

**STUDY ON INDUSTRIAL SUB-SECTOR  
DEVELOPMENT IN THE REPUBLIC OF  
THE PHILIPPINES**

**SECOND YEAR FINAL REPORT  
(SUMMARY)**

**June 1992**

**Japan International Cooperation Agency (JICA)**

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# **I. Introduction**



# **I. Introduction**

This is the final report for the second year of surveys conducted under the Industrial Sub-sector Development Program in the Republic of the Philippines.

The surveys were begun in May 1991 on the basis of the Scope of the Study in the Implementing Arrangement signed between the Department of Trade and Industry (DTI) of the Philippine government and the Japan International Cooperation Agency (JICA) on October 6, 1989. The final report was completed in May 1992.

## **1. Survey Background**

Economic reconstruction, and particularly the repayment of external debt, alleviation of poverty, democratization of economy and society, enhancement of employment opportunities, and establishment of equality and social justice were some of the issues facing the Aquino administration, inaugurated in February 1986.

Accordingly, the administration drew up a medium-term (1987-1992) development plan and grappled with the restoration of social order, improvement of efficiency in the government sector, economic development in the provinces, agrarian reform, promotion of local and foreign investment, and promotion of exports centering on non-traditional products.

Economic recovery, increased foreign investment, and a multilateral assistance initiative with the reduction of debts as its primary object materialized during the period. However, a rebellion of part of the AFP occurred in December 1989, and natural and man-made disasters such as droughts, earthquakes, typhoons, power stoppages and the deterioration of public peace and order broke out in 1990, and in the following year the country was hit by a volcanic eruption. Thus, the economic performance of the country worsened quickly. It is against this background and only weak signs of economic recovery that the presidential election was held in May, 1992.

Even should there be a change in government, industrial development and export promotion will be indispensable for the management of the country's economy, though it is hard to steer because of many restraints.

## **2. Survey Objectives**

The surveys aim at studying and analyzing sub-sectors and products regarded as promising for export in the future and drawing up a comprehensive export promotion program. Also, as a means of promoting joint ventures and technological tie-ups between Japan and the Philippines, information about firms desiring to engage investment and joint ventures should be prepared.

It should also be noted that the implementation of these surveys should facilitate the transfer to the Philippine side of fundamental knowledge and know-how on industries, products, and the improvement of marketing methods.

## **3. Industries to be Surveyed**

The following sub-sectors were surveyed in the second year:

- Toys (Stuffed toys)
- Fashion accessories (Costume jewelries)



## Oleochemicals

### 4. Survey Items

The surveys were implemented in line with the following items provided in the Scope of the Study.

(1) Overview of the selected sub-sectors and products

- 1) Production items in each sub-sector
- 2) Volume and value of production and quality of products
- 3) Volume and value of exported and imported products and their quality
- 4) Number of firms classified by size and number of employees
- 5) Profile of leading firms

(2) Overview of the industrial development policies and related measures of the government as well as the infrastructure for nurturing the selected sub-sectors and products

- 1) Administrative and policymaking organs
- 2) Sector development
- 3) Export promotion
- 4) Promotion of investment and technological tie-ups
- 5) Tax system
- 6) Financial system

(3) Overview of current problem areas in the selected sub-sectors and products

- 1) Manufacturing processes
- 2) Technological level (equipment and technology)
- 3) Plant management and quality control
- 4) Production development and design
- 5) Management of firms (labor-management relations, training of employees, financial management, etc.)
- 6) Raw material purchases and relations with supporting industries (subcontractors and parts suppliers)
- 7) Cost analysis
- 8) Marketing strategies

(4) Surveys of markets and policies classified by sub-sectors and products

- 1) Production, exports and imports by and of the specified sub-sectors and products
- 2) Competitiveness of the specified sub-sectors and products with competing countries
- 3) Marketability in importing countries of the sub-sectors and products

(5) Formulation of a master plan for nurturing the selected sub-sectors and products

- 1) Improvement of policies and systems
- 2) Improvement of technologies
- 3) Improvement of product and design development systems
- 4) Improvement of quality and reduction of cost
- 5) Improvement of management and training of employees

- 6) Creation of networks for sales and marketing
- 7) Improvement of financial and taxation systems

(6) *Provision of information for the promotion of investment and technological tie-ups in the selected sub-sectors and products*

- 1) Compilation of a list of Japanese firms having interest in investment
- 2) Compilation of a list of Philippine firms desiring joint ventures or technological tie-ups
- 3) Collection of information about the above-mentioned firms

## 5. Survey Methodology

On the basis of preparatory and advance surveys conducted by JICA, the Study Team adopted a deductive approach by which hypotheses of planned scenarios which would be eventually proposed were set up in advance and verified through field surveys, etc.

Work in concrete terms was as follows:

### (1) Advance preparations

- 1) Collection and analysis of existing materials and statistics
- 2) Drawing up of detailed plans for field surveys and domestic work
- 3) Preparation of an inception report and survey flowchart
- 4) Formulation of the questionnaire

### (2) Field surveys

- 1) Explanation of the inception report and consultations on planned surveys
- 2) Gathering of information through interviews and discussions with related organs
- 3) Field surveys at the related firms or factories
- 4) Formulation and filing of the progress report
- 5) Filing of an interim report, discussions about the program and supplementary surveys

### (3) Third country surveys

Surveys of third countries were conducted through the study of written materials and surveys commissioned through JETRO overseas offices.

### (4) Domestic work

- 1) Compilation and analysis of field surveys
- 2) Compilation and analysis of third country surveys
- 3) Interviews, field surveys, questionnaires for related domestic firms and analysis of the results
- 4) Overview and study of problems in concrete terms
- 5) Formulation and study of the interim report
- 6) Preparation of a comprehensive program and compilation of the draft final report
- 7) Compilation of the final report

## 6. Schedule of Surveys

Field survey	June 10 - August 8, 1991
Interim consultations and supplementary surveys	November 16 - November 30, 1991
Draft final consultation	March 10 - March 18, 1992
Domestic questionnaires	June - August 1991
Third country surveys	June - September 1991

In-depth interviews were used for the field surveys. A total of 201 such interviews were made and a total of 307 questionnaires collected. A breakdown by sub-sectors is shown in Table I-1. Geographical areas covered by the field surveys in the Philippines are shown in Table I-2.

**Table I-1: Details of Field Survey**

Sub-sector	In-depth 1st	Interviews <sup>(a)</sup> 2nd	Questionnaires Collected	Remarks
Toys	65	15	76 <sup>(b)</sup>	Complete count
Fashion accessories	67	14	231 <sup>(c)</sup>	Complete count
Oleochemicals	29	11	Not conducted	

- Notes: (a) In-depth interviews were conducted with private companies, a small number of institutions and other organizations.  
 (b) A total of 120 questionnaires were distributed.  
 (c) A total of 279 questionnaires were distributed.

**Table I-2: Geographical Areas Covered by Field Survey**

Sub-sector	Areas Covered
Toys	Metro Manila, Bulacan, Cebu
Fashion accessories	Cebu, Metro Manila, Bulacan
Oleochemicals	Metro Manila, Laguna, Batangas, Lucena, Cagayan de Oro

For the efficient implementation of the field survey, the following local consultants were engaged to distribute questionnaires, assist in their completion, collect and tally them.

Toys / Small Enterprises Research and Development Foundation of the Philippines (SERDEF)  
 Fashion accessories / Cebu Fashion Accessories Manufacturers and Exporters, Inc. (CEBU-FAME)

**Table I-3: Details of Questionnaire Survey in Japan**

Sub-sector	Companies Covered	No. of Companies	Study Items
Toys	Manufacturers	120	• Issues in management and possibilities for entry into Asia, technological tie-ups, import business
Fashion accessories	Manufacturers	151	• Degree of business interest in Philippines and other Asian countries • Form of import business and import programs • Issues involved in business with the Philippines and possibilities of expanding imports
Oleochemicals	Not conducted		

Note: As to oleochemicals, instead of the questionnaire, interviews with MITI, major industry organizations, and oil and fat manufacturers (16 interviewees) were conducted.

**Table I-4: Countries Covered by Survey of Third Countries**

Sub-sector	Export Markets	Competing Countries
Toys	U.S., Germany	R. Korea, Thailand
Fashion accessories	U.S.	Thailand
Oleochemicals	U.S.	Malaysia, Indonesia

## 7. Members of the JICA Study Team

This survey was implemented by a joint venture formed between JETRO (Japan External Trade Organization) and Unico International Corporation. The study team was composed of the following members.

Team Leader/Economist	Mr. Tamaichi MATSUMOTO
Sub-Leader/Economist (Export & Investment Promotion)	Mr. Nobuo KOBAYASHI
Sub-Leader/Economist (Industrial Sector Development)	Mr. Tetsuo INOOKA
Toys-Stuffed Toy	
Export/Investment Promotion Specialist	Mr. Masayuki SWEDA
Industrial Economist	Mr. Hirofumi YMAUCHI
Product Specialist	Mr. Seiichi FUKUSHI
Fashion Accessories-Costume Jewelry	
Export/Investment Promotion Specialist	Ms. Chieko OHGAKI
Industrial Economist	Mr. Yoshinari YAMAMOTO
Product Specialist	Mr. Yasuo MIZUNO
Oleochemicals	
Export/Investment Promotion Specialist	Mr. Atsushi SUZUKI
Industrial Economist	Mr. Hiroshi HASEGAWA
Project Engineer	Mr. Yoshiki HAYASHI
Chemist	Dr. Akio KATO
Market Analysis (Investment Promotion)	Mr. Yutaka MIYAHARA
Market Analysis (Export Promotion)	Mr. Jun TSUNEKAWA
Industrial Association Development	Mr. Yoshio SATO
Finance and Taxation System	Mr. Yasunaga TAKACHIHO

## **II. Policy Review and Tasks**



## II. Policy Review and Tasks

### 1. Industrial Development Policies

#### (1) Structural Deficits in the Industrial Sector and Its influence of Sub-Sectors Studied

As pointed out in the first year study report, the following structural deficits remain in the Philippines' industrial sector as a result of government intervention in the economy over a period of many years with protective policies which stretched in many directions. To overcome these defects in the industrial structure, the government set forth the reorientation of industrial development policy, putting an end on excessive intervention and control by the government, and converted it to that based on free competition with vitalizing leadership of the private sector. However, so far, such government effort had little effect on the economic improvement. In addition, the significant increase in wage rates compared to that of the neighboring countries, especially of China, has reduced the advantage in international competitiveness of Philippine industries, which were established taking advantage of cheaper labor costs. Generally speaking, increase in wage rates is a result of increase in demand for labor caused by industrial development. Under such circumstances, the industries usually have to make efforts to develop themselves by strengthening such non-price competitiveness as improved technology, and well-organized material supply ability, etc.

However, in the case of the Philippines, the industrial development is still insufficient. Namely, new industries, which are anticipated to be developed under the new economic order, are not developed well, and the existing inefficient industries have contracted; thus, industrial structure has increasingly become unfavorable for industrial development.

Such symptom is especially seen in the field of raw material supply. The backwardness of technology development and obsolete production facilities, especially of SMEs, has resulted in difficulty to formulate linkages with export sectors. Delay in development of infrastructure and technical infrastructure has resulted in poor performance of the existing firms in various industries, and impeded the introduction of new investment and technologies.

Such situation has also affected the sub-sectors studied in the second year.

Philippine stuffed toy industry has no adequate local supply source of raw materials. Therefore, raw material supply ability was not regarded as an advantage of Philippine stuffed toy sub-sector; rather, the sub-sector was established taking advantage of the cheaper labor costs alone. However, the industry is hard to keep such advantage any more accordingly with increase in labor costs compared to that of the neighboring countries, and insufficient development of subcontracting system for the industry. The diversification of product mixes of plush is still poor to meet the requirement of export oriented stuffed toy industry. Tardy development of small and medium businesses has prevented the stuffed toy industry from improving its efficiency.

The costume jewelry industry is mostly composed of small and medium scale exporting firms with micro scale manufacturing and subcontracting firms. Almost no large scale firm exists in the industry, because of the history that the industry has been established in the development process of Cebu locality. The materials used are limited to those which are available locally. The supply of metal parts and metal findings has relied on imported sources. Thus, since they have only an insufficient bases to promote tie-ups with advanced firms abroad or form linkages with these firms when they are established



in the Philippines, it is essential for the industry as a whole to make effort to form such basis improving their technological, marketing and managerial performance.

The oleochemical industry consists mainly of foreign affiliated large scale firms, being different from the above two sub-sectors.

The supply of raw materials is dependent on the agricultural sector. However, due to failure of improving their production efficiency, the oleochemical sub-sector is faced with problems which are the matter of their existence basis; 1) unstable supply of raw materials, and 2) lack of price competitiveness of their raw materials.

In addition to the above, the industry is faced with difficulty in diversifying their product lines due to insufficient development of domestic chemical industry, which is to be the supply source of auxiliary materials. At the same time, since the size of domestic market is small, the industry has difficulty to develop it as a comprehensive industry, and remains solely as a supply base of basic oleochemicals to the industry abroad.

## (2) Recommendation on Basic Strategy for Industrial Development

In the first year study report, the following recommendation was made on a development strategy for the Philippines on the perspectives common to the three sub-sectors comprised of this study.

1. While on the one hand advanced industrialized countries such as the United States, Japan and those in western Europe are experiencing an unprecedented labor shortage, on the other hand, in developing countries around the world technology levels are being improved; thus, there is an ongoing change in an industrial structure on the international level. The basic strategy for industrial development in the Philippines should be, as has been the case in the past experiences of NIES to achieve industrialization acceptable on an international level by making use of their advantages in the process of international developments of industry. In any event, it is important that this sort of industrialization is not achieved by only a number of large businesses which have been protected as was seen in the past, but that it is achieved as a result of a joint effort between large businesses and small and medium-size businesses or through development of small and medium businesses themselves.

2. In all three sub-sectors covered by the study there was a group of large-scale businesses already developed as export-oriented businesses, a group grown out of foreign capital businesses, and small and medium-scale local businesses which existed on a different level from that of these business groups. It was difficult for these smaller scale businesses to gain direct access to export markets, and to the upper end of demand on the domestic market. Their technology, production management, and management is still insufficient to meet the needs from these markets. Their access to financial resources required for modernization is limited. It is not easy to foster and develop the small and medium businesses as the export business, but regardless of this, the fostering these businesses is highly important and should be regarded as a key strategy for industrial development.

3. In order to achieve such targets, the followings are recommended as development measures common to each of the sub-sectors.

i) Increase opportunities to facilitate access to export markets and to demand at the upper end of the domestic market. By so doing, firstly increase in exports, and at the same time, improve the understanding of each firm on the requirements of these markets in regard to technology, production management, marketing and management.

ii) In order to comply with the needs of these markets efforts must be made at company level to make improvements in production technology, production management, marketing and management. This will contribute to develop markets or to promote the formation of tie-ups with overseas companies, further paving the way for undertaking independent initiatives in the future.

iii) The strengthening of industry should be supported by making improvements to the infrastructure, technological infrastructure, the financial system, and the educational and vocational training system.

