A STUDY ON INDUSTRIAL SECTOR DEVELOPMENT IN THE KINGDOM OF THAILAND

TEXTILES & GARMENTS AND WOODEN FURNITURE

SECOND YEAR FINAL REPORT

AUGUST 1989

JAPAN INTERNATIONAL COOPERATION AGENCY

A STUDY ON INDUSTRIAL SECTOR DEVELOPMENT IN THE KINGDOM OF THAILAND

TEXTILES & GARMENTS AND WOODEN FURNITURE

SECOND YEAR FINAL REPORT

AUGUST 1989

JAPAN INTERNATIONAL COOPERATION AGENCY

PREFACE

In response to a request from the Government of Thailand, the Government of Japan has decided to conduct a study on the development of industrial sectors in the Kingdom of Thailand and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent to Thailand a study team headed by Mr. Akira Inoue, Japan External Trade Organization, during the periods from November 1 to December 20, 1988 and from March 7 to March 26, 1989.

The team held discussions with the Government of Thailand officials concerned and conducted field surveys in the selected areas. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will serve for the development of the industrial sectors concerned and contribute to the promotion of friendly relations between our countries.

I wish to express my deep appreciation to the Government of Thailand officials concerned for the close cooperation which they extended to the team.

August 1989

Kensuke Yanagiya

Kensuke Yanagiya
President
Japan International Cooperation Agency

TABLE OF CONTENTS

IV. OTHERS

CONTENTS OF TABLES AND FIGURES

INTRODUCTION

CONCLUSION

PART-I. TEXTILE INDUSTRY

INTRODUCTION

Introduction

This is the Final Report for "A Study on Industrial Sector Development in the Kingdom of Thailand (Second Year)."

The Study was based on the "Scope of Work for the Study on Industrial Sector Development in the Kingdom of Thailand," signed on August 18, 1987 by the Government of the Kingdom of Thailand and the Japan International Cooperation Agency (JICA).

The Study was entrusted to the "Joint Venture for Study of Industrial Sector Development in the Kingdom of Thailand" organized by the Japan External Trade Organization (JETRO) and NKK Corporation, and was carried out from October 1988 to June 1989. The second year of study focused on two sectors and a total of three products, namely, the textile industry (including textiles and garments) and the wooden furniture industry.

A field survey in Thailand was carried out from November 1 to December 20, 1988, and a supplementary field survey from March 7 to 26, 1989. Interim reports were submitted to the Thai government in March and were accompanied by explanations and deliberations. Also during this time, a questionnaire survey was conducted in Japan, and studies on other nations were carried out through JETRO overseas offices.

The present Report consists of the following four parts and an appendix: the Conclusion (Comprehensive Program); I. Textiles; II. Garments; and III. Wooden Furniture. Parts I to III consist of an overview of present conditions, including the situation in other countries, and a pinpointing of problem areas. In the Conclusion, the comprehensive program is examined and recommendations made. In addition, results of third-country market surveys have been brought together in a separate English publication "Addendum."

The JETRO-NKK Joint Venture organized a Study Team consisting of the following members:

Akira INOUE	Team Leader (Senior Economist and Director, Development Survey Project Group, JETRO)

Sadao SHIMAZU	Deputy/Economist/Industrial Promotion (Deputy Director, Development Survey Project Group, JETRO)
Kota NAGAI	Deputy/Economist/Textile Industry (Deputy Director, Development Survey Project Group, JETRO)
Toshio KUROSAKI	Economist/Furniture Industry (Deputy Director, Development Survey Project Group, JETRO)
Masahiro SHIMADA	Economist/Export Promotion (Development Survey Project Group, JETRO)
Toshio INOMATA	Development Economist/Garment Industry (Assistant Director, Development Survey Project Group, JETRO)
Makoto NAMBARA	Economist/Furniture Industry (Development Survey Project Group, JETRO)
Osamu MIZUTANI	Economist/Industrial Promotion (Survey in Japan) (Assistant Director, Development Survey Project Group, JETRO)
Eiichi ASANO	Economist/Export Promotion (Survey in Japan) (Deputy Director, Development Survey Project Group, JETRO)
Shoichi SATO	Deputy/Industrial Engineer/Management (Production and Technology) (Deputy General Manager, Maritime Development Dept., NKK Corporation)

Hiroyuki TANAKA	Economist/Management (Management and Finance) (Manager, Maritime Development Dept., NKK Corporation)
Hiroshi NAKANO	Industrial Engineer/Textile (Management and Engineering Consultant)
Takaaki HAMASHIMA	Industrial Engineer/Garment (Director, Jasper Institute for Sewing Technology Research)
Naoya SUGIYAMA	Industrial Engineer/Wooden Furniture (General Manager, Overseas Operations Division, Tokai Furniture Co., Ltd.)

1. Background, Objective and Method of Study

1-1. Background and Perspective

After the first oil crisis, the world economy entered a period of low growth. Among the developing countries, the Asian NIEs and ASEAN nations managed to achieve economic growth rates higher than the world average. With the advent of the 1980s, however, the ASEAN nations were confronted with severe economic problems due to the plummeting prices of primary products and crude oil and the resulting drop in foreign currency earnings and increased debt.

During this time, Japan enjoyed a reduction in the value of its imports due to reduced fuel prices and an increase in exports because of its strong international competitiveness. The resulting surplus in its current account balance became the source of severe trade friction with the western nations. As a result, Japan was strongly pressed to change its industrial structure to one that would be in greater harmony with the world economy.

The ASEAN nations, meanwhile, found themselves in dire straits in the 1980s due to the changes in the international environment and embarked on a policy of promoting export industries to increase foreign currency earnings. With this in mind, they have been promoting local industry and actively encouraging foreign investment.

In addition, Japanese companies and other firms from the industrialized nations and Asian NIEs have been accelerating direct investment in developing countries, and the ASEAN nations in particular, to deal with the changes in their domestic industrial structures and the reorganization of the international division of labor. They have been transferring capital, technology, and know-how to the ASEAN nations and thus contributing to industrial development there. Japan in particular has been requested to participate in this process.

Since the 1970s, a horizontal division of labor has spread among Japan, the U.S. and the Asian NIEs, leading to a steady expansion of trade in manufactured goods. As the ASEAN nations join in full measure, a horizontal division of labor is being established throughout the entire Asia Pacific region. This will represent the most significant structural change in the world economy in this century.

In Thailand, one of the ASEAN nations, the focus of the economy is shifting from agriculture to manufacturing. Since 1984, manufacturing has taken over first place in terms of share of the GDP (gross domestic product) from agriculture, forestry, and fisheries. This is an indication of the changes wrought in the economic structure by the industrialization program in effect since the 1960s.

Thai industrialization began with import substitution, primarily in the light industries, but it was gradually expanded to cover other fields as well. Starting in the early 1970s, the country also began to work towards export-oriented industrialization, but these efforts proved to be ineffective.

Since 1977, export-oriented industrialization has been promoted with an emphasis on fostering agro-based industries and the expansion of foreign investment. In 1983, further supplementary measures were taken, with export ratios being clearly specified for export promotion projects, controls relaxed on foreign equity participation, and so on. Recent Thai economic policies have focused both on greater economic efficiency and the expansion of exports. The current (sixth) 5-year plan (1986-91) stresses the increase of export revenues through diversification of agricultural products, and promotion of agro-industries and of export industries.

Government efforts have led to steadily rising exports. In particular, there has been striking growth in exports of such traditional products as rice, tapioca, and rubber as well as textile products, ICs, canned marine products, toys, and other industrial goods.

Starting from the second half of 1986, along with the appreciation of the yen and the hike in the value of the currencies of the Asian NIEs with respect to the dollar, there was an increasing trend among corporations in Japan and the NIEs to look towards the ASEAN countries for production bases for labor-intensive export products and the like. Thailand, in particular, offers political stability, incentives for export-oriented investment, and high-quality, reasonably-priced labor, and this has resulted in soaring direct investment by Japan, Taiwan, and other NIEs. Once the many newly-established companies begin operation, considerable growth may be expected in exports of industrial products.

In the fall of 1986, Japan's Ministry of International Trade and Industry proposed a program for the active assistance of other governments and companies in the Asian nations in four fields:

(1) Improvement of infrastructure for export-type industries

(2) Overall technological cooperation in nurturing strategic export industries (cooperation in manpower training and marketing)

(3) Investment, etc., for nurturing strategic export industries

(4) Advice concerning improvement of the tax systems, investment policies, etc., in developing countries.

In the past, Japan has cooperated in various ways to assist industrial development in the developing countries, but the current project aims for the preparation, proposal, and realization of a comprehensive program for the promotion of foreign currency generating industries in the Asian nations. In other words, its objective is to formulate, present, and realize a package for policy measures and cooperation in all related fields.

The present study assumes an emphasis on the market principle and is an attempt to identify specific possibilities for production and export.

Another assumption is an international perspective. In the 1980s, reflecting the high-tech evolution of industries in the advanced nations, there have been rapid changes in the structure of relative superiority in international trade. This, in turn, has been changing the structure of the international division of labor. The present project attempts to take this into consideration and analyze the possibility of exports within the current framework of international trade.

The Thai government and Ministry of Industry requested the cooperation of the Japanese government after receiving this proposal. The JICA sent a Scope of Work survey mission to Thailand in August 1987 to discuss the industries and products to be surveyed with the Thai government. A plan for the survey was drawn up and the first-year survey was begun in January 1988. The industries and products decided upon are as shown below.

Industries and Products to be Surveyed

	Industry	Products
1st year	Molds & Dies	Molds and dies (for plastics), Molds and dies (for presses)
	Toys	Plastic toys, metal toys Stuffed toys
2nd year	Textiles	Textiles Garments
	Wooden Furniture	Wooden furniture
3rd year	Processed Plastic Goods	Houseware Industrial goods
	Ceramics	Tableware Novelties

1-2. *Objectives and Survey Items*

The objective for the second year is to survey the textile (including textiles and garments) and wooden furniture industries and formulate a comprehensive program for development and export promotion.

In the formulation of the program, attention has been given to:

[1] Selection of the most suitable and practical plans

[2] Presentation of as much detail as possible on program objectives, content, costs, schedule, effects, etc.

[3] Presentation of the program divided into short-, medium-, and long-term parts

Specific items to be surveyed by the study have been established as shown below based on the S/W (concluded August 18, 1987):

(1) Summary of Selected Industries
- a) Current state of production items, production, trade, and companies
- b) Investment, technical tie-ups, financing, taxation, promotion of foreign investment

(2) Current State of Selected Industries and Production Plants
- a) *Manufacturing processes and specifications*
- b) Technical level (quality control, etc.)
- c) Product development (designs, etc.)
- d) Corporate management (business management, fund-raising, etc.)
- e) Sales strategies (market surveys, marketing, etc.)
- f) Relation with peripheral industries (raw materials, equipment, etc.)

(3) Survey on Export Markets by Product
- a) Survey of supply and demand and imports in main importing countries
- b) Marketability of products in main importing countries

(4) Preparation of Comprehensive Program for Development of Selected Industries and Export Promotion
- a) Institutions and government policies
- b) Improvement of technology
- c) Product development
- d) Sales strategies
- e) Business management
- f) Manpower training

g) Improvement of industry infrastructure

(5) Finding Japanese Companies Desiring Joint Ventures and Technical Tie-ups in Thailand

a) Survey of companies with joint ventures or technical tie-ups

b) Preparation of list of companies desiring joint ventures or technical tie-ups

1-3. Methodology

The methodology of the study is as follows:

(1) Advance Preparation in Japan

a) Collection and analysis of existing materials and statistics in Japan

b) Preparation of detailed plan for overseas field surveys and work in Japan

c) Preparation of inception report and survey schedule

d) Preparation of question forms

(2) Field Surveys

a) Explanation of inception report and discussions on survey plans

b) Collection of information through interviews with related organizations and deliberations on same

c) Survey of related companies and factories and on-site surveys

d) Preparation and presentation of progress reports

e) Presentation of interim reports, deliberation on the program, and suppiementary surveys

(3) Third Country Surveys

a) Survey of third country markets

b) Survey of industries in competing countries

c) Survey of past industrial and export promotion policies

(a), (b), and (c) were conducted through surveys of written materials and surveys commissioned through JETRO overseas offices.

(4) Survey in Japan

a) Summary and analysis of field survey results

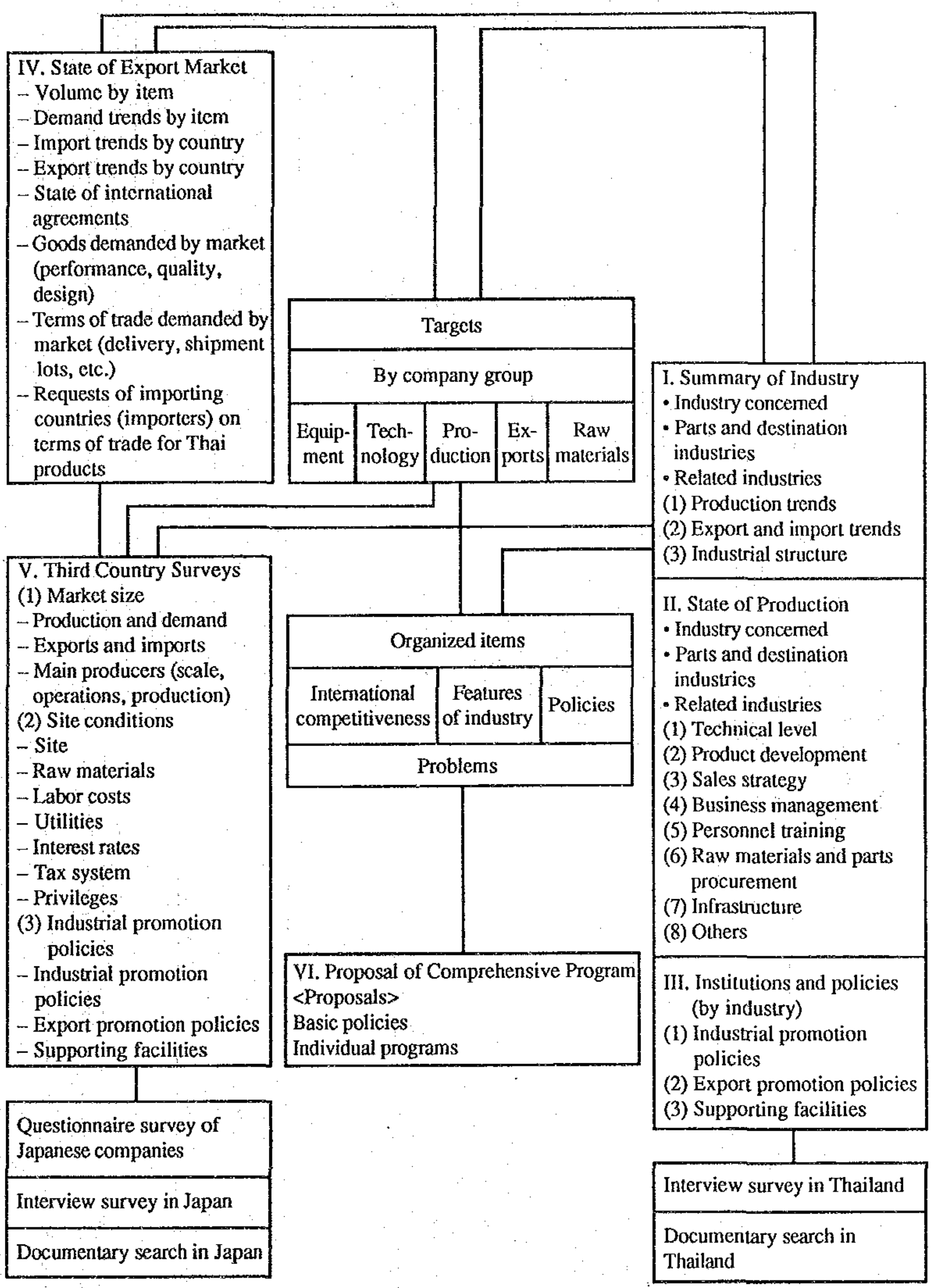
b) Summary and analysis of third country survey results

c) Collection and analysis of interviews with related companies in Japan, on-site surveys, and questionnaire surveys

