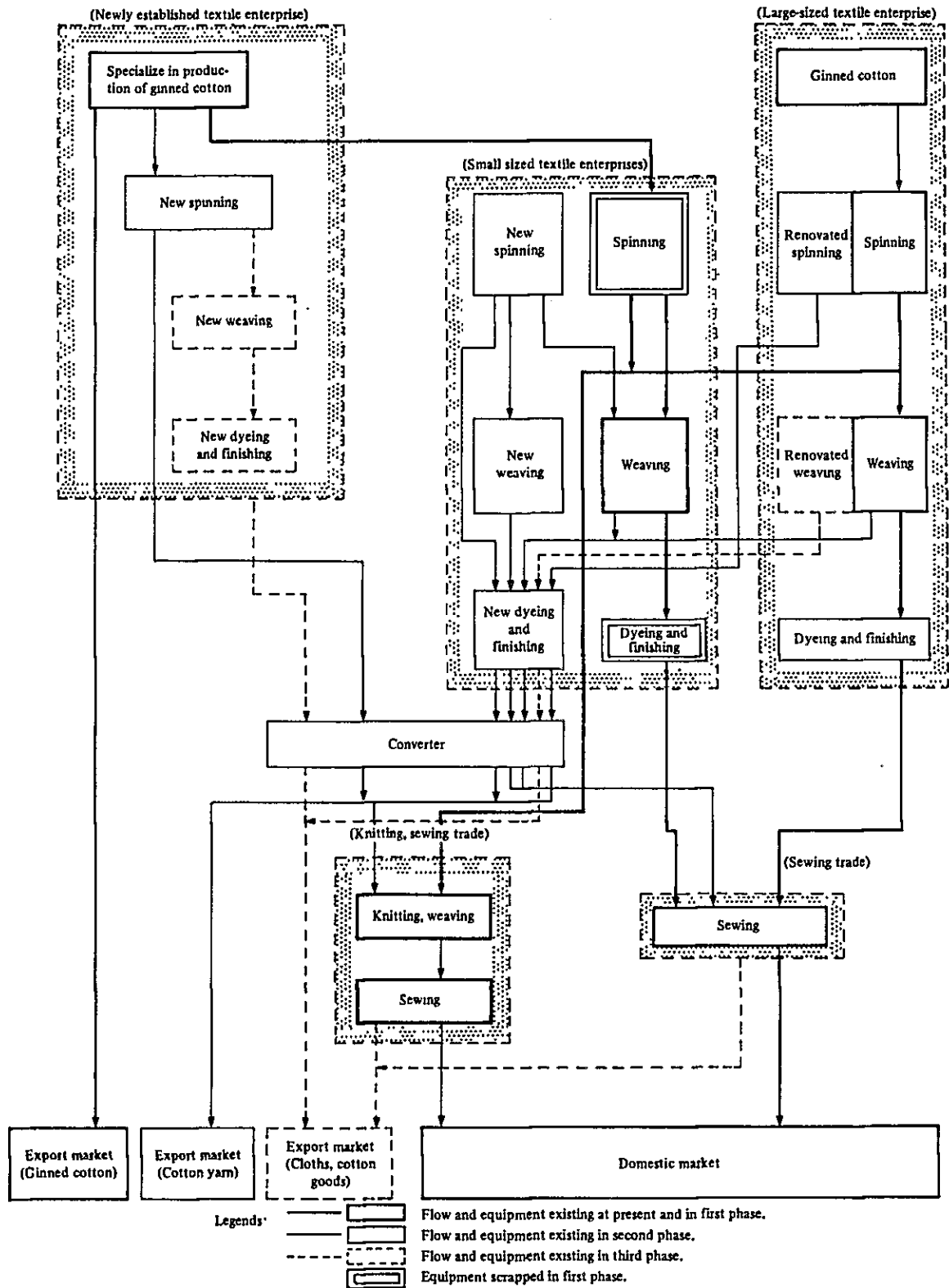
2) The second phase (export development period: 1987–1991)

- a. I.N.T.N.'s guidance in and supervision over standardization and inspection of exports.
- b. Construction of new spinning factory for export purposes.
- c. Renewal of production equipment in spinning departments of large textile companies.
- d. Installation of new spinning, weaving and dyeing equipment in small textile companies for joint production.
- e. Fosteration of converters.

3) The third phase (export expansion period: 1992–1996)

- a. I.N.T.N.'s guidance in and supervision over standardization and inspection of exports.
- b. Construction of new weaving and dyeing factories for export purposes.
- c. Renewal of production equipment in weaving departments of large textile companies.

With the carrying out of the above-mentioned strategies, Paraguay's future picture of its textile industry will become something like chart 6-1. The textile companies basically can be divided into three groups: new textile companies, large textile companies and small textile companies, each of which having its own market. Between these three groups of textile companies and sewing companies, there exist converters. If we make full use of these converters while taking the new textile companies as the core, the textile industry will surely make steady progress.



Note. In the flow from the spinning section to the weaving section, yarn dyed is to be included in the spinning section

Chart 6-1 Structural Plan of Textile Industry

After this development plan has been carried out, Paraguay's yarn production will reach 10,242 t/y and its fabric production will reach 28,092,000 m/y, as shown in the following.

1) Yarn

Newly-established factory	2,470 t/y
Existing factories	7,772 t/y
Total	10,242 t/y

2) Fabric

Newly-established factory	6,924,000 m/y
Existing factories	21,168,000 m/y
Total	28,092,000 m/y

6-4 Measures for Promoting the Textile Industry

What we have mentioned above is the plan for developing textile export and improving the textile industry, but it still needs the government's manifold countermeasures to support it and help carry it out. These countermeasures include programme that are indicated under the subhead of "Basic Development Strategy" and constitute the center of this development plan, as well as those that are mainly aimed at improving the business environment of the textile industry.

The former programme include the strengthening of the functions of I.N.T.N., rehabilitation of existing companies, the start of joint production, construction of new textile factories for export purposes and the fosteration of converters; while the latter programme include preferential treatment in taxation and financing, the opening up of new markets, the improvement of the infrastructure, development of manpower, organization of trade associations and others.

The preferential treatment in taxation and credit mentioned here includes that in taxes on exports and imported capital as well as protective tariffs.

The measures for promoting textile industry are to be carried out in three phases as indicated in table 6-1. Details of individual promoting measures are as follows.

Table 6-1 Measures for Promoting the Textile Industry

Item \ Period		Phase I	Phase II	Phase III
Objectives		Improvement of basic conditions	Export of cotton yarn	Export of textiles and processed products
Countermeasures	Companies	<ul style="list-style-type: none"> • Rehabilitation • Enlightenment of managers 	<ul style="list-style-type: none"> • Quality control campaign • Improvement of structure of textile industry • Raise of productivity 	<ul style="list-style-type: none"> • Quality control campaign • Raise of productivity
	I.N.T.N.	<ul style="list-style-type: none"> • Strengthening of such functions as technical guidance and supervision • Expansion of inspecting functions of textile goods 	<ul style="list-style-type: none"> • Standardization of cotton yarn • Inspection of cotton yarn for export purposes • Technical services • Publicity 	<ul style="list-style-type: none"> • Standardization of textiles and processed products • Inspection of textiles and processed products for export purposes • Technical services • Publicity
	Government	<ul style="list-style-type: none"> • Improvement of export duties • Tariff barriers for cotton yarn • Exemption from capital goods import duties • Improvement of infrastructures (port, sea transportation) 	<ul style="list-style-type: none"> • Tariff barriers for textiles and processed products • Reduction of taxes imposed on yarn-exporting enterprises • Expansion of organizations for opening up overseas markets • Credit systems for exporters • Establishment of textile courses at vocational training facilities 	<ul style="list-style-type: none"> • Reduction of taxes imposed on exporters dealing in textiles and processed products • Expansion of organizations in charge of opening up overseas markets
	Others	<ul style="list-style-type: none"> • Organizations of knitters' and sewers' trade associations 	<ul style="list-style-type: none"> • Training of converters 	

(1) Enhancement of Functions of I.N.T.N.

As promoting the textile industry calls for advanced textile processing techniques, it is necessary to expand the textile department of I.N.T.N., which was established in 1965 to develop science and technology, as a specialized organization for advancing textile processing techniques.

To strengthen the functions of I.N.T.N., it is also necessary to seek the help of foreign textile experts and install testing and inspecting equipments. The proposed I.N.T.N. organization in charge of textile and its main activities are listed in table 6-2. I.N.T.N.'s major services are as follows:

- 1) Inspection and issuance of inspection reports
 - ① Inspection of export
 - ② Inspection of products brought back by users
 - ③ Grading inspection for makers
 - ④ Publication of inspection results
- 2) Collection of information
- 3) Information service
- 4) Guidance in managerial techniques
- 5) Research and development (applied research)
- 6) Service for consumers (general users)

Tabel 6-2 Organization of I.N.T.N. and its Activities

	Organization	Personnel	Main Service
Textile department	(1) Inspection section: Spinning team Weaving team Dyeing and finishing team	Chief 1 Assistant 1 Chief 1 Assistant 1 Chief 1 Assistant 2	(1) Inspection of yarn and fabric · Inspection of yarn · Inspection of fabric · Inspection of dyeing and finishing (2) Publication of inspection reports · Inspection of exports · Inspection of products brought back by users · Grading inspection for makers · Publication of inspection reports (3) Guidance in administration techniques · Quality control (Q.C.) · Industrial engineering (I.E.) · Air conditioning (4) Research and development · Velvet · Sample dyeing, etc.
	(2) Technical service section	Chief 1 Assistant	(1) Collection of information · Translation of reference material · Information exchange with overseas technical organizations (2) Information service · Issuance of publications · Seminars · Reference service (3) Educational service for consumers · Seminars · Publicity activities, etc.
Textile department		Subtotal 9 Department director 1	
		Total 10 persons	

(2) Rehabilitation of Existing Textile Companies

Rehabilitation should be carried out at Pilar S.A. and America Textil S.A. to help these two large textile companies improve product quality, lower production costs and advance operating techniques. Details of rehabilitation are listed in table 6-3. It will help increase production as follows:

1) Pilar S.A.

Spinning: an increase of 30,000kg/m from 310,000kg/m to 340,000kg/m

2) America Textil S.A.

Spinning: an increase of 20,000kg/m from 100,000kg/m to 120,000kg/m

Weaving: an increase of 100,000m/m from 200,000m/m to 300,000m/m

Table 6-3 Details of Rehabilitation

Spinning	<ul style="list-style-type: none"> • Investigation of goods in process • Curtailment of personnel • Establishment of criteria for inspection • Strengthening of feedback from previous to next process • Supervision over knot • Thorough replacement of bad operating supplies • Improvement of outdated equipment
Weaving	<ul style="list-style-type: none"> • Production of textiles of high value added • Curtailment of personnel • Q.C. and I.E. education, introduction of small group activities • Improvement of maintenance and administration of operating supplies • Strengthening of feedback from finishing process • Replacement of some weaving machines with new-fashioned ones
Dyeing and Finishing	<ul style="list-style-type: none"> • Improvement of product quality after reexamining process • Establishment of Q.C. and inspection systems • Thorough-going preventive and protective measures for production equipment • Improvement and modernization of equipment from energy-conserving and labor-saving viewpoint • Taking a new look at energy resources • Procurement of major machines from same maker to insure unity and interchangeability in them

(3) Installation of New Equipment in Small Textile Companies for Common Use

Among the existing textile companies, I.T.A.S.A., Forno y Valle S.A. and Pedro Genovese Hijo S.R.L. have the need to substantially improve their structures. As far as cotton products are concerned, these small enterprises should be specialized in weaving and engage in joint production so as to raise their productivity and improve their product quality.

1) Location:

We will make use of the I.T.A.S.A. company's factory, revamp its interior and install new spinning, weaving and dyeing and finishing equipment there.

2) Time:

It is hoped that new equipment will be installed as early as possible. Our proposed schedule for installation is as follows.

- ① Installation of new spinning, weaving and dyeing and finishing equipment: 1984–1985
- ② Installation of additional spinning equipment: 1990–1991

3) Market

Our first target is the import substitution of low-count products. In the long run, our products will be exported to neighboring countries. They include dyed yarn and bleached or dyed products of poplin, shirting, sheeting and denim.

4) production Plan

As can be seen in the following, integrated production will begin in the first period and output of spinning is expected to double in the second period.

- ① The first period (1986–1991)
 - Spinning: 1,126 t/y
 - Weaving: 4,822 m/y
 - Dyeing and Finishing: 3,600,000 m/y
- ② The second period (1992–1996)
 - Spinning: 2,252 t/y
 - Weaving: 4,822,000 m/y
 - Dyeing and Finishing: 3,600,000 m/y

Outline of factories under the spinning, weaving and dyeing and finishing departments are shown in tables 6-4, 6-5 and 6-6, respectively.

Table 6-4 Outline of Small Spinning Factory

1. Major equipment (10,000sp)			
Blowing machine			2 F
Carding engine (Hi-pro)			16 F
Draw frame			4 F
Fly frame			6 F
Ring spinning frame (400sp)			25 F
Auto winder (50D)			5 F
Ring twisting frame			3 F
Doubling winder and rewinder			1 F each
(5,000 sp at the start of operation)			
2. Production			
7 ^s 2,160 kg/d		297 BL/m	
11 ^s 1,800		248	
20 ^s 1,590		219	
30 ^s 1,956		270	
Total 7,506 kg/d		1,034 BL/m (517 BL/m at the start of operation)	
(Production: 2,252 t/y home consumption: 956 t/y sales of yarn: 1,287 t/y)			
3. Personnel			
Operation (3 shifts)			
	Male	Female	Total
	12	79	91
Maintenance, etc.	16	13	29
Total	28	92	120 persons

BL : Bale

Table 6-5 Outline of Small Weaving Factory

1. Major equipment				
Warper		1 F		
Sizing machine		1 F		
Mixing tank		2 F		
Typing maching		1 F		
Reaching-in machine		2 F		
Loom		48 F		
Inspecting machine		1 F		
Folding machine		1 F		
2. Production				
Kind \ Item	Yarn count	Number of looms	Output (m/m)	
Poplin	30 ^s	12 F	61,818	
Shirting (yarn dyed)	30	12	123,636	
Sheeting	20	12	92,727	
Denim	7	12	123,636	
Total		48	401,817	
3. Personnel				
Division	Team Chief	Worker	Total	
Preparatory operation (two shifts)	2	14	16	
Weaving operation (three shifts)	3	27	30	
Finishing operation (two shifts)	2	20	22	
Inspection (one shift)	1	2	3	
Maintenance (one shift)	1	7	8	
Manager			1	
Total	9	70	80	persons

Table 6-6 · Outline of Small Dyeing and Finishing Factory

1. Major equipment			
No.	Major Machines		Number of sets
1	Yarn dyeing machine w/t dryer	200 kg	2
		100 kg	2
		50 kg	1
		25 kg	1
		10 kg	1
2	Gas singeing machine		1
3	Pad roll machine		1
4	Washing and drying machine		1
5	Dyeing jigger		1
6	Cold batching machine		1
7	Resin finishing machine		1
8	Compressive shrinking machine		1
9	Inspecting machine		2
10	Double and lapping machine		1
11	Packing machine		1
2. Production			
Products: poplin, shirting, denim, yarn dyed, colored yard			
(Production)	fabric finishing	3,600,000 m/y (Calculated in terms of 1.2-meter-wide grey cloth)	
	yarn dyeing	375,000 kg/y (Including sales of dyed yarn)	

Table 6-6 Outline of Small Dyeing and Finsihing Factory (con't)

	bleaching	50,000 m/m		
	dyeing	50,000		
	dyed yarn cloth finishing	200,000		
	total	300,000 m/m		
3. Personnel				
Division	Term Chief	Worker (Male)	Worker (Female)	Total
Yarn dyeing (two shifts)	2	10	8	20
Preparations, bleaching, dyeing (one shift)	1	5	—	6
Finishing inspection (one shift)	1	5	4	10
Manager				1
Total	4	20	12	37 persons

(4) Construction of New Textile Factories for Export Purposes

A new integrated factory equipped with modern facilities will be built to increase the value added to exports (value added increases in the order of cotton, cotton yarn, fabrics and finished products). On this account, we will start a new business with ginnery as its mainstay.