In order for the industrial development to be most effective in a short period as possible, the following points are recommended to be taken into consideration:

i) Incentive measures for supporting small and medium businesses, who are not focused in development policy, in their efforts to find their market either in export market or upper end domestic market.

ii) Implementation of the promotion measures of small and medium-scale business in strategic and preferential basis.

iii) Assigning a government agency responsible for sectoral approach.

iv) Using the vitality of industries and providing assistance for strengthening the organization of industry associations.

These recommendations are basically applicable also to the two sub-sectors comprised of this year's study except for oleochemical industry.

In the case of oleochemical industry, there is no dual structural characteristics, which is observed in other sub-sectors, and each firm has potentiality to perform business activities without any assistance from the government. Furthermore, these firms except for two of them, form a part of multinational firms or foreign invested firms. Therefore, operation of these firms are easily transferred to other countries of the more favorable business conditions in view of their strategy of international business operation.

Therefore, what is needed for the promotion of oleochemical industry in the Philippines include, 1) removal of impeding factors against their performing business activities, 2) improvement of supply condition of coconut oil by raising the productivity of coconut plantation and by rationalizing the coconut oil distributing so that coconut oil can cope with palm kernel oil, and 3) strengthening the R&D activities which is necessary especially in view of contribution to the Philippine economy, but difficult to attract the private sector's interest.

### (3) The Implementation of Industrial Development Projects and Industry Associations

In the first year study report, the following was recommended with regard to development of industry associations, expecting the leadership of industry associations in promoting and organizing the sub-sector promotion and development program:

The most important thing for the Philippines to do in relation to its industry development is to assist the industry, with utilizing the vitality of the private sector, to enable the industry to develop themselves in response to such international movement as transfer of production bases abroad and development of parts/materials complementary schemes among these bases abroad. It may be one of effective means of achieving this objective to foster industry associations, and use these as channels for coordinating government and industry activities, and requesting cooperation from industry. In addition

to this, the fostering of industry associations is important in the sense that they act as a check in regard to bias in the government's policies. Industry associations in the Philippines today generally 1) include those which are to promote friendship among members; 2) do not comprise of many members from smaller scale businesses in particular; and 3) have a weak financial base. It is desirable that the government implement measures aimed at fostering the appropriate association. The measures through which industry associations would be fostered would include 1) the defining of qualification of adequate industry association for this purpose; 2) the provision of financial assistance including tax exemptions for the operation of associations; and 3) the offering of incentives to members as a means of encouraging membership.

These points are also applicable to the sub-sectors studied in the second year, especially, stuffed toy and costume jewelry sub-sectors.

## **2. Investment Promotion Policy**

Expansion of investment, including foreign investment, is a central issue for the revival of the Philippine economy.

Results of investment so far indicate that the country has lagged behind neighboring nations in terms of the comparative value or growth rate. Moreover, competition to attract foreign investment in Asia is becoming increasingly fierce. In order to reverse this trend, the vicious cycle of low growth to low saving rate to stagnant gross capital formation will have to be broken by actively dealing with the attraction of foreign investment. It is essential that successful examples of investment be monitored, that the external image of the country be improved and that a more favorable cycle be achieved.

Under the basic framework of a deregulation-oriented policy, it is desirable that DTI/BOI: 1) shift their function from regulation to policy formation, 2) bring about selection of desirable industries, and 3) actively proceed with the strategy of attracting foreign investment.

1. In line with the scheduled steps for the implementation of the Foreign Investment Act of 1991, it is desirable that important policy decisions be announced collectively in a package which clarifies their targets and interrelations to the outside world, particularly towards the investors interested in this matter.

2. A strategy for the improvement of the country's image should be promoted. When the above-mentioned policy decisions are announced, efforts should be concentrated on the improvement of the image of the Philippines as a country ready and able to receive foreign investment. It is desirable that activities such as investment seminars, distribution of guidebooks on investment and dispatch of investment promotion missions be expanded on the initiative of the Philippine side. It would be effective to hold series of meetings based on themes such as cost factors, export systems or information related to the situation of individual industries. For example, it is desirable that information be provided or seminars held solely regarding industrial estates and cost factors.

3. Among the various measures planned to prepare the legal environment for receiving foreign investment, the Condominium Act is important. Foreign-affiliated firms show great interest in leasing terms and advance securement of the land necessary for future expansion of facilities.

4. Shift of BOI functions: Among the current BOI functions, activities of a strong regulatory nature, such as authorization or provision of privileges, is being reduced by stages with the progress of deregulation. It is desirable that the emphasis of BOI business

be shifted to mapping out industry nurturing policies, monitoring the processes to the realization of investment and positive investment attraction activities.

5. Enhancement of information services before and after authorization: First, complete arrangements should be made to allow DTI/BOI to conduct surveys concerning the specific sub-sector on their own. Second, the processes of implementing the promotion measures should be monitored. Third, investment processes from authorization to implementation should be monitored. Successful examples of investment thus observed are expected to offer the key to further attraction of additional projects.

### **3. Trade Policy**

Export promotion is a national priority for the Philippines, as trade is one of the most important means of supporting economic growth.

Although the government is serious in its work to promote trade, comprehensive, nationwide measures for improvement of the trade environment, the development of foreign markets, and the assistance and promotion of export corporations remain insufficient. At the same time, private industry must cooperate with the government to make structural improvements and cultivate competitiveness on the international market.

The following five measures are critical to future trade promotion efforts.

#### **1. Comprehensive Planning and Drafting of Basic Policy**

The Export Development Bill, which remains under consideration by the Congress, clarifies responsibility for drafting and coordinating export promotion policy for the Philippines. This is an essential ingredient to any trade promotion policy, and it is hoped that this Bill be adopted as early as possible.

#### **2. Improvement of the Trade Environment**

Trade promotion will first require improvements in the local trade environment. In particular, urgent work is needed on the creation of a minimum industrial infrastructure, including the enhancement of port functions and facilities and the creation of road systems and communications networks.

Trade-related procedures have become much smoother since the establishment of the One-Stop Documentation Center. However, there are still numerous complaints concerning delays in downloading imported cargo to export processing zones and delays in the transport of imported textile materials from bonded warehouses. Further simplification of procedures and faster processing of customs paperwork are needed.

Finally, conditions of settlement and export insurance programs need to be brought up to international standards.

#### **3. Diversification of Export Markets**

Philippine exporters are dependent on the U.S. and Japanese markets for fully 55% of their sales. In the future, efforts should be made to increase exports to neighboring Asian countries, the Middle East, and Oceania. One effective method would be to mobilize Philippine commercial attaches stationed in these countries to provide information on target markets and handle trade inquiries. Other useful measures in breaking open new markets would be joint marketing activities by CITEM and private

industry such as participation in overseas exhibitions and trade fairs or the dispatching of sales missions.

#### 4. Assistance and Promotion of Export Corporations

Improving the image of the Philippines and its products on the international market is an essential component of trade promotion efforts.

Many of the products manufactured by small and medium-sized companies in the Philippines do not meet international quality standards. Thus it is strongly recommended that all manufacturing processes from the materials stage onward be reexamined, extensive quality control systems established, and sales channels developed for Philippine brand names in the near future.

As indicated in the five-point DTI strategy, this will require official support from government organizations in terms of product development and the raising of funds.

#### 5. Assistance for PTTC Training Activities

Together with the proposal for structural changes in DTI, moves have been made towards the privatization of PTTC. PTTC training programs play a major role in trade promotion, and they will retain their importance as long as the need for trade promotion continues.

In addition to expanding existing courses in marketing and testing & inspection (textiles, furniture, foodstuffs), PTTC should provide new courses in product development and practical management guidance in cooperation with related organizations and respond to the needs of local areas.

Improved remuneration will be needed if PTTC is to retain its existing faculty and hire new members in the future. In addition, existing regulations should be revised to allow income accrued during PTTC training activities to be allotted for PTTC operating costs. In preparation for privatization, a non-profit foundation for the support of PTTC activities should be established under a medium- and long-term plan. Contributions should be solicited from local and foreign corporations and financial institutions, and income from the the resulting fund should be used to help cover PTTC operating costs.

### **4. Financial System for Promoting the Development of Sub-Sectors**

#### (1) Recommendation on Financial System for Promoting the Development of Sub-Sectors

Following recommendations, which were made in the first year study report, on financing system for promoting the development of sub-sectors are basically applicable also to the sub-sectors studied in the second year. Namely, financial policies for the promotion of the selected sub-sectors must be examined from two viewpoints: 1) the raising of funds by large and medium-size businesses which will play a leading role in development of the sub-sectors; and 2) the raising of funds by the smaller businesses. The financial markets' capacity to raise and supply funds is quite limited and there is little prospect of an early improvement of this situation. Therefore, it is necessary to promote direct investment from overseas and direct loans from overseas financial institutions for large and medium size businesses. For small and medium size businesses, it is advisable to supply funds through institutional loan schemes by blending locally-sourced funds with low interest rate funds sourced through international cooperation. On top of this, it is necessary to support moves to provide supplemental means for the improvement of

creditworthiness of each small and medium-sized business. What is most lacking in this regard is the absence of data regarding the credit standing of each business. In order to remedy this situation, it is necessary to : 1) use the accreditation and registration system applied to businesses as a substitute for data regarding the credit standing of each small and medium business; and 2) use information from industry associations and regional chambers of commerce and industry.

From this perspective, the following program recommendations for small and medium enterprises, are also applicable to the sub-sectors in the second year study, though some of them are under the stage of implementation trial in various forms.

#### 1) Measures for Raising the Level of Credit of Small Businesses

a) The establishment of credit-rating criteria for loans for "qualified businesses" (businesses with excellent credit standing) and the application of preferential measures.

It is recommended that the preferential measures be applied to the excellent credit standing businesses which fulfill the required conditions, not only for the purpose of strengthening the creditworthiness of small and medium businesses, but also to provide incentives for self-improvement in the areas of technology, management, and marketing. These are : 1) relaxing loan screening criteria; and 2) securing a certain amount of funds for preferential loans.

#### b) Examination of establishment of a credit supplementaion system

It is recommended that the possibility of establishing a body with the function of supplying supplementary credit information on individual firms on the basis of the organization of industry associations or regional chambers of commerce and industry be studied. The information may be supplied by either a national body or regional units. At the same time, it is necessary to undertake a study of the feasibility of establishing a credit guarantee association which would base its activities on the information provided by the body recommended above. To minimize the risks involved in such system, it is recommended that insurance companies for credit guarantee company be established.

#### 2) The Establishment of Loans for Sub-Sector Modernization

Facilities in all of the sub-sectors under study are remarkably outdated, making the renewal and introduction of modern equipment a substantial problem. Due to insufficient financial and technological capability, used machinery is often purchased. Moreover, the machinery introduced is frequently inappropriate for the purposes of modernization.

It is recommended to set up a financing system which has a main objective of the solution of this and similar problems.

The needs for the above recommendation will become more urgent accordingly with increase in demand for new investment. At present, the demand for financing is not great for each sub-sector, and the existing systems still have a capacity to absorb the further demand.



### **III. Summary of Subsector Study Results and Issues**





### **III. Summary of Sub-Sector Study Results and Issues**

#### **1. Toys (Stuffed Toys)**

##### **1-1 Summary of the Study**

##### **1-1-1 The Stuffed Toy Export Market and the International Development of the Industry**

###### **(1) Outline**

###### **1) Developments in Stuffed Toy Products**

In its broad sense the term "stuffed toy" refers to any toy made by stuffing a fabric outer shape with such materials as waste thread or cotton. However when used in the context of the stuffed toy industry, this refers to animal or character shaped dolls stuffed with materials such as thread or cotton and covered with various types of plush such as plush or high pile.

In recent years the toy market experienced either small or no growth and the market is believed to be reaching a stage of maturation. Even now that that the stuffed toy market has matured, efforts are still being conducted to increase demand through product development targeting specific consumer strata. Joint development with other industrial subsectors is also taking place and efforts are being made to expand distribution routes.

In the past stuffed toys were sold only by toy shops or in special corners of large shops. However, after 1980, as part of distribution channel expansion strategies and due to the entrance by other industrial subsectors into the toy market, stuffed toys began appearing in fancy shops, boutiques, gift shops, shoe shops and even furniture stores.

Product development in marketing strategies has resulted in the opening up of new market channels and the emergence of products which do not match the traditional concept of stuffed toys. Such products include: Christmas trees made from printed fabric, cars, vegetables, gloves and slippers in the form of monster hands and feet, and tissue box covers, and waste baskets made to look like stuffed toys.

Still retaining a 70-80 percent market share, characters lead the stuffed toy market. However, upmarket stuffed toys known as real-type toys have expanded their share considerably.

###### **2) The Stuffed Toy Export Market and Trends in Production**

Stuffed toy manufacturing is a typical labor-intensive industry, with personnel expenses generally accounting for 30 - 50 percent of production costs. As a result, the major exporting countries have changed with time. Japan, which was among the main exporting nations in the 1970s, moved production to R. Korea and Taiwan when its labor costs increased. In the latter half of the 1980s, China and Thailand began to replace R. Korea and Taiwan as the prime manufacturing bases.

In the distribution of stuffed toys, however, buyers versed in market trends play an important role, thus, producing nations serve only as production bases. Sometimes vendors stand between buyers and manufacturers.

The United States is the largest stuffed toy market in the world, followed by the EC, mainly Germany, France, the United Kingdom and Italy, and Japan. The size of the world stuffed toy market is estimated at US\$3.7 billion (on a retail price base). According to OECD statistics, on the other hand, the U.S. in 1989 imported US\$880 million worth of stuffed toys, Japan US\$115 million, Germany US\$158 million, France US\$128 million, the U.K. US\$147 million and Italy US\$72 million.

Currently, R. Korea, Taiwan and Hong Kong are the three major stuffed toy exporting countries or territories in the world, with Thailand, China, Sri Lanka and Malaysia quickly gaining strength (see Table III-1-1). In R. Korea, only few stuffed toy manufacturers remain, with all other major firms having suspended domestic production.

Among the new stuffed toy manufacturing nations, China can produce plush domestically. But the country cannot produce all varieties of the material and as a result it imports some, especially high grade materials from R. Korea. Thailand and Indonesia import plush mostly from R. Korea. Japan is a major supply source of fibers for making plush. R. Korea and Taiwan import high quality fibers from Japan, which also exports stuffing materials (acrylic cotton) for stuffed toys. Plastic eyes, cotton cloth, lace and other auxiliary materials are often produced in R. Korea and Taiwan for export.

