



THE STUDY
ON
THE DEVELOPMENT OF LAGUNA COTTON TEXTILE INDUSTRY
IN
THE UNITED MEXICAN STATES

PREVIEW

DECEMBER 1980

THE FEASIBILITY STUDY MISSION
JAPAN INTERNACIONAL COOPERATION AGENCY

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1. Background

The Government of Japan received the statement of United Mexican States to perform the investigation in order to give feasibility to establishing a cotton textile complex in the Comarca Lagunera of the said country. With view to realize this statement, the former commissioned the Japan International Cooperation agency (JICA), which sent a preliminary study mission that remained in the country from the 30th of June to the 11th of July of 1980.

This mission carried out the consultation with the Coordinating Office for Agroindustrial Development (CGDAI) and other authorities concerned, observation of the Comarca Lagunera and various factories and collection of relative information and data and reached agreement with Mexican party as to developing a deeper study relative to its Project.

In conformity with mutual agreement of both parties (minutes between the Japanese Preliminary Study Mission and the Mexican party, dated on the ninth of July of 1980), thus resulted that the Japanese party would develop the "Study on the Development of Laguna Cotton Textile Industry in Mexico" (hereinafter referred to as the Study) and as part of the said study, integrate newly a investigating mission organized by experts and delegate it to the United Mexican States.

2. Purpose of the Study

The Comarca Lagunera of Mexico is an agricultural zone in which the cotton is its main farm crops and the cotton production of the same Comarca represents nearly the 25% of the total national production. But, the income of the cotton farm workers is presenting reduction during the last years, affected by the increasing cotton production costs and by the sales price which is subject to the fluctuate movements of the internacional market price. Under such general aspects, the Mexican party planned the establishment of a cotton textile complex destined to increasing of cotton cultivators income, creation of employment and acquisition of foreign currencies. Therefore, the Study has for its object investigate the feasibility of industrialization of a cotton textile complex in the Comarca Langunera as well as evaluate its social-economic effects.

3. Members of the Study Mission

Experts team

Ing. Shigeo Inoue	Team Leader
Ing. Ikuo Arita	Sub Leader Textile Engineer (Raw Materials, Spinning, Weaving and Marketing Research)
Ing. Kenji Tanaka	Textile Engineer (Dyeing and Finishing, Sewing and Marketing Research)
Ing. Shuji Yasukawa	Civil Engineer and Architect
Ing. Sakae Hayashi	Energetic and Electric Engineer
Lic. Tomoyoshi Izuka	Economist
Lic. Kengo Tsumori	Researcher (Marketing and Industry)

Observation

In addition to these members, it is expected to join two or three members of Japan International Cooperation Agency and other Public Sector.