1) Location:

The location of the factory site should be based on the conditions of the supply of raw materials, labor, power, roads, communications, water supply and drainage, etc., but, in the main, the outskirts of Asunción are under consideration. In compliance with the regulations for industrial location in this district, a place beyond 20 kilometers of the capital will be chosen as the factory site. Candidates for this site are shown in map 6-2.

2) Time:

The proposed factories will be built step by step, and consequently, they will form an integrated production structure.

① Construction of spinning factory: 1985–1986

② Construction of weaving and dyeing and finishing factories: 1990–1991

3) Market

At first, products will be exported to neighboring countries, such as Argentina and Bolivia, and, in the long run, exports will be steered toward the European and North American markets. Products intended for exports will be yarn, dyed yarn and bleached, dyed or printed poplin, fancy fabric, shirting, sheeting and denim.

4) Production Plan:

As shown in the following, the spinning departments will begin production in the first phase, and the weaving, dyeing and finishing departments will join it in the second phase, thus forming an integrated production structure.

① Phase I (1978–1991)
Spinning: 2,470 t/y

② Phase II (1992–1996)
Weaving: 6,924,000 m/y
Dyeing and Finishing: 7,200,000 m/y

Outlines of factories under the spinning, weaving and dyeing departments are shown in Tables 6-7, 6-8 and 6-9, respectively.

Table 6-7 . Outline of New Spinning Factory

1. Major equipment (20,000 sp Start off with carded and combed yarn half-and-half)			
Blowing machine	2 F		
Carding machine (Hi-Pro)	20 F		
Pre-draw frame lap former	2 F		
Combing machine	12 F		
Draw frame (4 Del)	4 F		
Fly frame (FL-b)	8 F		
Ring spinning frame (400 sp)	50 F		
Auto winder (50D)	10 F		
(Or winder (120D floor space 10 F))			
2. Production			
10 ^S RF combination	2 F	Output 25,600 kg/m	
20 ^S RF combination	6	39,750	
30 ^S RF combination	17	69,275	
40 ^S RF combination	25	71,250	
Total	50 F	205,875 kg/m	
(Output: 2,470 t/y home consumption 1,040 t/y sales of yarn 1,430 t/y)			
Average yarn count 25.4 ^S (half of it is combed yarn)			
3. Personnel			
	Male	Female	Total
Operation (three shifts)	13	84	97
Maintenance (during daytime alone)	18	15	33
Total	31	99	130
			persons

Table 6-8 Outline of New Weaving Factory

1. Major equipment									
Winder									1 F
Warper									1 F
Sizing machine									1 F
Mixing tank									3 F
Tying machine									1 F
Reaching-in machine									4 F
Loom									200 F
Dobby									30 F
Inspecting machine									3 F
Folding machine									1 F
2. Production									
Kind	Item		Densify		Width (cm)	Number of looms	Production (1,000m/m)	Quantity of yarn consumed (kg/m)	Remarks
	Yarn count	Warp	Weft	Warp					
Poplin	40	40	120	60	120	50	129.5	17,718	rpm 200
Fancy fabric	40	40	120	60	120	30	77.6	10,636	eff 85%
Shirting A	40	40	60	60	120	20	51.9	4,677	
Shirting B	30	30	60	50	120	50	155.5	17,033	
Sheeting	20	20	60	50	120	30	93.4	15,545	
Jeans	20	10	60	45	120	20	69.1	15,658	
Total						200	577.0	81,267	

Table 6-8 Outline of New Weaving Factory (con't)

3. Personnel				
Division	Team Chief	Worker (Male)	Worker (Female)	Total
Preparatory operation (two shifts)	2	8	12	22
Weaving operation (three shifts)	3	15	42	60
Finishing operation (two shifts)	2	—	18	20
Maintenance of equipment for weaving and finishing operations	1	2	1	4
Inspection (one shift)	1	—	2	3
Manager				1
Total	10	35	79	125 persons

Table 6-9 Outline of New Dyeing and Finishing Factory

1. Major equipment			
No.	Major machine:	Unit	Remarks
1.	Yarn dyeing machine	100 kg x 2 50 kg x 2	
2.	Grey cloth joining machine	1	
3.	Continuous gas singeing, desizing and scouring range	1	
4.	Continuous bleaching machine	1	
5.	Mercerizing machine	1	
6.	Heat setter	1	Necessary for future production of mixed cotton and synthetic fabric
7.	Pad dry dyeing machine	1	
8.	Pad steam dyeing machine	1	
9.	Thermosol dyeing machine	1	A machine for dyeing synthetic fiber in the future
10.	Dyeing jigger	1	
11.	Rotary screen printing machine	1	
12.	Steaming machine	1	
13.	Baking and polymerizing machine	1	
14.	Washing and drying machine	1	
15.	Wire raising machine	1	
16.	Resin finishing machine	1	
17.	Compressive shrinking machine	1	
18.	3-bowls calender	1	
19.	Inspecting machine	3	

Table 6-9 Outline of New Dyeing and Finishing Factory (con't).

No.	Major machines	Unit	Remarks
20.	Double and lapping machine	1	
21.	Winding machine	1	
22.	Packing machine	1	
23.	Banding machine	1	
2. Production			
(Grey cloth) 100% cotton fabrics (in consideration of future production of cotton and synthetic fabric mixed)			
Weaving			
	Poplin	$\frac{40^S \times 40^S}{120/in \times 60/in} \times 120$ cm (width)	
	Shirting	$\frac{40^S \times 40^S}{60/in \times 60/in} \times 120$ cm (width)	
		$\frac{30^S \times 30^S}{60/in \times 60/in} \times 120$ cm (width)	
	Sheeting	$\frac{20^S \times 20^S}{60/in \times 50/in} \times 120$ cm (width)	
	Fancy fabrics	$\frac{40^S \times 40^S}{120/in \times 60/in} \times 120$ cm (width)	
	Jeans	$\frac{20^S \times 10^S}{60/in \times 45/in} \times 120$ cm (width)	
(Production)	Bleaching	40,000 m/m	
	Dyeing	250,000	
	Printing	250,000	
	Dyed yarn cloth finishing	60,000	
	Total	600,000 m/m	

Table 6-9 Outline of New Dyeing and Finishing Factory (con't)

3. Personnel				
Division	Team Chief	Worker (Male)	Worker (Female)	Total
Preparations, bleaching	1	7	2	10
Dyeing	1	6	—	7
Printing	1	9	—	10
Engraving	1	6	—	7
Finishing, inspection	1	6	7	14
Shipping, warehousing	1	4	—	5
Yarn dyeing	1	4	3	8
Facilities, maintenance	1	4	—	5
Test	1	1	3	5
Manager				1
Total	9	47	15	72 persons

(5) Establishment and Fostering of Converters

In order to promote the selling of fabric and dyed products, it is necessary to establish and foster new converters. First of all, they will take charge of marketing including exportation and, in addition, they will help develop textile companies in the fields of production, funds and stock.

As new textile companies need exporters. Being parent bodies of the converters, the exporters should expand their dealings with domestic sewers while carrying on exporting products.

In fostering converters, it is desirable to seek the help of foreign commercial capital while taking for reference successful examples, such as Japanese-owned textile enterprises' success in increasing production in Brazil and their marketing abilities in neighboring countries as well as Japanese comprehensive commercial firms' strengthen doing international textile transactions. At the same time, it is also hoped that these converters should forge ties with sewers, which operate in a modern way.

(6) Preferential Treatment in Taxation and Financing

The government's financial aid is indispensable to the success of the textile enterprises in promoting exports, reducing imports and improving the structure of the textile industry.

At present, we already have Law No. 550 which is aimed at promoting investment and grants special privileges to projects that make full use of domestic resources, increase exports, substitute for imports and contribute to development of certain districts. Many investments have received special privileges under this law, but, in order to promote the textile industry, we hope more positive measures will be taken.

With regard to preferential treatment in taxation and financing, we would like to make some suggestions concerning the measures to be taken in each developing period for developing the textile industry.

① Export Duty:

At present, a rate of about 5% is levied on cotton exports and a rate higher than 10% on cotton yarn and fabric. This has been one of the factors weakening this country's exporting abilities. We therefore suggest the following alterations:

- a. During the second-phase
period: Cotton yarn be exempted from export duties.
- b. During the third-phase
period: Cotton fabric and finished products be exempted from export duties.
- c. After third-phase

period: Rates of export duty be so revised that tax rates on cotton fabric and finished products, cotton yarn and cotton should be raised in the order named.

② Tariff Barriers during the Period of Import Substitution

During the period when the existing textile enterprises are being brought up, home-made products are still not strong enough to compete with imports and therefore tariff barriers are needed to protect them.

a. During the first-phase

period: Cotton yarn, cotton cloth products.

b. During the second-phase

period: Cotton cloth products.

③ Exemption of Imported Capital Goods from Import Duty

Imported capital goods accompanying equipment investments when new factories are being built or facilities renewed can be exempted from import duties according to Law No.550. The same law also applies to the textile department.

④ Protection by Tax Systems

To promote investment activities, usually preferential treatment is given in taxation on new undertakings or renovated equipment. Law No. 550 stipulates that income tax can be reduced by 50% at its maximum for a period of 5 years. In addition, in such preferential development areas as Chaco and Neembucú, investments can be exempted from taxes for 2 years and real estate can also be exempted from taxation for 5 years.

The said law is good for substitutes-manufacturing enterprises, but we still need something more to promote export-oriented undertakings, that is, a still stronger incentive in the concrete forms of extension of the period during which special taxation measures are taken, the application of preferential tax rates after the termination of the rent exemption period, advanced redemption and the deduction of expenses for promoting overseas sales.

⑤ Credit System

Financial aid should be given in acquiring the necessary funds for building new textile enterprises, renewing the equipment of existing textile enterprises and in making switch-overs between different trades. At present, loans are available from Banco Nacional de Fomento or civil credit organizations. But to make up for the insufficient capital formation by civil credit organizations, it is necessary to establish foundations for low interest credit, export credit and trade switchover credit.

(7) Development of Markets

In order to export textile products, it is necessary to develop overseas markets

through the concerted efforts of both the public and private sectors.

We already have CEPEX (Centro De Promoción de Exportaciones) as a public organization to promote export, but its activities need to be strengthened. For this reason the organization should appoint its staff members to take charge of textile business and increase the number of overseas offices so as to strengthen activities in collecting information on the trend of overseas markets. At the same time exhibitions or trade affairs should be held to publicize Paraguay's products abroad.

On the civilian side, converters and selling agencies should boost marketing and selling activities in cooperation with CEPEX.

Efforts should be made to watch the trends of consumer markets in EC member states and of international division of labor and to open up new markets with the emphasis on consumer markets in neighboring countries.

(8) Improvement of Infrastructure

The infrastructure such as road and waterway transportation is imperative to the realization of lower transportation costs. In a landlocked country like Paraguay, where transportation conditions are very poor, the infrastructure exercises considerable weight in strengthening its competitive power. As the export of textile products, such as cotton yarn and cotton fabric, depends on river transportation starting with Asunción, it is necessary to improve harbour facilities at the port of Asunción and strengthen water transportation in the Paraguay River. Efforts should be made to maintain the quality of commodities for export by building new warehouses and loading and unloading facilities at the port. As for river transportation, it is necessary to increase the number of ships so as to reinforce shipping abilities while at the same time striving to insure the regularity of shipping.

(9) Development of Manpower

In order to advance the production techniques of ordinary workers in the textile industry, national industry colleges and vocational training facilities should open textile courses to pass spinning, weaving, dyeing and finishing techniques on to them even after the termination of the rehabilitation period. By so doing, we will train technicians and workers and be able to secure talented people capable of expanding the textile enterprises' production along with I.N.T.N.'s efforts in extending textile processing techniques among the intermediate supervisors. The training referred to here includes lectures, field practice and on-the-job training in textile factories.

(10) Establishment of Trade Associations

Each sector of the textile industry should establish its own trade association to make internal adjustments within the industry and to take care of the affairs which can not be done by individual enterprises. The textile industry has spinning, weaving, knitting and sewing trades, etc, and the trade associations' major tasks are to make external and internal adjustments. One of the adjustments made by the trade associations among the different trades is to feed back requests from the trade in charge of the next step of production to the trade in charge of the previous step. Adjustments made within a trade serve to adjust ways of dealing with the trade's common issues. Especially when production adjustments among different enterprises

become necessary, consultations and contacts with the government including those concerning the government's aid policy are needed.

To smoothly carry out the trade associations' activities, it is necessary to hold liaison conferences periodically in which various activities will be initiated. At the same time, judging from the financial and technical points of view, there will be a need to seek the help from the Ministerio de Industria y Comercio and I.N.T.N.

(11) Others

Although the government plays a great role in developing the textile industry, we still have a need to grasp the real condition of its progress and to control its developing trends. For this reason, it will be helpful to collect information on capital, employees, equipment, production and sales proceeds. In addition, commercial statistics showing market trends such as those items on sales volume and selling prices are desirable. Besides, detailed import and export data by kind or item are much wanted.

Part of the statistics are being collected at present, but we need all of them as a basis on which we can grasp the trend of each industrial product. This applies not only to the textile industry but also to all industrial sectors. With these statistics at hand, we will be able to map out industrial plans more easily.

6-5 Financial Examination of Development Plan

Here we are going to examine financially the small and new textile enterprises in connection with equipment investment.

(1) Small Textile Enterprise

1) Factory Construction Cost

Funds needed to install new production equipment for joint production by small textile enterprise is shown in table 6-10. Required expenses are figured out as follows.

- ① Funds for equipment are to be procured abroad.
- ② Initial expenses needed before the start of operation include personnel expenses, training expenses, expenses of raw materials and power needed for test runs and miscellaneous expenses needed for establishing the company.
- ③ The reserve fund is estimated at 5% of the total construction cost of the factory.
- ④ Interest on half the loans during the construction period is supposed to be paid. The construction period is estimated at one year.
- ⑤ The working fund is estimated at monthly variable cost.

2) Methods for Procuring Funds

Thirty percent of the construction cost (G632 million) is to be met with capital and the remaining 70% (G1,474 million) by loans from international credit organizations on a long-term basis. Our repayment plan is as follows:

Term of Repayment	12 years
Grace Period	2 years
Interest Rate	8% (average)

3) Production Cost

Production cost for the first period is G795,714,000 a year as shown in table 6-11. Because the first period's 5,000 spindles increase by 100% during the second period, production cost for the spinning sector doubles during the same period, but those for the weaving and dyeing sectors still remain the same. As a result of increases in interest and marketing expenses, yearly production cost for the second period rises to G1,113,884,000.

The above-mentioned production cost is calculated on the basis of the following ideas.

- ① All calculations are based on current prices, making no allowance for inflation.
- ② The calculation of production cost is done on the assumption that all machines are in full operation. The time unit for calculation is one year.
- ③ It is assumed that ginnery participate in this undertaking and therefore the ginnery's selling prices of raw cotton are lower than usual prices.
- ④ The number of operating days in a year is 300.
- ⑤ Because 5,000 spindles are used in the first period and 10,000 spindles are used in the second period, expenses are calculated in proportion to the number of spindles.
- ⑥ The depreciation of the tangible fixed assets is calculated as follows:

production equipment

buildings (groundwork for spinning facilities)

service life (year)	method of depreciation	rate of residual value
10	straight line method	10%
20	straight line method	10%

- ⑦ Marketing expenses are estimated at 4% of the factory's production cost

Table 6-10 Factory Construction Cost of Small Textile Enterprise

(Unit: G1,000)

Item	Period	First Period	Second Period	Total
I. Equipment cost				
Spinning equipment		375,000	375,000	750,000
Groundwork for spinning facilities		82,500	82,500	165,000
Weaving equipment		193,750		193,750
Dyeing and finishing equipment		356,250		356,250
Shipping and installation charges		296,000	120,000	416,000
Sub total		1,303,500	577,500	1,881,000
II. Factory construction cost				
Equipment cost		1,303,500	577,500	1,881,000
Initial expenses		26,438	15,750	42,188
Reserve fund		72,938	32,375	105,313
Interest expenses incurred during construction period		40,875	18,125	59,000
Working fund		15,625	3,125	18,750
Total		1,459,375	646,875	2,106,250

(Footnote) Factory construction cost is calculated on the premise that the I.T.A.S.A. building is used as the factory building; therefore, the construction cost of the building is not included. If it was included, the factory construction cost would increase by G750,000,000 to G2,856,250,000.