A common form of trade transaction of toys is the direct deal between a manufacturer on the exporting side and a buyer on the importing side. But in the case of stuffed toys, vendors in third countries often stand between the buyers and manufacturers. Vendors do product development, sample making, pattern making, drawing up of detailed specifications, purchases or arrangement of raw materials, and arrangement and management of manufacturers standing between the buyers and manufacturers involved in the transaction.

## (2) The Japanese Market and Stuffed Toy Industry

### 1) The Stuffed Toy Market and Production and Distribution Channel

In the last five to six years the market for stuffed toys in Japan has risen a scale of about ¥45 billion (in terms of consumption value) and undergone shifts. This accounts for about 5-6% of total domestic toy market.

Japan's toy industry comprises 1) the leading toy firms, with financial, product planning and purchasing strength, 2) toy firms mainly engaged in production, comprising largely cottage type, small and medium sized makers, and 3) small and medium sized toy firms with a degree of product planning strength and which to an extent function as buyers.

Although the leading firms carry out product planning, their products are manufactured by domestic and overseas makers. Their role resembles that of "specialist wholesalers of products bearing the company brand". Overseas manufacturing takes the form of processing on assignment by makers in R. Korea, who is also a supplier of raw materials. When manufacturing in R. Korea is not possible, the R. Korean manufacturers will often subcontract the work as vendors to other countries and then deliver the products. Sometimes, OEM contracts will be concluded directly between Japanese firms and makers in countries such as China and Thailand. However, as this entails placing production control almost entirely in the hands of the overseas makers, this is usually done in respect of low and medium-grade products.

The majority of small and medium firms resemble buyers. Some firms conduct their own product planning. However, firms will often develop products based on orders received from mass sales retail chains at the end of the distribution channel. Generally

speaking, these firms deal with low and medium-grade products and character-items. Overseas production is done both through R. Korean firms as vendors and via direct OEM contracts with factories in countries such as China, Thailand, and Sri Lanka. Many firms depend on overseas manufacturers for production.

Stuffed toy makers of cottage type and small and medium size also receive orders with short delivery periods from leading toy firms. Their own products are sold via the same delivery system as small and medium sized firms.

## 2) Trends in Overseas Production and Evaluation of the Philippines

In Japan, the transfer of production bases by toy firms to R. Korea, Taiwan, Hong Kong, and China occurred at a remarkable pace following the sudden strengthening of the yen in 1985. Growing difficulty in securing personnel and enormous increases in labor costs also prompted such transfers.

At the outset of this movement, most of Japan's production bases were established in R. Korea and Taiwan which were in close proximity to Japan and had inexpensive labor costs. Taiwan and R. Korea had gained experience in stuffed toy manufactures through filling orders from U.S. buyers. However, attention was turned next to China and Thailand following marked increases in labor costs in R. Korea.

As the stuffed toy industry is one where changes in consumer tastes are considerable, in addition to low production costs buyers also look to: 1) whether the time between when orders are made and delivery is short enough to ensure that products are not late for movements in the market, 2) how accurately the desired characteristics can be embodied, and 3) how well quality is guaranteed. The particular type of product ordered in these countries varies according to the distance from Japan and the degree of ease of local material procurements. Thus most orders for character-items, which are subject to severe shifts in demand, and high value added products are placed with R. Korea and Taiwan, which are close Japan, and where quality and delivery conditions can be satisfied. Orders for standard products or sale (low price) items are usually placed with countries located some distance from Japan or with little experience.

R. Korean vendors play a very important role in overseas manufacture by Japanese firms.

According to a survey of Japanese stuffed toy firms conducted in June to August 1991 by the Team, of the twenty opinions as to the potentiality as the production base, however, only seven showed a positive image of the Philippines as an overseas production base.

Thus the way Japanese stuffed toy firms regard the Philippines is by no means optimistic for the Philippine industry. However as these assessments were not informed by accurate information, they cannot in many cases be said to be appropriate. There is need for Philippine side to actively approach Japanese stuffed toy makers in order to improve this situation.

## (3) The U.S. Market and Stuffed Toy Industry

### 1) Recent Trends in Products

The toy market has become saturated with costly licensed goods, electronic items, and even more complex products. Recently, the overall mood has been one of "back to basics," responding with more fundamental toys, with a shift toward more economical, ecologically sound products.

In addition to traditional products, stuffed animal makers have supplemented their lineups with exotic products like sloths, hyenas, and dangerous animals. In fact, the recession and increasing environmental awareness among consumers have actually provided the stuffed toy industry with an excellent opportunity for the rebound of the plush category. Plush products are now seen as being virtually unbreakable, offering easy repair, and being healthy and long-lasting as well as helping children to develop their creativity.

## 2) Supplying to the U.S. Market

99% of the plush products sold in the United States are imported, and most of these are produced in Asia for U.S. corporations in the form of processing on assignment.

A look at import trends for stuffed toys shows a general increase in shipments from China, Thailand, Indonesia and other Asian developing countries offset by reduced imports from R. Korea.

## 3) Evaluations of the Philippines and Philippine Products

Most of the firms responding to the survey held an image of the Philippines as a producer of natural fiber products like baskets and brooms and woodcrafts, and few knew much about the country's stuffed toy industry. There was also a general perception that this industry was an unsophisticated cottage industry lacking modern facilities and technology.

Responses concerning Philippine products and laborers, however, differed significantly from firm to firm. Some were of the impression that the Philippine labor force was not only skilled in stuffed toy production (sewing in particular) but was also hard-working and well-motivated. Others felt that the quality of Philippine products was below average and that there were problems with delivery time.

Most of the firms responding to this survey had had either no direct contact with Philippine products or at best only very limited contact. Despite this, many were open to the possibility of production in the Philippines and welcomed the idea of promotional activities by Philippine toy manufacturers and industry associations in the United States. What was most emphasized by the respondents was that the firms be capable of providing products of specified quality within a given time frame.

## (4) German Market and German Stuffed Toy Industry

### 1) Outline of Toy Production

Production of stuffed animals (made out of tissue and furs) reached 138.75 million German marks (below, "marks"; 1 mark = US\$0.67, at the end of Nov. 1990) in 1990, a 6.7 percent share of toy production as a whole. Imports of stuffed toys have continued to decline since 1988 (235.6 million marks) and dropped 3.1 percent in 1990 to 186.1 million marks (down 21.0 percent compared with 1988). The main countries of origin were China (72 million marks, 38.7 percent of all imports) and R. Korea (67.2 million marks, 36.1 percent), with the two countries accounting for three-fourths of the total imports.

The market for stuffed toys in 1990 (production - exports + imports) grew to 263.3 million marks, up 13.1 percent from the previous year, but this was still 15 percent below the level of 1988 (see Table III-1-2).

In these past few years, plush stuffed animal manufacturers have been searching for toys which have not yet been made with plush. Some companies have decided to manufacture plush bugs and beasts, but the trend is for a change from exotic animals to the conventional, traditional animals. Instead, even if the same type of animals as in the past, colors and forms are being changed to make them different.

## 2) Shift of Production Overseas

Faced with a decline in the number of buyers and an increase in imports in the 1980's, German stuffed toy manufacturers have moved to deal with the changes in their environment by shifting all or part of their production processes overseas. The majority of the overseas production of these companies is being done in R. Korea. The quality and craftsmanship of the products made there are excellent or sometimes extremely excellent, it may be said. On the other hand, the major origin of imports of plush stuffed toys is China. The Germans procure toys in China at low prices below even just the labor costs in Germany, but the quality is not very good.

### 1-1-2 The Stuffed Toy Industry in Neighboring Countries

#### (1) Republic of Korea

##### 1) Outline of the Stuffed Toy Industry

Virtually all stuffed toy production is exported, with export ratios of at least 95% every year from 1986 through 1990. Production peaked in 1987, dropped 12.1% the following year, and dropped another 17.7% in 1990 to US\$549.157 million (see Table III-1-3). This drop in production is due to the increasing number of Korean manufacturers who have moved their production facilities abroad and are exporting directly to target markets.

The United States is the leading export market, responsible for 46.1% of total Korean exports, followed by Japan, with 17.9%, Germany, with 7.0%, the United Kingdom, with 6.0%, and Italy, with 3.7% (value-based figures for 1990).

##### 2) Government Assistance for the Stuffed Toy Industry

Korean government assistance for the stuffed toy industry can be broken down into: 1) measures to promote structural improvements in the toy industry; 2) funding assistance; 3) promotion of foreign capital investment with the object of stimulating Korean industry; and 4) export promotion measures.

Things such as government support for improvement of industrial structure provide assistance for resolution of problems faced by the industry, including a weak production structure, an excessive reliance on exports, and a lack of design skills.

The basic philosophy of industry and government with respect to the production structure is that production of low-end stuffed toys should be shifted to developing countries like China and Thailand while converting local production to metal and plastic toys, which offer high added value and are in demand on world markets.

In order to correct the industry's excessive dependence on specific export markets, the government plans to subsidize 50% of all costs incurred for participation in the Nueremberg exhibition in Germany and the toy related exhibitions in Japan.

The government will also provide incentives for the creation of design development centers at individual corporations and introduce a design protection program. These measures are intended to promote development of new designs and company brands, both of which are crucial to survival in the toy industry.

Firms judged as being unlikely to survive despite these measures will be persuaded to move to other sectors with funding assistance from the government.

From the philosophy that improvements in technological development, design, and marketing skills would make it possible to produce and export high-priced, high-value-added products, KOTRA and the Ministry of Trade and Industry in January 1987 designated ten items including stuffed toy to be developed into world-class products.

### 3) Foreign Investment by the Korean Stuffed Toy Industry

Types of foreign investment expected to increase include the following: 1) investment for the introduction of sophisticated technologies; 2) investment for exports designed to develop local resources; and 3) investment aimed at labor-intensive industries and the avoidance of import quotas. Potential locations include North America, Southeast Asia, the Special Economic Zones in China, and the Eastern European countries, in which chambers of commerce have been mutually established.

#### (2) Thailand

##### 1) Development of the Stuffed Toy Industry

Rapid development of Thailand's stuffed toy industry began in 1988. Manufacturers from countries such as Hong Kong, Taiwan, and Korea with an annual production capacity of over 1 million items were awarded incentives by BOI, established production bases in Thailand and began operations there. Production capacity grew in leaps and bounds and export volumes increased each year.

However, there is a need to increase the quality of products and it is likely that exporting firms will have to pay more attention to QC systems in order to satisfy strict safety standards, particularly those in the European market.

The major destinations for exports are the U.S. and Europe. As each of these countries has granted Thailand GSP it is believed that stuffed toy exports to these regions will continue to grow in the future.

##### 2) The Government's Industrial Support Policy

BOI incentives are granted to firms investing over 2 million bahts (1US\$ = 25.68bahts, as of May 1991) and which primarily target the export market.

As marketing support the DEP (Department of Export Promotion) offers trade information to local firms free of charge. Trade specialists give consultations and a "seminar on technological development and trends in overseas markets" are held every year to assist firms in product improvement and marketing strategy. DEP also has on constant offer information regarding product safety standards in the major markets.

### 1-1-3 Current Situation in the Philippine Stuffed Toy Industry

#### (1) Current Situation in Industry

##### 1) Outline

No accurate data are available regarding the total number of stuffed toy firms. However, the number is estimated at around 104 on the basis of the number of BOI-registered firms, the PHILTOY membership and various data of PCHI (Philippine Chamber of Handicraft Industry). Of these firms, it is estimated that 19 specialize in exports. The remaining 85 are mostly cottage or small and medium-size enterprises, and many of them are engaged in subcontracting. Even among firms specialized in exports, mutual subcontracting is conducted as occasion demands.

Most of the stuffed toy manufacturers are concentrated in Metro Manila and its periphery. Only a very limited number of firms (As for BOI-registered firms, three out of the 31) are operating outside of Metro Manila, namely in Iloilo, Bacolod and Cebu. A similar tendency is seen in firms not registered with BOI.

Many stuffed toy manufacturers depend on imported raw materials and parts. Their concentration in Metro Manila and its periphery comes partly from the easy access to imported raw materials and parts available in the area. Other advantages of being located in Metro Manila include easy access for buyers, convenient transportation and ease in collecting information.

## 2) Market

As can be seen from its history, the Philippine stuffed toy industry is traditionally export oriented. It has developed with the support of U.S. buyers and R. Korean manufacturers who have close relationships with them.

Exports from the Philippine toy industry between 1982 and 1986 fell by an annual average 29 percent (table III-1-4). This compares with the annual average growth of 133 percent between 1977 and 1981. The fall bottomed out in 1986, however. Exports subsequently grew smoothly, reaching \$24.40 million in 1990. Exports of stuffed toys during the period are believed to have followed the trends of toys as a whole almost exactly.

The share of stuffed toys among all toy exports is believed to have approached 70 percent in 1990 after remaining at approximately 60 percent for the past several years.

## 3) Production Structure and Buyers and Vendors

As is the situation in other developing nations, the stuffed toy industry in the Philippines is based on close relationships with buyers or vendors.

Vendors are mostly R. Korean and Taiwanese firms, most of which are connected with U.S. buyers. The Philippine enterprises are often wholly owned by these vendors or are joint ventures between local firms and vendors. Few local wholly-owned enterprises do business transactions with vendors. Buyers and vendors overseas regard the Philippines as a production base, with marketing, product development and raw material purchases made by R. Korean and Taiwanese vendors. Because these vendors have networks with two or more buyers, manufacturers which have close relations with these vendors can maintain high rates of operation and can export almost 100 percent of their production. Such enterprises, however, account for only around 8 percent of the entire industry.

The other firms deal directly with buyers. Some firms do business by planning their production on the basis of long-term contracts with specified buyers, while others do transactions with buyers on a spot basis.



To do business with buyers, manufacturers must be able to make counter samples and patterns. Contracts are concluded on the premise that manufacturers have reached a certain technological level. Few manufacturers without experience can attract the attention of buyers. Manufacturers with long-term contracts with specific buyers maintain stable operating rates which are higher than those of other manufacturers. But such firms account for a mere 11 percent of all manufacturers.

In contrast, manufacturers operating on a spot contract basis generally lack a steady flow of orders and their operation rate is low. In general, these firms make several samples from an original design, bring them to buyers and receive orders if buyers find any of the samples attractive. It is rare that the original design is accepted as it is presented and buyers often request some changes. In other words, these manufacturers lack the power to develop markets for their own products on their own.

#### 4) Subcontracting Firms

Out of the 104 stuffed toy firms, 31 BOI-registered enterprises (as of 1991) are believed to be oriented toward direct exports. However, only 16 of them are actively exporting and the remaining 15 have either suspended their overseas transactions or are exporting on a drastically reduced scale due to the slump in business. Other manufacturers are generally shipping their products to the domestic market or subcontracting for export enterprises. Because the domestic market is small in scale, most of them are believed to be subcontracting.