4. Tentative Schedule of the Mission

<u>Date</u>	<u>Marketing and Financial Group</u>	<u>Production and Marketing Group</u>	<u>Civil and Utility Service Group</u>
January 14(Wed.)	Lv. Tokyo at 1800(JL12) and Av. Mexico at 1755		
15(Thu.)	Greeting to CGDAI(SARU), Japanese Embassy and JICA MEX Exchange of opinions		
16(Fri.)	Meeting with CCDAI(SARU)	Requesting of information and data	Preparing a minute on the articles confirmed by both parties
17(Sat.)	Marketing research at Mexico City		
18(Sun.)	-----		
19(Mon.)	Visiting SECON, IMCE and CANAINTEX		
20(Tue.)	From Mexico to Torreon (from 0740 to 0900 by AM200)		
	Meeting with SARU in Comarca Lagunera and BARRURAL		
21(Wed.)	Visiting Promotora del Parque Industrial Lagunera de Gomez Palacio and Parque Industrial de Torreon		
22(Thu.)	Visiting Union de Ejidos Colectivos and "Emilio Zapata"		
23(Fri.)	Visiting a few mills in Parque Industrial	Visiting Commerce Chamber in C. Lagunera	
24(Sat.)	From Torreon to Monterrey	Visiting Mill of Nylon de Mexico and marketing research at same city	
25(Sun.)	From Monterrey to Mexico City	From Monterrey to Comarca Lagunera	
26(Mon.)	Study on finance, law, tax, customs duties, etc.	Marketing research	Research on the earth, construction materials and utility Service (electricity, water, fuel, environmental pollution) Visiting construction companies and iron work shops
27(Tue.)		Visiting a few textile mills	
28(Wed.)	From Mexico City to border free zone	Study on labor source, schools, submaterials for production, etc.	
29(Thu.)	Study on bonded trade situation and marketing research		
30(Fri.)			
31(Sat.)	From border free zone to Mexico City	Transport and marketing research (highway, railroad, ports and stations)	
February 1(Sun.)	-----	From Comarca Lagunera to Mexico City through Mazatlan	
2(Mon.)	Mexico City's neighbouring areas		
3(Tue.)	Visiting AYOTLA Tex. S.A and other textile mills of spinning, weaving and dyeing and finishing		
4(Wed.)	Visiting Polyester fiber makers	Marketing research	
5(Thu.)	Meeting with CGDAI (Confirmation of feasibility study's detailed premises and receiving of requested data)		
6(Fri.)	Meeting and reporting to CGDAI		
7(Sat.)	Collected data and information adjusting		
8(Sun.)	Preparation of final report to CGDAI		
9(Mon.)	Final reporting and greeting to CGDAI		
10(Tue.)	Japanese Embassy and JICA MEX		
11(Wed.)	Lv. Mexico at 0800 (HX970)		
12(Thu.)	Av. Tokyo		

NOTE 1) Marketing and Financial Group consists of Messrs. Inoue, Izuka and Tsumori
 Production and Marketing Group consists of Messrs. Arita and Tanaka
 Civil and Utility Service Group consists of Messrs. Hayashi and Yasukawa

2) The Mission will consult with CGDAI in Mexico about this Tentative Schedule for the final schedule.

5. Items of field survey

In accordance with the scheme of work agreed between the Mexican party and the Japanese preliminary study mission on the ninth of July of 1980, the Feasibility Study Mission will hold a discussion with the authorities concerned and carry out necessary investigation in Mexico with relation to the next items.

(1) Marketing and merchandizing

- i) Demand and supply, current and projected, of each product and semimanufactured product
- ii) Analysis of export possibility
- iii) Price analysis
- iv) Merchandizing Sales plans

(2) Availability of raw materials

- i) Actual state of production, price, incentive in the Comarca Lagunera
- ii) Location of ginning mills
- iii) Organization of the primary producers
- iv) Demand and supply of polyester fibre

(3) Selection of location and capacity

- i) Selection of plant site
- ii) Production capacity of each item

(4) Technical analysis

- i) Construction companies and Complex construction schedule
- ii) Availability, characteristics and regulations of utility and services
- iii) Contamination control

- iv) Collection of climatologic data
- v) Manpower analysis
- vi) Availability of submaterials
- vii) Availability of transport
- (5) Financial analysis
 - i) Regulations and tax system
 - ii) Fiscal stimulus
 - iii) Credit and finance condition

6. Authorities and mills etc. concerned to be visited by the mission

The Study Mission wishes to visit the authorities and enterprises of public and private sector related continuously with the purpose of changing opinions about the general aspects of the textile industry in Mexico and the viability of industrialization relative to the establishment of a cotton textile complex in the Comarca Lagunera.

- (1) Marketing and merchandizing
 - i) SECRETARIA DE PATRIMONIO Y FOMENTO INDUSTRIAL (SEPAFIN)
 - ii) CAMARA NACIONAL DE LA INDUSTRIA TEXTIL (CANAINTEX)
 - iii) INSTITUTO MEXICANO DE COMERCIO EXTERIOR (IMCE)
 - iv) SECRETARIA DE COMERCIO (SECOM)
 - v) SECRETARIA DE AGRICULTURA Y RECURSOS HIDRAULICOS (SARH)
 - vi) Engineering enterprise GRUPO SIGMA