Table 6-11 Production Cost of Small Textile Enterprise

(Unit: G1,000)

Division	Yearly expenses (First period)	Yearly expenses (Second period)
(Spinning)		
Raw cotton cost	179,111	358,223
Power and packing materials	33,506	Same as previous period
Labor cost	25,388	Same as previous period
Maintenance expenses	7,500	Same as previous period
Depreciation	37,463	Same as previous period
Others	22,080	Same as previous period
(Total of processing expenses)	25,936	251,873
Sub total	305,048	610,095
(Weaving)		
Power, raw materials	37,669	Same as previous period
Labor cost	41,436	Same as previous period
Depreciation	17,438	Same as previous period
Others	50,356	Same as previous period
(Total of processing expenses)	146,898	Same as previous period
(Dyeing and finishing)		
Energy cost	51,844	Same as previous period
Auxiliary materials	56,738	Same as previous period
Labor cost	15,641	Same as previous period
Depreciation	32,063	Same as previous period
Others	24,079	Same as previous period
(Total of processing expenses)	180,364	Same as previous period
Interest	138,113	139,034
Marketing expenses	25,293	37,494
Total	795,714	1,113,884

(Footnote) Production cost did not include the cost of the factory building. If it was included, the depreciation would rise to G829,464,000 for the first period and G1,147,634,000 for the second period.

4) Sales Proceeds

Small textile enterprises are engaged in spinning, weaving and dyeing and in marketing yarn and dyed and finished products, mainly aiming at supplying the domestic markets with substitutes for imports. The selling prices of these products are fixed as follows.

While Pilar's grey yarn sells at G480 per kilogram, we will sell the same product at G432, or 90% of the Pilar price. While its dyed yarn sells at G800 with a distribution margin of 30% of the ex-factory price, we will sell it at G554, or 90% of the market price minus the margin. While dyed and finished products sell at G400 per meter on the market with a distribution margin of 30%, we will sell them at G246 per meter, or 80% of the market price minus the margin.

We plan to sell 160,800 kg. of grey yarn yearly during the first period and 1,287,600 kg during the second period, 231,000 kg of colored yarn during the first and second periods, and 3,444,000 meters of dyed and finished products during the first and second periods. The prices of our bag and grey cloths produced on consignment will be set at G87.5 per meter, representing the average unit costs of 1,200,000 meters of cloth, including manufacturing and other expenses.

① Sales proceeds during the first period

a.	Grey yarn	432G/kg	x	160,800kg	=	69,446,000G/y
b.	Colored yarn	554G/kg	x	231,000kg	=	128,061,000G/y
c.	Dyed and finished products	246G/m	x	3,444,000m	=	848,085,000G/y
d.	Bag and grey cloths	88G/m	x	1,200,000m	=	105,000,000G/y
				Total		1,150,591,000G/y

② Sales proceeds during the second period

a.	Grey yarn	432G/kg	x	1,287,600kg	=	556,083,000G/y
b.	Colored yarn	554G/kg	x	231,000kg	=	128,061,000G/y
c.	Dyed and finished products	246G/m	x	3,444,000m	=	848,085,000G/y
d.	Bag and grey cloths	88G/m	x	1,200,000m	=	105,000,000G/y
				Total		1,637,228,000G/y

5) Payability of Business

We have analyzed the payability of the business. The results are shown in table 6-12.

During the first period the rate of profit on sales proceeds before tax deduction is 30.8% and the rate of return on investment (ROI) before tax deduction is 39.7%. During the second period the rate of profit on sales is 32.0% and the rate of return on investment before tax deduction is 37.4%. As a result, the number of payout years on investment before tax deduction is 3.3 years for both the first and second periods, a rather short period. This is because the selling prices, though lower than what are prevailing on the Paraguayan markets, are still relatively high; furthermore, because no costs of buildings are involved in the manufacturing expenses, depreciation is as low as 86,963,000G/y for the first period, or 10.9% of the manufacturing expenses, and 124,425,000G/y for the second period, or 11.2%.

As can be seen above, the reason why small textile enterprises can achieve higher economic efficiency lies in their profitable selling prices and light depreciation burdens. Now, we take a look at how a change in selling prices affects the rate of profit on investment before tax deduction. If we cut the selling prices by 10% and 20% and make a sensitivity analysis, the result will be that the rate of return on investment becomes 32.6% for the first period and 30.1% for the second period, if the selling prices are cut by 10%, and 25.4% for the first period and 22.8% for the second period if the selling prices are cut by 20%. Therefore, in order to meet interest expenses and depreciations, it is necessary to insure a profit rate of 15.4% for the first period and 12.5% for the second period.

Table 6-12 Payability of Small Textile Enterprise

First period	
	(Unit: G1,000)
(1) Sales proceeds	1,150,591
(2) Expenses	795,714
Raw cotton cost	179,111
Spinning expenses	125,936
Weaving cost	146,898
Dyeing expenses	180,364
Interest	138,113
Marketing expenses	25,293
(3) Profit before tax deduction	354,878
(4) Rate of profit on sales proceeds	30.8%
(5) Rate of return on investment	
ROI =	$\frac{\text{Profit before tax deduction} + \text{depreciation} + \text{interest}}{\text{Factory construction cost}} = \frac{354,878 + 86,963 + 138,113}{1,459,375} \times 100 = 39.7\%$
(6) Number of payout years on investment (Before tax deduction)	
Number of payout years on investment =	$\frac{\text{Factory construction cost}}{\text{Profit before tax deduction} + \text{depreciation}} = \frac{1,459,375}{354,878 + 86,963} = 3.3 \text{ years}$

Table 6-12 Payability of Small Textile Enterprise (con't)

Second period		
		(Unit: G1,000)
(1)	Sales proceeds	1,637,228
(2)	Expenses	1,113,884
	Raw cotton cost	358,223
	Spinning expenses	251,873
	Weaving expenses	146,898
	Dyeing expenses	180,364
	Interest	139,034
	Marketing expenses	37,494
(3)	Profit before tax deduction	523,344
(4)	Rate of profit on sales proceeds	32.0%
(5)	Rate of return on investment	
	ROI =	$\frac{\text{Profit before tax deduction} + \text{depreciation} + \text{interest}}{\text{Factory construction cost}} = \frac{523,344 + 124,425 + 139,034}{2,106,250} \times 100 = 37.4\%$
(6)	Number of payout years on investment (Before tax deduction)	
	Number of payout years on investment =	$\frac{\text{Factory construction cost}}{\text{Profit before tax deduction} + \text{depreciation}} = \frac{2,106,250}{523,344 + 124,425} = 3.3 \text{ years}$

(Footnote) If building cost was included, the rate of profit on investment would be 24.7% for the first period and 26.4% for the second period.

(2) New Textile Enterprise

1) Factory Construction Cost

The necessary funds for building a new textile enterprise are listed in table 6-13.

The calculation method for the required expenses is the same as that for small textile enterprises.

2) Methods for Procuring Funds

Forty percent of the required factory construction cost (G2,562 million) is to be met with our own capital and the remaining 60% (G3,844 million) is to be met with loans.

The required loans will be obtained on a long-term basis from international credit organizations.

Our repayment plan is as follows:

Term of Repayment:	12 years
Grace Period:	3 years
Interest Rate:	8% (average)

3) Production Cost

The production cost of the new fiber enterprise are shown in table 6-14. The spinning department alone is supposed to operate during the first period, turning out 1,109,389,000 guarani's worth of cotton yarn a year, and the weaving and dyeing departments will join the spinning department in production during the second period, turning out 2,033,026,000 guarani's worth of product a year.

Table 6-13 Factory Construction Cost of New Textile Enterprise

(Unit: G1,000)

Item \ Period	First Period	Second Period	Total
I. Equipment cost			
Spinning equipment	1,562,500		1,562,500
Buildings for spinning purposes	437,500		437,500
Weaving equipment		641,250	641,250
Buildings for weaving purposes		284,375	284,375
Dyeing and finishing equipment		910,875	910,875
Buildings for dyeing and finishing purposes		522,500	522,500
Management facilities	55,000	110,000	165,000
Shipping and installation charges	500,000	496,680	996,680
Land cost and expenses for leveling of ground	104,320		104,320
(Sub total)	2,659,320	2,965,680	5,625,000
II. Factory construction cost			
Equipment cost	2,659,375	2,965,625	5,625,000
Initial expenses	62,500	67,813	130,313
Reserve fund	151,500	168,813	320,313
Interest expense incurred during construction period	145,438	162,063	307,500
Working fund	8,750	14,375	23,125
Total	3,027,563	3,378,688	6,406,250

The calculation of the production costs is based on the following ideas:

- ① Prices are based on the current prices, making no allowance for inflation.
- ② Costs are calculated on the assumption that all machines are in full operation, one year being the calculation unit.
- ③ The raw cotton cost is calculated on the assumption that ginnery are participating in this undertaking and therefore raw cotton is cheaper than usual prices.
- ④ The number of operating days per year is 300.
- ⑤ The depreciation of the tangible fixed assets is estimated as follows:

service life (year)	method of depreciation	rate of residual value
Production equipment	straight line method	10%
Buildings	straight line method	10%

- ⑥ Marketing expenses are estimated at 4% of the factory's production cost.

As to the details of spinning, weaving and dyeing and finishing costs, please refer to section 4-2.

4) Sales Proceeds

The new textile enterprise will adopt an integrated production system in which spinning, weaving and dyeing and finishing processes will be carried out in a serial way. The enterprise is mainly devoted to exporting cotton yarn and dyed and finished products to neighboring countries. The first period will witness a yearly sale of 2,470,000 kg of cotton yarn, and the second period will witness a yearly sale of 1,430,400 kg of cotton yarn, 3,172,800 kg of bleached and dyed products and 3,321,600 kg of printed cloth and of dyed yarn.

The selling prices of these products are fixed as follows:

Since Pilar sells its cotton yarn at G480 per kg and yet gets business inquiries from neighboring countries, the new textile enterprise will set its prices at G 450 per kg.

Because the dealer's distribution margin in selling bleached and dyed products is 30% of the ex-factory prices and meter of 36-inch-wide bleached and dyed cloth sells at G300 on the market, the new enterprise will sell its products at G231, or 80% of the market prices without the margin (because our products are 45 inches wide, conversion is needed here). Again, because the market price of a meter of 36-inch-wide printed cloth or dyed yarn cloth is G385 with a distribution margin of 30%, the new enterprise will sell the same products as G258, or 80% of the factory price without the margin.

Table 6-14 Production Cost of New Textile Enterprise

(Unit: G1,000)

Division	Yearly expenses (First period)	Yearly expenses (Second period)
(Spinning)		
Raw cotton cost	392,978	Same as previous period
Power and packing materials	89,760	Same as previous period
Labor cost	56,580	Same as previous period
Maintenance expanses	30,000	Same as previous period
Depreciation	162,788	Same as previous period
Others	98,341	Same as previous period
(Total of processing expenses)	437,469	Same as previous period
Sub total	830,446	Same as previous period
(Weaving)		
Power, raw materials		54,094
Labor cost		51,413
Depreciaton		72,984
Others		80,917
(Total of processing expenses)		259,408
(Dyeing and finishing)		
Energy cost		104,400
Auxiliary materials		120,000
Labor cost		34,425
Depreciation		107,970
Others		103,783
(Total of processing expenses)		470,578
Interest	245,725	410,177
Marketing expenses	33,218	62,418
Total	1,109,389	2,033,026

As a result, our yearly sales proceeds will turn out as follows:

① Sales proceeds during the first period:

Grey Yarn: $450\text{G/kg} \times 2,470,000 \text{ kg} = 1,111,500,000\text{G/y}$

② Sales proceeds during the second period:

a. Grey yarn: $450\text{G/kg} \times 1,430,400\text{k kg} = 643,680,000\text{G/y}$

b. Bleached products: $231\text{G/m} \times 3,172,800\text{m} = 733,708,000\text{G/y}$

c. Printed cloth or products of dyed yarn
 $258\text{G/m} \times 3,321,600\text{m} = 857,388,000\text{G/y}$

Total 2,234,775,000G/y

5) Payability of Business

We have already analyzed the payability of the business on the basis of the above-mentioned condition and the result is shown in table 6-15. During the first period the rate of profit on sales proceeds before tax deduction is as low as 0.2% and the rate of return on investment before tax deduction is 14.2%. During the second period the rate of profit on sales proceeds is 9.0% and the rate of return on investment before tax deduction is 15.4%. Consequently, the number of payout years on investment before tax deduction is 16.3 years for the first period and 11.1 years for the second period.

○ For export reasons the above-mentioned selling prices are fixed at lower than domestic prices and the rate of interest is very low. During the first period the selling price of cotton yarn is only high enough to earn a very small profit. The situation is better during the second period when dyed and finished products join in, but the rate of profit is still not high, either.

Table 6-15 Payability of New Textile Enterprise

First period		
		(Unit: G1,000)
(1)	Sales proceeds	1,111,500
(2)	Expenses	1,109,389
	Raw cotton cost	392,978
	Spinning cost	437,469
	Interest	245,725
	Marketing expenses	33,218
(3)	Profit before tax deduction	2,111
(4)	Rate of profit on sales proceeds	0.2%
(5)	Rate of return on investment	
	ROI =	$\frac{\text{Profit before tax deduction} + \text{depreciation} + \text{interest}}{\text{Factory construction cost}} = \frac{2,111 + 183,581 + 245,725}{3,027,563} \times 100 = 14.2\%$
(6)	Number of payout years on investment (Before tax deduction)	
	Number of Payout years on investment =	$\frac{\text{Factory construction cost}}{\text{Profit before tax deduction} + \text{depreciation}} = \frac{3,027,563}{2,111 + 183,581} = 16.3 \text{ years}$

Table 6-15 Payability of New Textile Enterprise (con't)

Second period		
		(Unit: G1,000)
(1)	Sales proceeds	2,234,775
(2)	Expenses	2,033,026
	Raw cotton cost	392,978
	Spinning expenses	437,469
	Weaving expenses	259,408
	Dyeing expenses	470,578
	Interest	410,177
	Marketing expenses	62,418
(3)	Profit before tax deduction	201,749
(4)	Rate of profit on sales proceeds	9.0%
(5)	Rate of return on investment	
		$\text{RIO} = \frac{\text{Profit before tax deduction} + \text{depreciation} + \text{interest}}{\text{Factory construction cost}} = \frac{201,749 + 377,123 + 410,177}{6,406,250} \times 100$
		= 15.4%
(6)	Number of payout years on investment (Before tax deduction)	
		$\text{Number of payout years on investment} = \frac{\text{Factory construction cost}}{\text{Profit before tax deduction} + \text{depreciation}} = \frac{6,406,250}{201,749 + 377,123} = 11.1 \text{ years}$

Now we will analyze how a change in selling prices affects the rate of return on investment before tax deduction by raising and cutting the selling prices 10% and 20% separately for the first and second periods and see what result of sensitivity analysis will turn out. The results are shown in table 6-16.

During the first period the selling price which is high enough to insure a 15% rate of return on investment before tax deduction is G459, 2% higher than before. To meet the interest expense and depreciation, it is necessary to have a profit rate of 14.2% for the first period and 12.3% for the second period.

Table 6-16 Results of Sensitive Analysis

(Unit: G1,000)

Price \ Item	80%	90%	100%	110%	120%
Sales proceeds (first period)	889,200	1,000,350	1,111,500	1,222,650	1,333,800
Profit before tax deduction	220,189	109,039	2,111	113,261	224,411
ROI	6.9%	10.58%	14.2%	17.9%	21.6%
Sales proceeds (second period)	1,787,820	2,011,298	2,234,775	2,458,253	2,581,730
Profit before tax deduction	245,206	21,728	201,749	425,227	648,704
ROI	8.5%	12.0 %	15.4%	18.9%	22.4%

6-6 Economic and Social Impacts of Development

The development of the textile industry will have great impacts on Paraguay's economic society. Now we will examine the impact on foreign currency, employment, technology transfer, industrial structure and regional development.

(1) Impact on Foreign Currency

As a result of development of the textile industry, the production of domestic substitutes for imports and of goods for export will be promoted and, at the same time, less payments will be made in foreign exchange and more foreign currency will be earned.