There are two attitudes toward the employment of subcontracting among exporting enterprises. One is to keep the use of subcontracting to a minimum and incorporate the relevant processes into their own lines. This tendency, which stems from the difficulty of extending quality control standards over subcontracting firms, is observed at foreign-affiliated firms.

The other attitude is to actively use subcontracting to enhance order reception capacity. This trend is strong among medium-size local enterprises. In such cases, there is a strong tendency to expect assignment of specific processes to specialized subcontractors rather than a simple expansion of the subcontracted portion of a product.

#### (2) The Long-Term Development Program for the Toy Industry

PHILTOY analyzed toy industry concepts and problem areas and in 1987 submitted to the government the Long-Term Development Program for the Toy Industry. This program proposed two development strategies: a basic strategy, assuming no substantial changes in government assistance for the toy industry; and an "enhanced" strategy, based on the premise of expanded government aid.

Total costs required for implementation of the various projects proposed in this program are estimated to total P20 million. Since access to long-term loans at favorable interest rates has yet to be found, for the time being necessary funds will probably have to be procured through a financing agency or through international aid organizations. The program was also submitted to NEDA, whose response was that "Although we recognize the importance of marketing activities, more emphasis should be given to product development."

#### (3) Industry Organization

PHILTOY (The Philippine Toy and Novelty Manufacturers Association) is an organization which represents toy firms including stuffed toy firms. The organization was

reorganized November 27, 1986 to take the place of PTMA (Philippine Toy Manufacturers Association: estd. June 2, 1975), its predecessor.

## **1-2 Issues**

### **(1) Raw Material Supply**

There are two domestic plush manufacturers in the Philippines. One produces plush whose density of thickening, materials and color are not suitable for manufacturing exports. The other is a joint venture with a Japanese firm set up in 1990. Although fabrics such as the boa it produces may be suitable for export, the plush it produces does not meet the specifications required by stuffed toy manufacturers in that: 1) it fails to satisfy the delicate color requirements of manufacturers, and 2) there are few kinds of fabrics produced (sliver high pile, jacquard, tumbling, etc.). At this stage, therefore, stuffed toy manufacturers do not regularly use the venture's products, though some are using them on a trial basis. On the other hand, plush manufacturers face difficult problems such as insufficiently large orders from users and the inability to secure all necessary dyes because of the small volume of orders for each color.

The growth of domestic raw material supply manufacturers is a very important factor for the growth of the stuffed toy industry because it would facilitate manufacturing of counter samples to be presented to buyers and would allow a reduction in the period from order reception to delivery. Currently, however, there exists a vicious cycle — domestic plush makers cannot meet the specifications of stuffed toy manufacturers due to their low level of experience. --> They do not receive large orders because of this inability. --> They cannot accumulate experience due to the lack of large orders.

This joint venture plush maker currently exports 75 percent of what they produce. China and R. Korea are their main exporting destinations. As well as achieving scale merit through continuing efforts to increase exports, plush makers should supplement this by conducting research on how to respond to the various needs of users. It is also necessary for the stuffed toy industry to establish a system of cooperation for the promotion of plush makers involving research on plush finish and domestic procurement of plush wherever possible.

### **(2) Marketing**

Contact with buyers/vendors is currently fairly passive. Trade fairs are one of the active points of contact on a spot basis. However, several factors make it difficult to attract the attention of buyers from overseas, namely 1) the high participation expenses limit the scope of participants, 2) the participants have difficulty grasping market preferences and display inappropriate exhibits, and 3) local capital small and medium-sized firms are dominant among the participants.

Buyers need overseas production bases and thus they are actively endeavoring to find appropriate manufacturers, not only at trade fairs but also on other occasions. In the Philippines, however, efforts to promote the advantages of the country to draw the attention of buyers are insufficient. In addition, there are no established windows for buyers to make contact with manufacturers and this results in lost opportunities for contact.

Improvement of order reception capability is also necessary for marketing. Unless manufacturers have the capability to meet the expectations of buyers during contacts with them, the buyers will turn to other manufacturers (or countries). With respect to order reception capability, buyers focus their attention on: 1) cost competitiveness, 2) counter

sample making ability, 3) quality control ability, and 4) ability to strictly observe delivery schedules.

Problems with counter sample making in the Philippines include: 1) shortage of designers (or patternmakers), and 2) difficulty in obtaining raw materials for sample making.

The shortage of designers (or patternmakers) is particularly serious among small and medium-sized local capital firms.

Foreign and local medium-sized firms conducting exports generally possess appropriate quality control ability. It is possible to expect them to manufacture products qualified for export if the proper raw materials are used. Firms inexperienced in export markets often lack consciousness of these items which are aimed at maintaining the basic quality of products.

Factors responsible for a longer time for delivery or delayed delivery include: the underdevelopment of the domestic raw material industry, the fact that subcontracting firms are not well organized, and insufficient infrastructure. Firms producing without any relations with vendors but through direct access to buyers are forced to spend around one month for raw material purchases after the receipt of orders (arrival of L/C). If they want to compete with others, they must reduce the period needed for actual manufacturing. Even though utilization of subcontractors is one way to reduce this period, because of anxiety regarding the ability of subcontractors to be utilized for manufacturing, they sometimes give up accepting orders.

### (3) Cost Competitiveness

A remarkable wage increase has taken place in the Philippines recently in accordance with higher prices. Minimum wages have risen as much as 30 percent in one year between 1990 to 1991. While the minimum wage in the Philippines was 14 percent lower than that in Malaysia as of January 1991, it was 15 percent higher than that in Thailand and 200 percent higher than that in China.

The costs of a medium-grade stuffed toy are estimated as follows:

Estimate of manufacturing costs for stuffed toys		(FOB)
		Unit price per piece (US\$)
R. Korea		2.20 - 2.30
China		1.60 - 1.80
Philippines		2.00 - 2.10

Note: Medium-grade products with seated height of 20 cm, lot size of 15,000 pieces.

There is already a huge gap between production costs in the Philippines and China. However there is still significant scope for reduction of production costs in the Philippines. Most important is the increase in operation rates. If operation rates were increased 30 percent, production costs would be reduced 13 percent, bringing them close to those in China.

Table III-1-1: World Export of Stuffed Toys

(Unit: US\$ million)

	1980	1984	1985	1986	1987	1989
R.Korea	185.7	403.1	498.4	693.8	1,020.1	684.1
Taiwan	183.5	423.4	507.2	667.1	905.0	124.6
Hong Kong	523.6	670.7	709.5	769.6	900.3	118.9
Thailand	1.2	11.2	26.2	29.4	65.5	41.7
China	-	-	-	-	-	572.5
Malaysia	1.2	23.5	38.8	26.5	39.2	17.2
Philippine	8.9	7.0	6.5	5.1	8.0	11.5
World Total *)	2,447.3	3,137.3	3,812.5	4,818.5	6,239.4	1,821.4

Note: 1. \*) Including others

2. Commodity code system was modified as follows;

1980 to 1987: OECD Imp. Statistic Code SITC R2 No. 894.22 (Dolls)

1989 : OECD Imp. Statistic Code SITC R2 No. 894.23

(Toys Representing Animals/Non-Human Creatures)

Source: OECD

Table III-1-2: Germany/Market Supply of Stuffed Toys

(Unit: million DM)

Year	Production	Export	Import	Market Supply
1989	100.5	59.7	192.1	232.9
1990	138.7	61.5	186.1	263.3

Note: (Market Supply)=(Production)-(Exports)+(Imports)

Source: Fed. Bureau of Stat. and own calculations

Table III-1-3: Demand and Supply of Toys in R. Korea  
(1986 - 1990)

Product	(Unit: US\$ 1,000)				
	1986	1987	1988	1989	1990
Vehicles for					
Production (a)	19,874	31,789	47,080	41,616	42,329
Imports (b)	956	2,101	455	768	671
Exports (c)	7,351	16,074	25,083	19,734	20,218
Consumption (d)	13,479	17,816	22,452	22,650	22,782
Dolls					
Production (a)	24,715	36,424	37,647	28,996	33,715
Imports (b)	1,169	22	416	675	943
Exports (c)	16,909	23,787	25,099	17,876	21,642
Consumption (d)	8,975	12,659	12,964	11,795	13,016
Stuffed Toys					
Production (a)	580,598	815,778	717,280	667,214	549,157
Imports (b)	118	634	1,161	2,034	1,650
Exports (c)	565,643	794,845	701,013	650,748	531,043
Consumption (d)	15,073	21,567	17,428	18,500	19,764
Metal/Plastic					
Production (a)	116,945	193,335	250,622	229,961	195,217
Imports (b)	1,479	2,259	6,036	8,008	16,517
Exports (c)	55,122	107,288	139,549	115,058	78,324
Consumption (d)	63,302	88,306	116,109	122,911	133,410
Others					
Production (a)	88,709	147,707	100,232	93,619	89,014
Imports (b)	5,856	5,924	4,811	11,043	11,267
Exports (c)	82,830	136,793	83,639	82,547	77,499
Consumption (d)	11,735	16,838	21,404	22,115	22,782
Total					
Production (a)	830,841	1,225,033	1,152,861	1,061,406	909,432
Imports (b)	9,578	10,940	12,879	22,528	31,048
Exports (c)	727,855	1,078,787	974,383	885,963	728,726
Consumption (d)	112,564	157,186	190,357	197,971	211,754

Notes: 1. Others include ceramic and wooden toys as well as parts of toys.

2. (d) = (a) + (b) - (c)

Source: Korea Toy Industry Cooperative and Bureau of Custom

Table III-1-4: Philippines/Export of Toys

	Amount (US\$, FOB)	Growth Rate (%)
1984	8,617,530	
1985	5,735,365	-33.40
1986	4,471,049	-22.00
1987	5,806,905	29.90
1988	10,083,560	73.60
1989	19,386,467	92.20
1990	24,423,098	26.00

Source: Philippine Export to the World, BET

## 2. Costume Jewelry Industry

### 2-1 Summary of the Study

#### 2-1-1 Present Situation of Export Market of Costume Jewelry

##### (1) Outline

##### 1) Market and characteristics of costume jewelry

Jewelry can be classified into fine jewelry and costume jewelry, and an expanding intermediate category of "bridge jewelry" has also sprung up. The term *semi-jewelry* refers to another group that overlaps both bridge jewelry and costume jewelry. (See Table III-2-1)

In place of the costly precious metals and gemstones used in fine jewelry, costume jewelry uses inexpensive base metals which have been plated, synthetic gemstones, plastics, textiles, and a variety of natural materials. Designed with an emphasis on fashion and lacking the lasting value of fine jewelry, these pieces have a short life cycle and are generally mass-produced by machines. Major products include women's hair ornaments, earrings, pendants, necklaces, bracelets, bangles, brooches, rings, lockets, armlets, anklets, button covers, watches, men's tie clasps and cufflinks, novelty items like key holders, and various character goods.

The market for costume jewelry can be divided into three sectors -- high-end, intermediate, and low-end -- on the basis of purchase incentive. (1) Low-end products are like consumer goods in that they use inexpensive materials, have short product cycles that are easily influenced by short-lived fads, and can be worn on more casual occasions. (2) Intermediate pieces are made using moderately-priced materials, are sold under license from U.S. and European designers, tend to be very trendy, and fall somewhere between formal and casual. (3) High-end costume jewelry involves formal pieces made from relatively expensive materials and having designs very similar to fine jewelry.

Low-end and intermediate products are especially influenced by yearly and seasonal fashion trends in terms of materials, designs and colors. Product life cycles are generally quite short, with a strong leaning towards fads and trends.

In the following discussion, costume jewelry markets are broken down into four classes, A through D. Class A indicates the market for high-end products, and corresponds to what would be called "formal" market in Japan or "high-end goods" in the United States. The Class B market covers intermediate-range products, and is equivalent to the "semi-formal" market in Japan or the "bridge jewelry" market in the United States (to be distinguished from the "bridge jewelry" market in Japan). The Class C market consists of the upper half of low-range products, and refers to the "fancy/casual" sector in Japan or the "low-end" sector in the United States. Finally, the Class D market covers the lower half of low-range products, and corresponds to the "character/novelty" market in Japan or the "novelty" market in the United States (see Table III-2-1).

##### 2) Outline of exports and imports

Worldwide imports of costume jewelry grew steadily at an average annual rate of 24.5% from 1983 to 1988. This was due to expanded imports by both the industrialized nations and the NIEs, which had been exporters. The United States was the largest single buyer in 1988, with imports valued at \$555 million, but its share of total imports was down to 29% from 47% in 1984. U.S. imports increased steadily until 1985, with

growth leveling off after that. During the same period, European imports continued to rise, with this region's share of total imports growing from 30% to 40%. The figure for Asian countries also rose from 14% to 24%. (See Table III-2-2)

The three leading exporters of costume jewelry in 1988 were Hong Kong (\$321 million), the R. Korea (\$259 million), and W. Germany (\$175 million). Together these three countries accounted for roughly half of worldwide exports of \$1.6 billion. Asia was responsible for 50% of all exports, and Europe for 41%. Philippine exports of \$19 million represented only 1% of the total.

Asian exports of costume jewelry have been successful because this is a labor intensive industry and the region has a large supply of cheap labor. Asian producers use different materials in each country and have targeted different sectors of the world market. Virtually all exports are low in price.

## (2) The Japanese Market

### 1) Features of the Japanese market and the production and distribution systems

In the past, Japan levied a 15% commodity tax on all jewelry priced at more than ¥37,500. With the revision of the tax system in April 1989, however, the commodity tax was abolished. As a result, distributors which had only dealt in cheaper items began to move into upmarket product ranges, and consumers, encouraged by the elimination of the commodity tax and an increasing preference for upmarket goods, began turning to fine jewelry.

Based on shipments, the Japanese market for costume jewelry was estimated in 1990 at ¥383.62 billion. Based on household consumer expenditures, the estimate for the same year was ¥541.2 billion.

The basic distribution channel for costume jewelry is as follows: processors (with various subcontractors) --> assemblers --> wholesalers --> retailers. Recently, some processors have established direct ties with wholesalers or retailers, and many assemblers are forgoing the wholesalers in their business with retailers.

Most manufacturers are from micro-sized to small and medium-sized businesses, and the subcontractors have established a division of labor by parts, assembly, materials and processes (gemsetting, carving, brazing, plating, etc.).

It follows that products are completely worthless after their product life cycle has finished. Thus, there are risks involved in production and sales. Most firms have adapted flexible manufacturing systems, and the industry itself is characterized by a flexible division of labor that has developed naturally over the years in response to this.

### 2) Imports

Recent years have seen a sharp rise in costume jewelry imports as local producers have been unable to keep up with increased demand. Growing demand resulted from 1) the need for large product lineups to respond to the diversification and individualization of consumer needs, and 2) growing demand for distributors' stock, caused by the entry of firms from other sectors and the expansion of retail floor space. Other factors behind the increase in imports include consumer yearnings for traditional European products, technical improvements by Asian manufacturers, labor shortages in Japan, the appreciation of the yen and the rollback of import duties, and the abolition of the commodity tax in 1989.