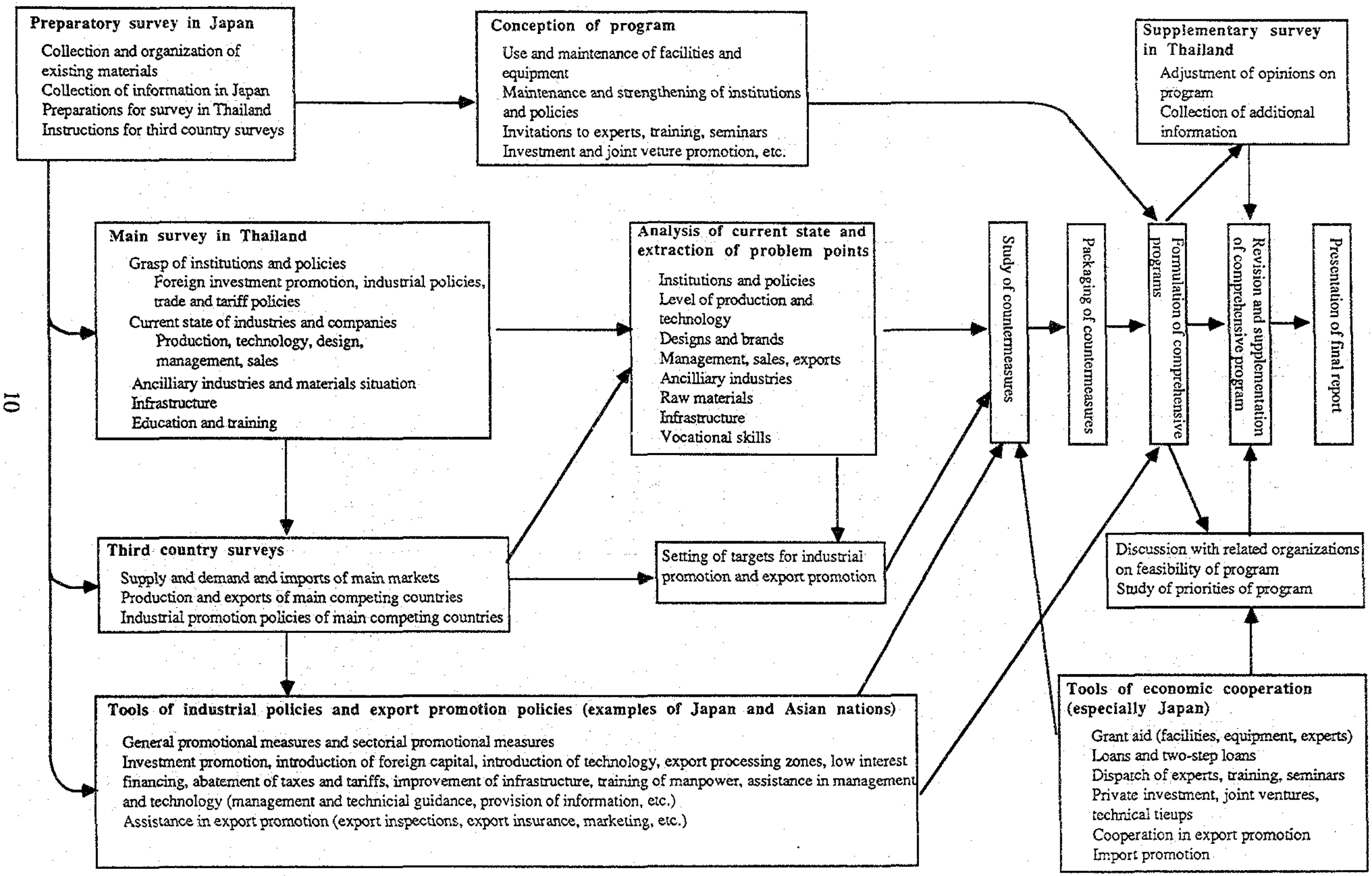
d) Overview of and deliberation on specific problems

e) Preparation of and deliberation on interim reports

Summary of Flow of Survey



Checkpoints at Each Stage of Development Survey



f) Preparation of comprehensive program and final report

Of the above, (d), (e), and (f) were performed through discussions with group members and experts in the field.

2. Survey Schedule and Content

The schedule and content of the second-year survey are described below.

2-1. Advance Preparations in Japan

- Collection of materials and information
- Preparation of plans for third-country surveys and instructions

  (Survey of third country markets)

Garments	U.S./U.K./West Germany
Wooden furniture	U.S./France

  (Survey of competing countries)

Garments	Korea/Hong Kong
Wooden furniture	Korea/Malaysia

- Deliberation on plans for field surveys

2-2. Outline of Field Surveys

2-2-1. Survey Outline

[1] Survey period: November 1 - December 20, 1988

[2] Field office: Located in the FIDC (Furniture Industry Development Center) of the ISI, under the DIP (Department of Industrial Promotion), Ministry of Industry

[3] Thai counterpart: DIP, Ministry of Industry
Staff from the Planning Division of the DIP, the ISI, and the TID (Textile Industry Division) participated in the survey.

[4] Cooperating institution: Steering Committee
Chaired by the head of the DIP, this committee consisted of representatives from Ministry of Industry-related departments, the NESDB (National Economic and Social Development Board), the Ministry of Commerce, the BOI (Board of Investment), and other related government agencies and departments and industry groups. In addition, related industry associations participated as observers.

[5] Survey Structure

The following groups were organized to conduct the survey.

(Textile group)	Nagai, Nakano Miss Sireerat (Mr. Suchart, Mrs. Suda)
(Garment group)	Inomata, Hamashima Mr. Boonying (Mr. Suchart, Mrs. Suda)
(Wooden furniture group)	Nambara, Sugiyama Mr. Nantapit, Mr. Yawarit Mr. Chinnavorn, Mr. Thawee Miss Suwicha
(Other)	Inoue (Team Leader) Shimazu, Shimada (policy) Sato (production and technology) Tanaka (management and finance) Mr. Wirat Mrs. Suda Suganuma (JICA expert)

In addition, secretaries were hired for work in the field office and an interpreter was used for assistance in conducting the interviews.

2-2-2. Daily Schedule of Field Survey

Nov. 1	Tokyo -> Bangkok
Nov. 2	Meetings with TID and FIDC Courtesy call to embassy and JICA
Nov. 3	Explanation of inception report and meeting with DIP Office opened and appointments made
Nov. 4	Appointments made and survey items discussed Interviews begun
Nov. 7	On-site plant surveys and interviews begun
Nov. 11	Party held by Mr. Pisan, DG of the DIP
Nov. 16	Textile group meeting
Nov. 17	Furniture group meeting
Nov. 24	General meeting for the preparation of progress reports
Dec. 7	General meeting concerning the direction of the program

Dec. 8 - 10	Furniture group excursion to Chiang Mai region in northern Thailand (Nambara, Sugiyama, Sato)
Dec. 12	General meeting concerning progress reports
Dec. 16	Advance explanation of progress reports to DIP director and assistant director
	Explanation of and deliberation on progress reports in the Steering Committee
	Dinner party held by the survey group
Dec. 19	Courtesy call to embassy and JICA
	Exchange of minutes and closing of the office
Dec. 20	Bangkok -> Tokyo

2-2-3. Number of Field Interviews and On-Site Plant Surveys

(Factories)

[1]	Textiles (spinning, weaving, dyeing, printing, etc.)	25
[2]	Garments (including fashion boutiques)	30
[3]	Wooden furniture (including plywood)	26
	, Subtotal	81

(Other)

[1]	Government institutions and industry associations	22
[2]	Schools and research institutes	7
[3]	Trading firms, department stores, retailers, shipping companies, etc.	8
	Subtotal	37
	Total	118

2-3. Survey in Japan

(1) Analysis of the results of field surveys and work in Japan

(2) Interviews with related institutions and corporations in Japan

(3) Analysis of third country survey results

(4) Collection and analysis of questionnaire surveys in Japan

(a) Posting of the questionnaire:

Date	No. sent
Nov. 16, 1988	212
Nov. 17, 1988	283
Nov. 18, 1988	117
Total	612

Wooden furniture-related firms: 500

Textile/apparel-related firms: 112

(b) Collection of the questionnaire

• Wooden furniture-related firms:

No. of ordinary responses:	99
No. of responses by telephone follow-up	68
Total	167

(Response rate: 33.4%)

No. returned because of incorrect address 8

(Corrected response rate: 33.9%)

• Textile/apparel-related firms:

No. of ordinary responses:	33
No. of responses by telephone follow-up	15
Total	48

(Response rate: 42.8%)

(5) Preparation of and deliberation on program proposals

(6) Preparation of interim reports

3. Supplementary Field Survey and Deliberation on Interim Report and Program

(1) Survey period: March 7 - 26, 1989 (including days spent in transit)

(2) Survey members: Inoue, Nagai, Inomata, Nambara (all present from March 7 to 26), Shimada (March 12 - 26), Tanaka (March 12 - 26), Sato (March 17 - 26), and garment expert Kawauchi (March 8 - 26)

(3) No. of interviews 53

Government agencies	18 (DIP, NESDB, MOI, MOC, etc.)	
Industry associations	5 (TGMA, UTMAU, TFIA, etc.)	
Corporations	30	
Textile		3
Garment		17
Furniture (incl. parts)		10

(4) Program-related discussions

Of the above interviews, the following ten consisted primarily of discussion concerning program development.

Mar. 9	NESDB (Mr. Panithan et al.)	Inoue, Nagai, Suganuma
Mar. 10	TGMA (Mr. Suchart)	Inoue, Inomata
Mar. 13	DEP (Mr. Songchai)	Inoue, Nagai
Mar. 14	FIDC (Mr. Nanthapit et al.)	Inoue, Nambara, Shimada, Tanaka
Mar. 15	TID (Ms. Prani et al.)	Inoue, Nagai
Mar. 16	DIP-Planning (Mr. Swat)	Inoue, Nagai, Suganuma
Mar. 17	UTMA	Inoue, Nagai
Mar. 20	IEPD (MOI Mrs. Orapin)	Inoue, Nagai, Shimada, Suganuma
Mar. 20	DIP (Mr. Padetpei et al.)	Inoue, Nagai, Shimada, Suganuma
Mar. 20	TFIA	Sato, Nambara

(5) Steering Committee

At the meeting of the Steering Committee held on March 24, the interim reports were explained and discussed.

Persons present: All survey members (with the exception of Inomata)
JICA Advisory Group
Nakamura (director)
Seki (from MITI)
Nishiwaki

Observers: Sumiyoshi (assistant director, JETRO Bangkok)
Kohata and Suganuma (DIP experts)

Thai members present at the meeting are listed separately.

Following is the abbreviated minutes of the meeting.

(a) Opening greeting by the chairman

(b) Greeting by the survey director

(c) Presentation of interim reports

Textiles (Nagai)

Garments (Tanaka)

Institutions and government policy (Shimada)

Wooden furniture (Nambara)

Program (Inoue)

(d) Question-and-answer session and deliberations

(e) Summary and closing remarks by the chairman

Thai Members Present at the Steering Committee Meeting

Date: March 24, 1989
ISD 2nd Year Interim Report
Place: Taratip 4, Tara Hotel, Bangkok, Thailand

Name	Title	Name of Firm/Organization
Mr. Manu Leopairote Chairman	Deputy Director-General	Department of Industrial Promotion (DIP)
Mr. Pairot Somapoomi	Director	Planning Division, Board of Investment (BOI)
Mr. Pimpapaan Chansilpa	Representative of the Director	Planning Division, Department of Export Promotion (DEP)
Mrs. Orapin Weerawut	Director	Industrial Economic & Planning Division, MOI
Mrs. Kasama Anantavorasakul	Representative of Mr. Thamnu Vasinonda (Director)	Thailand Management Development and Productivity Center, DIP
Mr. Damri Sukhotanang	Director	The Metal-Working and Machinery Industries Development Institute (MIDI), DIP
Mr. Suchart Chantaranakaraj	Representative	The Federation of Thai Industries (FTI)
Mr. Padetpai Meekun-iam Secretary	Director	Planning Division, DIP
Mr. Charoon Unsuwan Asst. Secretary	Director	Industrial Development Center

DIP Staff

Mr. Somsak Kuptakanchanakul	Director	Industrial Service Division
Miss Prani Obhasanond	Director	Textile Industry Division (TID)
Mr. Suchart Intarachote		TID
Mr. Nuntapit Nakasarn		FIDC Industrial Service Division
Mrs. Lalita Kitkrailard		TID
Mr. Suwat Siwasaranond		Planning Division
Miss Nantaya Yanumet		TID
Mr. Virat Amornlertwit		Planning Division
Mr. Boonying Phumpiem		TID
Miss Sireerat Charuchinda		TID
Mr. Thawee Kaewmanee		FIDC
Miss Supawan Satwvatorn		Planning Division

4. Survey in Japan

- Analysis and summary of survey results
- Analysis and summary of third country survey results
- Deliberations with related institutions concerning establishment of a comprehensive program
- *Final summary of the comprehensive program*
- Preparation of the final report (draft)

During the survey in Japan in April 1989, two staff members from counterpart organizations in Thailand, Mr. Thawee (ISI) and Miss Sirrerat (TID), joined in the work and discussion of the program.

5. Presentation of Draft Report

(1) Survey period: July 2-11, 1989 (including days spent in transit)

(2) Survey members: Inoue, Shimazu, Nagai, Kurosaki, Sato, Tanaka, Todoroki (JICA) and Seki (MITI)

(3) Presentation meetings:

Monday, July 4,14:00-17:00

Informal presentation on Wooden Furniture (at TID)

- Chaired by Mr. Somsak, Director of ISI, it was attended by approximately 30 people including the all members of the survey team, approximately 10 people related to the industry and people connected with ISI.

Tuesday, July 5,14:00-18:00

Informal presentation on Textiles and Garments (at TID)

- Chaired by Miss Prani, Director of TID, it was attended by approximately 50 people including all members of the survey team, approximately 25 people related to the industry and people connected with TID.

Wednesday, July 6,14:00-18:00

Formal presentation at the steering committee (at Tara Hotel)

- Chaired by Mr. Pisal, Director-General of DIP, it was attended by approximately 50 people including all members of the survey team, members of the steering committee, and representatives of the Thailand office of JICA and the Bangkok office of JETRO.

(4) Important comments made at the meetings

- Equipment of official service agencies (such as TID for textiles, FIDC for wooden furniture) has become so outdated that they cannot meet the industries' needs.

- High import duties on textile machinery, components and dyestuffs impede the development of the industry. The necessity of reducing the tariff rates should be stressed (for the textile industry).

  — As stated in the report, we replied that although their negative effects on the export competitiveness of textile products cannot be denied, we believe the issue should be considered from a wider viewpoint, taking overall industrial and financial policy into account.

- Similarly, the current business tax (levied on transactions) has become a heavy burden on the industry (the textile industry).
  - The report has made no mention of the issue in view of the fact that a switchover from the business tax to the value added tax system has already been decided upon and has only to be implemented.

- Cooperation is hoped for in efforts to promote exports to Japan (from the wooden furniture industry)
  - We suggested utilization of an assistance scheme of the Department of Export Promotion (DEP) of the Ministry of Commerce (also supported by Japan).

- We propose that the government and private industry cooperate in setting up a new training institution for nurturing a skilled labor force (the garment industry).
  - Although the report proposes utilization of existing organs, we commented that the establishment of a new institution with the cooperation of the private industry is worth considering.

- The industrial policy of Thailand, though learning from the "Korean type" or "Taiwanese type," will follow a course that is slightly different from either of them. (DIP, Planning Division)

CONCLUSION

CONCLUSION

1. Summary of Main Problems

1-1. Conversion from Import Substitution to Export Orientation

---

Thailand's manufacturing industries are a mix of coexisting export oriented industries, which have been undergoing rapid growth in the 1980s, and import substitution type industries, which have gradually developed since the 1960s. For the Thai industrial structure as a whole to switch over to an export orientation, it will be necessary to cut away the controls and protection remaining for the import substitution type industries and to proceed with liberalization of industries and allowance of free reign to the market mechanism.

It has been observed in overseas countries and areas that the promotion of manufacturing industries has been carried out by beginning with the aim of import substitution and gradually developing export oriented industry. Taiwan and South Korea in particular have been enjoying great success since the late 1950s and 1963 respectively, drawing attention from around the world by converting their industries to export-oriented businesses, something which has been cited by many economists.

To develop an import substitution industry, measures have to be taken to encourage and restrict investments on the one hand and on the other to limit imports through restrictions, high tariffs or exchange control and thus protect domestic industry. This means that it is necessary to protect the industries at home from competition with low-priced imports and to attain a production level counterbalanced with the domestic demand. Therefore, at this stage, government policies for the promotion of industries should be focused on "restriction" and "protection" rather than on "encouragement."

Generally speaking, import substitution industrialization starts with consumer goods. This is primarily because domestic demand for consumer goods exists there and secondly the production of raw materials and capital goods causes difficulties in terms of capital and technology. However, as the consumer goods import substitution industrialization advances, there will arise demand for raw materials and capital goods and obstacles regarding capital and technology will gradually be removed. This will give rise to a movement to switch from imports to domestic production. What causes this to materialize is secondary import substitution industrialization.