Beginning in 1976, the import of cotton yarn and other cotton products was banned to protect domestic industries, but, in recent years, this ban has been loosened. In 1979, about 400,000 dollars' worth of cotton yarn and other cotton products was imported. If all fiber products were included, the total value of imports would reach 9,436,500 dollars of which about 6,700,000 dollars were for importing chemical fiber. Most of the imported chemical fiber were from the United States and Japan.

These two countries supplied Paraguay with 5,810,000 dollars' worth of fiber products, representing 61.6% of the total value of the fiber products imported by this country that year. With this project carried out, the country will increase fiber products by 2,065 tons, quite enough to substitute for the 2,115 tons of non-chemical fiber products imported from other countries. If calculated in terms of value, the above-mentioned substitution means a saving of US\$3,626,500 or 38.46% of the total value of the country's imported fiber products. But, this saving in foreign currency is still too small to significantly affect the whole trade structure for it only accounts for 0.8% of the country's total value of imports in 1979 (US\$431,758,000).

However, if any improvement can be made in the quality of homemade fiber products as well as in selling prices, all of the imported chemical fiber products, mainly from neighboring countries, can possibly be substituted and in this case markets for homemade products will expand.

In 1979, Paraguay exported 98,596,000 dollars' worth of cotton, of 32.3% of the total value of its exports that year (US\$305,173,000). Although the value of cotton exports ranked first among all exports that year, the value of fiber exports was still too small to appear in the country's statistics.

The new textile factory will play a leading role in exports. During the second development period (1978-1991), it will earn US\$8,424,000, a sum which is equivalent to 8.5% of the total value of cotton exports for 1979 (US\$98,596,000), or 2.8% of the same year's total export value (US\$305,173,000) ranking ninth among main exports.

During the third development period (1992-1996), the factory is expected to earn US\$16,932,000, a sum which is equivalent to 17.2% of 1979's total value of all exports, ranking sixth among main exports. In the initial stage, the factory for export purposes is supposed to turn out a yearly output of 2,470 tons of fiber products for the time being, but it is expected to increase its output after gaining in competitive power.

By that time, export value will go up and consequently the balance of international

payments will be improved. However, here we must note that the pace of production growth heavily depends on the trend of markets and technology transfer.

(2) Effects on Employment

Employment is usually one of the objectives aimed at by industrial development. In order to expand employment, great importance is attached to labor-intensifying industries and techniques. This has become an important issue for a country whose agricultural sector is very weak in absorbing labor.

This issue has trade-off relations with the export-oriented development of the textile industry. In order to stimulate export, it is necessary to introduce advanced techniques into this country so as to lower production costs and improve product quality, but, on the other side of the coin, this will curtail employment to the minimum. Through improvements in management many enterprises will cut down the number of their employees.

At present, it is estimated that about 2,800 people are working in five textile companies and about 1,200 in knitting and sewing companies. With this project carried out, 700-800 textile workers will be laid off, about half of them being male workers of the Pilar company, and the remaining half being female workers in Asuncion. They are hoped to be re-employed by other companies. This, how to create more employment opportunities will become an issue, particularly for Pilar.

On the other hand, about 400 workers will be newly employed by the new factory and about 300 workers by knitters and sewers. A total of about 700 workers will have new employment opportunities, almost the same as the number of the reduced ones. At the same time, additional employment opportunities will be also created by the transportation and service sectors.

According to the national development plan, 973,000 people are expected to work in 1980. Some 441,800 people, or 45.4% of the total, will work in the agricultural and animal husbandry sectors, representing the largest percentage.

The industrial sector will take up 139,500 workers, or 14.3% of the total. In contrast, the textile industry will employ only 4,000 workers, or 2.9% of the total, a percentage which is too small to play any important role in absorbing workers.

(3) Technology Transfer

Technology transfer means the transfer of production technology, which takes such forms as patent, knowhow, manpower and capital. Technology transfer will make the production of a certain department possible and help to promote the production of substitutes for imports as well as goods for export purposes.

In a developing country technology transfer generally constitutes a factor for technical progress. But in this case the absorption of technology is always inadequate. For this reason, various policies are adopted to enhance absorption. Paraguay is giving serious consideration to this issue and is striving to popularize technology throughout the country.

First, in cooperation with Japan, Paraguay opened a vocational training center in

May 1979, which offers seven courses, namely, architecture, woodworking, electricity, electronics, mechanics, auto maintenance and cold storage piping, with a total attendance of 140 students.

In addition, in I.N.T.N., which is particularly related to the textile industry, is also striving to absorb and popularize foreign production techniques. Besides, technology transfer is also being carried out by individual enterprises through the renewal of equipment and the installation of new equipment. For this reason, equipment investment and the import of capital goods are given preferential treatment.

The development of the textile industry may exercise the following effects on technology transfer:

The textile industry development plan places particular emphasis on the ties between the new textile factory and the strengthening of the role of I.N.T.N. in order to transfer the former's productive forces in producing competitive products to the latter and to use the latter in improving the production techniques of the textile industry as a whole. All this is aimed not only at advancing the techniques of the textile industry but also at spreading these techniques to other industries, especially the production management techniques, such as Q.C., I.E. and ventilation, which are scheduled to be carried out mainly in I.N.T.N. The effects of these measures, therefore, are not only a purely a technical problem, but one which will greatly concern the government's basic objectives of industrialization.

(4) Effects on Other Industries

The development of the textile industry may bring about the following effects on other industries:

First of all, the production of cotton and ginned cotton may be considered related to the supply of raw materials. At the present production level the country's spinning factories consume only 6,000 tons of ginned cotton, which is less than 8% of the 73,000 tons of ginned cotton produced in this country. About 3,000 tons more of ginned cotton, or half of the present consumption level, will be consumed in the future. If the textile industry develops further, more ginned cotton will be consumed. If more cotton is consumed by the textile industry and more fiber products exported, output of ginned cotton will be increased from the present 100,000 tons to 300,000 tons through the expansion of cotton acreage.

Besides, cotton ginning yields cotton seed oil soap and feedstuffs as by-products. These by-products are now being recovered by some ginneries. A ton of raw cotton yields 150 kg of oil and 450 kg of feedstuffs on the average. Therefore, if all by-products are recovered from the 330,000 tons of seed cotton, which are required to produce 100,000 tons of ginned cotton, the possible maximum quantity under the present production conditions, Paraguay will be able to produce 49,500 tons of cotton seed oil and 148,500 tons of feedstuffs as by-products.

Aside from cotton as a raw material for the textile industry, some auxiliary raw materials and expendables are needed for spinning and dyeing purposes. The so-called auxiliary raw materials include starch, dyestuffs and medicines while the so-called expendables include items for spinning and weaving purposes as well as oils, belts and others. Most of these items have to be imported from other countries; domestic production is still impossible for the time being. Furthermore, the country also has need to import some machine parts and needles.

Therefore, there is a need to consider the establishment of agencies to take charge of importing and selling these articles. In addition, we also need iron plants to repair metalwork.

Next, we should consider effects on sewer. With quality cotton yarn and fabric available, the sewer will be able to raise their competitive capabilities, which in turn will promote the substitution of some products for imports. Despite the possibility that the existing sewer will be able to expand their businesses and produce more and multifarious products, new comers into this trade will be limited to only two or three companies.

What we have mentioned above is concerned with the effects viewed from the angle of enterprises, but we still have the need of considering the macro effects brought about by the development of the textile industry.

The textile industry has played a leading role in promoting industrialization in America, Western Europe and many developing countries. But in this case, most of these countries have an advantage in technology, labor and markets, which are very important in developing industrialization. However, this is not the case with Paraguay. Despite the fact that Paraguay has an advantage in natural resources, it has no good conditions for other factors.

But, to promote industrialization is the Paraguayan government's basic policy. It seems that the textile industry will play a vanguard role in developing Paraguay's industrialization, because the industrialization plan is export-oriented and is earnestly carried out by the government and because the country's cotton exports make up 32.3% of its total exports at present, ranking first among all exports, and there are no significant industrial exports except foodstuffs. In a country like Paraguay, the textile industry occupies a very important position. When the export of fiber products is started along the right lines, Paraguay will export US\$17,500,000 worth of fiber products, which is equivalent to 5.7% of the country's total export value (US\$305,173,000) registered in 1979. This export value will rank the fiber products sixth among exported commodities in the same year. Once the export of fiber products begins to gather momentum, it will change from the form of cotton to the form of cotton yarn, of cotton fabric and of finished cotton products. At the same time, more value will be added to export.

As a result of the development of the textile industry and the expansion of export, the infrastructure will be improved, capital accumulated and income distributed, which in turn will help expand consumer markets, promote technology transfer and hasten industrialization.

The development of the textile industry, however, can only be expected to exercise great effects in the initial stage aimed at high-degree industrialization, but it can not long remain a motive force for industrial development generally, so the capital accumulated by the textile industry has to be used in other industrial sectors; therefore, further efforts will be needed to promote general industrialization.

(5) Regional Development

Regional development is a major basic objectives of the national development plan. It is aimed at rectifying the lopsided distribution of the population, rehabilitating regional economies and strengthening economic ties among different regions. This is why development of the primary industries centered on agriculture, animal husbandry and forestry, and the improvement of the infrastructures are emphasized as a strategy.

With regard to the effects brought about by development of the textile industry in connection with regional development, first, we should consider the effects of the construction of a new textile factory for export purposes. Because the idea about the construction site is basically in favor of the outskirts of Asuncion, the site will be a place related not to regional development but to the development of the national capital's suburbs. Thus, to improve urban functions in the sprawling capital suburbs will become an important issue in the future and, in this connection, the location of the new factory should be considered along with the questions of land utilization, traffic plans, urban facilities and the environment in the capital suburbs.

It is also expected that Pilar, which we advise to improve its management through rehabilitation but to have a new factory, will also increase its exporting capabilities in the future. If the roads in Pilar City, where the Pilar Company is located, are improved and surfaced and power transmission lines other than those belonging to the Pilar Company, are well maintained, the city is expected to grow as a base city for agriculture, trade and transportation while taking the textile industry as its central business.

Next, the development of the textile industry will bring about such indirect effects as the expansion of acreage sown to cotton. The present textile industry consumes about 6,000 tons of ginned cotton, a quantity which accounts for merely 8% of the total ginned cotton (73,000 tons) produced in this country. Because the export of ginned cotton is expected to grow in the future, the rate of ginned cotton to be consumed by the textile industry will increase moderately. Following the development of the textile industry, the expansion of cotton production will be stimulated by government policy under which the infrastructure and rural facilities will be bettered, thereby giving the cotton farmers an incentive for expanding cotton production, which in turn will help stabilize the rural population and increase employment.

7. SUGGESTIONS ABOUT FUTURE STEPS

The major programs for development of the textile industry are listed in table 7-1. It is desirable to deepen the understanding of and carry out the following three points so as to push forward the development envisaged in these programs.

(1) Strengthening the Functions of I.N.T.N.

The first step should be strengthening the function of I.N.T.N., which plays a leading role in promoting the textile industry. For this reason, it is necessary to so revise the law as to make I.N.T.N. competent enough to adequately carry out related activities.

Second, it is necessary to secure the necessary equipment and bring up competent personnel for test and inspections. As of 1987, the establishment of a system for quality control will become an urgent task. In addition, aside from this, it is also necessary to publicize important production techniques and I.N.T.N.'s activities among people related to the textile industry.

(2) Conducting Feasibility Studies

In the course of examining this master plan, we have reviewed the significance of small textile enterprises and new textile enterprise and have found that these undertakings will play a big role in the development of the textile industry and be economically worth the efforts to carry them out in the future. Although this development plan is to be carried out mainly by private enterprises, it is necessary to ascertain their feasibilities, considering from the standpoint of the country.

The feasibilities of the following two steps should be studied along with the strengthening of I.N.T.N.'s functions. This will help clarify the question of what concrete measures should be taken by the government to promote textile industry.

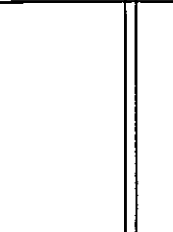

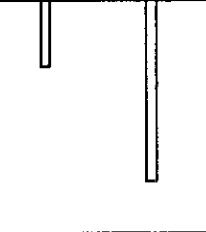
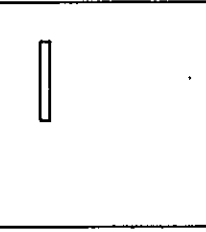
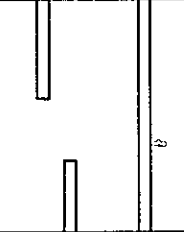
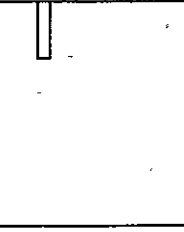
1) Small Textile Enterprises

Now that it is planned that joint production will be carried out by making use of the I.T.A.S.A. building and by installing new production equipment for spinning, weaving and dyeing purposes, it will be necessary in the future to make a feasibility study of joint production in all production processes or alternatively of partial joint production in the spinning, weaving and dyeing processes alone while taking the views of people concerned into consideration.

2) New Textile Enterprise

It will be necessary to make a detailed study of markets, the location of factories, production plans, investment plans and forms of undertakings to be taken concerning the proposed integrated plant equipped with spinning, weaving and dyeing facilities so as to judge its feasibility on a commercial basis.

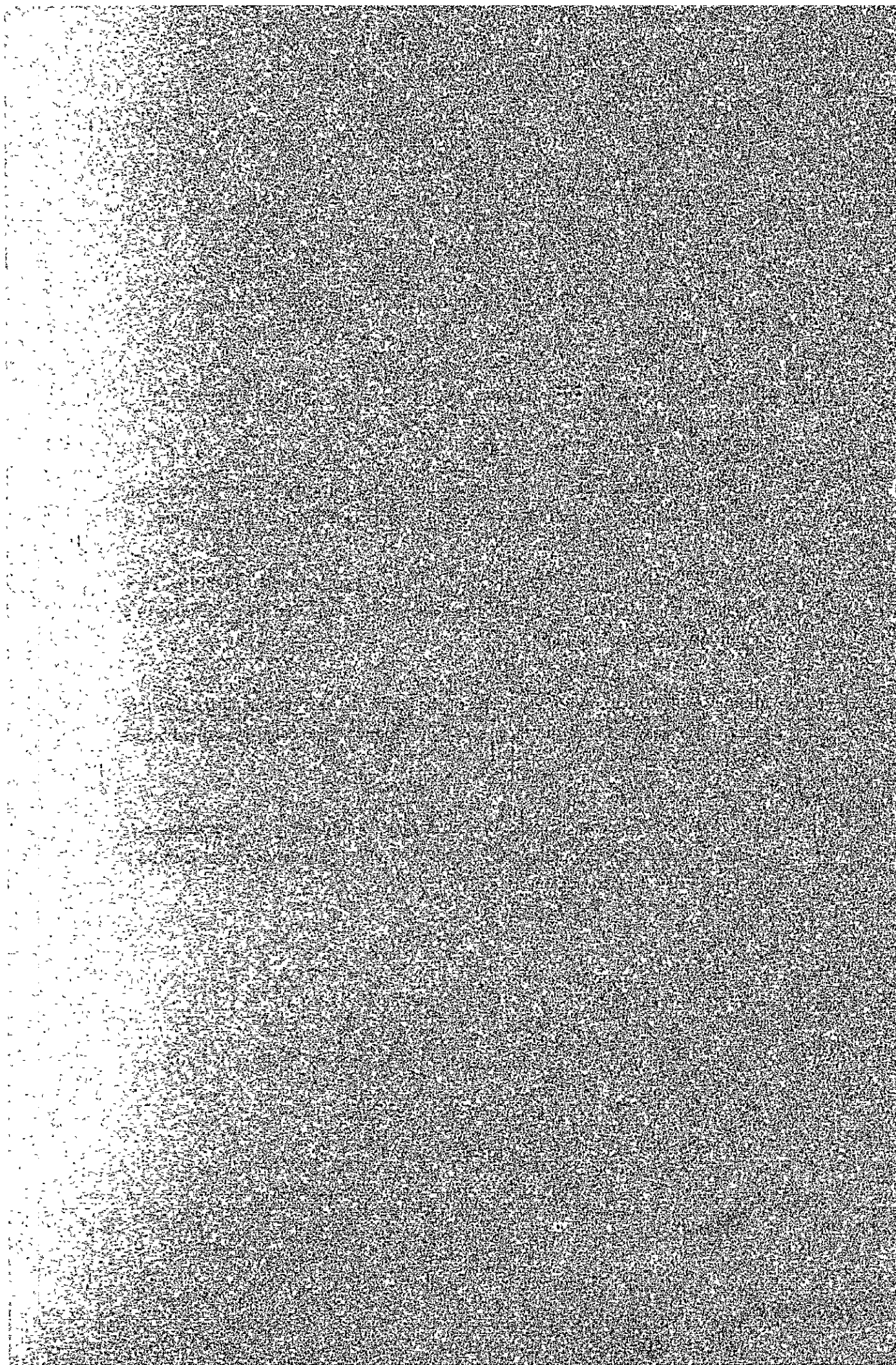
Table 7-1 Programs for the Textile Industry Development in Paraguay

Item	Schedule	Phase 1 (1982-1986)	Phase 2 (1987-1991)	Phase 3 (1992-1996)	Remarks
I.N.T.N. 1. Revision of law 2. Training of personnel 3. Expansion of equipment 4. Guidance in and supervision over textile enterprises					Compulsory identification of quality begins in 1987 Installation of testing and inspecting machines
Large textile enterprises 1. Rehabilitation 2. Import substitution 3. Export					Cotton yarn 5,520 t/y Fabric 14,820,000 m/y
Small textile enterprises 1. Renewal of equipment 2. Import substitution					Equipment investment (first investment: spinning 5,000 sp looms 48 units, dyeing and finishing) (second investment: spinning 5,000 sp added) Cotton yarn 2,252 t/y (first investment 1,126 t/y) Fabric 4,322,000 m/y
Newly established textile enterprise 1. Construction of new factories or expansion 2. Guidance in operation 3. Spinning 4. Weaving and finishing					Equipment investment (first investment: spinning 20,000 sp) (second investment: looms 200 flats dyeing and finishing) Cotton yarn 2,470 t/y Fabric 6,924,000 m/y
Social and economic effects 1. Savings in foreign currency 2. Earning of foreign currency 3. Employment			US\$3,627,000 US\$8,424,000	US\$16,932,000	Employment in the direct production departments remains at the same level because 700 workers lose and get a job at the same time. Employment will increase if workers employed in the indirect production departments are included.