- vii) AYOTLA TEXTILE, S.A.
 - viii) Spinning, weaving and dyeing mills in Mexico
D.F. (HILOS TIMON etc.)
 - ix) Spinning, weaving and dyeing mills in the
Comarca Lagunera and its neighbouring area
(FABRICA DE MEZCLILLA DE PARRAS, CLOVER, S.A.,
etc.)
 - x) Textile mills in Free Zone of the border with
U.S.A.
- (2) Availability of raw materials
- i) UNION DE EJIDOS in the Comarca Lagunera
 - ii) Ginning mill EMILIO ZAPATA
 - iii) Chamber of commerce and industry in the
C. Lagunera
 - iv) SARA in the Comarca Lagunera
 - v) BANCO DE CREDITO RURAL (BANRURAL) DEL CENTRO
NORTE, S.A., Torreón
 - vi) CELANESE MEXICANA, S.A. (Querétaro)
 - vii) FIBRAS SINTETICAS, S.A. (Mexico D.F.)
 - viii) NYLON DE MEXICO, S.A. (Monterrey)
 - ix) AKRA, S.A. (Monterrey)
- (3) Selection of location and capacity
- i) PROMOTORA DE PARQUE INDUSTRIAL LAGUNERO DE
GOMEZ PALACIO
 - ii) Office of Parque Industrial de Torreon
- (4) Technical analysis
- i) PROMOTORA DE PARQUE INDUSTRIAL LAGUNERO DE
GOMEZ PALACIO
 - ii) SEPAFIN
 - iii) SARA in the Comarca Lagunera
 - iv) The labor standards low office

- v) SECRETARIA DE COMUNICACIONES Y TRANSPORTES
- vi) FERROCARRILES NACIONALES DE MEXICO, S.A.

(5) Financial analysis

- i) SARH
- ii) SEPAFIN
- iii) BANRURAL
- iv) NACIONAL FINANCIERA, S.A. (NAFINSA)
- v) TRAFIMEX

Note: The Mission will coordinate with CGDAI to visit dependency and entity concerned as information source.

7. Items to be confirmed and discussed

- (1) The Complex's capacity will be defined within the limit of annual cotton consumption of 20,000 to 30,000 bales.
- (2) Which is the cotton buying price with which the Complex is favored and the future forecast?
- (3) The site of the Complex will be in Gomez Palacio or Torreon.
- (4) Which is the fundamental strategy of finance?
- (5) Which is the authority which exercises with responsibility the approval of plant design, ordering negotiation, construction and inspection and acceptance of the machinery and equipment?
- (6) Which is the authority which exercises with responsibility the plant management?
- (7) Which is the concrete stimulus with which this Project is favored?

- (8) Are there possibility of export quota bound for U.S.A. and Europe and of participation in official demand?
- (9) The industrial water will be drawn from deep well.
The equipment for the industrial residual water treatment will be the most economic one.
- (10) Results of marketing research of Grupo SIGMA and their opinion.

8. Questionnaire

1. Land

- Detailed plan of Site (Gomez Palacio/Torreón) and survey map (which includes trees, etc. that serve as mark and contour line)
- Data of bearing power of soil and test boring in the Site
- Data of test boring of the existent construction in the neighbourhood

2. Natural and meteorological condition of the

C. Lagunera

- Meteorological observation records of the last three year of a meteorological station in the neighborhood.

Maximum and minimum temperature and humidity by month, maximum, minimum and average rainfall by month, maximum and minimum wind velocity by month, maximum and average snow fall by month, average sunshine hours by month, days of dust, rainfall days by month.
- Temperature and humidity records by hour of the last 365 dyas.
- Disaster records in this area.
the most copious rainfall, tremendous snowfall, sandstorm
- Disaster records due to hurricane and tornado.
- Annual avarage visiting time, maximum instantaneous wind velocity, damage situation

- Disaster records due to earthquake.
frequency, magnitude, damage situation
 - Disaster records due to thunder
frequency, damage situation
 - Water-bearing stratum
3. Civil and architecture, utility and service
- 1) Civil and architecture
- Competent authority of design and execution
 - List of various agencies in this area (a few companies).