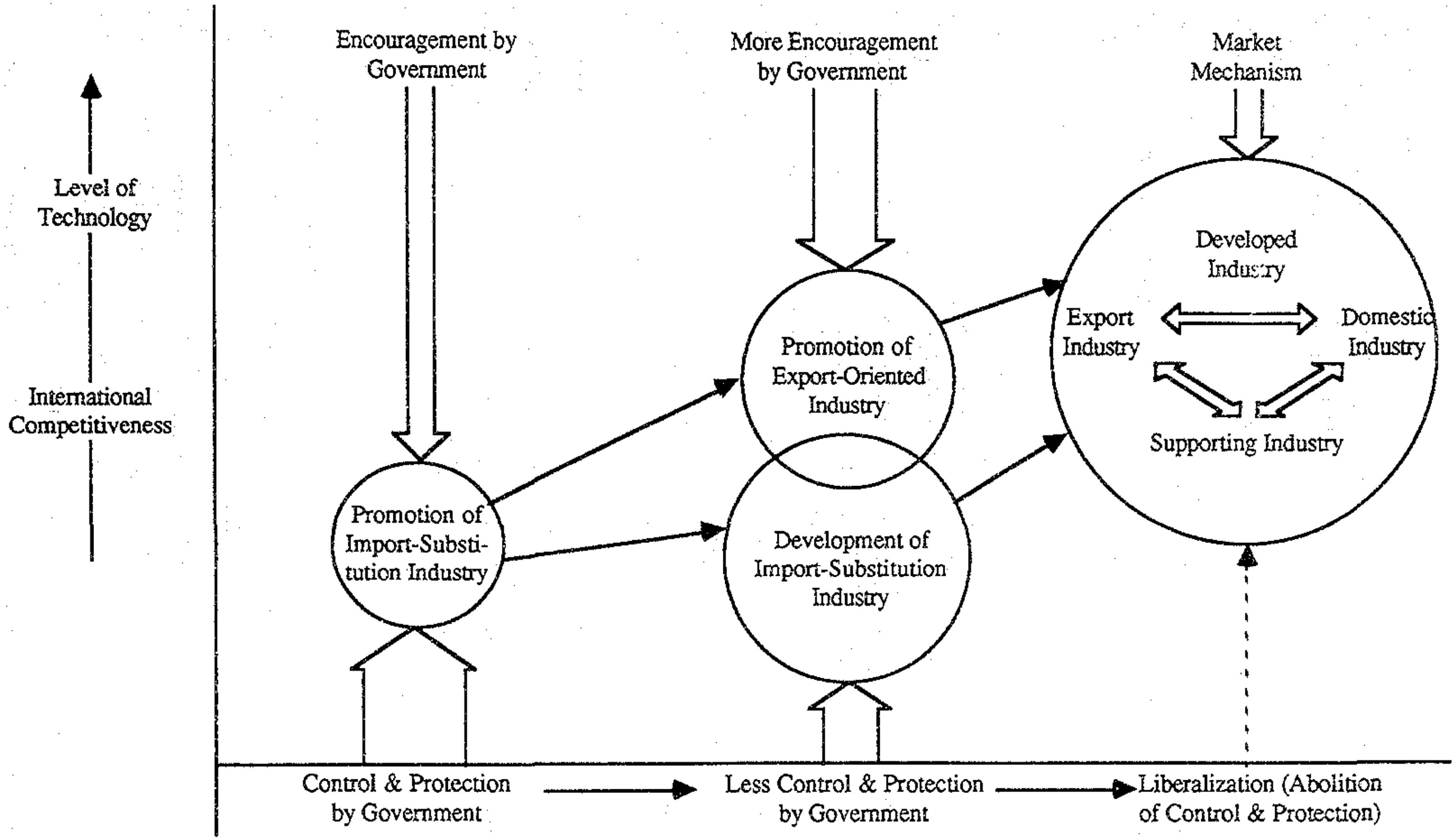
In the process of development toward export-oriented industry, the government is, in general, requested to strengthen encouragement for investment or to ease restrictions on investment. In other words, acceleration and liberalization of investment are required. At the same time, it is also necessary to alleviate import restrictions and high tariff policies or to advance "trade liberalization". By so doing, the industry is allowed to adapt to the market through free competition and it becomes possible to develop the international competitiveness necessary to join the world market. In a word, it is imperative that the government change its focus from restriction and protection to encouragement.

Converting industries from the import substitution type to the export oriented type is painful and can leave a trail of victims. For example, if equipment control is lifted, excessive production will be generated in the industry concerned, competition will intensify and sometimes excessive competition might even occur. If the import tariff on products is reduced, cheap imported goods will flow in and price competition with domestic products will heat up. This will create another problem in that the reduction of tariffs and the resulting reduction in the nation's revenue must be compensated for by some other means.

The change from import substitution industry to export industry signifies the liberalization of the various activities of industry and the introduction of the market mechanism. With this done, it is possible for the industry to become competitive internationally and to achieve success in the world market.

Established industries of the import substitution type have already accumulated some profits. To them it is foreseeable that the change in the type of industry, especially trade liberalization, will bring growing pains and even casualties. Accordingly, the industrial world often tends to defer the innovation it needs. However, the industrial and trade policies of Japan, Taiwan and South Korea have all historically proved that the sooner and the more boldly the change starts, the less painful it is and the fewer casualties are produced and the better the effects on the development of industry as a whole.Conversely, the greater the delay in conversion and liberalization, the greater the later pain and sacrifices. This is primarily because the existing profits of the import substitution type industries will be cut away or lost entirely.

Chart 1. Model of Transition from Import-Substitution to Export-Oriented Industry



1-2. Export Related Industries and Related Industries

In Thailand, there is insufficient linkage between the spinning, weaving, dyeing, and other textile industries, which grew as important substitution type industries starting in the 1960s, and the garment industry, which grew rapidly as an export oriented industry starting in the 1980s. The garment industry is relying on imported materials more and more. To strengthen this linkage, it will be necessary to proceed with liberalization of the textile sector and use of the market mechanism and to expand the midstream sectors of weaving, dyeing, etc., promote "converter" businesses, and stimulate an exchange of information among the concerned sectors.

Between two related or inter-dependent industrial fields, it often happens that one of them has completed the conversion to export orientation, while the other remains at the import substitution stage or a stage where it still cannot deal with the needs of an export oriented industry. In the case of the consumer goods industries, some industries have established "comparative superiority" in the world market by converting themselves to export-oriented types. However, their suppliers of raw materials, in many cases, have not reached the same level and remain in a state of "comparative inferiority."

In this case, the consumer goods industries have to depend a great deal on imports for their raw materials if they are to maintain their international competitiveness as domestic raw materials do not meet the standards for quality, variety and price. If they insist on using the domestic raw materials of "comparative inferiority," they stand a good chance of losing their competitive power. This situation can ultimately result in a distinct lack of the linkage between consumer goods industries and their domestic suppliers that should be established from the onset.

Industrialization of the nation should hopefully be developed by securing, as much as possible, a balance among all industrial fields concerned. For this end, as a certain industry develops its export capacity, it is required that related fields be guided to reach a level where they can deal with its needs or they too should be encouraged to change over to an export orientation. If this is achieved, those industries which have already developed into export industries can deepen their relations with their associated industries. They can also develop a consistent production from raw materials to consumer goods which will add more value to the products as a whole and secure "comparative superiority" in the world market, strengthening their international competitive power. For these purposes, the government is required, in its role in relation to industry, to switch over to policies of encouragement rather than restriction and protection and at the same time go ahead with the liberalization of economic activities and full use of the market mechanism..

Applying the above-mentioned points to the development process of the Thai textile industry, the following areas will be discussed.

(1) The textile sector (yarn, fabrics, dyeing, etc.) has been developing since the 1960s as an import substitution industry. At present, it still largely maintains the characteristics of such an industry with government enforced equipment controls and high tariffs on yarn, fabrics and so on. Here, the market mechanism linking the industry with the world market has not come into play yet.

(2) Accordingly, the yarn and fabrics industries have not reached "comparative superiority" except for some of their products. Neither have they fully converted themselves into export industries or supplied sufficient raw materials to the domestic export industries (garment industry).

(3) Due in part to the very low level of domestic demand for garments as consumer goods, there was almost no development of a garment industry even as an import substitution type. In the 1970s, a garment industry was finally established, but this was divided into two areas, one of which was to meet domestic demand and one which was aimed from the start at exports.

(4) In the latter half of the 1980s, the garment export industry attained a rapid growth as a result of fluctuating wages and floating exchange rates in Asian countries. Its exports have been increasing rapidly as well.

(5) However, as we have observed in the above, the textile sector is limited in its ability to supply raw materials to this industry because of problems in terms of quality, variety and price. Therefore the garment industry is becoming increasingly dependent on imported materials.

(6) Consequently, linkage between the textile and garment industries, in particular the supply relationship of textile materials to the garment sector, has not been fully established.

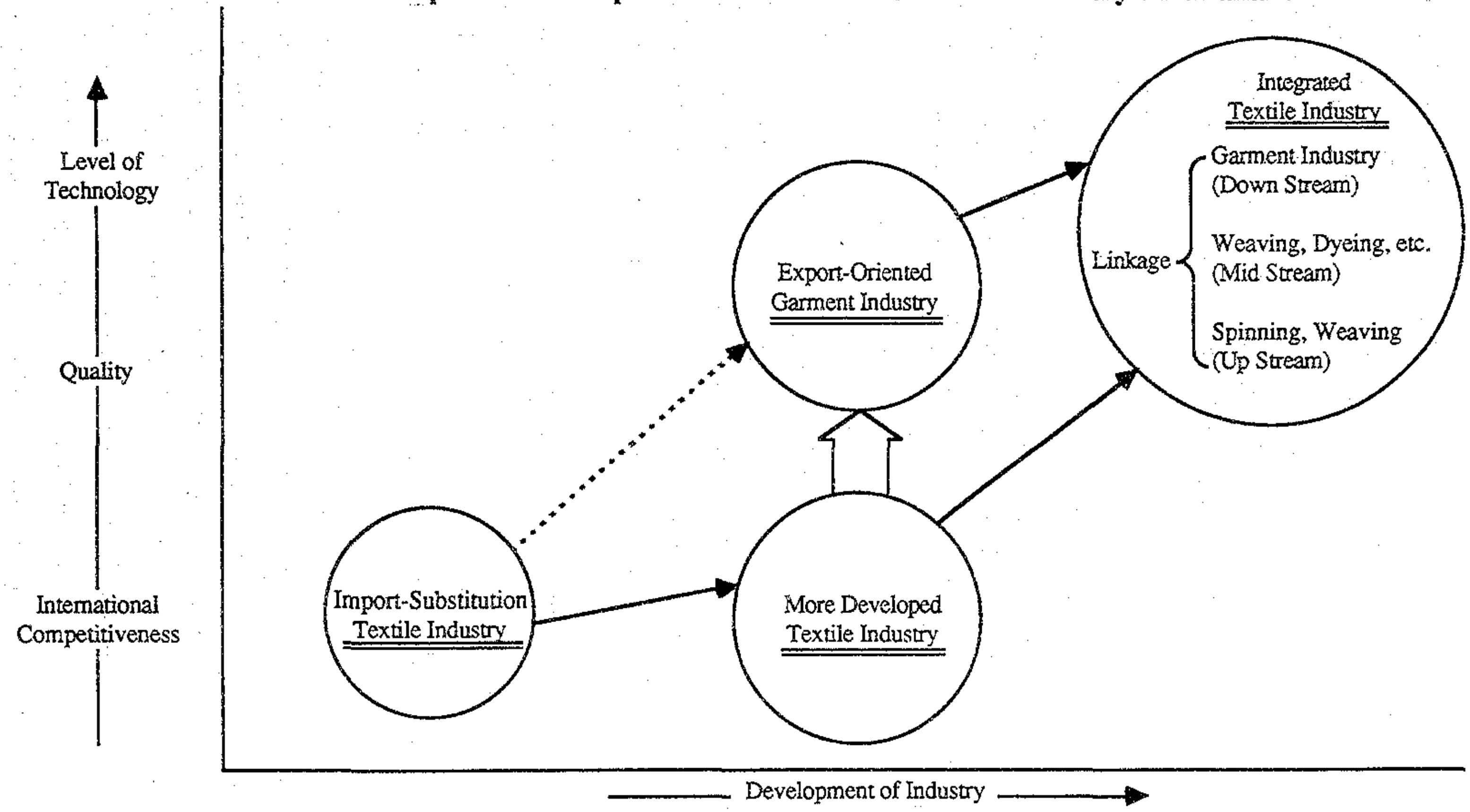
(7) Though the textile sector is improving its equipment and facilities with government permission, their major products are standard ones for the domestic market. It is the majority opinion that there has not been that much progress made in the point of supply of materials needed by the garment sector.

(8) In order to develop linkage between the textile and garment sectors, the enterprises involved with specified fabrics, dyeing, printing, finishing and other midstream sectors should be equipped with functions and capabilities to meet the demand

for garment materials. It is also necessary to develop "converters" which plan and develop materials and control the processing between the two. In today's Thailand, however, those functions and capabilities are not fully developed.

In order to further develop the garment industry as an export industry, it is desirable that the link with the textile industry be strengthened. To attain this, it is considered necessary to take steps toward liberalization and utilization of the market mechanism in the textile industry. It is also vital that there be a greater exchange of information between the two industries and that the functions and capabilities be improved (for example, by strengthening the dyeing sector and foster converters). This should invigorate the textile industry, helping it to develop into an export industry and become internationally competitive.

Chart 2. Expected Development of Textile & Garment Industry in Thailand



1-3. BOI Investment Incentives and Sectorial Industrial Policies

To achieve a switchover of existing import substitution type industries to export orientations and to develop the linkage which inherently should exist between the various industrial sectors, i.e., the correlation and relationships of mutual dependence, it is considered effective, and necessary, to adopt sectorial industrial policies, i.e., to devise comprehensive, limited time frame incentives and preferential measures for specific sectors, apart from the BOI investment incentives.

Today, many industries in Thailand are achieving the changeover from import substitution to exports. However, the degree of changeover in each industry and the pace of change naturally differ from one to the other and the gap between some is immense. Because of such differences, linkage between industries of the same kind or between closely related industries has not developed.

The BOI investment incentives have, particularly recently, played a great role in promoting export-related industrial development. Yet it cannot be said that they have played a sufficient role in helping to convert industries from import substitution to exports. This is because the investment incentives have, in designating "promoted industries", been applied to new investment projects of enterprises after stringent case-by-case examination. Their effects have not necessarily been felt by the industrial sector as a whole.

Nor have they played a sufficient role in deepening the linkage between the new export industries and the existing import substitution industries. On the contrary, in some cases, BIO investments have either broadened the gaps between the export industries who have been aided by them and other industries or even weakened the links between the two.

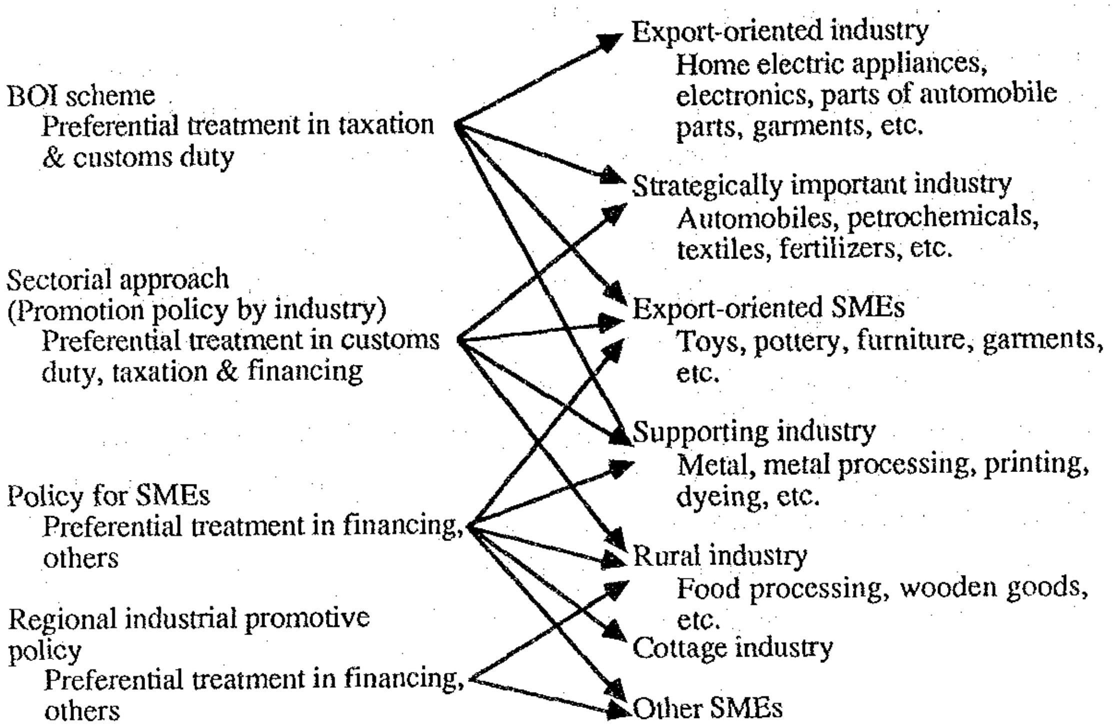
For the industrial development of the nation as a whole, it is important for each industry to make progress by strengthening linkage with its peripheral industries so that it can upgrade the level of the entire industry and enhance its added value as a whole.

To this end, political measures are required to promote the development of less developed industries and sectors, on the premise that liberalization and utilization of the market mechanism for the entire industry should be taken into consideration. This is one of the significant aspects of the "sector approach.", discussed in the first year report.

In other words, there is a need for industrial policies by sector to strengthen linkage between the rapidly growing export industries under BOI investment management and their peripheral relevant industries, making it possible to obtain a balanced development throughout entire industries. It is necessary to develop comprehensive policies for vitalizing encouragement for BOI investments, modernizing existing industries and strengthening their competitive power. These policies must be enforced in the sectors concerned including medium and small-scale enterprises. The basic direction should be toward encouragement, not restriction and protection, with the ultimate aim of liberalization and the introduction of the market mechanism.

As for the textile industry, which was included in the latest survey, here too it is necessary to apply industrial policies by sector to promote changeover from import substitution to exports. At the same time, in order to strengthen the linkage between the textile industry and the garment industry, it is necessary to prepare industrial policies, by sector, to develop the mid-stream sectors which includes special fabrics, knitting, dyeing, printing and finishing. Additionally, another policy should promote the development of converters which control the planning, developing and processing of the products in the sector. Further, a brisk exchange of information among the textile, garment, and peripheral industries would be a precondition to stronger linkage.