Note: The scheduled periods will be shortened if the plan is carried out smoothly.

ANNEX

- I. **The Study on the Textile Industry Development in the Republic of Paraguay Interim Report**
- II. **El Estudio del Desarrollo de la Industria Textil en la Republica del Paraguay Informe Interin**
- III. **Minutes of the Discussion on the Study on the Textile Industry Development in Paraguay between the Japanese Study Team and the Paraguayan Authorities Concerned**
- IV. **Minuta de las Discusiones sobre Estudio del Desarrollo de la Industria Textil en Paraguay entre las Autoridades Concernientes del Gobierno de la Republica de Paraguay y la Mision Japonesa del Estudio**
- V. **Minutes of the Discussion on the Result of the Study on the Textile Industry Development in Paraguay between the Japanese Study Team and the Paraguayan Authorities Concerned**
- VI. **Minuta de las Reuniones sobre el Resultado del Estudio sobre el Desarrollo de la Industria Textil en la Republica del Paraguay entre la Mision Japonesa del Estudio y las Autoridades Paraguayas Concernients**



ANNEX I

THE STUDY
ON
THE TEXTILE INDUSTRY DEVELOPMENT
IN
THE REPUBLIC OF PARAGUAY

INTERIM REPORT

10 DECEMBER, 1980

THE STUDY TEAM

JAPAN INTERNATIONAL COOPERATION AGENCY

1. Preface

The Japanese Study Team (hereinafter referred to as "the Study Team") sent by Japan International Cooperation Agency (JICA) stayed in Paraguay from November 17, 1980 to December 12, 1980 and carried out the field survey for the textile industry development (mainly cotton industry) there.

The Study Team visited thirteen (13) textile factories (including some ginnery- refer to appendix) and exchanged views on the textile industry development with their managers as well as the authorities concerned in Paraguayan government during their stay. And the Study Team collected the relevant materials and data.

Based on the result of this field survey, the Study Team has had the following views on the textile industry in Paraguay.

2. Economic and Social Outlook

Recently economic growth in Paraguay is favorable.

According to the data of F.I.C. , the average annual growth rate in Gross National Product grew highly as follows:

1977:	8.6%
1978:	10.6%
1979:	9.0%

It seems that above mentioned growth rate is the highest in Latin America. There are two factors in this growth. One is the increase of agricultural product owing to the acreage expansion under cultivation. Another is the growth of construction sector dependent on the dam construction.

According to the data of the Central Bank of Paraguay, the amount of agricultural products rose by 8.1% in average annual from 1977 to 1979. Soybean and cotton are representative of these agricultural products.

The growth of construction sector rose by 31.2% in average annual from 1977 to 1979 owing to the dam construction of Itaipú and Yacypetá.

Paraguay exports agricultural products mainly, and imports fuel, machinery, materials and equipments of transport etc. in trade sector.

Articles of export have a variety extensively as consist of soybean, wood, tobacco and coffee. According to the data of the Central Bank of Paraguay, especially cotton occurred 32.0% of the total amount of exportation, and ranked first in 1979. The government attaches importance to following agricultural policies in order to support cotton farmers.

(1) Finance for the purpose of land cultivation and technical introduction.

(2) Reduction of transport cost owing to the adjustment of road and river transport.

In order to promote National Development Plan which has substitution of import and promotion of export as its basic strategy, the government makes special effort to promote textile industry which is represented by cotton industry.

3. Present Status of Production of Cotton

According to the information of O.F.A.T., the production of cotton in 1978/79 is as follows:

Area under cultivation: about 280.000 ha.

Amount of production: about 250.000 tons.

Yield: 874 kg. per 1 ha.

10 years ago, the production of cotton in 1968/69 was as follows:

Area under cultivation : 60.000 ha.

Amount of production: 41.000 tons.

Yield : 675 kg. per 1 ha.

Production of Cotton in 1978/79 is about five times in its area under cultivation and about six times in its amount of production as compared with in 1968/69.

It's factor is as follows:

- (1) Development of new seed of Reba B-50 and Reba P-279.
- (2) Seed control by O.F.A.T.
- (3) Finance and technical aid for cotton farmers.

Especially Reba P-279 is superior in yield per area of hectare and is suitable for picking by hand as well as by machine. It seems that Reba P-279 will be representative of seed in its ability of production and quality in Paraguay hereafter.

Especially cotton of la Cormena is estimated highly by each ginnery. According to the data of O.F.A.T., the area under cultivation in this year is about 350,000 ha., and amount of production is expected to be over 300,000 tons, most of seeds are Reba P-279.

According to the data of the Central Bank of Paraguay, the amount of production in 1979 is about 73,00 tons in ginned cotton and occupies 32 % of the total amount of exportation.

There seems to be some active enterprises which plan to increase the value of cotton by producing yarn, whose object is to produce some yarn of coarse count, and it seems to take some times to produce the yarn of fine count.

4. Present Condition in Cotton Textile Industry

According to the material of the Central Bank in Paraguay, the domestic production of cotton manufactures was about US\$ 31,000,000 in 1979, and this value is twice as large as in 1977. Similarly the import of them has also increased and was some US\$ 400,000 in 1979, about a little over one per cent of the domestic production. While the export of them was more than the import of them from 1975 to 1978, it decreased considerably in 1979.

The Study Team tried to calculate the domestic demand of cotton manufactures using these figures. As a result, their market in Paraguay is estimated to be about US\$ 32,000,000.

Consequently the annual consumption per capita is US\$ 10.6 .

According to the official statistics, the domestic consumption of cotton manufactures is supplied by the domestic production of them and Paraguay hardly exports them. But the Study Team got the following information in this field survey: Paraguayan is apt to buy the foreign products, the trade that can not take statistics exists and there are not statistics of each cotton manufacture. Accordingly, it is necessary to analyze the information --- for example, using foreign trade statistics and statistics on expenditure for consumption and so forth --- and to make actual situation of cotton textile industry clearly.

5. Diagnosis of the Private companies

The Study Team inspected and diagnosed nine (9) companies (including three (3) main textile companies in Paraguay) and visited other four (4) factories (ginneries and sewings) during their stay. Based on the result of this inspection, the Study has had some opinions to these factories.

The summary is as follows:

The present status of textile industry in Paraguay is serious because of an inflow of foreign products as high-grade goods imported from developed countries and low-grade ones imported from neighbouring countries. Owing to the increase in Stocks, a lot of companies are obliged reduced operation of factories.

Though the equipments of their factories superannuated in general, the investments in equipments are small except a plan for a newly-founded spinning mill by ginnery.

Meanwhile, many textile companies can not produce goods on a large scale because of limited market with around three million population as well as the competition with importation.

Nevertheless they are lacking control technique for operation. Besides, it seems that many workers work for these companies lack relevant knowledge and skill. Therefore, it may be said that the textile industry in Paraguay has a lag from the viewpoints of productivity and quality in the world. It is necessary to educate the middle administrators and workers hereafter.

The summary in the fields of spinning, weaveng, knitting, and dyeing and finishing is as follows:

(1) Spinning

a. Facilities

In general, equipments manufactured twenty or thirty years ago are operated in the spinning mills in Paraguay. Some main factories renewed equipments or installed more machines, but those cases are not so much.

Most of managers who operate a spinning mill in other countries tend to install a new machine or to renew a part of machine in their factories. But a lot of managers in Paraguay use the machines without doing them. If they renew a part of their machines, they will be able to produce more goods. By way of example for renewing a part of machine, the Study

Team found that there are some ring spinning frames without pneumafil equipment which are unexceptable in general.

b. Productivity

It may be said that the level of productivity in textile industry in Paraguay is low. But the Study Team observed that the quality of workers is high in some ginneries and sewing factory. And so this problem is solved if manager adequately educate their workers.

Besides, the consciousness and effort of operators who maintain capacity of their machines are insufficient. Consequently, most of their machines are operating at low speed and low efficiency.

c. Products and Quality

In general, most of products manufactured in Paraguay are coarse count. But quality of raw cotton has made rapid progress, so producing upper-class count of yarn is possible in future. We can state the following reasons for obstructing to upgrade of the products, first, the raw cotton consumption rate to produce a unit volume of yarn is too high, secondly, textile companies in Paraguay tend to even use short fiber and unmatute fiber.

Under present condition, Paraguay yarns can not compete with foreign ones and are not used for various purposes.

And there is no room for spreading the domestic demands. It is necessary for Paraguay textile industry to have high control technique for operation.

d. Costs

It may be said that companies need not a redemption fund as most of existing equipments have operated for a long time. But as the labor productivity is low, it seems that cost for labor in Paraguay is equal to in the developed countries. The competitiveness in cost for the Paraguayan yarn would not be prospective in viewpoint of the structure of yarn count in the world market.

(2) Weaving

a. Facilities

It seems to be good that some leading enterprises introduced new weaving machines. But facilities of other enterprises are superannuated remarkably, that is, the spare parts for those machines are no longer available and also main metals and shafts have been worn severely. It is expected to change those machines gradually hereafter.

b. Productivity

As for the rate of operation of looms, it maintained over 90 % in some factories by abundant workers, while most of factories are maintained at the range of about 50 - 70 %, therefore condition for operation is generally bad.

They have insufficient stock of spare parts, fault in adjustment and imperfection of automatic equipment etc. as the problems relating to facilities, and they have some machines not in well running, shortage of patrol by the workers, the defect and the incompletely wound beams etc. as the problems relating to operation.

c. Products and Quality

In small factory, the Study Team found many defects on the thick woven fabric (deck - chair, blanket, mantle, bed -cover, towel and bag etc.). These defects are caused due to lack of sizing process and dropper. Also their products have a lot of fluffs, besides, their quality is poor in general due to lack of the next-process of yarn dying.

Large companies hold some sizing machines, and excepting one company, they weave many products of a wide range from thick cloth to thin cloth (denim, working wear, panta-loon, sheeting, shirting, poplin and fancy fabric etc.) extensively.

The quality seems to be tolerable, but there are some defects of double pick, lashing -in and filling bar in filling part, as well as mis-draw, temple mark and warp float in warping part, and also there are yarn defects of nepped yarn and slubbed yarn etc. Therefore, their export neither their deliver to domestic sewing is difficult under the existing conditions.

Especially to say ,in all factories the standards of quality which must be inspected in each process are not clearly defined, consequently many products flow to the next process without inspection, and come into the market as it is. It is desirable to establish the standards of quality control in each process.

d. Cost

It seems that a ratio of labor (man - hour) to production per unit product is extremely high as every mills have too many workers without exception ,and consequently that a ratio of labor cost to production cost per unit production is high even if an average wage of workers is low .Moreover, as energy cost is high compared with one in Japan, the positive promotion of countermeasures for personnel cut and saving energy should be required hereafter.

(3) Knitting

a. Facilities

There are many new machines relatively in knitting section as compared with spinning and weaving section. there is no necessary to use a machine suitable for low productivity with small diameter and small supply, because most of products are processed through cut and sew. But from the viewpoint of quality of yarn supplied at present, it is feared that efficiency would come to low ,even if introducing a machine with high efficiency, and it seems that

some old machines would be renewed and preservation of the status quo cannot be helped.

b. Additional

Major use of knit products are sport wears, the most of them are colored ,so that lacks are scarcely shown. Productivity and quality depend on yarn largely so consignment of yarn must be checked strictly. Moreover, knitter should be required to make spinner to promote actively development of upper quality yarn for knit with desiring high value-added.

(4) Dyeing and Finishing

a. Facilities

Two major mills were equipped with full series of facilities ,such as bleaching ,dyeing ,printing,yarn dyeing, and finishing processing machinery.The most of them were made in Europe and U.S.A. about 5 - 10 years ago,and are well maintained.

However ,in general the Study Team observed that the speed and efficiency of operation were very low.In the other mills, only small scale yarn dyeing equipments and fiber dyeing equipments are equipped for internal use,and all of them are out-of-date.

Therefore ,the dyeing and finishing process for these mills would be desired to be united for their cooperative use.

B. Productivity

Even the productivity of the two major mills stated above are estimated to be very low as compared with these of the mills in advanced countries, according to the estimation of the state of facilities as well as stuffs and the quantity of production. It is important to attempt to improve productivity through the reformation of organization, the rationalization of facilities, the intensification of management and the rearrangement of product items.

C. Products and Quality

For the most textile firms, their dyeing and finishing conditions would be required of reestablishment referring to the advanced data in foreign countries. That is to say, it is necessary to promote the improvement of quality in the dyeing and finishing process, by adopting good dyestuff, auxiliary stuff, establishing normalized dyeing and finishing conditions, moreover establishing an S.O.P. (Standard Operation Procedure) and by which conduct their own control.

We could judge that low evaluation on the domestic products by consumers and the people concerned in the sewing industry is due to the inferior in quality and the high cost of the domestic products. Every mills should make effort to improve quality by changing consciousness of both manager and worker or these factors.

d. cost

In considering all aspects ,it should be started to increase consciousness to endeavor cost improvement , and it seems important to be thorough of reduction , recovery and high efficient use of fuel oil, dyestuff, and auxiliary stuff, which are imports, so as to reduce their cost.

6. Diagnosis of the I.N.T.N.

(1) Summary

Now it seems that three persons are nominated to the staff for textile division, but seems that textile division has not necessarily been established formally as one of the division in the I.N.T.N..

As regards of facilities, several equipments for cotton and spinning are set up, but equipments for weaving as well as dyeing and finishing are not set up.

We would propose to investigate and to enforce the following countermeasures in considering the present condition as mentioned above.

a. Establishment of a research division for textile.

This division is to be constituted of spinning section, weaving section , dyeing and finishing section , and knitting section.

b. Completeness of experiment and inspection equipments, data and literatures, sample and etc., to each section.

c. Training the staff, enforcement of sending people concerned in textile industry to foreign countries and of enlightening education.

(2) Function and Purpose

Standardization and inspection of textile goods should be done by the I.N.T.N. with having public authority. Moreover, function of services for every technology, information and of consulting should be owned.