Soil analysis consultant, design office, local and central influential constructors
 - Annual change of the construction cost
 - Periodical publications which matter construction materials, personal cost and derrick rental
(If not, the unit price of the next construction materials: pile, steel frame, steel bar, concrete, cement, forms, aluminium plate, galvanized sheets, slate, asbest board, plasterboard, plywood, heat insulator, ALC, brick, concrete block, terrazo, plastic tile, crystal, epoxide resin paint, wood, roof fan, etc.)
 - Construction equipment and derricks generally used
 - Normal work quantity by day for every type of job
 - Building construction standards
 - Construction materials standards adopted in Mexico

2) Electricity

- Which electric power plant? Distance from it
- Power transmission
- Primary and secondary wiring tension and frequency
- Necessity of emergency power (frequency of power stoppage)
- Standards and conditions

3) Fuel (Heavy oil, heating medium, natural gas)

- Size, distance and transport from the fuel base
- Capacity of supply
- Method of supply
- Price
- Days of storage with security (Storage equipment of Site)
- Analysis data and standards

4) Water for industrial use

- Distance between the source and Site
- Quality of pipeline
- Data of detailed analysis of water by station and source
- Necessity of treatment of supplied water
- Existence of makers specialized in the hydraulic work and their size (including well excavator)
- Standards and conditions
- Possibility of excavating the well of exclusive use of the Complex. Maximum intake volume.
- Necessity of emergency water

5) Environmental pollution

- Contamination by drainage

i) Present condition of the drainage canal of public use and the industrial wastes treatment equipment of other mills
(Canal route, size and expenses)

ii) Present condition of the industrial wastes of existent finishing mills

- Regulations of other environmental pollution
- Measuring and examination method and competent authority of the environmental pollution

6) Air conditioning

- Existence of makers specialized in the air conditioning work and their size

7) Equipments for fire fighting

- Insurance system
- Obligations imposed on the textile mills

4. Supply of raw materials, auxiliary materials, machines and equipments and spare parts

1) Polyester fibre of 1.5 denier

Price, reserve of supply and delivery time by every maker

2) Price, delivery time and seller of dyestuffs and chemicals

Indanthren Blue BC (C.I. No. Vat Blue 6, BASF)

Indanthren Br. Green FFB (C.I. No. Vat Green 1, BASF)

Resolin yellow GGLS (C.I. No. Disperse Yellow
42, By)

Samaron Blue FBL (C.I. No. Disperse Blue 60, Hoe)

Cibacron Br. Blue BR-P (C.I. No. Reactive Blue 5,
CIBA-Gy)

Procion Yellow H-5G (C.I. No. Reactive Yellow 2,
ICI)

Acramin Green FB (Pigment, By)

Helizarin Br. Yellow RRT conc (Pigment, BASF)

Caustic Soda (NaOH, 97%)

Hydrogen Peroxide (H₂O₂, 35%)

3) Price, delivery time and seller of sizing
materials

- Corn starch, wheat starch, alginic acid soda,
PVA, softening materials, copper sulphate,
soda ash, caustic soda, antistatic agent, etc.

4) Price, delivery time and seller of articles of
consumption

- Fittings for spinning and weaving, articles of
general consumption (bobbins and lubricants)

5) Price, delivery time and seller of packing
materials

- Paper, polyethylene film, carton box and tube
hessian cloth, iron strap, etc.

6) Price, delivery time and seller of sewing
articles

- Buttons, zipper, lining, sewing thread

7) Price, delivery time and seller of films for printing

- Is possible employing designers?

8) Machinery and equipment

- Equipments necessary for the installation of process machinery (forklifts, etc.)

- Technics of casting and iron work.

Specialized workshop.

- Industrial standards and weights and measures unit

- Main domestic makers of the electric equipments and parts, boiler, gas burning boiler and air conditioning equipment.