The main suppliers in 1990 were R. Korea, with ¥4.18 billion, the United States, with ¥4.00 billion, France, with ¥3.31 billion, Taiwan, with ¥2.63 billion, (West) Germany, with ¥1.94 billion, and Italy, with ¥1.43 billion. Each of these countries is viewed as a source for certain types of products.

In Japan there are different types of imports corresponding to the various stages of processing and distribution. They include the special materials imported by individual specialist processors, the parts and semi-finished products imported by assembler/manufacturers, and the finished products imported by wholesalers with product planning capabilities and operational mobility in an attempt to achieve greater variety in their product lineups.

Japan has only a short history of importing accessories. The Japanese industry is set up based on the principle of meeting demand with local production, and structures are in place to allow flexible production and distribution of products with short life cycles. In recent years, however, some department stores have engaged in direct imports to boost the variety, and particularly the high end, of their product lineups.

The following points concern products for the Japanese market and features of export business to Japan.

1. **Materials:** In the case of the upmarket, careful finishing and the use of metal fittings suited to the product level are necessary. On the other hand, in the case of low-priced products, efforts need to be directed toward cost cutting and research in the areas of materials and design which follow market trends.
2. **Quality control and inspection:** In order to meet Japan's stringent quality standards, a sense of responsibility among workers and a system of checks are needed throughout the production process, from the processing of raw materials to final finishing. Areas needing special attention include size, fading, adhesive strength, metal fittings, finish (including color, balance and feel), and uniformity.
3. **Delivery time and communication:** Although strict observance of delivery dates goes without saying, the buyer should be notified as soon as possible when it is expected that his sales (shipment) plans may have to be delayed. When doing business with Japan earning the buyer's trust and building a solid partnership is most important.
4. **Transaction lots:** In reflection of the local market, which is characterized by wide variety and small lots of products, order size on import transaction is therefore limited to the necessary quantity plus a margin for defective items. Imports, whether they are from developing or industrialized nations, are purchased only as a means of filling out existing product lineups. For major import products, the manufacturer either obtains a license for local production or else imports the necessary materials and components for assembly in Japan.
5. **Development of designs and materials:** Japanese schedules for orders, production and shipment are tight. Because of delivery time constraints and the time and effort required for alterations, orders to foreign suppliers must be limited to alterations of existing designs. Thus foreign manufacturers and exporters must develop their own designs in line with current fashion trends, allowing Japanese buyers to select the items they need from a wide selection. Buyers are attracted by originality and novelty.
6. **Distribution:** Japanese distributors operate around target markets defined by age group or lifestyle. Unless distributors who deal in the overseas maker's or exporter's type of product are approached contracts will not be able to be achieved.

### 3) Imports of Philippine costume jewelry in the future

Concerning "hand-made items using natural materials" and "coloring schemes," however, Philippine products are superior to competing items from other Asian nations. Buyers look to the Philippines when they have to purchase these materials and products. The market segments open to traditional Philippine products, which have earned a reputation as "rustic craft items made from natural materials," are extremely limited in number, and even these segments are small in size and vulnerable to fashion trends. Product development and marketing by the Japanese industry focuses on very small target audiences, and so a limited to firms dealing in Philippine materials and products are successful on the young market, or firms are interested in natural materials. (See Fig. III-2-1)

The abolition of the commodity tax in April 1989 makes fine jewelry more affordable and also helped to promote sales of upmarket costume jewelry. At present, the costume jewelry market is dominated by base-metal products, especially those plated with a precious metal.

In order for the Philippine costume jewelry industry to increase its exports to the Japanese market it is absolutely essential that these expanding markets be entered. In order to achieve this the industry must develop the capacity to respond to the needs of this market in areas of design, materials and quality.

### (3) The U.S. Market

#### 1) Market and imports

The U.S. market for costume jewelry (excluding precious metal and precious metal-plated products) began a course of steady expansion starting in the mid-1980s and by 1989 had grown to \$2.1 billion. Market size for imported costume jewelry on retail price base alone surged from \$241 million in 1980 to \$800 million in 1989. Dependence on imports increased during the same period, from 17% in 1980 to 27% in 1986 and 35% in 1989.

Imports of costume jewelry totaled \$461.38 million in 1990. Imports from Central and South America were insignificant. Half of the market for imported costume jewelry was split up by R. Korea (27.8%) and Taiwan (22.4%), with both countries posting 7% growth over the previous year. Imports from China, with a 10.2% overall share, surged 66.0% over the previous year, due mainly to increased purchases of non-metal products.

The trend in favor of importing raw components from outside and then processing these domestically is growing stronger. This has been thought necessary in order to facilitate design changes and to respond to shorter delivery periods and thus strengthen competitiveness. Moreover, due to increased labor costs, makers in the U.S. and Europe have begun to emphasize the production of expensive goods of high quality.

#### 2) Import transaction

Imports take the form of 1) direct purchases at overseas factories and exporters, 2) purchases through local agents, 3) purchases through U.S. affiliated importers or manufacturers, 4) direct purchases from overseas makers. Importers (buyers) who purchase products at overseas factories and exporters already have information regarding local suppliers, and have business relationships with them. Leading chain stores discover makers which make products to be sold under the chain store's brand name through direct overseas purchases. Many buyers overseas choose to conduct such business because they

like the culture of the particular place. Overseas purchases are estimated to account for 10 percent of total imports.

Because local agents conduct their business on a long term basis, they are able to keep constant checks on the progress of production and on quality as well as complete export documents and customs procedures quickly and efficiently. The use of agents brings about a 10 to 15 percent increase in costs. Imports conducted through agents account for 40 percent of the total. Dealing with one agent is in practice easier than dealing with a number of different suppliers.

Importers with bases in the U.S. and positive results with makers from the exporting country are used when particularly small amounts are imported. Direct purchases from overseas makers are restricted to purchases from major overseas manufacturers with showrooms or offices as well as permanent staff in the U.S.

### 3) Evaluation of Philippine costume jewelry in U.S. market

To be successful, costume jewelry must combine the following elements: (1) appeal in terms of design, style, and coloring; (2) combination or novelty; (3) trendiness; and (4) a price low enough to encourage impulse buying. Low price alone is no longer enough. In addition, styles, materials and price ranges change rapidly, and the life cycle of hit products is very short. The evaluation of Philippine costume jewelry in U.S. market is as follows:

1. Flexibility in pricing and business dealings: Most Philippine products target the low-end market. Although this segment is very large, competition between Asian producers is intense. Trendy styles are needed, but designs often suffer due to cost constraints. Manufacturers must be flexible in working with a given price range and product category.
2. Target market: At present Philippine products depend heavily on low cost for their marketability, but cost competitiveness is gradually being faded. If the Philippines is to secure its own niche in the low-end of the U.S. market, unique products will be needed.  
The Philippines will have to satisfy the following conditions in order to penetrate the high-end market. First of all, the workmanship must be improved by using more expensive artificial materials and more complex production processes. Also, the high-end market should not be approached until producers are capable of consistently meeting delivery dates.
3. Setting of prices: In Taiwan and Hong Kong, the prices asked for similar products by different manufacturers vary only about 25%, while in the Philippines the difference can run as high as 300%. Companies also provide large discounts depending on negotiations; reductions from \$10/dozen to \$3/dozen, for example, are not uncommon. Stories like these tend to create a mood of distrust and animosity among U.S. buyers and importers. Prices should be calculated based on actual production costs and a reasonable margin.
4. Quality and design novelty and originality: When looking for new products, buyers tend to prefer products priced accordingly for their design and quality to products in specific price ranges. Fashion accessories appeal to consumers by being trendy, not by being cheap. In the case of the Philippines, a greater variety of materials should be used along with more elaborate processing techniques.
5. Imitation products: Unique designs are of paramount importance for designers and manufacturers. Imitation products run rampant in the Philippines, and the copies

are often of poor quality. This is one of the reasons why buyers prefer components over finished products when ordering from the Philippines. In order to approach high-end markets, education will be needed to encourage responsible practices and preserve the integrity of supplied designs.

6. Prompt delivery: In addition to developing new designs, manufacturers must respond quickly and decisively to new fashion trends. When looking for new manufacturers, buyers emphasize the speed of production and deliveries.
7. Thorough inspection of shipments: Especially in the case of orders by specifications, the delivered items often vary substantially from the original order. This is because Philippine suppliers have yet to understand the importance of collation with the provided specifications.
8. Improved processing quality: The Philippines are highly rated for the processing of shells, bone, paper, dyed lumber, etc., but there are problems in terms of production and quality when it comes to specific components or designs. In particular, regarding items with designs using metal fittings and/or metallic components, Philippine costume jewelry is inferior to that produced in Thailand and Indonesia in terms of product quality. In the area of wood carving, China, Indonesia, and countries in Latin America are able to provide more careful and detailed workmanship.
9. Use of high-quality metal fittings: Metal fittings are used in assembly and joining. They are more than simple components, however, since designers will often modify styling or tone because of them. The Philippines produce almost no metal fittings, forcing manufacturers to rely on imports. This contributes to delayed shipments and increased costs and hurts competitiveness; it is also one of the reasons why buyers regard the country as a supplier of assembly components and certain low-priced products.
10. Promotion of technology transfer: The development of products and markets will require the transfer or development of advanced technologies. Possible suppliers include Taiwan and R. Korea.
11. Sales promotion activities: More aggressive sales promotion activities are needed, including the following: (1) promotion of exports in cooperation with governments and industries in countries and areas such as Taiwan, Singapore, Hong Kong and Japan; (2) distribution of company lists containing the names and company profiles of manufacturers and suppliers; (3) selection of distribution channels suited to the size and resources of each manufacturer; and (4) the establishment of showrooms and sales offices in major cities in the U.S. including New York at the company, industry, or government level.

#### (4) The U.K. Market

##### 1) Market and imports

During the mid 1980s, the image of fashion jewelry was transformed from a low value positioning to become a high fashion, high value product, with pieces costing several hundred pounds each. This was influenced by the rising trend to mean jewelry as a fashion accessory, and the trend set by rich and famous style leaders.

Over the period 1985 to 1990 the importation of imitation jewelry (including synthetic and reconstructed precious or semiprecious stones) rose 42% in value to £74.7 million (C.I.F. Equivalent to US \$134 million).

Much of what is imported from the Far East is relatively cheap and tends to be unbranded. Importers say they buy on price. While Hong Kong is still fairly competitive, R. Korea and Taiwan prices have been rising in recent years as labor costs have risen. Importers have been looking for other Far Eastern sources. Mainland China and Thailand are likely to become important in the future.

Each year EC countries account for 26% to 28% of imports of imitation jewelry of other non-precious materials with France, (West) Germany, Italy and more recently Ireland as the principal European sources.

## 2) Distribution

Costume jewelry is a market controlled by the retail traders rather than by manufacturers, wholesalers or importers. The distribution chain nevertheless includes manufacturers and importers, wholesalers and retailers.

Thus the supply chain is very short. Retailers obtain their supplies either directly from U.K. manufacturers or directly from importers who act as their own wholesalers. Importers tend to obtain their low cost volume supplies from the Far East and more expensive products from Europe including Czechoslovakia. There is no evidence of importers specializing in supplies from one specific country or source. The reason for this is the fashion nature of the costume jewelry market which requires frequent changes of design and style. Single country specialization would be too risky.

## (5) Costume Jewelry Industry in Neighboring Countries: Thailand

### 1) Overview of the industry

Over the last several years costume jewelry exports have been expanding steadily, with particularly large growth being seen from 1988 onward.

There are currently 50 costume jewelry manufacturers, 20 of which export their products. Whereas large manufacturers only produce jewelry for the overseas markets, medium sized manufacturers target both domestic and overseas markets. Because of the quality of their products, medium sized manufacturers' exports account for 20-25 percent of total exports on a value basis.

### 2) Production technology

Production technology and the quality of workmanship is improving year by year. The import and use of artificial pearls and gems as well as the development of production processes have been key factors in this improvement. The three main processes in jewelry production are casting, plating and decorating. Skilled craftsmen utilize traditional Thai designs in the decorating process.

Although in the past the standard of casting and plating was low, major manufacturers are developing these processes. Tin is the main material used in casting (major makers use tin with a purity of 90 percent). The plating process has been improved with the use of 100 percent gold plating solution. This improves the appearance of finished products giving them a look of high quality. The introduction of modern technology and of high speed and high technology machinery and equipment such as casting machines, electroplating facilities and sand blasters have not only helped in the improvement of quality but also in upgrading the industry.

### 3) Exports

Exports of costume jewelry from Thailand have been experiencing remarkable growth since the mid-1980s. The highest growth on both a value and quantity basis was recorded in 1989. The growth largely resulted from an increase in exports of metal based items.

Exports to the major importing countries, the U.S., the U.K., France and Saudi Arabia, are demonstrating firm increase. Although the U.S. is the largest market, growth in exports to this market is expected to slow as a result of the cancellation of Thailand's status as a Generalized System of Preferences in the U.S..

### 4) Industrial support, export promotion policy

The costume jewelry industry has been designated a promising export industry and the Thai government has been implementing various support measures in areas of production technology improvement and export promotions over the last ten years.

The Ministry of Industry, Ministry of Commerce and the Office of BOI are progressing with their joint program for the establishment of the jewelry industry zone. The purpose of this is to facilitate approaching the export market and is expected to bring many benefits to the costume jewelry industry. The zone will have training systems on technical craftsmanship and a tax incentive system to strengthen competitiveness (refunds for import duties on materials required in processing of products for export).

## 2-1-2 Costume Jewelry Industry in the Philippines

### (1) Production Structure

#### 1) Outline

The Philippine costume jewelry industry consists of exporters, assemblers, manufacturers, and other related firms. Most of the exporters are also engaged in assembly and manufacturing. In Cebu, however, exporters and manufacturers have relatively distinct functions, and the manufacturing divisions at the exporters are quite small. In contrast, Manila-based exporters remain heavily dependent on in-house manufacturing.

Most are located in Cebu and surrounding areas, and many are cottage industries with just 5-10 employees. They are numbered at anywhere from 1,000 to 2,000; the actual figure is uncertain. Most of the employees belong to low-income groups, and the high unemployment rate makes it easy to hire workers. Several processes are contracted out to these firms by the exporters. Each of the firms specializes in a certain material, such as shells or wood. Since they depend on a limited range of work, these companies tend to be directly affected by seasonal fluctuations in orders and demand. As a result, changes of occupation and business closings are fairly common.

Assemblers, also called stringers, assemble parts supplied by the manufacturers and put together the finished or semi-finished product. They typically employ only 5-10 workers, or about 20 at most. They have little capital, and often do not even have telephones. Most of the work is done in-house (i.e., at home). The employees may be housewives, senior citizens, or children, and often the work requires no experience. Since payment is made on a piece-rate basis, earnings are unstable throughout the year. Little machinery is used; scissors and cutters are the only equipment at some of the companies. It is estimated that about 500 of these firms are located in Cebu.