Chart 3. Industrial Policies in Thailand (4 types of approach)



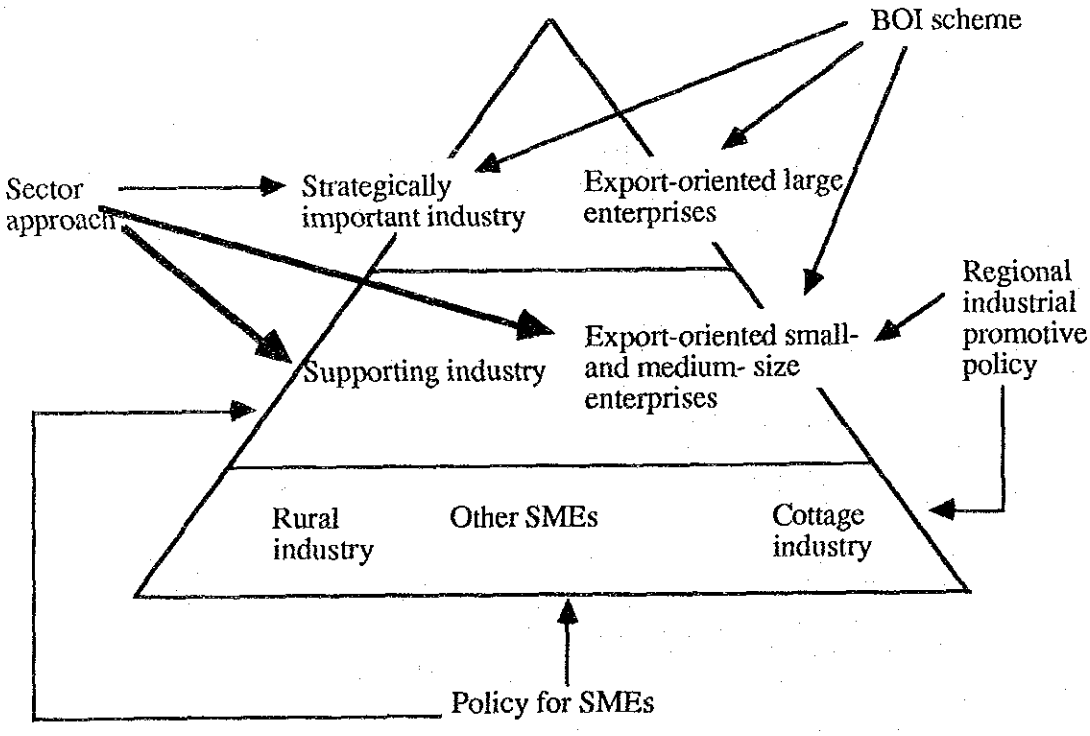
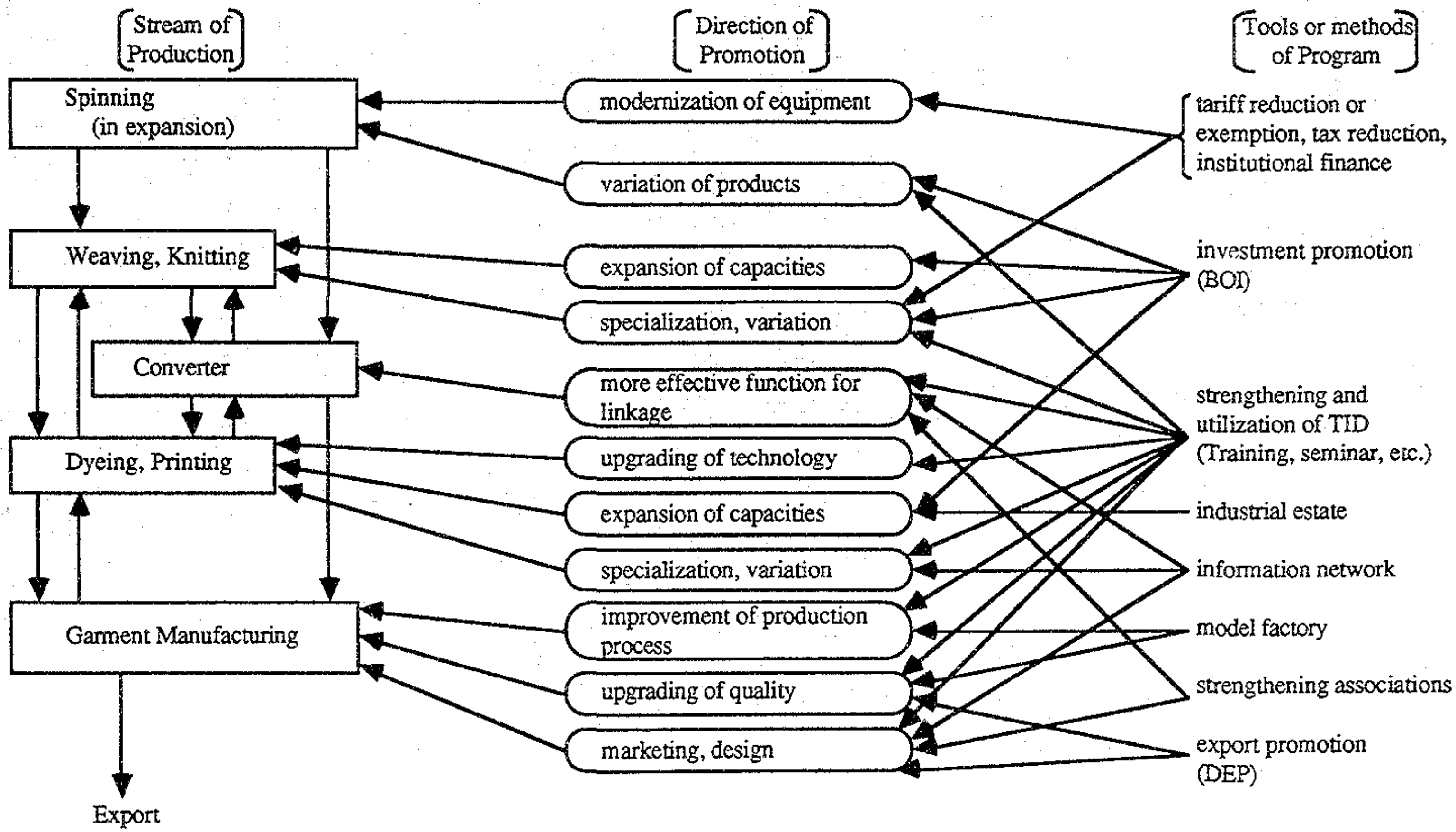


Chart 4. Basic Elements of the Program for the Textile and Garment Industry



1-4. Use of Domestic Resources and Export-Oriented Industries

---

For the development of export-oriented manufacturing industries using domestic resources, the supply of domestic resources to the export oriented industries in a manner linked with supply and demand on the world market and the market mechanism, that is, at least under the same conditions as with rival exporting countries, is essential. Therefore, the government should take responsibility and move its resource policies in that direction.

Making effective use of domestic resources, existing or produced, in the manufacturing industry, means that the results from industrialization can affect the natural resources industries (the primary industries) such as agriculture, forestry, fisheries, mining, etc. and result in higher added value for the entire economy and more employment.

On the other hand, natural resources, which are very significant for the nation's economy, are limited (for example fuel, timber, etc.) and therefore, the government, in many cases, controls their production or imposes stringent restrictions. In such cases, sales are carried out with national and political considerations rather than under free competition based on the market mechanism.

If, however, export industries are to use domestic resources, it is not possible to ignore supply conditions and prices of the same resources in foreign countries. That is, it is essential to supply resources to domestic export-oriented industries in a manner linked with supply and demand of the resources on the global market, i.e., the market mechanism.

For an export industry, it is important to be able to freely obtain the highest quality raw materials at a low price. Without this, the industry cannot maintain its competitiveness or develop in the midst of the free competition on the world market. Accordingly, the government, which controls, restricts and protects domestic resources, should be responsible for their supply in compliance with the international levels of quality and price.

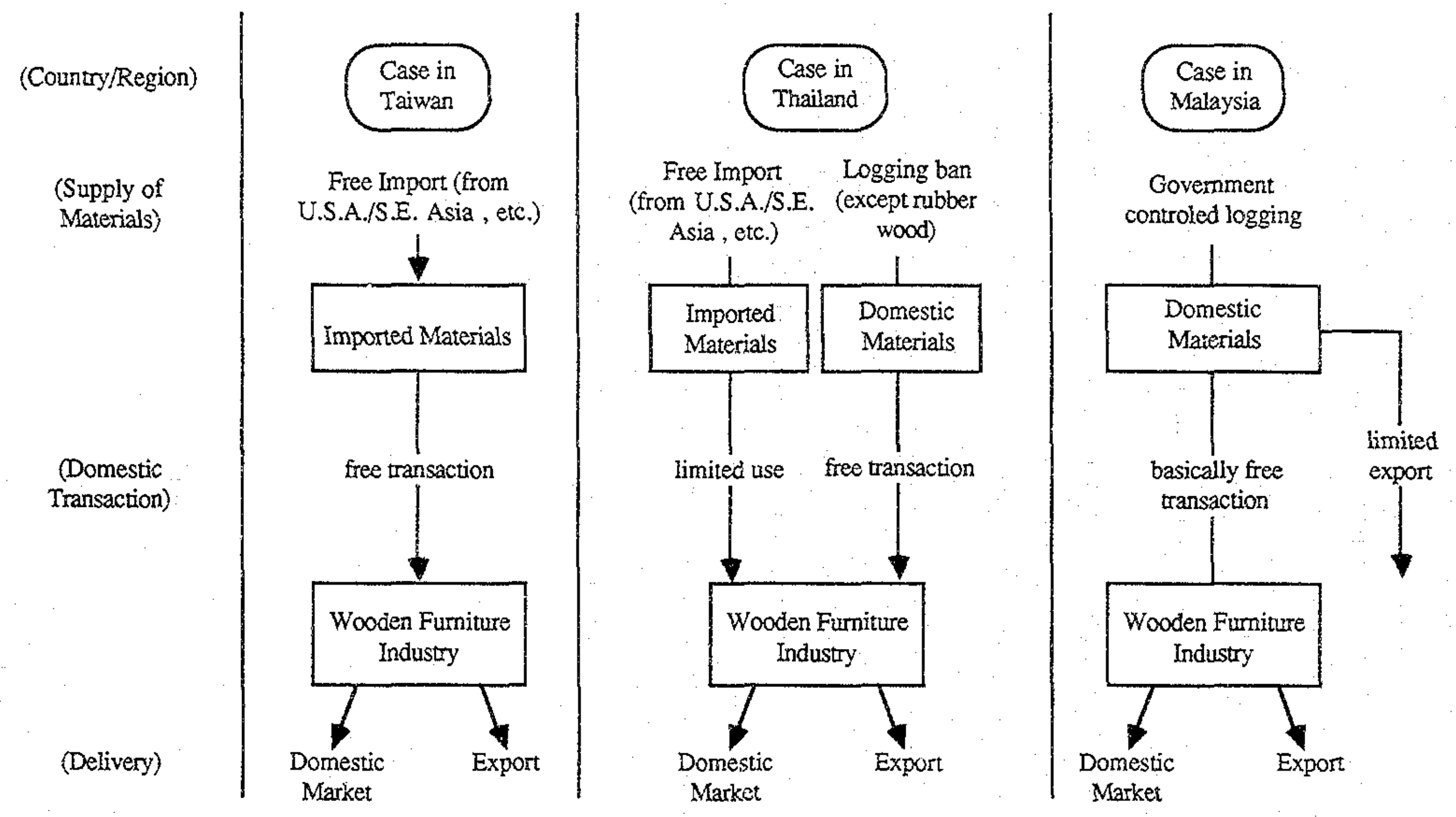
Thailand has been blessed with natural resources and there is plenty of scope to link them with rapidly developing export industries. To this end, it is recommended that supply be secured in line with the world market, by ensuring conservation and a stable supply of resources. It is considered imperative for export industries to obtain raw materials under the same conditions as their competitors and government policies should be developed in this direction.

Cotton is produced and supplied using the market mechanism, in general. However, taking into account that presently the supply of cotton is dependent mostly on imports and future increases in demand will result from the expansion of the textile sector, there is enough room to expand its production. To realize this, the profitability and stability of the cotton cultivation business should be raised without hindering the market by, for example, consolidating cotton storage functions in production and distribution. It is desirable that cultivation be made more attractive to the cultivators.

The wooden furniture industry in Thailand began by utilizing domestic wood resources. Today, however, the lumber resources at home, except for the use of rubber materials, have almost dried up. Accordingly, in order to maintain or develop it as an export industry, conditions must be created whereby the manufacturers of wooden furniture will be able to obtain foreign logs and lumber freely and on a constant basis.

To achieve this, it is required that imported logs and lumber be allowed to circulate freely in the domestic market which should work in line with the international market. Rubber materials, which are currently under government control, will also have to be allowed to circulate under the market mechanism. Furthermore, it is necessary to minimize, as much as possible, the differences in the purchasing conditions for logs and lumber for large-scale furniture makers and small and medium-scale enterprises by introducing "cooperative purchasing" and "cooperative sawing" etc.

Chart 5. Comparison of Wooden Furniture Industries



1-5. Designs and Brands in Industry

Designs and brands often play an important role in raising the added value in the garment, wooden furniture, and other consumer goods industries. For the labor-intensive consumer goods industry to cope with the challenge posed by the rise of lower wage countries and maintain its position as an export industry, it is important to raise the levels of quality, performance, ideas, and processing and to build up one's own design development abilities and brands.

The significance of design in industry has been pointed out frequently. Especially in the field of high-grade consumer goods used in daily life (garments, furniture, ceramics and so forth), design often plays a decisive role in commercial success.

Like design, brand also plays an important role in industry. A brand is a name which identifies a commodity and thus it is naturally linked with the product's quality and performance. But in the field of high-grade consumer goods, it has a closer connection with design.

The best example of the link between the two and industrial activities is observed in the Paris fashion business. As the traditional center of fashion, Paris has given birth to many world famous designers such as Chanel, Christian Dior, Pierre Cardin, Yves Saint Laurent and so forth. These names are used, as they are, as the brand name of fashion-related commodities (garments, leather, jewelry, cosmetics, etc.) which are sold in markets all over the world.

The design and brand arouse the interest of consumers, raise the image of commodities and could be factors in enhancing the added value of the commodity. The added value is produced by the quality, performance, degree of processing and the producer's concept, but as for high-grade consumer goods, the design and brand play more significant roles.

Though the garment and wooden furniture industries in Thailand are rapidly growing as export industries, the designs of their commodities are more or less supplied by their customers as are the brand names. Original designs by the makers are limited and original brands are even fewer. This is quite natural as these types of industries were introduced to Thailand from abroad for the purpose of transferring production bases.

However, the design and color sense of the Thai people are highly regarded. In the jewelry sector, some designers are already known in the world market. It is said that promising young designers in the textile industry are beginning to grow as well.

The Thai exporting industries are destined to compete with new rival industries such as Indonesia, China, India, Pakistan and so on. A key weapon for Thai industry in such a battle could be higher added value as a result of more refined designs and brand images as well as more advanced technology and higher quality.

Especially in the garment industry, the role of design and brand are paramount in enhancing the added value and strengthening competitiveness. With the higher selling prices which have resulted from improved quality and processing degrees, the role of design and brand will become even more significant.

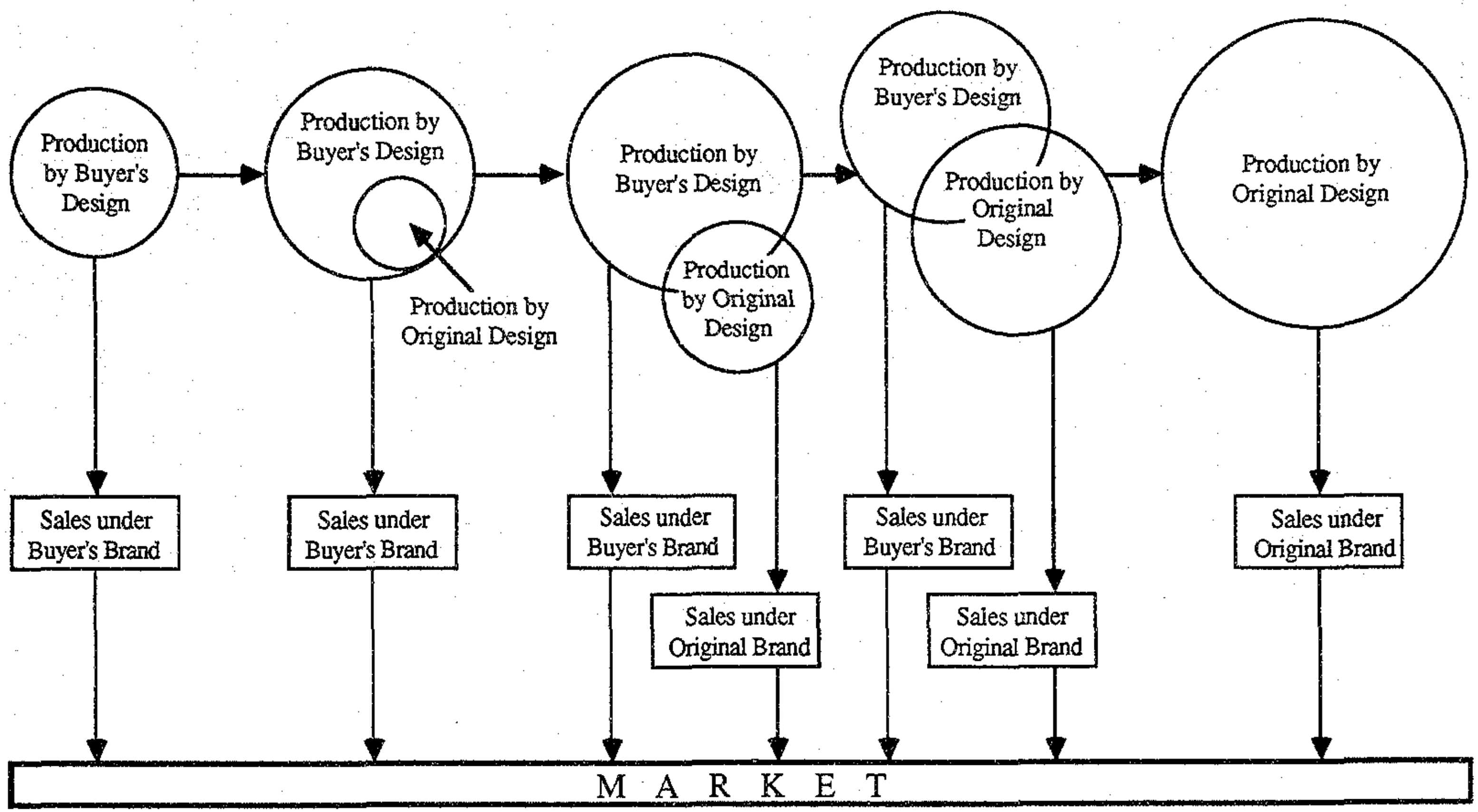
In Japan, the importance of design and brand in the textile and garment industries has been greatly recognized since the late 1970s. In "the new textile vision" determined by the Ministry of International Trade and Industry (MITI) in 1983, a direction to develop the textile and garment industries as a "fashion industry" was introduced and concrete promotion measures for it were also developed. It was around that time that JETRO held a large-scale apparel fair in New York.