Also, in the future the I.N.T.N. should be made to become the organization which has research and development function for textile industry, and it should be desired to possess the function of inspecting organization for export.

7. The Direction of the Textile Industry Development

(1) Procedure of Making Development Plan

The Development plan of the textile Industry will be made through the following process.

a. Evaluation of the present condition of the textile industry and investigation of the scope of development possibility.

- b. Establishment of basic objective of development.
- c. Establishment of development plan.
- d. Making the necessary means for the development.

(2) Objective and Strategy

At present, as the gap of import and export is large in Paraguay, it becomes one of the most important subject to the national economy to improve it. Enlargement of export would be desired for the solution.

It turns into national concerns to get foreign currency by increasing added value to cotton, which get primary goods of export recently, and by exporting yarn and textile goods.

This is the basic objective for the development of textile industry, and objectives such as import substitution, export expansion, promotion of opportunity for employment, and technology transfer are related to it. The development plan is created to realize these objectives. It would be necessary to make sure the range of development possibility first, concerning the following items, in order to realize the development plan under the present condition of the textile industry in Paraguay.

a. Raw Material

The range of product of yarn and fabric by using present paraguayian raw cotton could be considered as follows:

- Yarn Count : 6 ' S - 40 ' S Carded Yarn, 30'S - 40'S
Comed Yarn and 45'S Ester/Cotton Mixed Yarn.
- Cotton Woven Fabric: Sheeting, Poplin, Broadcloth, Twill,
Fancy Fabric, etc.
- Cotton Knitt Fabric: Circular Knit , Tricot Knit, Flat bed
Knit, Full-Fashioned Knit.

b. Labour and Technology

It is difficult to export high-quality goods at present, because of the lack of knowledge and technology of middle managers as well as of skill and consciousness of workers.

c. Facilities

In general, many old machines are used, but some mills have introduced new -type machines .After the advancement of renewing machine, export will be made possible in view of facilities, but technology of practical use of them must be advanced simultaneously.

d. Products

Domestic products at present are as follows:

30'S - 40'S Carded Yarn , Duck , Denim, Working Wear,
Fanta-loon , Sheet , Shirt, Womens wear, Sport Wear,

Socks, Under Wear.

The following items must be considered sufficiently to investigate the development strategy for the present textile industry.

- a. It would be impossible to make a textile mill for export profitable immediately even if newly - established.
- b. Accumulation of domestic capital for establishing new mills is not sufficient.
- c. It takes long time to maintain and train excellent managers in the textile industry.
- d. Condition of transportation such as port and ships is not good.
- e. International evaluation for Paraguayan cotton is not established yet.

In consideration of these points of problems, the basic strategy for development could be thought as follows:

- a. To intensify the system of I.N.T.N. and to increase in ability of technical guidance and get authority of supervision to promote acceleration of the textile industry.
- b. For a while, to consolidate ginning mills and to increase export of cotton.

c. To attempt to consolidate transport means such as port, ships and to make an effort to maintain regularity of shipping in order to promote cotton export.

d. To start to produce yarn ,and protect it by tariff barrier after advancing the accumulation of capital.

e. At the same time, to perform rehabilitation of existing mills and advance improvement of mills.

Above steps a.-e. are the basic development stage of the textile industry ,and industrialization could be advanced after the accomplishment of this stage..

(3) The Direction of the Development

The development of the textile industry in Faraguay could be considered in three phases as follows:

a. Phase 1

To consolidate basic condition of the development of textile industry as mentioned before.

b. Phase 2

To export yarn and produce textile goods for domestic use.

c. Phase 3

To produce and export textile goods.

2. Necessary Countermeasure for the development of the textile industry.

The following countermeasure for fosteration would be required to develop the textile industry.

(1) Phase 1

- a. To intensify the function of I.N.T.N.
- b. Enlightenment to the managers in the textile industry.
- c. Improvement of tax system, i.e. export tax ,import tax, and establishment of tax barrier.
- d. Consolidation of port facilities and transport vessel.
- e. Establishment of the organization of industry ,such as knitting industry ,sewing industry,towel producers.
- f. Creation and fosteration of " converters" which are in charge of purchasing yarn,planning products,saling and collecting information.

(2) Phase 2 - Phase 3

- a. Enforcement of standardization by I.N.T.N.
- b. Extension of organization for expanding foreign market.
- c. To intensify of financing institution.

Appendix

1. Manufactura de Pilar S.A.
2. America Textil S.A.
3. Industria Textil Asuncena S.A.
4. Forno y Valle S.A.
5. Pedro Genovese e Hijos S.R.L.
6. Textil Algolana Industria y Comercio S.A.
7. Textil Parana S.A.
8. Tricotex Industrial y Comercial S.R.L.
9. Cooperativa Milital y Naval Ltd.

10. Fenix S.A.
11. Algodonera Guarani S.A.
12. Algodonera Ybycui S.A.C.I.
13. Compañia Algodonera Paraguaya S.A.

ANNEX II

EL ESTUDIO
DEL
DESARROLLO DE LA INDUSTRIA TEXTIL
EN
LA REPUBLICA DEL PARAGUAY

INFORME INTERIN

10 de DICIEMBRE, 1980

EL EQUIPO JAPONES DE ESTUDIO
JAPAN INTERNATIONAL COOPERATION AGENCY

1. Prólogo

La Misión Japonesa de Estudio para realizar el estudio del desarrollo de la industria textil en la República del Paraguay (en adelante llamada " Misión Japonesa) fue enviada por la Agencia de Cooperación Internacional del Japón (JICA) y permaneció en Paraguay desde el 17 de noviembre hasta el 12 de diciembre de 1980, realizando su estudio sobre la condición actual de la industria textil (principalmente estudio de la industria algodonera) en Paraguay.

Durante su estadía , la Misión Japonesa ha visitado 13 empresas textiles(incluyendo desmotadoras -refierese Anexo) y ha efectuado el diagnóstico con nueve empresas. Al mismo tiempo, la Misión Japonesa intercambió opiniones con administradores y gentes correspondientes del gobierno y del instituto pública de estudio y pudo conseguir datos necesarios.

Las siguientes son las observaciones sobre la industria textil en Paraguay de la Misión Japonesa realizadas con la información obtenida mediante su investigación.

2. Situación general económica y social

La economía del Paraguay muestra el crecimiento constante hoy en día. Según datos de Ministerio de Industria y Comercio, la tasa de crecimiento actual de la producción bruta nacional registra alto crecimiento como sigue:

1977:	9.6	por	ciento	promedio	anual
1978:	10.3	"	"	"	"
1979:	9.0	"	"	"	"

Esta tasa de crecimiento puede ser lo más alto en toda América Latina.

Este desarrollo de la economía del Paraguay debe a dos factores.

Una es un aumento de la producción agrícola mediante la expansión de áreas de cultivo y otro es un aumento en la sección de construcción debido a la construcción de la represa.

Según a los datos de Banco Central del Paraguay, la producción agrícola demuestra el crecimiento de 8.1 por ciento promedio anual desde el año 1977 hasta el año 1979 y sus principales productos son la soja y algodón.

En la sección de construcción, también, se registra el crecimiento de 32 por ciento promedio anual desde el año 1977 hasta el año 1979. debido a construcciones de las represas de Itaipú y Yacyretá.

En la sección de Comercio exterior, se exportan principalmente los productos de agrícolas y se importan combustibles, materiales y equipos de transporte.

Dentro de los artículos de exportación, se incluyen varios productos como soja, maderas, tabaco y café, especialmente, soja se ubica en primer lugar ocupando 32.1 por ciento de la exportación total en el año 1979 según a los datos de Banco Central del Paraguay.

El gobierno del Paraguay presta alta atención a siguientes políticas de agrícola para ayudar productores de algodón.

- (1) Financiamiento para cultivación del campo y introducción de la técnica.
- (2) Disminución del costo de transporte mediante mejoramiento de transporte por rios y carreteras.

Tambien ,el gobierno presta especial atención al desarrollo de la industria textil ,principalmente a la industria algodonera para promover plan Nacional del desarrollo que intenta conseguir substitución de exportación.

3. Estado actual de la producción de algodón

Según a O.F.A.T. , la área sembrada es 280 mil hectareas, la producción anual es 250 mil toneladas y su rendimiento es 874 kilo gramos por hectárea en año 1978/79.

Si comparamos esto con el estado de diez años antes, se registra el rendimiento de cinco veces más con la area sembrada y seis veces más con la producción, porque en el año 1968/69, se registrarón la áreasembrada de 60 mil hectáras , la producción anual de 41 mil toneladas y el rendimiento de 675 kilo gramos por hectárea.

Como razón de este crecimiento, se puede citar los siguientes elementos.

- (1) La explotación de nueva semilla como Reba B-50 y Reba P-279
- (2) Control de semillas por O.F.A.T.
- (3) Financiamiento y apoyo a productores.

Especialmente ,Reba P-279 tiene la ventaja de tener alto rendimiento por hectárea y de estar adecuada para la cosecha tanto de la mano como de la máquina y se espera de ser una semilla más representativa en Paraguay por su productividad y calidad.

Algodón en la región de la Colmena tiene alta evaluación por desmotadoras.

Según a los datos de C.F.A.T. ,este año será sembrado 350 mil hectáreas y la producción más de 300 mil toneladas está esperando. Mayor parte de semilla es Reba F-279.

En cuanto al algodón desmotado, su producción demostró 73 mil toneladas en el año 1979 y ocupó 32 por ciento de la exportación total según los datos de Banco Central del Paraguay.

Hubo alguna desmotadora dinámica que emprenden a iniciar la fábrica de hilado procurando valor adicional de algodón crudo, sin embargo, todavía no pasa la etapa de producir hilo de baja calidad y parece que se tardaría algún tiempo hasta producir hilo de alta calidad.

4. Situación actual de la industria textil algodone

Según a los estadísticos de Banco Central del Paraguay, se informa que la cantidad de producción de productos algodoneiros se duplicó durante estos tres años y en el año 1979 tuvo su producción total de 31 millones de dolares U.S. Al mismo tiempo, la importación está aumentando y en el año 1979, productos algodoneiros de 400 mil dolares U.S. fueron importados y eso monto equi vale más de un por ciento de la producción total.

La cantidad de exportación superaba la cantidad de importaciones desde el año 1975 hasta el año 1978 pero en el año 1979 demostró la disminución notable.

Si calculamos la demanda interna de los artículos algodoneiros utilizando estas cifras, se estima que el mercado interno del Paraguay para productos algodoneiros tiene la escala de 32 millones de dolares U.S., en el año 1979 y puede decir que el consumo anual per capita asciende 10.6 dolares U.S.

Si contaremos solamente con los estadísticos oficiales, puede considerarse que el consumo interno de productos algodoneiros está suministrado por la producción domestica y no hay alta dependencia para la importación.

Sin embargo, en el intercambio de opiniones realizada por la Misión Japonesa se destaca la afición para los productos extranjeros por paraguayos y movimientos de mercancías no registrados en el estadístico y hay otro problema de que este estadístico no demuestra cifras de cada producto.

por lo tanto, no hay duda que existe la necesidad de entender más realmente la situación actual de la industria textil en Paraguay aprovechando otras informaciones - tal como el estadístico de Comercio y exterior y gastos de consumo en otros países.

5. Diagnóstico de las empresas

La Misión Japonesa ha realizado diagnóstico de nueve empresas textiles incluyendo tres grandes y además ha visitado cuatro empresas, tales como desmotadoras y confecciones.

El sumario de su observación es como sigue.

El mercado local de Paraguay enfrenta con un ambiente muy difícil por causa de ingresos de productos de alta calidad de los países avanzados y productos de uso diario de los países vecinos.

En consecuencia, cada empresa está obligada a disminuir su producción por razón del aumento de los productos sobrantes excepto algunas pocas empresas.

A pesar de la existencia de la realidad de que equipos ya son viejos en general, la inversión para equipos está limitada solamente al cambio parcial de sus equipos viejos excepto el programa de establecer nueva fábrica por desmotadora.

El mercado local de Paraguay es pequeño con sus habitantes de 3 millones en todo el país y además, por la competencia con los productos importados, las empresas toman la forma de producir muchas variedades de productos en pequeña escala.

No obstante, excepto algunas buenas empresas tanto la productividad como la calidad es inferior al nivel normal internacional de hoy por falta de la técnica de control de operaciones y falta del conocimiento y habilidad de obreros. Se desea educar y adiestrar más administradores de clase media y obreros.

... aquí sumaremos la observación de la Misión Japonesa para cada sección de hilandería y tejeduría. Y teñido y acabado realizada dentro del límite de su información obtenida.

(1) Hilandería

a. Equipos

Los equipos de hilandería de cada fábrica son viejos y mayor de ellas son equipos de 20 a 70 años antes. En grandes fábricas están realizándose el cambio o la expansión de equipos, esos con fenómenos parciales con grandes fábricas.

Mundialmente hay tendencia de realizar cambio de máquinas, así mismo se realiza en gran parte la reforma parcial a lograr la alza de productividad sin cambio de máquina misma.

En Paraguay, máquinas están en uso guardando su forma original y para muchas de ellas no está aplicada la menor reforma necesaria y se destaca la condición de atraso. Se puede esperar la alza de productividad solamente con la aplicación de reforma parcial.

Por ejemplo, hay algunas máquinas de hilanderías sin neu mafil que es un componente indispensable.

b. productividad.

En cuanto a la calidad de obreros que demuestra la baja productividad en la condición actual de operación, podemos decir que no habrá gran problema si se efectúa educación adecuada tomando en cuenta esa situación de trabajo en desmotadora y confecciones.

La falta de conciencia y esfuerzo por parte de administrador de operación resulta en conseguir solamente la baja productividad de máquinas.

c. Productos ,calidad

En la estructura de productos, el título de número bajo ocupa la gran parte, pero es posible de producir el título de número alto en vista de que un ^{hay} mejoramiento notable de algodón crudo.

La inclinación de utilizar la fibra corta y inmadura por razón de alto rendimiento de algodón crudo.

es un elemento que invade a producir título de alto número.
El hilo de Paraguay no tiene competencia internacional con su calidad actual.

Los títulos actuales están limitados en su utilización y no se puede esperar tipo de expansión en el consumo doméstico.
Se requiere la alta técnica de control de operación que permita a utilizar algodón de alta calidad.

d. Costo

Se supone que el costo de amortización sea bajo por antigüedad de las máquinas, pero por esa misma razón la productividad de trabajo es baja y se estima que el costo de trabajo será igual al de los países avanzados.

En el mercado internacional, no podemos esperar la ventaja de costo con su estructura de productos.

(2) Tejeduría

a. Equipos

Vale de elogiar que en algunas empresas se introducen las máquinas de innovación, sin embargo se destaca la antigüedad de máquinas que ya no tienen el suministro de componentes y hay máquinas con metales y ejes desgastados.
Se desea la renovación paulatina.

b. Productividad

En lo que concierne la tasa de operación, hubo algunas fábricas que mantienen esa tasa a nivel de más de noventa ^{utili}por ciento zando. amplio mano de obra, pero generalmente esa tasa se mantiene en el bajo nivel de cincuenta o setenta por ciento.

La razón que viene de parte de equipos, se anotan la falta de suministro de componentes provisionales, el ajuste inadecuado y la quiebra de aparatos.

d. Costo

Cada empresa tiene obreros sobrantes sin excepción y el volumen de trabajo contra el volumen de producción por unidad es muy alto, por lo tanto si el salario promedio de obrero sea barato, el costo de trabajo contra la unidad de producción debe ser caro.

También, el costo de energía es más alta que Japón y sería necesario de promover agresivamente la disminución de empleados y la creación de medidas para disminución del uso de energía.

(3) Tejido de punto

a. Equipos

Equipos de tejido de punto son relativamente nuevas comparado con las de hilandería y tejeduría.

No hay necesidad de utilizar equipos de baja productividad con diámetro pequeño y con poco suministro por razón de que casi todos los productos están procesados en la forma de cortar y coser. Sin embargo si se introduce equipos de alta productividad hay mucha posibilidad de causar peoramiento de productividad con uso del hilo suministrado actualmente y parece ser inevitable de mantener los equipos actuales por renovación parcial.

b. Cetros

Los productos de tejido de punto en este país se utilizan principalmente en fabricar camisas de deporte, mucho de ellos son teñidos y no se ve fallas realmente.