Exporters play a key role in marketing, design and product development as well as handling some manufacturing and assembly operations. Thus they form the backbone of the Philippine costume jewelry industry. Exporters located in Cebu differ from their Manila counterparts in the way in which they were established and in their business objectives.

Exporters based in Manila must procure shell and other natural materials from Cebu or other areas, driving up costs. These firms are also at a disadvantage because of the higher wage scales in Metro Manila. As a result, products cost more to produce in Manila than in Cebu. However, Manila has better access to foreign ports and buyers, and related government agencies and services can be easily utilized.

Cebu is home to a large number of manufacturers and assemblers, simplifying management for the exporters. Labor costs are lower than in Manila, and shells and other natural materials are abundant. Today, however, the natural materials used in costume jewelry are shifting from shells to wood and coconut shells, both of which are found in abundance throughout the Philippines. Consequently, some production is being transferred to Mindanao, Bohol, southern Luzon and the north area of Manila. In this sense Cebu's superiority is on the wane. Although the number of exporters located in Cebu is quite large, a small group of large corporations is responsible for a substantial share of costume jewelry exports. Cebu is also home to several wholly-owned foreign affiliates and joint ventures (from the United States, Italy, West Germany, etc.) who are engaged in manufacturing and exporting. Some of these firms are quite large, and their exports considerable. In terms of absolute numbers, however, Philippine-capital firms constitute an overwhelming majority.

Cebu firms can further be divided into three groups, and Manila firms into two groups, on the basis of designs and target markets.

1. Group A-1: Firms in this group are based in Cebu and have a strong flavor of private management, along with an orientation towards flexible manufacturing (i.e., high-variety, low-volume). Designs are heavily dependent on the individual tastes of the owner or designer. The main market remains the United States, although recently there have moves to target the European market.
2. Group A-2: Also located in Cebu, firms in this group are relatively large and have established corporate organizations. They are also able to produce a large variety of products in large quantities. They maintain large workforces and numerous subcontractors, and have large management divisions. The main market for these firms is the United States, to which they export large quantities of costume jewelry.
3. Group A-3: Firms in this group are privately-managed operations located in Cebu with inadequate design capabilities and limited production volume. Their buyers are also limited in number.
4. Group B-1: Located in Manila, these firms also have a strong flavor of private management and an orientation towards flexible manufacturing. Their products, however, differ from those produced in Cebu.
5. Group B-2: These firms are based in Manila and have an established corporate organization. Although management and assembly divisions may be located in Manila, most production is subcontracted out to smaller firms in Cebu and other regions.

## (2) Development Policy

The Medium-term Development Plan (1987-92) characterizes costume and imitation jewelry as a "local resource utilization industry" and as a "short-term strategic export product", designating it a key sector for export promotion.

The Long-term Development Plan (1989-2000), released in 1988 by DTI/BOI, is an attempt to improve competitiveness on world markets and increase exports through two activities: 1) improving production efficiency through higher productivity and reduced production costs; and 2) making raw material and finished product suppliers more reliable in terms of delivery time and product quality.

Financial programs and import policy (including tariffs and trade-related procedures) are the most important elements of the action plan to realize the above goals. Although import duties were finally rolled back in September 1991, no real progress has been made on the rest of the action programs.

## (3) Industry Association

The main associations for the costume jewelry industry are CEBU-FAME, based in Cebu, and FAMA-PHIL, based in Metro Manila. Exporters and manufacturers make up both organizations. Neither has a long history, and not all of the leading exporters and manufacturers are among their members. However, we look forward to future activities.

## 2-2 Issues

### (1) Market and Design Information

#### 1) Export market information

Information that directly concerns the transaction at hand is often very limited. In addition, there is no systematic collection of information or study of target markets, especially concerning (1) the positioning and evaluation of the company's products and (2) distribution systems, the characteristics of each distribution channel, competing products from other nations and trends in consumer demand.

#### 2) Design-related information

At present, Philippine products are made from natural materials and are characterized by a low degree of processing. As a result, design variations are limited. To utilize natural resources more effectively and produce products with higher added value, firms will have to study material processing techniques and obtain information on auxiliary materials like metal fittings, paints, adhesives, resins, and chemicals (specifically, varieties, applications, proper use, etc.) and incorporate them into the production process. Collection of information in this area has not yet been done.

The dividing line between costume jewelry and fine jewelry is quickly disappearing on the world market. If firms are to succeed in entering the bridge jewelry market during the medium to long term, they will have to collect and study fine jewelry designs, both antique and modern.

### (2) Design and Product/Material Development

In general, the Philippine costume jewelry industry can be characterized by access to abundant natural materials and the availability of a plentiful labor force to process these materials. In terms of design and product originality, however, the industry's reputation



is not so favorable. Philippine costume jewelry began and developed as a local handicraft, and it continues in that tradition today. Only limited demand can be expected for handicraft-class products, and many competing nations are capable of producing similar products. Thus it will be difficult to achieve viability on the international market.

The major factors behind this design lag include the following: 1) a shortage of designers; 2) a limited selection of materials; 3) a lack of awareness and information concerning the need for design information; and 4) a lack of awareness concerning copyrights.

### (3) Raw Material Supply

Most metal components are imported, though some are also produced locally. Cast and pressed pieces are limited in volume. The pressed pieces in particular are characterized by limited variety and poor quality. Imports include components, metal fittings, and chemical products such as adhesives.

Due to the short product cycle of costume jewelry, materials must be procured promptly. In the case of imported metal fittings, it is necessary to remove all existing obstructions and create a distribution mechanism that will reduce procurement time.

### (4) Export Marketing

Aside from the exporters, the only other firms engaged in the export business are a few large manufacturers (these two groups will collectively be referred to as "exporters" below).

Exporter efforts to accommodate the customer vary in such areas as the materials used in leading products, target markets (i.e., low-end, mass-produced goods for the U.S. market or small-lot, mid- to high-range products for the European market), design skills, and product development capabilities.

Regardless of their size, most firms lacking in design skills simply wait for visits or orders from buyers and therefore suffer from the large seasonal fluctuations in order volume (orders for spring and summer designs are concentrated from December to the following April, with a large drop off starting in May).

### (5) Fund Raising

The costume jewelry industry is composed mainly of small and medium-sized companies, and borrowing from banks is difficult. Manufacturers are often forced to turn toward informal sources for their credit needs due to a lack of fixed assets or other collateral. In contrast, the exporters have relatively easy access to banks and other financial institutions. Thus there is a distinct difference between the two groups in terms of how they raise necessary funds.

Table III-2-1: Classification of Costume Jewelry Market \*1)

Market Classification	Features	Materials Used	Other Features in:	
			Japanese Market	U.S. Market
Fine Jewelry	For formal use at parties and formal visits, and for gifts; by rich women and working women.	Gold or platinum; with precious stones	20,000 yens or over	
Bridge Jewelry *2)	For formal use at parties and formal visits, and for gifts; by working women and students of upper 10s to lower 30s.	Silver; with 10K gold, precious stones, or pearl	- Attached with licence brand; 3,000 - 15,000 yens	
Costume Jewelry	Class A (High-end)	Non-precious metals (white metal) plated with precious metal; attached with pearl, rhine stone, synthetic precious stone	- Mostly imported goods from European countries; 20,000 - 50,000 yens	US\$200 or more
	Class B (Intermediate)	For semi formal use at ordinary visits and outing by housewives and students	- Attached with apparel brand; 4,000 - 10,000 yens	US\$13 - 200 (bridge jewelry *2)
	Class C (Low-end1)	For casual use by students of lower 20s	- Short life cycle - No brand name 2,000 - 5,000 yens	Under US\$15
	Class D (Low-end2)	For souvenir or personal adornment including hair ornaments, buttons, and key holders, etc.	Low cost materials including: - Non-precious metal - Chemical materials (plastics) - Natural materials (wood, shell, bamboo, horn, etc.)	100 - 1,000 yens

Notes: \*1) The classification for this specific purpose; various market segmentation prevails depending on markets and types of distributors.

\*2) The concept of Bridge Jewelry in the U.S. is different from that of Japan.

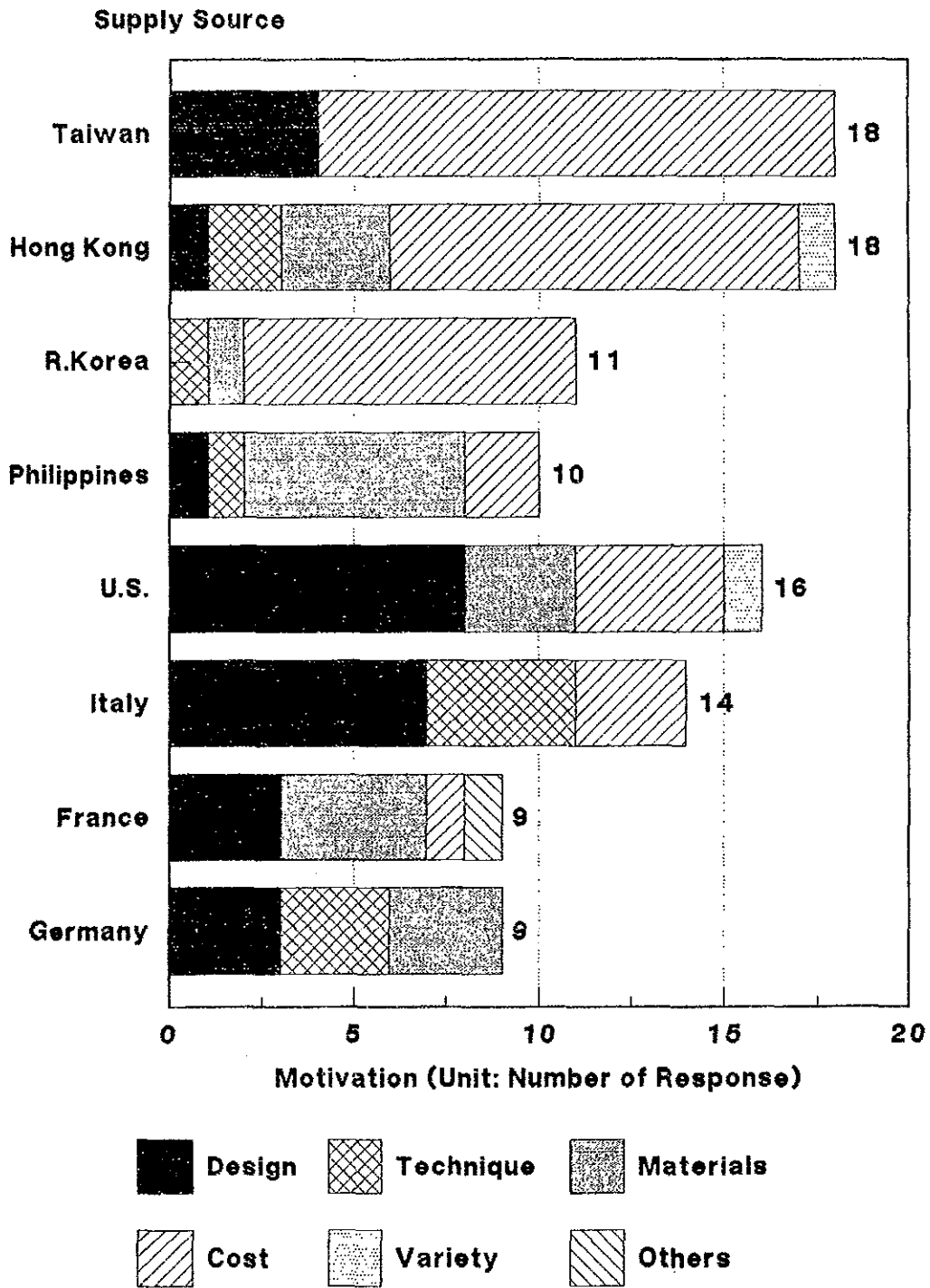
Table III-2-2: World Trade of Costume Jewelry

Import						
	Unit: Tousand US Dollars					
	1983	1984	1985	1986	1987	1988
U.S.	211,128	414,371	505,885	504,635	527,899	558,107
France	50,724	53,217	67,604	114,713	125,153	133,180
U.K.	42,197	53,993	64,349	88,338	109,706	125,106
Japan	39,158	44,078	45,571	77,846	122,517	225,359
W.Germany	35,450	35,240	39,849	66,949	99,580	121,637
Asia	117,875	126,748	142,180	208,945	321,853	453,571
Europe	246,687	263,117	324,787	527,758	709,067	770,999
Americas	246,817	459,980	566,802	583,476	603,432	620,021
Others	32,312	34,092	34,426	40,549	51,536	55,696
World	643,691	883,937	1,068,195	1,360,728	1,685,888	1,900,287

Export						
	1983	1984	1985	1986	1987	1988
H.K.	98,648	143,048	190,374	225,465	288,031	321,397
Korea	51,686	71,690	101,207	143,016	193,617	258,687
W.Germany	52,149	53,142	68,263	102,516	118,603	174,788
Italy	37,759	40,207	54,094	79,630	95,227	107,801
U.S.	58,998	57,146	56,953	76,049	84,953	112,788
Japan	44,605	51,231	62,550	62,465	46,501	105,788
India	18,700	3,969	3,574	50,263	53,097	43,716
Thailand	4,289	4,809	5,081	12,143	23,700	32,843
Philippines	5,717	12,222	13,768	11,980	23,387	19,116
Asia	229,827	292,191	383,620	516,704	644,741	796,075
Europe	201,853	221,137	287,664	435,864	528,191	652,915
World	496,716	577,059	735,642	1,039,227	1,271,528	1,604,957

Source: UN International Trade Statistics Yearbook

Figure III-2-1: Motivation for Importing Costume Jewelry by Japanese Companies



Source: Questionnaire Survey by JICA Study Team

### 3. Oleochemicals

#### 3-1 Summary of the Study

##### 3-1-1 The Oleochemical Product Market and International Developments

###### (1) Outline

The oleochemical industry is a chemical industry which uses animal/vegetable oils and fats as raw materials. Animal/vegetable oils and fats are used as 1) edible and industrial use as they are, or after refining, 2) edible use after processing (processed products), 3) products after chemical processing (oleochemicals).

The coconut oil-based oleochemical industry was developed for the utilization of C<sub>8</sub>, C<sub>12</sub> and C<sub>14</sub>. The demand areas for these are in a wide range and account for the majority of oleochemicals, as shown in Fig. III-3-1. Basic oleochemicals and derivatives produced from coconut oil compete with those manufactured from palm kernel oil.

###### 1) Demand and supply for finished products

The main finished products in the oleochemical industry can be divided into the following two categories.