Name, location and supply scope

5. Transportation

1) Harbor

- Port dues

entrance honorarium, stevedoring fee, anchorage, dispatching fee

- Custom duty

tariff rate, duty free articles, prohibited articles, bond system

- Import harbor

depth, maximum handling tons, warehouse, stevedoring capacity, customs formalities, agent of handling of heavy cargo (capacity, available equipment and fee)

2) Highway

- Limit of weight and measurement
- Heavy cargo handling and transport equipment
- Transportation fee (freight, loading and unloading fee)

3) Railroad

- Network
- Capacity of cargo handling
- Transport cost (freight, loading and unloading fee)
- Capacity of heavy cargo handling and available equipment

6. Capacity, organization and labor power of the productive mill

1) Quantity of spindles and looms and capacity of dyeing and finishing by every province in Mexico

2) System of organization and wages of spinning, weaving, dyeing, and sewing mills.

- Present condition of organization system
- Average wage by job and class in the Comarca Lagunera (Basic salary, allowance, bonus, retiring allowance, etc.) executive/middle management/high-class engineer/technician/clerical employee/guard/worker

3) Labor power

- Kinds of school and the number of graduates of every school in the Comarca Lagunera (excluding the sixth grade school)

- Population of workers graduates of more than sixth grade by age and sex, which is possible to be employed.
10 years/20 years/30 years, masculine/feminine
- Working conditions and regulations
 - i) Working hour, recess,
 - ii) Limit of employed age
 - iii) Regulations of night work and overtime work of feminine and minor workers
 - iv) Holiday, vacation and festival day
Extra charge(%) of overtime work and work at holidays and festival days
- 4) Regulation and taxation system for the foreign technician

7. Economy, taxation system, accounting and finance

- 1) General aspects of economy
 - Tendency of producers' and consumers' price of representative textile products
 - Average wages and its ascending rate
 - Circumstances of foreign currency and change rate
 - Price index and general inflation rate
- 2) Taxation system
 - Kind and rate of taxation
 - i) Federal tax
Income tax/enterprise tax/corporation tax/
additional value tax/export and import duty/
stamp duty/education tax

ii) Provincial and municipal tax

Capital income tax/immovables dominion

translation tax/land and house tax

• Favorability measures

Measures of reduction and exemption of/
from tax and its duration after the start
up

3) Accounting usage

• Samples of balance sheet and statement of
profit and loss of textile manufacturing
enterprises

• Depreciation and the life list

i) By a decreasing balance method and a
fixed amount method

ii) The life and amortization rate by sort
(Building, machinery and equipment,
vehicle, tool, implement and accessory)

4) Finance and interest

• Limit of finance from domestic financial
institutions

• Lending interest and term of short and long
term fund

8. Marketing research

1) Statistical quantity of textile distribution
of 1970 and 1975 to 1979.

• Production quantity of finished goods and
half-finished goods by fibre, article and
use.

- Delivery quantity from textile manufacturers to wholesale stage and final goods makers
 - Delivery quantity from wholesale stage and final goods makers to retail sale stage
 - Export and import quantity of finished and half-finished goods by fibre, article and country to/from which to be exported and imported
 - Statistics of general consumption of textile products
- 2) Distribution cost research
- Sales cost and wholesale and retail margin
- 3) Study on export possibility
- Possibility of selling yarn and cloth to weaving, finishing and confection mills in Free Zone
 - Present condition of export quota bound for U.S.A. and Europe
- 4) Quality standards of products of domestic official demand (military uniform, general uniform, bedspread)

9. Various regulations

1) Architecture

- Regulation on building a mill
- Regulation on building a general structure
- Regulation on the fire fighting and environmental pollution (noise, vibration, wastes)

- Regulation on importing construction materials, etc.
 - Regulation on wind and earthquake force
- 2) Infrastructure
- Regulation on the environmental pollution and requirement on drainage industrial wastes/contamination of the cultivating area/noise/bad smell/waste
 - Regulation on drawing underground water
 - Water quality standards and relative domestic regulation
 - Regulation and requirement on fire fighting
 - Regulation on pressure vessel (boiler, bomb, cylinder)
Regulation on storage equipment (high pressure gas, dangerous article)
 - Regulation on handling heavy cargo
 - Regulation on importing machinery and equipment and restriction items (especially electric and air conditioning equipment)
- 3) General
- Requirement and regulation in using the industrial park
 - System of amount to be borne of water for industrial use, gasoduct and drainage canal, etc.
 - the Minimum Wages Act, the Labor Standards Act



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