La productividad y calidad depende mucho con la calidad del hilo original y se requiere la inspección más rigurosa.

La empresa de tejido de puntos para procurar más valor adicional, debe intervenir más agresivamente a la empresa de hilandería y tejeduría a realizar explotación del hilo original de alta calidad.

La razón que viene de parte de operación ,se anotan
Sin plegador, atrazo de patrulla ,defectos y mal plegador.

c. Productos y Calidad.

En las empresas pequeñas, no se aplica el proceso de engomado en la sección de tejido algodónero grueso (lona, sábana, sobretodo cobija, toalla, bolsa etc.), tampoco se utiliza dropper y estos son elementos de fallas.

En la sección de hilo tejido no tiene el proceso posterior y productos presentan falla de pelusa.

Generalmente, los productos no son de buena calidad.

Las grandes empresas tienen engomadoras y fabrican varias tejidos desde el tipo de tejido fino hasta tejido grueso. (Benim, camisa de trabajo , pantalones, Batista, poplin y telas de fancy, etc)

Se puede considerar que la calidad mantiene el nivel promedio, sin embargo en cada fábrica se ven las siguientes fallas y bajo la condición actual, es difícil de vender productos no solamente al mercado internacional tampoco a confecciones domesticas.

En parte de trama, fallas tal como hilo doble, entrada de trama,

En parte de urdimbre, fallas tal como urdimbre equivocado, marca de templazo, urdimbre flotante y además se ve fallas tal como brotón, hilo grueso.

Especialmente, cada empresa no tiene la norma de calidad que debe realizarse después de cada proceso y casi sin ninguna inspección se pasan los productos al proximo proceso y se envia al mercado.

Es deseable de crearse el control y la norma para productos en cada proceso.

(4) Teñido y Acabado

a. Equipo

Dos grande empresas tienen equipos de blanqueado, teñido, estampado, hilo teñido y acabado, de las cuales principales son máquinas de cinco o diez años antes importados de Europa y Estados Unidos y eran bien mantenida. Sin embargo, pareció que la velocidad de operación y tasa de funcionamiento es baja.

Otras empresas tiene pequeños equipos de tipo viejo de hilo teñido y fibra teñido para su uso propio. por tanto, podemos considerar que es deseable que el proceso de teñido de estas fábricas se hace junto con elavoración respectiva.

b. Productividad

Aún en esas dos grandes empresas, la productividad del mencionado proceso se cree que ser considerablemente baja en comparación con el nivel de los países avanzados en la industria textil si se toman en cuenta de equipos, número de personal y la cantidad de producción.

Es importante de lograr la alza de productividad mediante la reforma de organización, la racionalización de equipos, el fortalecimiento de control y el arreglo de variedad de productos.

c. Productos, Calidad

En casi todas las fabricas se necesita de restablecer la condición de acabado comparando con los datos de países extranjeros.

Es necesario de promover la alza de calidad en el proceso de teñido y acabado mediante la adopción de colorante y materia auxiliante de buena calidad, el establecimiento de la condición regular de acabado especialmente por el establecimiento de procedimiento de operación Normal y realización de su control.

Se puede suponer que la baja evaluación al producto nacional por consumidores y confesiones vienen de su calidad inferior y alto costo.

En cada empresa, tanto administradores como obreros deben esforzarse a mejorar la calidad renovando su conciencia.

d. Será importante de disminuir el uso y profundizar recolección y uso de alta eficacia de materiales importados tales como petróleo crudo, Colorante y materia prima auxiliante empesando con la elevación de conciencia para mejoramiento del costo en todas las aspectos.

6. Diagnóstico a I.K.T.H.

(1) Sumario

Ahora están nominados tres personales como funcionarios en la sección textil, sin embargo no se puede pensar que la sección textil está formalmente establecida como una sección en la organización.

En cuanto a los equipos, hay solamente unos equipos para la inspección de algodón crudo y hilado, y no hay ningún equipo para la inspección de tejido y acabado.

Considerando esta situación actual, queremos sugerir e investigar y realizar las siguientes medidas.

- (a) Establecimiento del departamento de estudio para textil
Este departamento se compone con las siguientes secciones

Sección de Hilandería	
"	Tejeduría
"	Teñido y Acabado
"	Tejido de punto

- b. Ampliación de equipos de examen y inspección, datos, referencias y muestras ,etc.
- c. Realización de adiestramiento de personales y educación de personales en los países extranjeros.

(2) Función y objetivos

Realizar la creación de normas y la inspección para cada producto textiles mediante el otorgamiento de poder oficial a I.N.T.N. y también otorgamiento la función de consultorio y la función de servicios técnicos, informativos.

Se desea que en futuro ,INTT va a ser un instituto con facultad de efectuar el estudio y la invención de la industria textil y además va a ser un instituto con facultad de realizar la inspección para productos que se exportan.

7. La dirección del Desarrollo de la Industria textil

(1) Modo de pensamiento

El plan del desarrollo de la industria textil se puede pensar en las siguientes formas.

- a. Evaluación de la situación actual de la industria textil y investigación de la dirección del desarrollo.
- b. Establecimiento de los objetivos básicos del desarrollo.
- c. Creación de plan de desarrollo
- d. Preparación de las medidas necesarias para el desarrollo.

(2) Objetos y Estrategias.

Al presente ,la brecha entre la exportación y importación es grande en Paraguay y su mejoramiento es una tema más importante en la economía nacional.

para este propósito se desea el aumento de exportación y es un interés nacional de ganar divisa extranjera por exportar hilos y tejidos utilizando algodón crudo que ocupa primer lugar en la exportación de Paraguay.

Esto es un objeto básico para el desarrollo de la industria textil y relaciona al objeto de sustitución de importación, expansión de exportación, promoción de empleo y transferencia de tecnología.

para cumplir este objeto, se establece el plan de desarrollo para realizar el plan de desarrollo, es indispensable de conocer de antemano el límite de la posibilidad del desarrollo.

a. Materia prima.

El límite posibilidad de producir hilos y tejidos con el algodón crudo de Paraguay es como sigue.

Título de hilo	6's - 40' s	Cardado
	30's - 40' s	Peinado
	45' S	Mescla de algodón y poliéster
Tejido de algodón		Batista, poplin, brocad poplin twill, telar de fancy.
Tejido de punto		punto circular, punto de tricot punto de base, punto de full fashion.

b. Labor, tecnología

Por falta del conocimiento y técnica de administradores de clase media y por falta de la habilidad y conciencia de obreros, es difícil de exportar los productos de alta calidad por el momento.

c. Equipos

Generalmente se instalan máquinas de tipo viejo, sin embargo en algunas empresas se introducen las máquinas nuevas y si la renovación marcha constantemente, será posible de conseguir exportación en la que concierne la instalación, así mismo es necesaria de progresar la técnica que permite el uso de máquina con alta eficacia.

d. Productos

Los productores de la fabricación local son como siguientes.

30' s - 40' s hilo Cardado

pato ,denim, camisa de Trabajo ,pantalón,sábana ,camisas. prendas de Mujer, Camisas de Deporte ,Medias ,Ropas interiores .

Debido a la situación actual de la industria textil, hace falta de tomar en cuenta suficientemente los siguientes puntos para investigar la estrategia del desarrollo.

- a. Si se establece la nueva fábrica textil con meta de exportar, será difícil de esperar el rendimiento inmediato.
- b. La acumulación del capital interno es insuficiente para establecer nueva fábrica.
- c. Se necesita tiempo para adopción y adiestramiento de administradores y directores de alta calidad en la industria textil.
- d. Condición de transporte de puertos y barcos no es buena.
- e. Todavía no está establecido la evaluación internacional para el algodón de Paraguay.

Con estos problemas en consideración ,la estrategia básica del desarrollo se puede considerar como sigue.

- a. A fortalecer la organización y otorgar tanto el poder oficial como el poder de realizar guía técnica.
- b. A consolidar desmotadoras y aumentar la exportación de algodón crudo por el momento
- c. A consolidar medidas de transporte tales como puertos y barcos y hacer esfuerzos de mantener la expedición regular para promover exportación de algodón crudo.

- d. A iniciar la producción de hilos de algodón y proteger por barrera de tarifas aduaneras cuando la acumulación del capital por desmotadoras avanza.
- e. A realizar la rehabilitación de fabricas existentes y promover el mejoramiento de constitución de la empresa.

Las gestiones mencionadas estan en la etapa de consolidar condiciones basicas del desarrollo de la industria textil, la industrialización se promoverá cuando estas gestiones fuerón conseguidos suficientemente.

(3) La dirección del desarrollo

El desarrollo de la industria textil en paraguay se puede dividir en tres etapas siguientes;.

a. Primera etapa

A considerar las mencionadas condiciones basicas del desarrollo de la industria textil.

b. Segunda etapa

A iniciar la exportación de hilos de algodón y la producción de tejidos y productos al mercado domestico.

c. Tercera etapa

A realizar la producción y exportación de tejidos y productos textiles.

8. Medidas necesarias del desarrollo

Farece que se necesitan las siguientes medidas para desarrollár la industria textil.

(1) Primera etapa

- a. Fortificación de facultad de I.N.T.N.
- b. Adiestramiento de administradores y directores de la industria textil
- c. Mejoramiento del sistema tributario (gravamen de exportación y importación) Establecimiento de barrera de tarifa aduaneras.
- d. Consolidarse de obras portuarias y barcos de carga
- e. Creación de la organización industrial de fabricante de tejido de punto, confecciones y fabricante de toallas que puede competir con la organización de hilandería y tejeduría.
- f. Creación y fomento de intermediario quien se encargará de la compra de hilos ,la invención y venta de productos textiles y la colección de informaciones.

(2) Segunda y Tercera etapa

- a. Realización de normas por I.N.T.N.
- b. Ampliación de la organización para la exportación del mercado interno.
- c. Intencificación del sistema de financiamiento.

Anexo

1. Manufactura de Pilar S.A.
2. America Textil S.A.
3. Industria Textil Asuncena S.A.
4. Forno - Valle S.A.
5. Pedro Genovesi e hijos S.R.L.
6. Textil Algolana Industria y Comercio S.A.
7. Textil Parana S.A.
8. Tricotex Industrial y Comercial S.R.L.
9. Cooperativa Militar y Naval Ltd.
10. Fenix S.A.
11. Algodonera Guaraní S....
12. Algodonera Ybycui S.A.C.I.
13. Compañia Algodonera Paraguaya S.A.

ANNEX III

MINUTES OF THE DISCUSSION

ON

THE STUDY ON THE TEXTILE INDUSTRY DEVELOPMENT IN PARAGUAY

BETWEEN

THE JAPANESE STUDY TEAM AND THE PARAGUAYAN AUTHORITIES
CONCERNED

1. The Japanese Study Team for The Study on the Textile Industry Development in the Republic of Paraguay (hereinafter referred to as "the study Team") sent by the Japan International Cooperation Agency, which stayed in Paraguay from november 17 to december 12, 1980, carried out the field survey in Paraguay and submitted an Interim Report on the Study to the Paraguayan authorities concerned and discussed on the textile industry development with them.
The members of the Study team and the schedule during their stay in Paraguay are shown on Annex-1 and Annex-2 respectively, and members of the Paraguayan counterpart are shown on Annex-3.
2. Prior to beginning the field survey in Paraguay, the Study Team met the staffs of M.I.C. and I.N.T.N., and asked their collaboration to carry out the field survey in accordance to the contents of the Talking Paper, November 1980, which was prepared by the Study Team.
3. The Study Team visited the public organizations and the textile companies by the good arrangement both of M.I.C. and I.N.T.N. staffs concerned, and was given warm welcomes as well as relevant informations and materials by the people concerned. At the same time, diagnosis of the I.N.T.N. and the nine private mills in textile industry were carried out.
4. The Study Team presented the I.N.T.N. with some materials, equipments and documents as listed on Annex-4.
5. Based on the result of the study including this field survey, a final report will be made to be presented to the Paraguayan Government and the authorities concerned.
The draft of final report will be presented within five months after this field survey, and the final report and its summary will be submitted within two months after the draft of final report is presented.

The report will be made in English, and the summary of the final reports will be written both in Spanish and English.

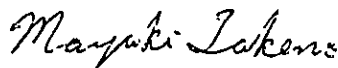
Signed at Asunción, December 11, 1980.

On Behalf of the Ministry
of Industry and Trade



DR. EMILIO A. RAMIREZ RUSSO
Director del Gabinete
Técnico

On Behalf of Japanese Study
Team



MAYUMI TAKENO
Team Leader



DR. JOSE MARTINO
Director del I.N.T.N.

Annex - 1: MEMBERS OF THE JAPANESE TEAM March 1961 - August 1961
State of New Jersey 1961

... MEMBERS OF THE STUDY TEAM

Mr. Mayuki TAKENO	Team Leader
Mr. Akira MORI	Sub-Team Leader Weaving and Knitting Expert
Mr. Makio HATTORI	Spinning Expert
Mr. Yoshimitsu ISHII	Dyeing and Finishing Expert
Mr. Keiji MATSUNO	Accountant
Mr. Nobuyuki YASHIRO	Industry Researcher
Mr. Koji ONO	Marketing Researcher
Mr. Kazuo ITO	Economist
(Advisory Team)	
Mr. Kengo IHARA	Project Planner
Mr. Toshio NAMAI	Coordinator

B. JAPAN INTERNATIONAL COOPERATION AGENCY (J.I.C.A.)

Mr. Kenji YAMAMOTO	Funcionario de J.I.C.A. en Asunción
--------------------	--

Annex - 2: SCHEDULE OF THE JAPANESE TEAM

<u>Date</u>	<u>Schedule (Place of Visit)</u>
Nov. 15 (Sat.)	Lv. Tokyo
16 (Sun.)	-----
17 (Mon.)	J.I.C.A. Office, Japanese Embassy
18 (Tue.)	Meeting with M.I.C. and I.N.T.N.
19 (Wed.)	Meeting with Presidencia de la República, Secretaría Técnica de Planificación. Showing of Movie and Slides on Japanese Textile Industry at I.N.T.N.
20 (Thu.)	Visiting Pedro Genovese e Hijos S.R.L., and Textil Paraná S.A.
21 (Fri.)	Visiting Textil Algolana Industrial y Comercio S.A.
22 (Sat.)	Visiting Centro de Entrenamiento Vocacional Presidente Carlos Antonio López. Lv. Asunción (K. IHARA and T. NAMI, members of Advisory Team)
23 (Sun)	Making a report
24 (Mon.)	Visiting Forno y Valle S.A., Market Survey
25 (Tue.)	Visiting Industria Textil Asuncena S.A., Market Survey
26 (Wed.)	Visiting Algodonera Guaraní S.A. (ginnery) Arriving at Pilar
27 (Thu.)	Visiting Manufactura de Pilar S.A., Arriving at Asunción
28 (Fri.)	Visiting Algodonera Ybycuí S.A.C.I. (ginnery)
29 (Sat.)	Making a report
30 (Sun.)	Same as above
Dec. 1 (Mon.)	Visiting America Textil S.A., Market Survey
2 (Tue.)	Meeting with C.F.A.T. and C.E.P.E.X., Visiting America Textil S.A. (ginnery) and Head Office of Algodonera Ybycuí S.A.C.I. (ginnery)
3 (Wed.)	Meeting with Banco Nacional de Fomento and K.A.G., visiting Tricotex Industrial y Comercial S.R.L., Cooperativa Militar y Naval Ltd.

4 (Thu.)	Meeting with Banco Central del Paraguay, UNIDC, visiting Fénix S.A. (sewing)
5 (Fri.)	Meeting with Presidencia de la República, Secretaría Técnica de Planificación and M.I.C., visiting C.A.P.C.A. (ginnyery)
6 (Sat.)	Making a report
7 (Sun.)	Same as above
8 (Mon.)	Making a Interim Report
9 (Tue.)	J.I.C.A. Office
10 (Wed.)	Meeting with M.I.C. and I.N.T.N., Japanese
11 (Thu.)	Meeting with M.I.C. and I.N.T.N.
12 (Fri.)	J.I.C.A. Office Lv. Asunción
13 (Sat.)	-----
14 (Sun.)	ar. Tokyo

Annex - 3 : MEMBERS OF THE PARAGUAYAN AUTHORITIES

DR. EMILIO A. RAMIREZ RUSSO	Director del Gabinete Técnico - Ministerio de Industria y Comercio
DR. JOSE MARTINO	Director del I.N.T.N.
ING. MARCOS H. GOLDENBERG	Director de Programación Industrial Gabinete Técnico - Ministerio de Industria y Comercio
DR. EDUARDO GONZALEZ	Jefe Programa Textil I.N.T.N.