Among the other Asian countries, Hong Kong and Singapore have made particular efforts to promote their fashion industries since the mid-1980s. Their major activities in this area have included holding fashion shows and contests and participating in overseas trade fairs with the assistance of their trade promotion organizations. Due to the fruitful results of those activities, they have produced designers and brands which are highly regarded in the world market today.

The role of design and brand image in the textile and wooden furniture industries is not small. Although textiles are not finished consumer goods, their design is still an important factor when they are used as materials for garments and interior goods. In wooden furniture, the role of design is enormous, to say nothing of the roles of its functionability, quality and degree of processing. The more refined the furniture, the more immense the role played by the brand.

It is an important factor for each exporting industry of consumer goods in Thailand to improve its design capabilities and to develop brand images based on them in order to compete with low-wage countries. To this end, it is not enough to foster designers and promote design development. To be effective, the contact areas between the design field and industry must be widened by consolidating design education, giving opportunities to designers to be active, and disseminating design information at the government and industry level. Before this, consumer goods industries should, it is important, be made aware of the importance of design and brand.

Chart 6. Possible Development Process of Garment Manufacturers



1-6. Sectorial Industrial Policies and the Role of Related Government Agencies and Industrial Organizations

---

In formulating and implementing sectorial industrial policies for the promotion of specific industrial fields, the sections and officials in charge of those sectors should be clearly designated in the government agencies in charge of those industrial fields, the relevant information concentrated there, and as much power be given to them as possible, so that they may take on the role as the centers of formation and implementation of the policies. Further, industrial organizations belonging to said sectors must maintain close contact with the sections and officials in charge and play a positive role in shaping the opinions of the industrial world.

Industrial policies by sector are designed to promote development in specified industries. In Japan, South Korea and Taiwan, "basic industries", "strategic industries" or "specified exporting industries" were often selected in the process of industrial development and supported by preferential treatment in the areas of finance, taxation or customs and by special conditions for the supply of raw materials and energy. The same measures have been employed in many cases of specified fields in the small and medium-sized businesses. There have been some cases of failure with these measures but there have been more cases of success.

One of the important premises for the sector approach is that a series of promotional measures must be taken for the specified industry for a certain limited period. This is because the key industries in every country are always changing as a result of the stage of development of the country's overall economy. Furthermore, it is considered that greater effects will be produced if a series of promotion measures are applied in a concentrated manner for a particular period.

Regarding the formulating and enforcement of industrial policies by sector, it is necessary to create a section in charge at the government office concerned. The officers of the section take responsibility for determining the policies and adapting them by constantly being aware of the current situation and problems.

To fulfill their duties, the section and officers should always have contact with industrial bodies, experts, key persons, etc., and work out promotion measures and tackle implementation. They should also keep in contact and exchange views with related government organizations (especially the Ministry of Commerce or the Ministry of

Finance). Officers should also be required to have basic knowledge of various fields and to learn how to devise plans regarding finance, taxation, customs and so on. On the other hand, the upper sector in the ministry should make efforts to let the officers, to whom they grant power as much as possible, collect relevant information.

In the case of Japan, some sections, by industry or by commodity, are created within MITI. Their services are summarized as follows:

1) Drafting of plans, regulations and administrative measures regarding the production, circulation, sales and trade of the industries and businesses concerned (or commodities concerned).

2) Development and promotion of the technology regarding the industries and businesses concerned

3) Establishment of industrial standards.

4) Promotion of trade

5) Fulfillment of international agreements.

6) Approval of acts of the industrial bodies concerned

7) Establishment and management of inspection systems

Corresponding to the institutions and functions of the government, the private sector concerned should also play a certain role in the decisions concerning and embodiment of industrial policies by sector. In doing this, the industrial organizations or associations should represent themselves to communicate, exchange opinions and negotiate with the government section and its officers.

The industrial organizations consist of legally established ones and informal ones, some of which aim at economic or political purposes but some of which are only for socializing.

In either case, however, when the government extends its assistance to the development of a specified industry in compliance with an industrial policy by sector, there will also arise significant roles and responsibilities for industrial organizations which belong to the industry.

Looking at the cases of Japan, the Republic of Korea and Taiwan, it would have been impossible, it is said, to enforce their industrial policies without the help of the respective industrial organizations.

The role played by industrial associations in the decisions regarding and embodiment of the industrial policies by sector are as follows:

1) Gathering information and opinions from the member enterprises and coordination among these enterprises.

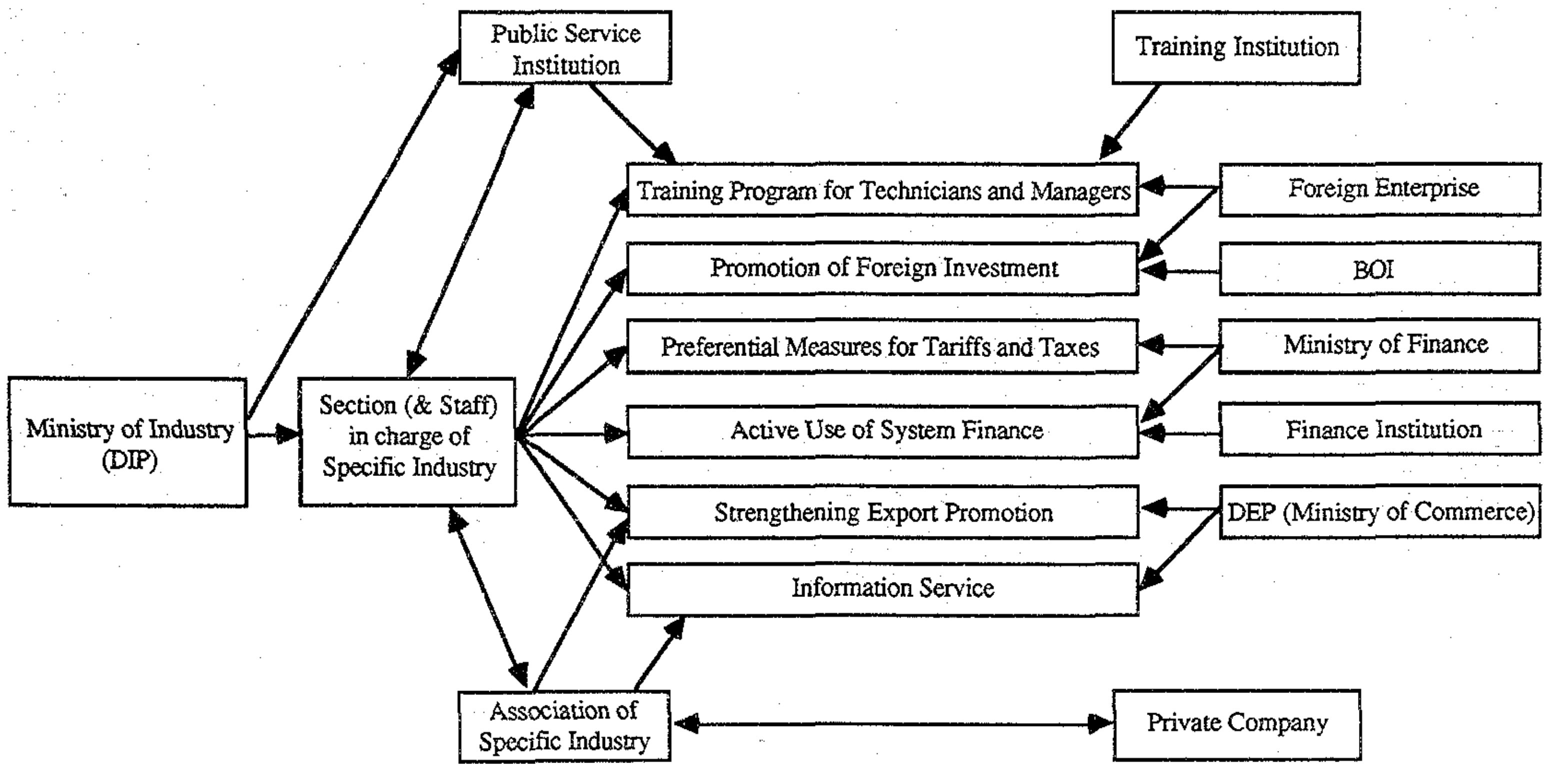
2) The exchange of information and opinions with the government offices in charge and coordination with the offices.

3) Dissemination and public relations activities concerning information necessary to their enterprises.

4) Communication and exchange of information and opinions with relevant government organizations, industrial associations and foreign industrial bodies, etc.

5) Planning and execution of necessary actions the associations may have to take.

Chart 7. Roles of the Section and Staff for Specific Industrial Sector Policy



1-7. Use of Public Organizations for Industrial Promotion

When a public organization provides services to private companies in the field of industrial activities, frequent use is made of the principle of having the beneficiaries bear the costs of the services according to their ability to pay. This enables the public organization to secure independent fiscal resources and replace equipment or strengthen its staff freely at its own discretion. This in turn leads to greater activity of the organization and enables it to shift to to a semigovernment "third sector" or to profit making through a shift to independent accounting not requiring official subsidies.

In a free economy, industrial activities basically depend on private industry. However, there are many cases in overseas countries, where, due to industrial promotion or other reasons, public organizations render services for private enterprise.

Service activities rendered by public organizations, although differing between countries, are in general as follows:

* Education and training of engineers, skilled labor, managers and so on.
* Research development, technology development, experimental production.
* Establishment of standards and criteria.
* Inspection of the quality and performance of products, approval and certification of inspection results.
* Collection and presentation of information and data.
* Offers of public funds.
* Granting permits and approvals and carrying out surveillance of how the law is enforced

Generally speaking, at an early stage of industrialization, public organizations are established with government funds and services are rendered either free of charge or at a low cost. The focus of the services is concentrated on education and training in the field of technology.

In the developing stage, due to the addition of various services for industrial promotion, the scope of the services expands to include, for example, setting standards and criteria, inspecting materials and goods, collecting and offering information, etc. At this stage, in addition to government funds, private funds are often collected in the form of membership fees, inspection fees and rental fees, for the purpose of extending services. Collecting appropriate fees from the beneficiaries for public services is regarded as "the benefit principle" and it is adopted in many countries.

At almost the same stage, organizations are often established on the initiative of private industry for the purpose of the common benefit of the members. In some cases, public funds assist these organizations, but whatever the case, service organizations operate as "independent accounting units" and perform their services autonomously.

In Japan, many of the public organizations collect self-supporting funds such as membership fees, inspectio. fees, rental fees and so on, which are then spent for the expansion of equipment and facilities or the improvement of the services. There are also many cases where private initiative launches public service corporations which offer services to the public.

The public organizations under the Thai Ministry of Industry are maintained and operated by government funds in almost all cases even today. Therefore, it is not easy for them to replace or modernize their equipment or expand their staffs to meet with the growth of industry. For this reason, in more than a few cases, the public service organizations can no longer meet the needs of the industrial world with their services.

Even assuming that the public organizations makee their users bear part of their expenses, those payments in general are counted as government revenue and not used directly for the expenses of the public service organizations themselves. Therefore, the public organizations currently have no interest in increasing their revenues.

The public services in industry should be improved and expanded along with industrial development. To realize this, it is often necessary to expand and renew equipment and facilities and to increase the number of staff, which is not managed, in many cases, by public funds only.

In this case, if private enterprises are assumed to share some of the benefits of the requested funds, it would be effective to adopt the self-paying principle. This is because public organizations themselves try to obtain independent funds by rendering good services and strive to improve their equipment and facilities and staff. In short, the self-paying principle is often effective for the vitalization of public organizations.

It is also possible for public organizations, as government organizations established by government funds or with overseas assistance, to introduce step-by-step the principle of having the beneficiaries of their services bear their expenses along with the development of the industries covered by their services, the accompanying rise in the ability of the beneficiaries to pay, and the need for expanded services. In this regard, it would be possible to select any one of the following measures"

1) Convert the government organizations themselves to "attached organizations" or "independent organizations",

2) Convert the government organizations to "semipublic organizations" and then to "private organizations",

3) Create "user organizations" outside of the government organizations and have funds pooled there and expended as necessary, and

4) Have industrial organizations function as the above-mentioned "user organizations".

Chart 8-1. A Model of the Development of Public Service Institutions

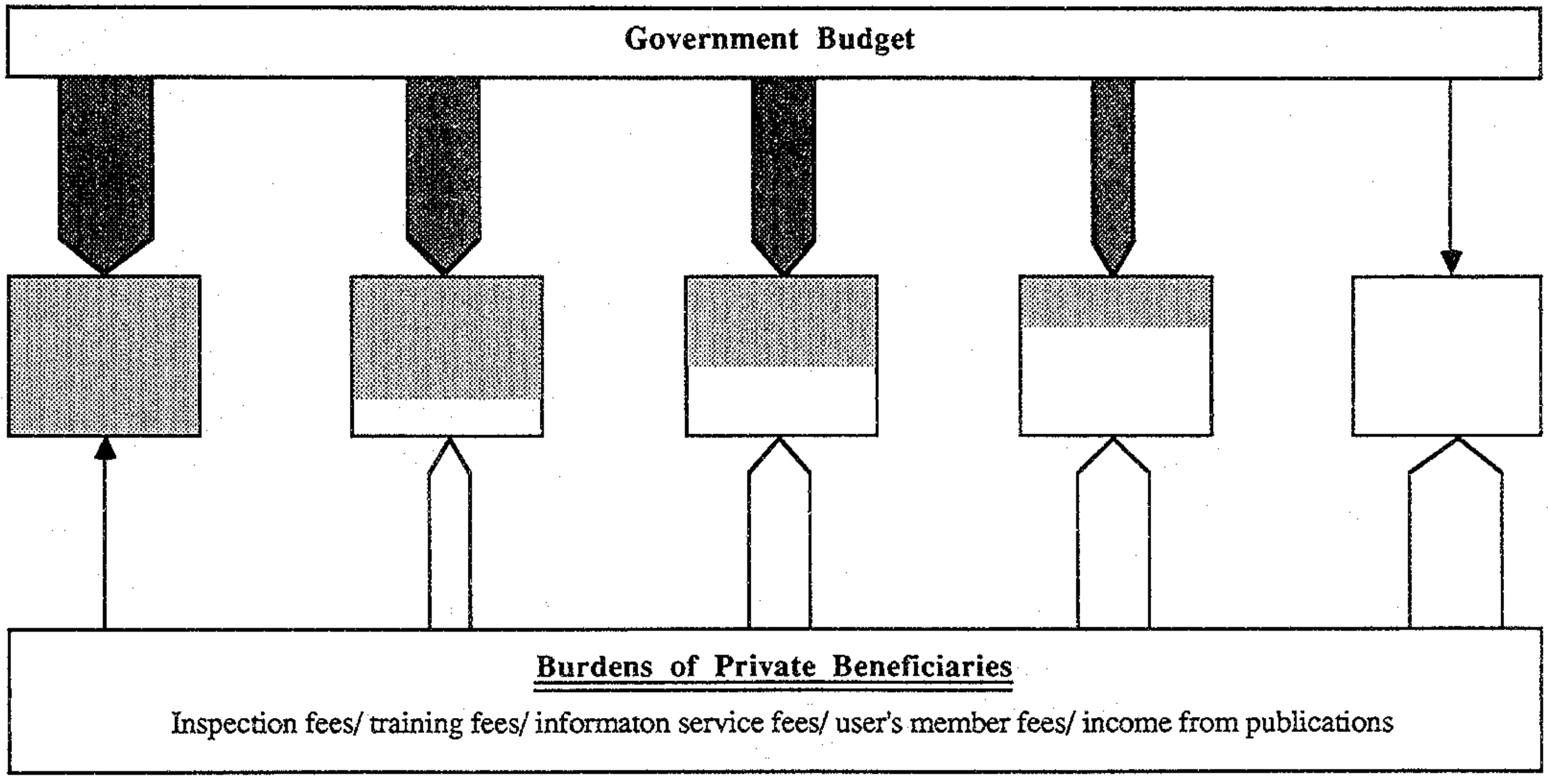


Chart 8-2. A Model of the Development of Public Service Institutions - Case B.