###### 1. Household soaps and detergents and toiletries:

Soaps, detergents, shampoos, etc.

###### 2. Industrial fine chemicals such as surfactants, additives, stabilizers, etc., which make use of surface activity and other functions:

Surfactants for industrial use, additives for plastics, additives for food processing, industrial agents

Demand and supply for finished products in developed countries (U.S., Western Europe and Japan) is shown in Table III-3-1.

###### 2) Demand and supply for basic oleochemicals and intermediate products

Table III-3-2 shows global demand and supply for basic oleochemicals. In Western Europe and the U.S. over 40% of fatty acids are used in alkali metal salts and around 20% in fatty amine derivatives. Fatty acids are also used in esters, heavy metal salts, and monomer/ dimer/ trimer acids. In Japan fatty acids are mainly used in soaps, detergents, metallic soaps (including PVC), rubber processing agents, synthetic surfactants and lubricating oils and greases.

Drugs and personal care products are overwhelmingly the greatest users of glycerol. Of all glycerol consumed, 31.5% is used in the manufacture of these products. In Western Europe and the U.S. tobacco/triacetin is the next largest demand area for glycerol. In Japan this is alkyl resins.

Most fatty alcohols are used as surfactants and including ASs (alkyl sulfate salts), AEs (alkyl polyoxyethylene ethers), and AESs (alkyl polyoxyethylene sulfate salts) to produce detergents and cosmetic products.

Demand for fatty acid methyl esters as an intermediate products in the production of fatty alcohols, alkanolamides,  $\alpha$ -sulfonated methyl esters and sucrose esters, and others, has increased. Fatty acid methyl esters are consumed mostly for fatty alcohols

because they can be derived at lower cost in this manufacturing process. It is forecast that the consumption of methyl esters will grow considerably in the future as demand for fatty alcohols increases. Demand for  $\alpha$ -sulfonated methyl esters and sucrose monoesters as intermediate products has also been on the increase in recent years. The former is used as surfactants for detergents and the latter as emulsifiers, wetting agents, lubricants, plasticizers and defoaming agents in foods, cosmetics and drugs. Research into the possibility of its use as a substitute for diesel fuel is being conducted in the Philippines, South Africa and Malaysia.

Demand for fatty amines and its derivatives as both final products and intermediate products in various industries has undergone growth. In the U.S. fabric softeners account for almost half the consumption volume of these. They are also used in asphalt emulsifiers and petroleum additives.

### 3) Demand and supply for raw materials

Among raw materials for oleochemicals coconut oil and palm kernel oil, which have the same characteristics and uses because of the similarity of their chemical compositions, are in direct competition with one another in the global oil and fat markets.

Production of palm kernel oil was a marginal 600,000 metric tons (MT) in 1981 while production of coconut oil was 2.89 million MT. However, palm kernel oil production grew steadily through the 1980s by an average annual rate of 6.4 percent while coconut oil production stagnated during the decade. In 1990, production of coconut oil and palm kernel oil was recorded at 3.29 million MT and 1.43 million MT respectively. Although palm kernel oil production depends on palm oil production, palm kernel oil production has shown a 2.5-fold increase in the past ten years, doubling its share in the total production of the two oils. C.A. Houston & Associates forecasts (in the "INFORM" magazine) that palm kernel oil production will continue to grow at an average annual rate of five percent in the 1990s.

In Malaysia, oil palm estates started in 1917. Since then, oil palm plantations have rapidly expanded to 1.984 million hectares (ha) in 1990, when the production of the palm oil reached 6.095 million MT, representing a productivity rate of 3.1 MT/ha. Productivity is forecast to further increase because of the scheduled large-scale replanting of aging palm trees with lower productivity, as well as an expected expansion of cultivation areas.

In the Philippines, however, the production system is still based on small farmers and estate cultivation and replanting are inadequate. As a result, the productivity of coconut oil production in the Philippines remained low through the 1980s, with the average production volume standing at a marginal 0.7 MT/ha between 1985 and 1989.

### 4) International developments

The world's major oleochemical manufacturers are currently moving their production bases from their own countries to Southeast Asia and expanding their production of basic oleochemicals and derivatives.

Malaysia is becoming the world's greatest supplier of fatty acids. At present, as well as the production expansion plans already approved by the Malaysian government, there are additional plans which, if approved, would increase annual production a further 210,000 MT to 580,000 MT. Production capacity would thus be at the same level as that in the U.S. It is expected that the majority of the fatty acids produced in Malaysia will be exported. Malaysia can thus be said to have an extremely large influence in the world

market. In recent years, fatty acid production has also increased in countries including Indonesia and India.

Production of fatty alcohols is expected to increase in Southeast Asia in the future. Malaysia will be at the center of this production. It is estimated that the world's present natural fatty alcohol production capacity stands at 522,000 MT. This is expected to increase 240,000 MT to 762,000 MT by the end of 1992. It will exceed the production capacity of synthetic alcohols which is around 700,000 MT at present. Although there is a possibility that the supply and demand balance will be upset by the rapid increase in production, it is forecast that in the long-term demand will equal supply and indeed that the trend of increasing production of natural fatty alcohols will continue.

Tendencies toward expanding production of glycerol in Southeast Asia can also be seen. However, unlike fatty acids, the demand for glycerol is limited. Unless new applications for glycerol are developed in the future, a considerable oversupply will result from increased production of fatty acids, methyl esters and fatty alcohols in Southeast Asia. Therefore, a development of application technology for glycerol is required.

Production of intermediate derivatives is also expanding. Mono alkyl phosphates (MAP) has been exported from the Philippines to Japan. It also began production of tertiary amines there. Annual production capacity is 5,000 MT and exports are made to Japan as well as Western Europe and Southeast Asia. 1,000 MT of alkanolamides from methyl esters annually is produced in the Philippines and exported to China and Western Europe. Production of monoglycerides in Malaysia will begin in 1992. It is planned that high purity monoglycerides will be produced and exported to Japan. The proportion of overseas production is expected to increase if production lots for intermediate derivatives are consolidated.

## (2) The Japanese Oleochemical Industry

Up till now, Japanese oleochemicals firms have imported raw materials for production into basic oleochemicals such as fatty acids and fatty alcohols and their derivatives in Japan. Firms using coconut oil, either import crude coconut oil or import copra and conduct mechanical expression domestically. By 1988 annual imports of the two had reached a scale of 100,000 MT. Since 1989, however, imports of both coconut oil and copra have been declining. Imports in 1989 fell by 16.5 percent and in 1990 by 5.6 percent from the previous year respectively. Imports in 1990 amounted to less than 80,000 MT.

This might be related with the fact that Japanese oleochemical manufacturers are shifting production of basic oleochemicals such as fatty acids and fatty alcohols to raw material producing countries.

Japanese oleochemical manufacturers have had to expand their production facilities in response to growing demand for basic oleochemicals. However, due to high land prices and labor costs in Japan, it is difficult for Japanese oleochemical firms to expand their domestic facilities while maintaining competitive production costs. In response to this situation the major manufacturers aimed at increasing their production by building basic oleochemical production plants in the raw material producing countries. Production for basic oleochemicals in Japan is shown in Table III-3-3.

## (3) The U.S. Oleochemical Industry

A manufacturing industry census conducted in 1987 revealed that there were 764 soap and detergent manufacturers and 217 surfactant manufacturers.

P&G, Colgate and Unilever, known as the Big Three, hold a combined share of 76 percent of the household soap and detergent market in the U.S. These three firms either manufacture basic oleochemicals themselves or procure them from outside.

In the U.S., tallow-based fatty acids account for one-third of total fatty acid production. Coconut oil-based fatty acids account for 8-10 percent of production, soy bean oil 1-2 percent, and rapeseed and fish oil 2 percent.

Production of palm oil and palm kernel oil-based fatty acids is expanding globally. In the U.S. market, exports from Malaysia are showing rapid growth.

Production of methyl esters in 1988 totaled 110,000 MT. It is predicted that the amount will reach 175,000 MT in 1995 and 190,000 MT in 2000 after which production will cease to grow.

Global production of natural fatty alcohols is expanding. Growth in production in the Asian region is particularly high. However, production in the U.S. will grow a mere 2.6 percent between 1988 and 2000. (predicted by C.A. Houston & Associates).

Consumption of glycerol in 1987 amounted to 152,000 MT. Uses for glycerol include drugs/personal care products (39 percent), tobacco/triacetin (14 percent), food (14 percent), polyether polyols (11 percent) and alkyd resins (9 percent) and others.

#### (4) Trends in R&D

The emphasis which is placed on the following three areas is characteristic of trends in R&D in Japan today: 1) biotechnology such as the synthesis of materials using enzymes, 2) fine chemical materials and the fractionation and utilization of useful minor components, and 3) the development of materials which have no or little effect on people or the environment as a response to growing concern over environmental conservation and the effects of materials on consumers. These issues have come out as a result of demands from manufacturers and users rather than from the raw materials themselves.

In Malaysia joint research with Japan is taking place on the above themes and the same trends may be seen in Malaysia as in Japan. At the same time much research on the possibility of replacing currently used materials with palm oil based materials is also taking place. As neither government research organizations in industrialized countries nor leading oleochemical firms place very much emphasis, it is thought necessary that coconut producing countries take the initiative in regard to such research using coconut oil.

The research themes which would provide valuable reference to the Philippines on the basis of the perspectives outlined above include: 1) the use of calcium soap in feed for ruminants, 2) palm oil derived substances as substitute raw materials for printing ink, and 3) the synthesis of lubricating oil from palm oil by metathesis reactions.

#### (5) Outlook for Demand in Oleochemical Products

##### 1) Soap

Soaps can be divided into bath soaps, body washing soaps and clothing washing soaps. Others are liquid soaps for hand washing and industrial use.

1. Though in developing countries per capita consumption is low, demand can be expected to increase in the future as incomes increase. However, until incomes reach a certain level, consumers tend to buy for reasons of price not quality. For this reason, soap



produced by cottage industries will make up the bulk of the market, and exports cannot be expected to increase to match demand in the developing countries.

2. In industrialized countries annual per capita soap consumption is high, at 1.47kg in Western Europe, 1.51kg in the U.S., and 1.52kg in Japan. There is already no room for further expansion. However various types of soaps for personal use including high quality facial soaps, makeup removal agents, and body shampoos are being developed. The segmentation of the market is progressing and the quantity of upmarket soaps increasing. It follows, then, that in order to increase soap exports to these industrialized nations the upgrading of products and the carrying out of advertising and promotional activities directed at increasing the appeal of products are essential. Entering the market would be extremely difficult without a tie-up with a firm which has experience in sales in industrialized countries.

3. In the past, soap was produced primarily in the areas of consumption. However, a recent trend has been to produce soap base in the raw material producing areas (Malaysia) and transport soap chips/noodles in bulk to the consumption areas (Japan). This shifting of production from the consumption areas to the raw material production areas means that expansion in imports can be expected.

## 2) Synthetic detergents / personal care products

Synthetic detergents include those for 1) laundry, 2) kitchen and household furniture use and 3) personal care products include hair shampoo/rinse, body shampoo and facial soap.

Consumption levels for each of these are quite high in industrialized countries. Segmentation of the market according to use (clothing, tableware, household furniture, hair and face, body, etc.) and taste is progressing and the quantities of upmarket and high performance products in the market increasing. As a whole the demand is showing steady increase.

Per capita consumption in developing countries is still low. However in order to increase laundry and washing use, the largest demand area in synthetic detergents, the widespread use of electric washing machines is an important requirement.

1. Though the petroleum based LAS (linear alkylbenzene sulfonates) is generally used as the effective component in synthetic laundry detergents, there is a tendency for shift to the use of natural substances such as AS (alkyl sulfate ester salts) and AE (polyoxyethylen alkyl ethers).

2. Furthermore,  $\alpha$ -sulfonated fatty acid methyl esters, manufactured from coconut oil, palm oil and palm kernel oil methyl esters have begun to be used as detergents. As this does not require the high pressure catalytic process equipment needed in the manufacture of fatty alcohols, it can be manufactured at relatively low cost, so is suited to the markets of developing countries.

At present, emphasis is placed on C<sub>14</sub>-C<sub>18</sub> fatty acid methyl esters and interest is being shown in palm oils. However, derivatives of coconut fatty acid methyl esters (fractionated C<sub>14</sub>-C<sub>18</sub>) can be expected in the field of synthetic detergents.

3. The consumption of kitchen use detergents in industrialized countries is already high and growth in demand has declined (0.5% up on previous year). However, the trend in favor of detergents using natural materials is strong, particularly as they have to do with food. Sucrose fatty acid esters, sorbitan fatty acid esters and their POE ethers, and fatty

acid alkanolamides have come into wide use. Raw materials for these, not simply the fatty acids are either produced or have the potential to be produced in the Philippines. From the point of view of procurement of the raw materials, these would be products for which production in the Philippines would be relatively easy.

However, because these products are used in connection with food and may produce chapped hands, standards regarding blends and applications in industrialized countries are strict. It would thus necessary for strict quality control to be implemented. Moreover, as this market is twice the size of the market for shampoo, (in Japan 260,000 MT/year) there is enormous competition between manufacturers. Thus production in the Philippines would require tieups with overseas firms with strong research, production, supply and retail bases.

4. Demand for shampoos, rinses and conditioners in the area of personal care products is also large scale. Each of these are well established as commercial products in industrialized countries. Fatty alcohol based surfactants are widely used in shampoos. Those most widely used include alkyl sulfate salts (sodium salts, alkanolamine salts), POE lauryl sulfates, and POE sorbitan esters. An increase in the consumption of shampoos and hair rinses in developing countries is expected to follow widespread introduction of showers. Demand for tertiary and quaternary amines and other anionic surfactants and amphoteric surfactants, which are main components in these products, is expected to increase. The use of coconut oil derivatives in the production of shampoos and rinses is increasing. However, as the blend ratios of the effective components in these products is no greater than 20-30% and the majority comprised of water, they are fundamentally suited to production at the place of consumption. However the export of surfactants, the major component of shampoos and rinses as intermediate blend materials is highly possible.

5. There is a good possibility that ester sulfate salts from coconut oil fatty acids, and lauric acid monoglycerides will come to be widely used in shampoos, toothpaste and bar soap. This will offer many possibilities to countries which produce those raw materials.

### 3) Industrial surfactants

Surfactants as raw materials for synthetic detergents has been discussed. Below industrial surfactants will be examined. In industry, most demand for surfactants comes from the textile industry (25.1% in Japan). Other industries (in order of size of demand) are 1)the rubber and plastic industries, 2) civil engineering, construction and ceramics industries, 3)the lifestyle industries, 4) foodstuff industries, 5) fragrance and drug industries, and 6)the paper and pulp industry. As demand areas for surfactants are expanding, continued and stable growth in demand can be expected. It may be expected, too, that a host of new products performing new functions will be developed thus ensuring stable growth.