Annex - 4 : LIST OF ARTICLES PRESENTED TO I.N.T.N.

1. Yarn Quality Standard for Classification	3 sheets x 3 sets
2. Black Board for Yarn Sample	5 pieces
3. Hand Knotter	3 sets
4. Earthman Type Thermo and Hygro Meter	1 set
5. Slide Film of Modernized Spinning Mill	1 set
6. Sample Book of Faults in Woven Fabrics	one
7. Sample of Cotton Spun Yarn	1 set
8. Microscope	one
9. Sample of Gray Fabrics	1 set
10. 16 mm Moving Picture of "Air Jet Loom"	1 reel
11. Slide Film of Weaving Mill	1 set
12. Sample of Printed, Yarn Dyed & Dyed Fabrics	1 set
13. Catalogue of Ring and Traveller	one for each
14. Catalogue of Shuttles	one

MINUTA DE LAS DISCUSIONES

SOBRE

ESTUDIO DEL DESARROLLO DE LA INDUSTRIA TEXTIL
EN PARAGUAY ENTRE LAS AUTORIDADES CONCERNIENTES
DEL GOBIERNO DE LA REPUBLICA DE PARAGUAY Y LA
MISION JAPONESA DE ESTUDIO.

1. La Misión Japonesa del Estudio para el estudio del desarrollo de la industria textil en Paraguay (en adelante llamada "Misión Japonesa") enviada por la Agencia de Cooperación Internacional del Japón (en adelante llamada "JICA") permaneció en Paraguay desde el 17 de noviembre hasta el 12 de diciembre de 1980. La Misión Japonesa ha realizado estudio en el campo y ha sometido un informe interin a las Autoridades Paraguayas concernientes e intercambio de opiniones con ellas al desarrollo de la industria textil en Paraguay. Los miembros de la Misión Japonesa y el programa de estadía se adjuntan como Anexo-1 y 2, respectivamente. Los miembros de la contraparte se adjunta como Anexo-3.
2. Antes de comenzar el estudio en el campo en Paraguay, la Misión Japonesa se reunirá con los miembros de M.I.C. y I.N.T.N. y ha solicitado su colaboración para realizar el estudio en conformidad con el contenido de "Aide Memoir" con la fecha de noviembre de 1980 fue preparado por la Misión Japonesa.
3. La Misión Japonesa ha visitado a las organizaciones públicas y las empresas textiles apoyado por el buen arreglo de M.I.C. y I.N.T.N. y sus miembros concernientes. Asimismo, el diagnóstico de I.N.T.N. y nueve empresas privadas de la industria textil se ha realizado.
4. La Misión Japonesa ha donado algunos materiales, equipos y documentos que se adjunta como Anexo-4.

5. Basándose del resultado del estudio incluyendo este estudio en el campo, un informe final se preparará a presentarse al Gobierno del Paraguay y las Autoridades concernientes. El borrador del informe final se someterá dentro de cinco meses después de este estudio en el campo y un informe final y su sumario se someterán dentro de dos meses después de la presentación del borrador del informe final. Un informe se preparará en inglés y sumario del informe final se preparará en castellano e inglés.

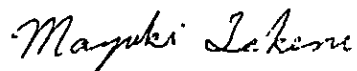
Asunción, 11 de diciembre de 1980.

Por el Ministerio de Industria
y Comercio



Dr. Emilio A. Ramírez Russo
Director Gabinete Técnico

Por la Misión Japonesa
del Estudio



Mayuki Takeno
Líder de la Misión



Dr. José Martino
Director de I.N.T.N.

Anexo - 1 : MIEMBROS DEL EQUIPO JAPONES

A. MIEMBROS DE LA MISIÓN JAPONESA DE ESTUDIO

Sr. Mayuki TAKENO	Líder de la Misión
Sr. Akira MORI	Sub-Líder de la Misión Experto en Tejido y Punto
Sr. Makio HATTORI	Experto en Hilado
Sr. Yoshimitsu ISHII	Experto en Tintura y Acabado
Sr. Keiji MATSUMOTO	Contador
Sr. Nobuyuki YASHIRO	Investigador de Industria
Sr. Eoji ONO	Investigador de Mercado
Sr. Kazuo ITO	Económista

(Miembros del Consejo)

Sr. Kenzo IHARA	Planificador de Proyecto
Sr. Toshio NAMAI	Coordinador

B. LA AGENCIA DE COOPERACION INTERNACIONAL DEL JAPON (J.I.C.A.)

Sr. Kenji YANAMOTO	Funcionario de J.I.C.A. en Asunción
--------------------	--

Anexo - 2 : EL PROGRAMA DEL EQUIPO J. JONES

<u>Fecha</u>	<u>Plan (Lugar de visita)</u>
Noviembre 15 (Sa)	Salir de Tokio
16 (Do)	-----
17 (Lu)	Reunión con la Embajada del Japón y la oficina de J.I.C.A.
18 (Ma)	Reunión con M.I.C. e I.N.T.K.
19 (Mi)	Reunión con Presidencia de la República, Secretaría Técnica de Planificación, Presentación de películas y slides sobre la Industria Textil del Japón en I.N.T.K.
20 (Ju)	Visitar Pedro Genovese e Hijos S.R.L. y Textil Arará S.A.
21 (Vi)	Visitar Textil Algodana Industrial y Comercio S.A.
22 (Sa)	Visitar Centro de Entrenamiento Vocacional Presidente Carlos Antonio López. Salir de Asunción (K. THARA y T. K.MAI, Miembros del Consejo)
23 (Do)	Prepara el informe
24 (Lu)	Visitar Forno y Valle S.A., Investigación de mercado
25 (Ma)	Visitar Industria Textil Asuncena S.A., Investigación de mercado
26 (Mi)	Algodonera Guarani S.A. (Desmotadora). Llegar a Pilar
27 (Ju)	Visitar Manufactura de Pilar S.A., llegar a Asunción
28 (Vi)	Visitar Algodonera Ybycuí S.A.C.I. (Desmotadora)
29 (Sa)	Preparar informe
30 (Do)	Como arriba

- Diciembre 1 (Lu) Visitar America Textil S.A., investigación de mercado
- 2 (Ma) Reunión con O.F....T. y C.E.P.D.X., visitar America Textil S.A. (desmotadora) y oficina principal de Algodonera Ybycuí S.A.C.I. (desmotadora)
- 3 (Mi) Reunión con Banco Nacional de Fomento y M....G., visitar Tricotex Industrial y Comercial S.R.L., Cooperativa Militar y Naval Ltd.
- 4 (Ju) Reunión con Banco Central del Paraguay, UNIDC, visitar Fénix S.A. (Confección)
- 5 (Vi) Reunión con Presidencia del República, Secretaría Técnica de Planificación y M.I.C., Visitar C...P.S.A. (desmotadora)
- 6 (Sa) Prepara el informe
- 7 (Do) Como arriba
- 8 (Lu) Prepara el informe interin
- 9 (Ma) La oficina de J.I.C.A.
- 10 (Mi) Reunión con M.I.C. e I.N.T.N. y Reunión con la Embajada del Japón
- 11 (Ju) Reunión con M.I.C. e I.N.T.N.
- 12 (Vi) La oficina de J.I.C.A.
- Salir de Asunción
- 13 (Sa) -----
- 14 (Do) Llegar a Tokio

Anexo - 3 : MIEMBROS DE LAS AUTORIDADES PARAGUAYAS

DR. EMILIO A RAMIREZ RUSSO	Director del Gabinete Técnico Ministerio de Industria y Comercio
DR. JOSE MARTINO	Director del I.N.T.N.
ING. MARCOS H. GOLDENBERG	Director de Programación Industrial Gabinete Técnico Ministerio de Industria y Comercio
DR. EDUARDO GONZALEZ	Jefe Programa Textil I.N.T.N.

Anexo - 4 : LA LISTA DE ARTICULOS DONADOS A I.N.T.N.

1. Normas de Calidad de Hilado para Clasificación, 3 hojas x 3 juegos.
2. Tablero negro para Muestra de Hilado: 5 hojas.
3. Hiladora a mano. 3 unidades.
4. Termómetro e Hidrómetro de tipo Barthaman, 1 unidad.
5. Diapositiva de Hilandería modernizada, 1 juego.
6. Libro de Muestras de fallas en tejidos, uno.
7. Muestra de hilo, un juego.
8. Microscopio, uno.
9. Muestra de Tela cruda, un juego.
10. Película de 16 mm de "Air Jet", un rollo.
11. Diapositiva de Tejeduría, un juego.
12. Muestras de Estampado, Tejido de hilo teñido y Fabrics teñido, un juego.
13. Catálogo de Anillo y Viajero.
14. Catálogo de Lanzaderas, uno

ANNEX V

MINUTES OF THE DISCUSSION
ON
THE RESULT OF THE STUDY ON THE TEXTILE INDUSTRY DEVELOPMENT
IN PARAGUAY BETWEEN THE JAPANESE STUDY TEAM AND THE PARAGUA-
YAN AUTHORITIES CONCERNED.

1. The Japanese Study Team for The Study on Textile Industry Development in the Republic of Paraguay (hereinafter referred to as "The Japanese Team") sent by the Japan International Cooperation Agency stayed in Paraguay from June 16 to 24 in 1981, to discuss on the result of the study, as well as to exchange their views on the textile industry development with Paraguayan authorities concerned.


The list of the members of the Japanese Team and the schedule during their stay in Paraguay are attached to Annex 1 and 2 respectively. The members of the Paraguayan counterpart are attached to Annex 3.

2. The Japanese Team submitted the draft of final report with its summary written in English as well as its resume written in Spanish and made a presentation on the report to the Paraguayan authorities concerned.
3. The Paraguayan authorities concerned appreciated the contents of the draft report.
4. The final report will be made to be submitted to the Paraguayan authorities concerned within two months after this meeting. The final report will be made in English and also the summary of the final report will be written both in Spanish and English.


Both parties accepted the above.

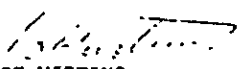
Signed at Asunción, 23 June, 1981.-

ON BEHALF OF THE MINISTRY
OF INDUSTRY AND COMMERCE


Dr. EMILIO A. RAMIREZ RUSSO
Director del Gabinete Técnico

ON BEHALF THE JAPANESE
TEAM


MAYUKI TAKENO
Team Leader


Dr. JOSE MARTINO
Director del I.N.T.N.

Annex - 1 : MEMBERS OF THE JAPAN TEAM

A. MEMBERS OF THE STUDY TEAM

Mr. Hayuki TAFANO	Team Leader
Mr. Akira MORI	Sub-Team Leader Weaving and Knitting Expert
Mr. Nobuyuki YAMANO	Industry Researcher
Mr. Shinya KAWAI	Coordinator

B. JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

Mr. Kenji YAMAMOTO	Funcionario de J.I.C.A. en asunción
--------------------	--

Annex - 2 : SCHEDULE OF THE JAPANESE TEAM

DATE	SCHEDULE (Place of Visit)
June 15(Mon.)	Lv. Tokyo
16(Tue.)	J.I.C.A. Office
17(Wed.)	Meeting with I.N.T.N.
18(Thu.)	Documents Preparation
19(Fri.)	Meeting with I.N.T.N.
20(Sat.)	Documents Preparation
21(Sun.)	Same as Above
22(Mon.)	Meeting with I.N.T.N. and M.I.C.
23(Tue.)	Reporting to textile Firms at M.I.C., Meeting with M.I.C. and I.N.T.N.
24(Wed.)	J.I.C.A. Office, Japanese Embassy
25(Thu.)	-----
26(Fri.)	-----
27(Fri.)	AP Tokyo

Annex - 3 : MEMBERS OF THE PARAGUAYAN AUTHORITIES

Dr. EMILIO A. RAMIREZ RUSSO	Director del Gabinete Técnico- Ministerio de Industria Y Comercio
Dr. JOSE MARTINO	Director del I.N.T.N.
Ing. MARCOS H. GOLDENBERG	Coordinator Gabinete Técnico Ministerio de Industria y Comercio
Dr. EDUARDO GONZALEZ	Jefe Programa Textil I.N.T.N.

ANNEX VI

MINUTA DE LAS REUNIONES
SOBRE

EL RESULTADO DEL ESTUDIO SOBRE EL DESARROLLO DE LA INDUSTRIA TEXTIL EN LA REPUBLICA DEL PARAGUAY ENTRE LA MISION JAPONESA DEL ESTUDIO Y LAS AUTORIDADES PARAGUAYAS CONCERNIENTES.

1. La Misión Japonesa de Estudio enviada por The Japan International Cooperation Agency para el Estudio sobre el Desarrollo de la Industria Textil en la República del Paraguay (en adelante "La Misión Japonesa") permaneció en el Paraguay desde el 16 hasta el 24 de junio de 1981) tanto para analizar el resultado del estudio como para intercambiar opiniones con las autoridades paraguayas concernientes sobre el desarrollo de la industria textil.

La Lista de los miembros de la Misión Japonesa y su programa durante su estadía en el Paraguay se incluyen en el Anexo 1 y 2 respectivamente. La Lista de los miembros de la contraparte paraguaya se incluye en el Anexo 3.

2. La Misión Japonesa sometió tanto el borrador del informe final con su sumario escrito en inglés como su resumen escrito en español y realizó una presentación sobre ese informe a las autoridades paraguayas concernientes.
3. A la presentación del informe, las autoridades paraguayas apreciaron el contenido del borrador de informe.
4. Un informe final será completado para presentarse a las autoridades paraguayas dentro de dos meses después de esta reunión. El informe final será hecho en inglés y un resumen del mismo en español e inglés. Ambas partes aceptaron lo arriba mencionado.

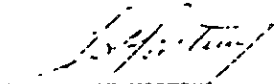
Asunción, 23 de junio de 1981.-

POR EL MINISTERIO DE INDUSTRIA
Y COMERCIO


Dr. EMILIO A. RAMIREZ RUSSO
Director del Gabinete Técnico

POR LA MISION
JAPONESA


MAYUKI TAKENO
Líder de la Misión


Dr. JOSE MARTINO
Director del I.N.T.N.

Annexo-1 : MEMBRAS DEL E. F. C. J. A. C. H.

A. MIEMBROS DE LA MISIÓN JAQUESA DE ESTUDIOS

Sr. Hayuki S. KENC	Líder de la Misión
Sr. Akira HORI	Sub-Líder de la Misión Experto en Tejido y Punto
Sr. Nobuyuki YASUIRO	Investigador de Industrias
Sr. Shinya YATAI	Coordinador

B. LA AGENCIA DE COOPERACION INTERNACIONAL DEL JACOH (J.I.C. .=)

Sr. Lenji YALAKIC	Funcionario de J.I.C.A. en Asunción
-------------------	-------------------------------------

Annex - 2 : SCHEDULE OF THE JAPANESE TOUR

DATE	SCHEDULE (Place of Visit)
June 15(Mon.)	Lv. Tokyo
16(Tue.)	J.I.C. . Office
17(Wed.)	Meeting with I.N.T.N.
18(Thu.)	Documents Preparation
19(Fri.)	Meeting with I.N.T.N.
20(Sat.)	Documents Preparation
21(Sun.)	Same as Above
22(Mon.)	Meeting with I.N.T.N. and M.I.C.
23(Tue.)	Reporting to textile Firms at M.I.C., Meeting with M.I.C. and I.N.T.N.
24(Wed.)	J.I.C. Office, Japanese Embassy
25(Thu.)	-----
26(Fri.)	-----
27(Fri.)	Ar Tokyo

Amex - 2 : MEMBERS OF THE PARAGUAYAN UTILITIES

Dr. ENRIQUE A. NAHREZ BUSO Director del Gabinete Técnico-
Ministerio de Industria Y Comercio

Dr. JUAN MARTINEZ Director del I.N.T.N.

Ing. MARCOS H. GOLDSBERG Coordinator
Gabinete Técnico
Ministerio de Industria y Comercio

Dr. EDUARDO GONZALEZ Jefe Programa Textil
I.N.T.N.