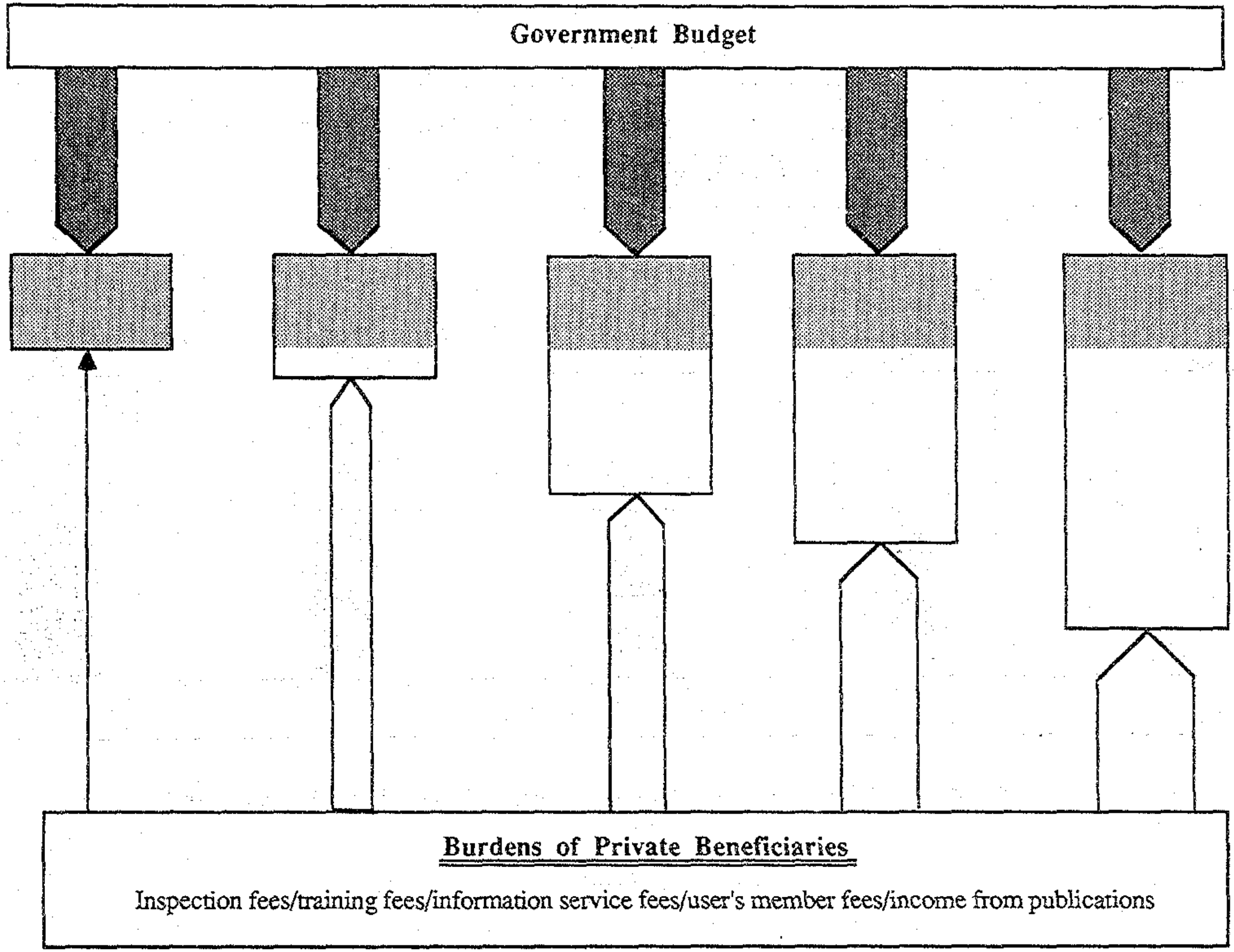
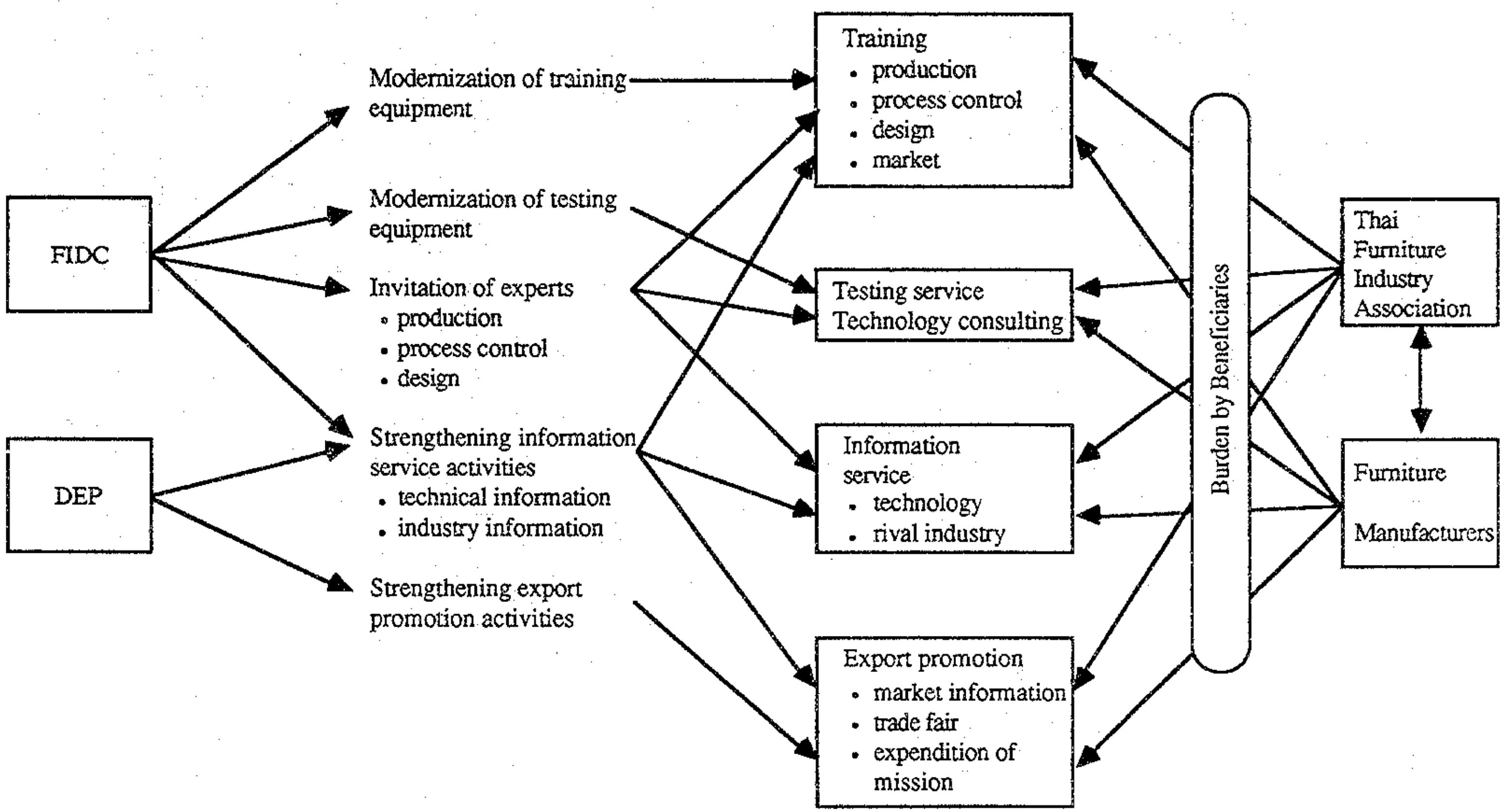


Chart 9. Expected Utilization of FIDC



2. Examination of Countermeasures

2-1. Textiles

2-1-1. Summary of Problems and Countermeasures

Structurally, the Thai textile industry features the characteristics of an import substitution industry, a remnant from the start of the industry in the 1960s. Partly due to this, monopolistic systems are evident in the upstream sector, particular the synthetic fiber materials and spinning stages. These features lead to the high domestic price of yarn and woven fabric and to the insufficient volume, quality, variety, etc. of materials supplied to the garment sector.

As a possible countermeasure for all of this, it is considered necessary in the medium and long run to ease restrictions on facilities and lower duties on yarn and woven fabric so as to enable the market mechanism to work. Before this is done, however, the most urgent necessity is the promotion of investment in the midstream sector, in particular the production and processing of garment materials, including promotion of foreign investment and joint ventures. For this, flexible application of BOI investment incentives would be necessary.

In terms of facilities, the massive buildup of facilities in the upstream sector (spinning) now underway poses fears of an imbalance between the capacities of facilities in the upstream and midstream sectors (weaving, dyeing, printing, etc.) Further, throughout the upstream and midstream sectors, facilities lean toward production of standard items. These are matters for concern from the viewpoint of the supply of materials for garment production.

Further, the monopolistic systems in the upstream sector, the policy of high tariffs on machinery, yarn, and woven fabrics etc., and the lack of prospects for the future, have resulted in companies having a strong tendency to pursue expansion of the volume of their production, expecting only a short-term profit. This has led to slow modernization of facilities and will pose a major problem in the future from the viewpoint of international competitiveness.

As a countermeasure for this, it will first be necessary to lift restrictions on facilities in the midstream sector, in particular weaving, knitting, printing, etc., and promote investment in those fields. Along with this, to promote replacement and modernization of textile machinery, it would be considered effective to establish specific promotion measures.

As to problems in technology and information, a major problem is posed by the lack of up-to-date specialized technology and know-how in the midstream sector (weaving, dyeing, etc.) Further, the lack of a converter function linking the upstream, midstream and downstream sectors may be said to be due to the "lack of 'soft' technology". Further, the shortage of engineers and skilled laborers, a problem similarly seen in numerous industries, is serious in the textile field. An overall lack of information in the midstream and downstream sectors is also an important problem in the textile industry.

A possible countermeasure for these problems in technology would first of all be promotion of foreign investment and joint ventures in the midstream sector. Along with this, it would be effective to promote foreign investment and the establishment of joint ventures etc. for the promotion of companies with converter functions as well. Of course, improvement of the education and training provided at vocational schools, the TID, etc. would also be important.

To deal with the problems in information, it is considered necessary, for example, to stimulate the exchange of information in the midstream and downstream sectors through the formation of an information network, the publication of journals, etc.

Regarding the TID system and functions, first there is the problem that the functions are spread out over too many fields. The next important problem is that there is a shortage of training and inspection machinery and equipment and what there is is antiquated. Further, there is a shortage of instruction and inspection staff and also a shortage in terms of budget and operation expenses.

To eliminate the problems, breathe new life into the TID, and ensure its effective use, it would first be necessary to select key functions of the TID and then strengthen and improve those functions. It would be important to replace and modernize the machinery and equipment for the selected functions and then to improve the content of the services. Further, it is considered necessary to strengthen the collection and provision of technical information and improve training and seminars. Judging from the current state of the textile industry, it is believed to be unavoidable that the principle of the beneficiaries paying for the series of services offered by the TID be introduced and that through this a sufficient financial foundation be built to enable securement of operation costs and flexible replacement of equipment.

In addition to this, in terms of the infrastructure of the textile industry, there are the problems of water supply and waste water in the dyeing and printing sectors. Regarding this, it may be pointed out that the lack of knowledge about water supply and waste water is a widespread problem. Further, fears over shortages of water supply, which already exist, pose a problem which cannot be overlooked. Another major problem for the future is the fact that the heavy fund burdens for water treatment are dampening corporate investment in the dyeing and printing sectors, which Thailand wishes to improve.

As a countermeasure for these problems, first, consideration may be given to the strengthening of training and seminars at the TID and industrial organizations so as to disseminate information regarding water supplies and waste water. In the medium and long run, it will be necessary to establish public industrial water supply and waste water facilities. It would be effective to provide low-interest financing for water treatment facilities to companies making new investments. However, judging from the importance of the dyeing industry in Thailand in the future, the most effective measure probably would be to promote the establishment of industrial estates for dyeing which are provided with a water supply and waste water treatment infrastructure.

Finally, there are several important problems regarding overall policies for the textile sector. One is the lack of a future vision of the industry. This causes apprehensions in the private sector concerning the future. One reason for this is that the industry has inherited the old import substitution type industrial policies and even today has remnants of controls and protective measures. Further, problems have spawned from this, including the imbalance among textile sectors. This problem is now beginning to manifest itself and is an important one for policy makers.

To deal with these problems, it will be necessary for the government and the private sector to deliberate and come out with a long term development policy covering both the textile and garment sectors and to formulate a future image (vision) of the industry. This vision must be formulated in a way promoting liberalization and the action of the market mechanism. Further, it will be important to ease the existing restrictions and protective measures step by step and in line with the vision and to give advance warning of the schedule for this. The report in a survey of the British garment market that "Thailand has yet to escape from its protectionist image" speaks of the need for this.

Comparing Thailand with key rival producing nations, there are marked differences in the linkage between the midstream and downstream sectors. In Korea, the majority of the garment materials are supplied domestically. The same is true for Taiwan. Hong Kong produces only a little material domestically and imports the majority of it, but improvements in the processing stage after the midstream sector have resulted in the formation of a desirable linkage.

Thailand imported 15.0 billion bahts worth of yarn and woven fabrics in 1987 while exporting 36.0 billion bahts worth of garments. Further, a look at 1987 shows that the rate of increase in exports of garments (77 percent over the previous year) was paralleled by a rate of increase in imports of yarn and woven fabric (56 percent). This proves the lack of linkage in Thailand and stresses the need for improvement of the situation.

Table 1. Main Problems and Countermeasures: Textiles

Item	Problems	Possible Countermeasures
Industrial Structure and Market	• Remnant of characteristics of import substitution type industries • Monopolistic system in upstream sector (in particular man-made fibers) • High domestic prices of yarn and woven fabric • Insufficient supply of materials to garment sector (in quantity, quality, and variety)	• Easing of restrictions on equipment and lowering of tariffs on yarn and woven fabrics (medium and long term) • Promotion of investment (foreign investment and joint ventures) in midstream sector (in particular production and processing of garment materials) • Flexible application of BOI investment incentives
Equipment	• Imbalance between upstream (spinning) sector and midstream (woven fabric, dyeing, etc.) sector after increasing installation • Preference toward production of standard items • Delay in modernization of equipment	• Lifting of restrictions on equipment in midstream sector (in particular weaving and knitting) and promotion of investment there • Measures to promote replacement and modernization of textile machines (exemption from restrictions on equipment, temporary abatement of import duties, preferential treatment in taxation and financing, etc.)
Technology and Information	• Lack of updated specialized technology and skills in midstream (woven fabric, dyeing, etc.) sector • Lack of converter functions • Lack of engineers and skilled laborers • Lack of information concerning mid and downstream sectors	• Promotion of foreign investment and joint ventures in midstream sector • Promotion of companies with converter functions (including attraction of foreign investment and promotion of joint ventures) • Expansion of education and training at technical schools, TID, etc. • Active use of foreign experts and roving guidance by industrial organizations • Stimulation of exchange of information (for example, formation of information network)
TID System	• Insufficient and antiquidated machinery and equipment for training and testing • Insufficient guidance and testing staff • Insufficient budget and running fee	• Selection of main functions of TID and strengthening and expanding of same • Replacement and modernization of machinery and equipment • Strengthening of collection and supply of technical information • Expansion of training and seminars • Introduction of principle of costs borne by beneficiaries
Infrastructure	• Insufficient knowledge about water supply and wastewater • Fears of insufficient water supplies • Heavy fund burden in water treatment in dyeing sector	• Strengthening of training and seminars at TID, industrial organizations, etc. • Establishment of public water supply and sewerage facilities • Low interest financing for water treatment related facilities • Establishment of industrial estate for dyeing
Institution and Policies	• Lack of vision for future • Remnant of controls and protective measures • Imbalance between textile sectors	• Formation of medium and long term vision covering both textile and garment sectors (in direction of positive use of market mechanism) • Step-by-step easing of restrictions and protective measures (medium and long term)

2-1-2. Examination and Summary of Countermeasures

Countermeasures for problems in the textile industry were examined and broken down into three groups: 1) basic policies, 2) TID functions, and 3) education and training. In examining these, we took into consideration the fact that many garment manufacturing countries are sourcing the majority of their materials from within their own countries.

Regarding 1) basic policies, the most important tasks at the present time are quick expansion of facilities, particularly in the midstream sector (particularly for weaving, knitting, dyeing, printing, etc.), and promotion of investment and technical transfers leading to production of diverse garment materials of a good quality.

Among the series of countermeasures, there are two important points: easing or scrapping of restrictions on facilities and promotion of investment and joint ventures in the midstream sector. Further, it is necessary to reduce import duties on textile-related equipment and parts and to offer tax and financial incentives to promote modernization of machinery and equipment in the textile sector overall. Further, promotion of companies provided with "converter functions" which help to strengthen the linkage of the upstream sector and the mid-stream and downstream sectors should be emphasized.

In the survey of the U.S. market, garment buyers gave as an important requirement for the garment exporting country "how much material it can supply domestically". This is due to the importance of being able to react quickly to changes in market trends. The ability to supply materials is necessary in forming a good image as a garment exporting nation.

On the other hand, the need to establish a clear image of the future for the textile industry as a whole should be reconfirmed. For this, formulation of a "vision for the textile industry", which sketches what the textile industry (including garments) will ideally be like after five and 10 years, is essential. Along with the same, it will be necessary to draw up a schedule for the easing or scrapping of restrictions and protective measures, the reduction of tariffs on yarn and woven fabrics, etc. In this regard, the cases of Korea and Taiwan, whose industries grew through conversion from the import substitution type to the export-oriented type, are useful references. In the field of textiles, the Asian NIEs, followed by the ASEAN nations, China, and India and further Turkey, Portugal, Latin America, Eastern Europe, etc., are making rapid inroads into the world market, and thus there is not a great deal of time left for strengthening Thailand's international competitiveness.

Further, as indicated in the results of the survey in Hong Kong, improvement of the supply of materials to the garment industry tends to mean larger benefits to the midstream sector than to the upstream sector in the textile industry. It should be confirmed that the Thai textile industry is fated to head in that direction too.

On the other hand, in order to lighten the burden of investment in water treatment in the dyeing and printing industries, it is important to enlarge water supply and waste water facilities through public investment or to promote the establishment of "industrial estates for dyeing". Toward this end, industrial water supply and waste water systems should be established, and feasibility studies on the formation of industrial estates should be made as soon as possible to promote the construction of industrial estates by the IEAT or private concerns.

As a measure for the revitalization and use of the TID (Textile Industry Division), it would be effective to select the three functions of training, inspection, and information as key functions and to expand and strengthen the same. To make this possible, stress was laid on the need to promote the augmentation and modernization of training and inspection facilities and equipment. It will also be necessary, on the one hand, to augment the inspection function and, on the other hand, to strengthen the training in skills and technology in the midstream sector, in particular special fabrics, dyeing, printing, etc. Further there is the need for introducing the principle that the burden of costs is to be borne by the beneficiaries and that services should carry charges, through cooperation with industrial organizations etc. Charges are paid for these types of services in many cases in Japan, Korea, Taiwan, etc. In particular, there are quite a few public organizations among the inspection organizations which are self-supporting.

In addition, there is the need for augmenting textile-related departments in the universities and textile-related courses in the vocational schools, and securing the necessary teachers and instructors is a precondition of this. Moreover, active use should be made of private sector experts to assure the provision of teachers or instructors.

Table 2. Examination of Countermeasures: Textiles

Topic	Possible Countermeasures	Specific Countermeasures	Details
Basic policies • Quick improvement of facilities in midstream sector (in particular, weaving, knitting, dyeing, printing, etc.)	• Easing or scrapping of restrictive measures on facilities by government	• Easing of restrictions on facilities	• Take necessary action after examination at TIDC
	• Step by step lowering of tariffs on yarn and woven fabrics	• Reduction of tariffs (yarn and woven fabrics)	• Same as above (however, precondition is formulation of vision)
• Promotion of investment and technical transfers leading to production of diverse types of garment materials of good quality	• Promotion of investment and joint ventures in mid-stream sector	• Flexible application of BOI investment incentives • Promotion of investment and introduction of companies for joint ventures	• Dispatch and receipt of investment missions and introductions of companies for joint ventures and tieups
	• Lowering of tariffs on textile-related equipment, components, dyes, etc.	• Tariff rollbacks (equipment, components, dyes, etc.)	• Appeals to the Ministry of Finance
• Replacement and modernization of facilities in upstream (spinning etc.) and midstream sectors	• Promotion of replacement and modernization of machinery and equipment through extension of tax and financial incentives	• Formation of detailed measures for sector promotion • Active use of institutional financing	• Formulation of sector-wise promotion measures and application of pressure on Ministry of Finance etc. for making them a reality
	• Lightening of burden of investment into water treatment in the dyeing and printing industries through the augmentation of water supply and wastewater facilities by public investment or the promotion of establishment of industrial estates for dyeing.	• Establishment of industrial water supply and wastewater systems • Construction of industrial estates by IEAT or private interests • F/S studies on establishment of industrial estates	• Establishment of environment for promotion of investment and joint ventures in dyeing and printing sectors • As the next step, promotion of investment (covering possibility of investment from NIE's)
• Strengtheing linkage within textile and garment industry	• Promotion of companies with "converter function" helpful in strengthening linkage of upstream sector and midstream and downstream sectors	• Holding of seminars • BOI investment incentives • Promotion of investments and introduction of companies for joint ventures	• Raising of awareness of need for converter functions and enticement of companies and promotion of joint ventures • Promotion of technical transfers in "soft" fields
• Formulation of vision for textile industry	• Sketching of what textile industry (including garments) should be like five and 10 years from now	• Preparation of schedule for easing and scrapping of restrictions and protective measures	• Formulation of vision through consultations between government and industry and preparation of schedule for realization of same
TID (Textile Industry Division) • Selection and strengthening of key business and functions (for example, training, inspection, information, etc.)	• Augmentation and modernization of training and inspection facilities and equipment	• Augmentation and modernization of facilities and equipment	• As part of rehabilitation of TID, combination of arrangement of materials and invitation of experts
	• Augmentation of inspection functions	• Fostering of inspection experts	• Augmentation of TID training and inspection functions, establishment of association of users, and

Table 2. Examination of Countermeasures: Textiles
(Continued)

Topic	Possible Countermeasures	Specific Countermeasures	Details
	• Strengthening of training of skills and technology in midstream sector (in particular special fabrics, dyeing, printing, etc.)	• Strengthening of technical training at TID • Fostering of instructors • Holding of seminars and workshops	rehabilitation through introduction of principle of payment for services by beneficiaries
	• Strengthening of collection and provision of information	• Augmentation of information activities • Publication of textile information journal	
• Insufficient budget and running funds	• Augmentation of services such as inspection, training, and information supply and charging for same (introduction of principle of beneficiaries paying for services)	• Invitations to organization experts • Preparation and realization of charging system • Establishment of users association	• Application of pressure on Ministry of Finance etc. for realization of special fund
• Promotion of cooperation with related industrial organizations	• Strengthening of cooperative relations with Department of Export Promotion (DEP) of Ministry of Commerce (in particular regarding collection of overseas information)	• Strengthening of cooperation between DIP and DEP	• In particular, seeking cooperation of DEP in collection of overseas information for publication of afore-mentioned information journal
Education and training • Improvement of level of technology throughout all fields of textile industry	• Augmentation of textile related departments in universities and textile related courses at vocational schools	• Application of pressure on Ministry of Finance and other related ministries	• Promotion of plans now underway for augmentation of universities
• Augmentation of education and training for engineers and skilled workers	• Securement of teachers and instructors	• Promotion of use of private experts • Engagement of experts at private level	• In medium and long term, promotion of research and development in textile and polymer fields (obtaining cooperation of TID).

2-2. Garments

2-2-1. Summary of Problems and Countermeasures

One of the problems in the industrial structure of Thai's garment industry is, as has already been made clear in the section on the textile sector, the large limitations in the area of procurement of materials, that is, the high reliance on imports and the high price of domestic products. Next, it is important to note that garment exports fall under the export quota system of the MFA (Multinational Fiber Agreement), which blocks free expansion of exports. Further, the lack of converter functions in Thai industry is believed to have led to the aforementioned limitations in the procurement of materials. In addition, most small and medium sized companies still cannot convert to export orientation and the garment sector still does not have enough subcontractors. As a result, it is not easy for Thailand to enlarge its production capacity. Another problem that may be pointed out is that Thai companies are not sufficiently specialized.

Countermeasures for this situation include, first of all, basic policy measures such as the easing of restrictions on facilities, the lowering of tariffs and the promotion of investment in the midstream sector, as already mentioned in the section on the textile industry. To deal with the MFA quota system, it will be necessary to promote exports of nonquota items in nonquota markets. Also important will be the promotion of converter functions and the stimulation of exchanges of information among textile-related sectors. Further, it will be necessary to strengthen export training, seminars, and business introductions for small and medium sized enterprises. For promotion of sewing subcontractors, these are considered effective for expansion of production capacities.

In the area of facilities, two facts stand out: Medium-sized and smaller manufacturers have much antiquated machinery remaining and have few specialized machines overall. Further, medium-sized and smaller manufacturers lack sufficient maintenance personnel for their machinery. This may be considered a major problem.

To deal with these problems, it will be necessary, particularly for replacement and modernization of facilities and machinery, to temporarily reduce or waive import tariffs for sewing machines. Further, with regard to capital investment, it would be effective to provide special measures for promoting small companies and subcontractors. On the other hand, it is considered necessary to augment education, training and seminars at vocational schools, industrial organizations, the TID, etc. to secure and build up maintenance personnel for the machinery.

Regarding production activities and technology, one may first point to the problem of the lack of a training function for garment production in the TID (Textile Industry

Division), which is the only public service organization for the textile industry. This leads to problems such as the unfamiliarity of the industry as a whole with the basics of production control and process control and to the overwhelming shortage of engineers, technicians, and pattern makers. Relating to this point, it was pointed out that there was still much room for improvement in the quality of garments made in Thailand and that the loss on personnel expenses was large in most companies, i.e., work efficiency was poor.

As countermeasures for this, the addition of a training function for garment production to the TID would be essential. Further, it will be necessary to augment education and training in the vocational training centers and vocational schools with regard to garment production. In particular, it would be desirable, if possible, to switch the courses in dress making, which are common in public and private vocational schools, over to courses in industrial production. In relation to this, it would be effective to build a "model factory" for providing practical training and practice and to use the same for visiting inspections and training. For this training and practice, it would be essential to secure the requisite instructors. Consideration should be given to the use of private experts for this. Further, strengthening of the collection and provision of technical information by the TID could be expected to be effective as a countermeasure for this.

Regarding marketing and export promotion, the large number of companies among present-day Thai garment manufacturers which are satisfied with subcontracting for foreign buyers will be a large problem in the future. In relation to this, almost all manufacturers still rely on foreign buyers for designs and brands, so there is the problem of insufficient awareness of designs and brands. Further, there is a shortage of designers for handling such activities. Another major point is that there is insufficient information about foreign markets to enable promotion of design activities in this industry.

To resolve these problems, it would, for example, be necessary to strengthen the collection and provision of information regarding foreign markets and the training, seminars, etc. on exports. Similarly, it would be effective to have Thai garment companies positively participate in overseas exhibitions. To raise the awareness of designs and brands, it should be beneficial to offer frequent measures of encouragement.

In relation to industrial policies, there are fundamental problems such as a "lack of future vision" and "insufficient linkage with the textile industry", just as pointed out with regard to the textile industry. One of the main reasons for this is clearly the lack of exchange of information among related sectors. Further, in relation to this point, it may be pointed out that the Thai garment industry at the present time still relies solely on "cheap wages" and therefore there remain apprehensions over future competitiveness. Still further, in relation to government, one cannot overlook the lack of involvement of the TID in the garment sector.

As a countermeasure for this, it would first be necessary to formulate a medium and long range vision, just as mentioned in relation to textiles. Further, it would probably be effective for the government to tackle the promotion of converter functions and stimulation of exchanges of information. Also, a training and information function for garments should be added to the TID and made use of. This should be one of the essential actions taken by the government.

Regarding the current state of the garment industries of rival countries, Korea and Taiwan are also hampered by the tough quota allocations of the U.S. and are suffering from the rise in the value of their currencies on the foreign exchange market, soaring wages, etc. Thus they are continuing to shift their production capacities overseas (in particular, to Southeast Asia). Hong Kong, more flexibly, is moving its production capacity to Southeast Asia, China, etc., while Hong Kong itself is changing in nature to a center for midstream sector processing, marketing, etc. In the future, whether or not the Thai garment industry can handle a large portion of the work of the production bases moving southward will be the key to its development.

The garment industries of Korea, Taiwan, and Hong Kong are pouring efforts, with government support, into the improvement of product quality and added value and the establishment of design development capabilities and brand images. However, this type of development assumes as a precondition long years of development of human resources and for this reason alone results are not expected to come easily. In the future, Thailand will be pressured from below by low-wage countries such as China and Indonesia and the Thai garment industry will probably have to begin work on the development of human resources quickly.

Table 3. Main Problems and Countermeasures: Garments

Item	Problems	Possible Countermeasures
Industrial Structure and Market	• Large restrictions on procurement of materials (high import dependence) and high prices • Export quota system under MFA (Multilateral Fiber Agreement) • Lack of converter functions • Insufficient conversion of medium and small businesses (to export orientation) • Underdeveloped state of subcontractors • Insufficient specialization	• Easing of restrictions on equipment in textile sector, reduction of tariffs, promotion of investment in midstream sector, etc. • Promotion of exports of nonquota items and to nonquota markets • Fostering of converter functions and stimulation of exchange of information • Reinforcement of training, seminars, and business introductions for exports for small and medium sized enterprises • Buildup of subcontractors in sewing on local level • Training and seminars for specialization
Equipment	• Large numbers of antiquidated machinery remaining • Small number of specialized machines • Insufficient machine maintenance personnel	• Temporary abatement of tariffs on imports of sewing machines, institutional financing of capital investment by small and medium enterprises, lease system for subcontractors, etc. • Expansion of training and seminars at schools, industrial organizations, TID, etc.
Production Activities and Technology	• No TID functions for training in garment production • Unfamiliarity with basics of production and process management • Insufficient engineers, technicians, and pattern makers • Still large room for improvement on quality • Large loss in personnel expenses (poor work efficiency)	• Expansion of education and training at technical schools, TID, etc. • Designation of "model factories" and use of same for improvements, teaching by example, and training • Reinforcement of training and guidance by active use of private experts • Reinforcement of collection and supply of technical information at TID
Marketing	• Large number of companies satisfied with subcontracting for foreign buyers • Insufficient awareness of designs and brands • Insufficient designers • Insufficient information on overseas markets	• Collection and supply of information on foreign markets and reinforcement of training, seminars, etc. on exports • Promotion of participation in overseas exhibitions • Training and seminars to raise awareness of designs and brands • Incentives for training of designers • Formation of fashion street in Bangkok (medium and long term)
Institution and Policies	• Lack of vision for future • Underdeveloped linkage with textile industry • Insufficient exchange of information with related sectors • Remaining unease about future competitiveness • Insufficient role of TID in garment sector	• Formation of medium and long term vision (in common with that for textiles) • Promotion of converter functions • Stimulation of exchange of data • Reinforcement of training and information functions of TID (on garments)

2-2-2. Examination and Summary of Countermeasures

Countermeasures for problems in the garment industry were examined and broken down into five groups: 1) basic policies, 2) TID, 3) education and training, 4) export promotion, and 5) others.

Regarding 1) basic policies, there is a need for strengthening of the linkage with the upstream and midstream sectors and toward that end the promotion of companies with converter functions, just as in the examination of measures for the textile sector. A more important issue in this sector, however, is the expansion of the production capacity for garments. For this, pushing forward with promotion of small and medium sized garment companies and a subcontracting system, including those on the "local level," is important.

Further, as a specific measures for this, active use of institutional financing for promotion of small and medium sized companies, training and seminars in the fostering of a subcontracting system and further technical training on garment production at the local level would be effective. Still further, in promoting small and medium sized enterprises and a subcontracting system, maintaining the level of technology and quality while expanding production capacity is also important.

The garment industry requires relatively small initial investment and further production technology can be acquired in a relatively short term. Thus persons or enterprises with very small, small, or medium capital can relatively easily begin businesses in it. Further, demand in the markets of the advanced nations has been becoming more individualistic and diversified in recent years and, in this sense, small and medium sized enterprises are said to be increasingly superior due to their ability to handle small lots. In actuality, the garment industries in the key garment producing nations of the world developed due to the activities of small and medium sized companies rather than large ones. Even today, the small and medium sized companies form the mainstream of the industries.

The Thai export garment industry is currently based on large sized companies, but to promote activity in the industry, to enable a rapid increase in productivity, and to strengthen competitiveness, promotion of small and medium sized companies and, further, the promotion and active use of subcontractors, will be highly important.

For the same reasons, garment production is relatively easy to develop in rural farming regions far away from the major metropolitan areas. Thailand faces the problem of overconcentration of the population in Bangkok and has made regional economic development a national project. In view of this situation, the development of garment production activities on the local level would be extremely meaningful. However, this would assume, of course, the preparation of the necessary infrastructure and the promotion of sufficient skilled workers, engineers, and other human resources.

The TID (Textile Industry Division) should be given a training function with respect to garment production. Further, introduction of the principle of beneficiaries paying for services through cooperation with industrial organizations, establishment of a charging system, etc. is essential. In this regard, the possibility of using the method of establishing a users' association should be considered.

Regarding education and training, it is urgent to raise the overall level of technology and augment the education and training of engineers and skilled laborers. Toward this end, there is a need to augment and strengthen education and training at every stage, e.g., vocational schools, dress making schools, vocational training centers, etc. In particular, development of human resources for process control in garment production is an urgent task.

To develop human resources, it would be effective to augment and strengthen garment courses at vocational schools and dress making schools and to establish "model factories" for garment production at vocational schools or vocational training centers. Further, it would be necessary to secure sufficient teachers for this, but experts from the private sector could be used for this.

However, there are several different ideas regarding the most suitable way to split training for production of garments among the TID, vocational schools, dress making schools, vocational training centers, etc. In particular, there are doubts regarding the cooperation of dress-making schools in industrial training.

Regarding designs and brands, the most important thing of all is to make the garment industry aware of the importance of designs and that with this awareness, it will be possible to seek cooperation in the fostering of designers. Specific measures for promotion of designers might include education and training at vocational schools and the establishment of incentives for fostering designers, such as holding design contests and giving winners cash prizes and opportunities for overseas study. In this regard, full consideration should be given to the fact that in the garment markets of advanced nations like the U.S. and the U.K., overall demand is moving in the direction of greater individuality and diversity.

In addition, raising companies' interest in exporting, even those with no prior experience in it, augmenting provision of overseas information, etc. are important. Also, sponsoring "Thai Fashion Weeks" in key foreign markets with the cooperation of the silk, jewelry, and other industries and creation of a "Fashion Street" in Bangkok (together with silk products, jewelry, etc.) would be effective in improving the image of Thai fashion.

Surveys in the markets of third countries such as the U.S., U.K., and West Germany showed that Thailand already has a reputation for "supplying good quality products", but Thai garments still often have the image of being "cheap and crude". This is extremely significant. It is essential that only high quality products be exhibited.

Note that when examining countermeasures for the textile and garment sectors and summarizing the same, quite a few common problems were appeared, such as the lack of linkage between related sectors and the functions of the TID. Therefore, it was judged that when formulating a program it would be suitable to consider the textile and garment sectors together.

Table 4. Examination of Countermeasures: Garments

Topic	Possible Countermeasures	Specific Countermeasures	Details
Basic policies • Strengthening of linkage between upstream and midstream sectors	• Promotion and strengthening of companies with "converter functions"	• BOI investment incentives • Promotion of investment and introduction of companies for joint ventures	• Common problem with textiles
• Expansion of garment production capacity	• Promotion of small and medium sized garment companies • Promotion of subcontracting system	• Active use of institutional financing for promotion of small and medium sized companies • Training and seminars for promotion of subcontracting system • Training of skills for garment production at local level	• Maintaining level of technology and quality while increasing production capacity through promotion of small and medium sized companies and subcontracting system (including at local level)
TID (Textile Industry Division) • Selection of key business and functions	• Strengthening of training and inspection functions	• Buildup of instructors and inspectors (engagement of experts and dispatch of trainees)	• In particular, strengthening of training function for production control and process control for garments and reeducation of engineers
• Expansion and strengthening of training function (in particular for garment production)	• Expansion of seminars and training courses • Introduction of principle of beneficiaries paying for services	• Expansion and modernization of traiing and inspection machinery • Strengthening of training functions • Detailed structuring of charging system	
• Promotion of cooperation with industrial organizations	• Strengthening of collection and provision of information (publication of "textile information journal", strengthened cooperation with DEP, etc.)	• Strengthening of information activities • Issuance of journal	• Together with textiles (issuance of journal for both textile and garment industries)
• Insufficient budget and running funds	• Expansion of services and charging for same	• Introduction of principle of beneficiaries paying for services • Strengthening of cooperative relations with industry • Establishment of users association	
Education and training • Overall improvement of level of technology	• Augmentation and strengthening of garment courses at vocational schools (including dress making schools)	• Strengthening of pressure to related ministries, vocational schools, etc.	• Augmentation of education in skills for "industrial production" of garments
• Augmentation of education and training for engineers and skilled workers	• Establishment of "model factories" for garment production in vocational schools • Securement of teachers and instructors	• Fostering of instructors (engagement of experts and dispatch of trainees) • FS for establishment of model factories • Use of private sector experts as instructors	• Fostering of skilled workers for production control and process control

Table 4. Examination of Countermeasures: Garments
(Continued)

Topic	Possible Countermeasures	Specific Countermeasures	Details
• Raising of awareness of designs and brands	• Incentives for promotion of designers	• Sponsoring of design contests • Cooperation with garment industry • Dispatch of trainees	• Raising awareness of importance of design in garment industry and seeking cooperation for training of designers
Export promotion • Raising interest in exports	• Holding seminars on garment exports, designs and brands, etc.	• Engagement of experts and holding of seminars	• In particular, promotion of exports of domestically oriented small and medium sized garment manufacturers
• Augmentation of provision of overseas information	• Strengthening of information provision activities (including publication of journal)	• Strengthening of cooperation between DIP and DEP	• Raising of awareness of garment industry with respect to designs and brands
• Raising of image of "Thai fashions"	• Strengthening of export promotion activities of DEP	• Participation in trade fairs and dispatch of missions (DEP)	• In particular, promotion of exports by small and medium sized garment manufacturers
		• Sponsoring of "Thai Fashion Weeks" in key foreign markets with cooperation of silk, jewelry, and other industries	• Addition of "improvement of fashion image" to activities of DEP
Others • Improvement of production control and process control technology	• Designation of factories of private companies as "model factories"	• Technical guidance by TID • Engagement of experts at private level • Active use of institutional financing (SIFO)	• Active use of training of TID, vocational training schools and model factories
• Raising image of "Thai fashions"	• Creation of "fashion street" in Bangkok (together with silk products, jewelry, etc.)		

2-3. Wooden Furniture

2-3-1. Summary of Problems and Countermeasures

What the Thai wooden furniture industry needs above all is a supply of lumber resources. The shortage in domestic resources is already becoming a large problem. This has been accompanied by rising prices of materials in some cases and by the ensuing difficulties in acquisition of supplies. Another problem, it may be pointed out, is the large gap between large companies and small and medium sized companies in their acquisition of materials and in their processing technology.

To deal with these problems, it is considered important to promote research and development for the development of technology for utilization of rubber wood, to improve sawing technology, disseminate the same, and thus help raise the level of quality of rubber wood for furniture use and increase supplies. In the future, Thailand will be increasingly relying on imported lumber, so it will be necessary to promote imports of logs and lumber and the liberalization of domestic transactions. Further, to facilitate procurement of materials by small and medium sized furniture manufacturers, consideration should be given to promotion of joint imports of logs and lumber and joint sawing operations.

Note that in the Asian nations and regions, Korea and Taiwan are poor in domestic lumber resources and have developed their export furniture industries through reliance on imported lumber. In this regard, Thailand is envisioned as going through a process of development similar to that of Taiwan. Further, in recent years, the majority of the furniture wood imported by Korea and Taiwan has been from the U.S.

Regarding facilities, a major problem is the slowness of small and medium sized companies in modernization. The shortage of drying facilities for wood in small and medium sized companies similarly is becoming a problem in terms of the improvement of quality. Further, the small and medium sized companies are noticeably late in introducing specialized automated machinery and this is seen as blocking the improvement of productivity. The failure of small and medium sized companies to properly store and polish their cutting tools is also a problem requiring improvement.

To resolve these problems, first it is necessary to promote the replacement and modernization of woodworking machinery. For this, it is considered effective to reduce or waive import tariffs , make active use of institutional financing, etc. Further, the establishment of joint drying factories by small and medium sized companies without drying facilities would be an effective measure. For the small and medium sized companies, it is considered advantageous to provide training and seminars on woodworking machinery and its operation.

As to problems in technology, it may first be pointed out that small and medium sized companies are unfamiliar with the establishment of production lines. Further, they have low levels of process control and quality control. This is a problem due to insufficient personnel to raise these levels. Still further, small and medium sized companies generally lack awareness of strength and the ability and knowledge for drafting. These problems, it is certain, derive from the shortage of the engineers and skilled workers necessary for the production of wooden furniture.

Therefore, to resolve the problems, it is necessary to augment education and training in universities and vocational schools. At the same time, however, it would be effective to raise the level of existing engineers and skilled workers to augment and strengthen the training and seminars at the FIDC, industrial organizations, etc. Further, to improve the level of technology and secure export markets, it is considered effective to promote tie-ups and joint ventures with foreign companies.

Regarding marketing, most Thai wooden furniture manufacturers have insufficient knowledge and information about foreign markets. Along with this, a lack of product specifications and design capabilities has been pointed out. Further, the lack of effort to sell to foreign markets is another point requiring improvement in the future.

As countermeasures for these problems, first, consideration may be given to strengthening the collection and provision of information on foreign markets by the DEP, FIDC, and other public organizations or the furniture industry association and the like. Along with this, it should be effective to augment training and seminars. Also, it would probably be effective to augment education, training, and seminars on product planning and design. Other effective actions for promotion of exports could be to promote small and medium sized companies.

By way of note, in Korea, the Korean Federation of Furniture Industry Associations is scheduled to participate, with government support, in furniture fairs in West Germany, France, the U.S., Taiwan, and Japan in 1989. Further, it is scheduled to send missions to Southeast Asia, China, and Eastern Europe.

As problems in the system and functions of the FIDC, the shortage and outdatedness of training and inspection machinery may be pointed to. Similarly, a problem is posed by the shortage of technical instructors and inspection staff. At the root of this is a shortage in the budget and running expenses, making replacement of equipment and improvement of services hopeless.

To deal with these problems, it would first be necessary to try to replace and modernize the training and inspection machinery. The augmentation of training courses aimed at small and medium sized companies will also become a major issue. To do these things and revitalize the FIDC, it will be essential to introduce the principle of beneficiaries paying for the services.

Regarding supporting industries for furniture, there are problems such as high prices for adhesives, paints, etc. and a lack of good quality metal fittings. Means to deal with these problems would include reduction of tariffs for these items or promotion of foreign investment and joint ventures in these fields.

In terms of industrial policies, there is a major problem in that it is unclear right now what direction Thailand will be moving in in the future in terms of resource policies, the import and distribution of lumber, etc. In this regard, the government will have to clarify its policies for promotion of wood products which have high degrees of processing and added value.

Table 5. Main Problems and Countermeasures: Wooden Furniture

Item	Problems	Possible Countermeasures
Industrial Structure	• Insufficient domestic resources • Rising prices of raw materials and difficulties in acquisition • Large gap between large companies and medium and small ones	• Dissemination and raising of level of technology for use of rubber plant scraps • Promotion of imports of logs and lumber and liberalization of domestic trade • Joint import and joint lumber making by small and medium sized furniture makers
Equipment	• Delay in modernization of equipment (in small and medium enterprises) • Insufficient drying facilities (") • Delay in introduction of automated specialized machines • Unfamiliarity with storage and grinding of cutting tools	• Promotion of replacement and modernization of wood working machines (abatement of import duties, use of institutional financing, etc.) • Joint drying plants of small and medium sized enterprises • Training and seminars on woodworking machines and their operation
Technology	• Unskilled setting of production lines • Low level of process control and quality control and insufficient human resources • Insufficient awareness of strength • Insufficient drafting capabilities and knowledge	• Expansion of education in universities and technical schools • Expansion and reinforcement of training and seminars at FIDC, industrial organizations, etc. • Active use of private experts • Promotion of cooperative agreements and joint ventures with foreign enterprise
Marketing	• Insufficient knowledge and information on foreign markets • Insufficient capabilities in product planning and design • Lack of efforts to sell to foreign markets	• Reinforcement of collection and supply of information on overseas markets • Expansion of training and seminars on above • Expansion of education, training, and seminars on product planning and design • Participation in foreign trade fairs • Establishment of a common exhibition hall for exports
Functions of FIDC	• Antiquidated machinery for training • *Insufficient technical guidance staff* • Lack of budget and operating costs	• Replacement and modernization of machinery for training • Improvement of training courses for small and medium sized enterprises • Introduction of principle of costs borne by beneficiaries
Supporting Industries	• High prices of adhesives, paints, etc. • Poor quality of domestic metal fittings	• Reduction of tariffs • Promotion of foreign investment and joint ventures
Institutions and Policies	• Lack of clarity on resource policy and measures concerning import and distribution of lumber	• Clarification of policies for promotion of wood product industries involving high degrees of processing and added value • Restrictions on exports of lumber with low degrees of processing

2-3-2. Examination and Summary of Countermeasures

Countermeasures for problems in the wooden furniture industry were examined and broken down into five groups: 1) basic policies, 2) FIDC (Furniture Industry Development Center), 3) education and training, 4) export promotion measures, and 5) others.

Regarding 1) basic policies, two points are important: securing a stable supply of lumber and raising the level of technology of small and medium sized furniture manufacturers. Regarding the former, it would be effective for political measures to be taken to increase trade with nearby countries and also for investment by lumber businesses or sewing factories to be promoted in nearby countries. Also, to facilitate the acquisition of materials by small and medium sized furniture manufacturers, the promotion of joint imports of logs and establishment of joint lumber mills and joint drying factories by small and medium sized furniture manufacturers should be considered. In relation to this, Malaysia has established an industrial estate for furniture in Selanggor which has begun joint lumbering, joint drying, etc. for furniture manufacturers.

In addition, it would be effective to promote research and development with government support so as to improve the quality of parawood lumber, the quality of which still remains varied.

To raise the level of technology of small and medium sized furniture manufacturers, it would be advantageous to promote joint ventures and technical tie-ups with foreign furniture manufacturers in addition to general training. At that time, further, tie-ups of a form leading to technical guidance by foreign manufacturers and purchases of products are probably more realistic.

Regarding the FIDC, augmentation and strengthening of its functions of technical training, inspection, and information and also the rehabilitation of the FIDC through introduction of the principle of the beneficiaries paying for the services, cooperation with industrial organizations, etc. are needed. Regarding training, it is important to strengthen training and seminars on skills for raising the quality and degrees of processing of small and medium sized furniture manufacturers, and the preconditions for this are the replacement and augmentation of training equipment and the securing of instructors.

In addition, it might be possible to augment the development functions of the FIDC, in particular to promote research and development in the field of parawood and also in furniture made of combinations of metal, plastics, etc. It might also be effective for the FIDC to strengthen its information collection and provision functions and publish a "furniture information journal".

Regarding education and training, policies to augment the woodworking and furniture courses at vocational schools, to secure the teachers and instructors for the same, and further to strengthen on-the-job training in companies might be possible. In particular, teaching skills oriented for the production of export furniture are important. Note that the aforementioned Malaysian "industrial estate for furniture" is reportedly considering the establishment of woodworking training courses at a neighboring site.

Regarding export promotion, there is a need for strengthening cooperation between the FIDC and DEP, assuming strengthening of the export promotion activities of the DEP, and augmenting collection and provision of overseas market information and on the sponsoring of furniture fairs in Bangkok, the promoting of participation in foreign furniture fairs, and the dispatching of export missions. Further, the establishment of a standing furniture exhibition in Bangkok paid for by the beneficiaries would be worthy of consideration.

In regard to this point, Thai chairs and other furniture made of materials other than rattan have widely penetrated the U.S. market. Compared with this, in France, a leading importer of furniture, almost all imports from Thailand are rattan furniture. French buyers are not much interested in Thai furniture of other materials. This suggests there is still considerable room for sales efforts of Thai wooden furniture.

In addition, to promote the domestic supply of inexpensive, good quality secondary materials (adhesives, paints, metal fittings, etc.), the promotion of investment by foreign companies and the establishment of joint ventures in the area of secondary materials should be considered. These industries are promising ones for Thailand, offering the possibility of export to nearby countries as well.

Table 6. Examination of Countermeasures: Wooden Furniture

Topic	Possible Countermeasures	Specific Countermeasures	Details
Basic policies • Securing stable supply of logs and lumber	• Securing log and lumber imports	• Promotion of investment of lumber businesses in nearby countries	• Government support for securing lumber imports from nearby countries
• Raising of level of technology of small and medium sized furniture manufacturers	• Promotion of joint imports of logs by small and medium sized furniture manufacturers and establish of joint lumber mills and joint drying factories	• Incentives for joint operations (taxes and financial)	• Facilitation of acquisition of logs and lumber by small and medium sized furniture manufacturers through promotion of joint operations
	• Promotion of joint ventures and technical transfers with foreign furniture manufacturers	• BOI investment incentives • Promotion of investment and introduction of companies for joint ventures	• Introduction of companies and encouragement to enable exports by small and medium sized furniture manufacturers through joint ventures and tieups
• Modernization of facilities and machinery	• Tax and financial incentives for modernization of facilities	• Formulation and detailed structuring of sectorial promotion measures • Active use of institutional financing	• Promotion of modernization of facilities for improvement of quality and strengthening of competitiveness
• Improvement of quality of parawood lumber	• Restriction on exports of low processing parawood	• Step by step increases in parawood export tax	• Guidance for export of as highly processed parawood as possible
	• Support by government in development and improvement of technology for parawood lumber	• Research and development through cooperation between Royal Forest Department and FIDC	• Standardization of quality by technical improvements and spread of parawood lumber
FIDC (Furniture Industry Development Center) • Strengthening of training	• Replacement and augmentation of training and inspection equipment	• Replacement and augmentation of equipment	• Augmentation and strengthening of training and inspection functions and strengthening of training and seminars for raising quality and degree of processing in small and medium sized furniture manufacturers
• Introduction of principle of beneficiaries paying for services	• Augmentation of training courses and seminars for small and medium sized companies	• Securing of instructors (engagement of experts and dispatch of trainees)	
• Promotion of cooperation with industrial organizations	• Institution of charges for inspection, training, etc. (promotion in parallel with cooperation with industrial organizations)	• Detailed structuring of charging system • Cooperation with furniture industry association	• Introduction of principle of beneficiaries paying for services and rehabilitation of FIDC
• Promotion of active use of materials other than lumber	• Promotion of research and development of furniture composed of combinations of metal, plastic, etc.	• Augmentation of development functions of FIDC	• Research and development for use of other materials to enable manufacturers to deal with worldwide shortage of lumber resources (obtaining cooperation of MIDI)
• Strengthening of information service activities	• Publication of "furniture information journal"	• Strengthening of collection and provision of information • Publication of information	

Table 6. Examination of Countermeasures: Wooden Furniture
(Continued)

Topic	Possible Countermeasures	Specific Countermeasures	Details
Education and training • Augmentation and strengthening of education and training of furniture engineers, designers, and skilled laborers	• Augmentation of woodworking and furniture courses in vocational schools	• Augmentation of vocational colleges	• Teaching of skills aimed at production of export furniture
	• Securing of teachers and instructors	• Active use of private experts as instructors	
	• Strengthening of on the job training in companies	• Engagement of experts at private level	• Strengthening of on the job training in companies through engagement of experts at the private company level too
Export promotion measures • Strengthening of information activities	• Collection of information	• FIDC - DEP cooperation	• Strengthening of collection and provision of overseas market information
• Promotion of exports to key markets	• Strengthening of export promotion activities of DEP	• Sponsoring of furniture fair in Bangkok	• Export promotion activities, primarily through DEP, for raising image of Thai furniture and stressing its originality
	• Establishment of standing furniture exhibition center in Bangkok (by financing by beneficiaries)	• Participation in foreign furniture fairs and dispatch of export missions • Government support for establishment of standing exhibition center	
Others • Promotion of domestic supply of inexpensive, good quality secondary materials (adhesives, paints, metal fittings, etc.)	• Promotion of investment by foreign companies and establishment of joint ventures in secondary materials	• BOI investment incentives • Promotion of investment and introduction of companies for joint ventures	• Promotion of supporting industries for furniture (which could also be expected to export to nearby countries)