Sales of industrial surfactants involves a system which is akin to joint development between manufacturers and customers. Sales cannot be made separate from technical services. It is generally the case in industrialized countries that manufacturers have facilities almost equivalent to pilot plants on the side of customers, at which research and testing is carried out. Manufacturers receive support for their R&D and technical service systems from firms to whom they sell their products. With the exception of the textile industry, most user industries are located in industrialized countries. For this reason, the manufacture of industrial surfactants is almost entirely carried out in industrialized countries.

However, the manufacture of surfactants in developing countries has become more possible in recent years due to: 1) the remarkable shift of textile industry

manufacturing bases to developing countries, and 2) the fact that, as is the case for surfactants for the textile industry, stability has been achieved in manufacture of almost finished products as well as in the required technology, as a result of many years of research.

However, few surfactants are made from coconut oil. In Japan, coconut oil accounts for no more than 18% of all raw materials used in surfactants (or 0.6-0.7% of the total volume of surfactant produced). Alkyl sulfate ester salts would be an appropriate substance for manufacture in the Philippines, as this is used in the textile industry, its technology established and demand adequate.

Among surfactants, POE alkyl ethers polymerized by fatty alcohols and ethylene oxides accounts for about 15% of total production, and are used in the production of emulsifiers and other industries use. If ethylene oxides will be procured, there is a possibility of local production.

#### 4) Plastic additives

In the area of plastic additives, oleochemical derivatives play a relatively important role in 1) plasticizers, 2) vinyl chloride stabilizers and 3) lubricants.

Plasticizers are most important in the plasticizing of polyvinyl chloride (PVC) and large quantities are used for it. As demand for PVC products is increasing, growth in demand for plasticizers is also growing steadily. The majority of plasticizers are DOP (in Japan this accounts for 550,000 MT, 54% of all plasticizers). There is a high demand for DOP (dioctyl phthalates) in developing countries, and imports of this in the Philippines are relatively large.

Another raw material, natural octanol is produced from coconut oil, and if this were to be produced in the Philippines, it would be necessary to procure, phthalic anhydride. In Taiwan and Korea there are plans to build new facilities for the production of plasticizers from octanol and phthalic acid. In case of local production for these products, it is necessary to examine whether raw materials will be supplied at competitive price and transportation cost will be economical.

Vinyl chloride stabilizer is an additive which is necessary for the stabilization of vinyl chloride resin. Along with plasticizer it is an indispensable auxiliary material in the processing of vinyl chloride resin. Lubricants are used to reduce friction between polymers, and also between polymers and the surface of equipment during processing. It is also used to improve its performance as a product. As an oleochemical derivative, metallic soaps are used as a major ingredient in both vinyl chloride stabilizers and lubricants. Fatty alcohols and fatty acids over C<sub>16</sub>, fatty acid amides and fatty acid esters are also used in lubricants. However the extent of demand for these is not known. As a whole, demand for vinyl chloride stabilizers and lubricants is expanding steadily with growth in demand for vinyl chlorides. Although metallic soaps would be a product relatively well suited to manufacture in the Philippines, there is a high degree of local production of this in all countries. Moreover, exports from Japan to these countries is drastically decreasing. Thus production must be supported by domestic demand.

#### 5) Food ingredients and industrial agents

In the other fields, diversification of product development and development of applications is progressing. Importance has been placed on the following as derivatives which are becoming widely used in product technology as well as in the manufacturing technology.

1. C<sub>8</sub>, C<sub>10</sub> glycerol fatty acid esters, derivatives of fatty acids and glycerol are used widely in food ingredients. Among them are fatty acid monoglycerides and triglycerides which are used in the emulsification of raw food materials, dispersion, and as ice cream bases. They are also used as lubricants for plastic and in cosmetic emulsifiers. Among these, distilled and purified molecular distilled monoglycerides is growing.

2. Similarly, C<sub>8</sub>, C<sub>10</sub> medium chain triglycerides (MCT) have excellent absorption and metabolism and greater use of these in foods, drugs and cosmetics is expected.

3. Esters of trimethylol propane and pentaerythritol derived from C<sub>8</sub>, C<sub>10</sub> fatty acids are excellent as lubricants and are used as synthetic lubricants in areas requiring high performance such as jet engines. It is also possible that in the future their demand in more general areas will increase.

#### 6) Other uses of coconuts and coconut oil

Although not an oleochemical product, it is recognized that C<sub>8</sub> helps in reducing fat in the bodies of animals. By mixing this in with the feed of cattles and fish for breeding, development in the area of low fat meats and fish can be expected.

#### 7) Development of oleochemicals in the Philippines

##### a) Outlook for the fine chemical products

The oleochemical industry's developing fields include 1) basic oleochemicals, 2) derivatives from basic oleochemicals, and 3) fine chemical products. In the case of fine chemicals, even when the technological level of products as well as production technology has achieved stability, small quantities of a wide range of products must be produced and standards for quality are extremely strict. Furthermore even when shipment volumes are not large, they are often made on the basis of drum can units, and strict delivery dates is required. Technical service requirements are even greater here than in the fields mentioned above. Thus, in the case of fine chemicals, as well as there being strict requirements for production, high levels of quality are expected at a negotiating level as well. Moreover, from the perspective of marketing products, finding users is difficult except, perhaps, in the case of new users. Thus it is believed that it would be difficult for Filipino firms to enter this field unless they did tieups with firms in industrialized countries.

On the other hand, it is thought that emphasis should be placed on basic oleochemicals and intermediate derivatives which make the most of coconut oil properties. It is important, too, that efforts be made to capitalize on coconuts and coconut oils in fields other than oleochemicals. This could include, for example, improving the quality of coconut oil for export and taking measures to avoid deterioration during transportation.

##### b) Effective use of fatty acid composition

Up till now, development of coconut oil based oleochemicals has basically taken the form of exploiting the properties of C<sub>12</sub> and C<sub>14</sub>. However in the future it will be necessary to consider ways of using all of the fatty acids which make up coconut oil.

Because of the advances being made in simple fatty acid fractionation technology, in the future it will be relatively easy to exploit the characteristics of fatty acid compositions in many varieties of oils and fats. It follows that development which relies on a single type of fatty acid (say fatty acid from coconut oil) in the face of diversifying demand would be sacrificing economic efficiency. It is necessary that this point, too, be given consideration.

c) Development toward the production of basic oleochemicals and derivatives

Total global demand for oleochemicals is expected to expand in the future. Expansion in demand for the basic oleochemicals, fatty acids, fatty alcohols, methyl esters, fatty amines and amides is also expected. Because of the nature of the manufacturing process of basic oleochemicals, an economical scale is generally sought and the trend toward production in raw material producing countries is accelerating. However, as has been stated above, greater stability of supply can be expected of palm kernel oil than coconut oil. Thus this trend is more visible in palm oil and palm kernel oil producing countries than in coconut oil producing countries. Because expected added value for basic oleochemicals production is not definitely smaller than that for derivatives production, it is believed that most emphasis should be placed on the expansion of production of basic oleochemicals in the Philippines.

Demand for detergents, the major final products of fatty alcohols, is expected to grow. There is also expected to be a shift away from synthetic alcohols due to considerations of cost. In view also of the possible applications for natural fatty alcohols, preferences will swing in favor of coconut oil and palm kernel oil fatty acid compositions.

Alkyl sulfate ester salts, polyoxyethylen alkyl ethers and polyoxyethylen alkyl sulfate ester salts are fatty alcohol derivatives for which demand is expected to grow in developing countries. If inexpensive raw materials are used, surfactants made from  $\alpha$ -sulfonated fatty acid methyl esters can be produced at lower cost than those based on petroleum. Study to reduce production cost is underway.

Although growth in demand for fatty acids and glycerols will not be as high as that for fatty alcohols, fatty methyl esters and, and fatty amines, demand for derivatives of these such as medium chain triglycerides (MCT) and monoglycerides is expected to grow in the future.

As MCT's have excellent absorption and metabolism, their use in foods, drugs, and cosmetics is expected to rise in the future. Among monoglycerides, demand for the purified molecular distilled monoglycerides has been increasing in recent years. Although their major use is in emulsifiers for foods, they are also used in margarine, shortening, ice-cream, bread, cakes, noodles, and tofu and others. Monoglycerides are also used as lubricants for plastics and emulsifiers in cosmetics.

As production of basic oleochemicals and intermediate derivatives expands there will be a need for mutual cooperation in manufacturing and marketing between various firms in each of the derivative fields. There must be a complex production base where an overall balance in fatty acids is achieved. There is also a need for adequate consideration to be given to rationalization in the area of distribution.

Manufacturers who deal in coconut oil and coconut oil derivatives, have in general tended to accumulate technology, including production technology in this field, and seek to concentrate their production here, even when slight losses were made due to the coconut oil supply situation. Although this could be said to be beneficial to a country like the Philippines which has a pre-existing coconut oil production base, as history illustrates, it is necessary to be mindful of the possibility that instability of, price, supply volumes and quality of coconut oil may prompt the development of a substitute source in the long term.

### 3-1-2 Oleochemical Industries in Neighboring Countries

In recent years Malaysia and Indonesia have become well known as production bases for oleochemicals. The oleochemical industries in both countries were established in the mid 1970s, and when production of palm oils and palm kernel oils, the raw materials for oleochemicals, increased, both foreign and local firms began expanding their production there.

Seven firms currently have operations in Malaysia and this will grow to thirteen in 1993. Although palm oil and palm kernel oil based fatty acids and glycerol have been the major products up till now, expansion of fatty alcohol production is planned for the future.

The Malaysian government provided pioneer status to investment in the field of oleochemicals, and incentive measures such as reduction of corporate tax and investment tax allowances to investors. In Malaysia there is a system of regulation for the industry including registration for palm oil and palm kernel oil related firms with the Palm Oil Registration and Licensing Authority (PORLA), cess and export tax. The cess is used to fund the activities of the Palm Oil Research Institute of Malaysia (PORIM) and PORLA. These activities are aimed at supporting the industry and include R&D and the development of markets.

In Malaysia, though steady progress is being made in oil palm production, reduction of production cost by increasing yield has become an important issue.

Coconut oil as well as palm oil and palm kernel oil are produced in Indonesia. Up till now government policy was such that domestic demand, which includes demand from manufacturers of frying oil, soap and margarine, should be met. However following an easing of regulations in June 1991, domestic sale and export of palm oil, palm oil products and copra were liberalized.

In Indonesia 80-90% of oleochemicals produced are based on palm oil, though some manufacturers also use coconut oil. There are plans to expand present production capacity as well as to begin production of surfactants and metallic soaps. These moves are expected to bring about a quantum leap in the development of the oleochemical industry.

### 3-1-3 Current Situation and Issues in the Philippine Oleochemical Industry

#### (1) Industrial Structure

As of March, 1992, 15 BOI registered oleochemical companies existed in the Philippines. They can be classified as follows, based on the status of their operations.

Operating:	Cocochem, PKI, Colgate, P&G, Proton, Sakamoto, D&L, Philippine Refining Company (PRC), Chemphil Specialty, Vegoil Phil., Countryside Millers	(11 firms)
Stopped:	Atson Coco, Universal Robina	(2 firms)
Pre-operating:	Royal Industrial Development, Primofina Oleochemicals	(2 firms)

Atson Coco:	The firm started operation in 1976 as an oil mill and began production of desiccated coconuts in 1979. In 1990, Atson Coco exported methyl esters and diethanol amides to China. The firm stopped the exports due to lowering of price competitiveness resulting from a sharp rise in the price of coconut oil. It uses batch system facilities. It is now producing only refined coconut oil and desiccated coconuts.
Countryside Millers:	The firm is producing cochin oil and steam distilled oil as well as fatty acids (by-product). The products are being exported, mainly to the U.S. and Europe but to Japan as well in small volume.
Universal Robina:	Universal Robina is a food manufacturer producing snacks, noodles, corn starch and corn oil. The detergent bar has been produced for three to four years under an assigned production contract with P&G.
Vegoil:	The firm is producing shortenings and edible oils using palm oil. Vegoil has no intention of diversifying into production of oleochemicals because of the small volume of palm oil production in the Philippines. According to the company, three palm plantations with a total of 12,000 ha are being operated by three companies in Mindanao.
Royal Industrial Development:	Detergent bars are being produced by the company using fatty alcohols and alcohol sulfates purchased from Cocomem. Production of surfactants is scheduled to start in 1992.

Table III-3-4 shows the production capacity of Philippine oleochemical manufacturers, excluding Vegoil, based on the results of the field survey. The manufacturers can be grouped into two categories according to the table.

Firms producing only basic oleochemicals and derivatives: Cocomem, Proton, Sakamoto, D&L, Chemphil Specialty

Firms producing soaps and detergents as well: Pilipinas Kao, Colgate, P&G, PRC

Fig. III-3-2 shows the business relationship between the above-mentioned Philippine firms.

It appears difficult for major foreign affiliated oleochemical manufacturers to develop and produce derivatives by themselves because their operations are in line with their parent companies' production systems and R&D policies.

Based on the results of the field survey, if the Philippine economy grows in the future, the demand for products such as detergents and personal care products including shampoos, body shampoos and conditioners is expected to increase in view of the present small size of the market. In this sense, fatty alcohols and alcohol sulfates may be promising.

## (2) Development Policies

## 1) Philippine Oleochemical Sector Ten-Year Development Program

The Philippine Oleochemical Sector Ten-Year Development Program was announced in 1988. The program includes analysis of the present state of the industry, strategies, and proposals.

## 2) Coconut R&D Network

The Coconut R&D Network was established in order to develop the coconut industry by promoting R&D, particularly the development of manpower for R&D. Preparatory meetings have been held since 1989 and in 1990 the Network was established based on an agreement reached by the 15 organizations. The Network faces the following issues;

1. Inadequate funds
2. Lack of full-time secretariat
3. Insufficient coordination of research themes between manufacturing technologies and agricultural fields

## 3) Encouragement for use of domestically produced raw materials

Under the Marcos regime, a shift toward coconut oil-based raw materials for the production of detergents was promoted based on Presidential Decree (PD) 1863 and 1872 implemented in 1983. The Aquino regime followed this policy and implemented EO 259 in July 1989.

The order calls for a gradual reduction of the hazardous hard alkylbenzene (HAB) for the purposes of shifting toward coconut oil-based raw materials and saving of the foreign exchange required for imports of HAB. The percentage of coconut oil-based raw materials (fatty alcohols) used increased from 20 percent in the initial stage to 40 percent in the second stage and to 60 percent in April 1990.

According to detergent manufacturers, the shift toward coconut-oil based raw materials was relatively smooth while the ratio was raised to 20 percent. When shifting from 20 percent to 40 percent, however, they faced problems with many defective products. In the process of further increasing from 40 percent to 60 percent, productivity fell significantly. Among detergent manufacturers belonging to the Soap and Detergent Association of the Philippines (SDAP), small and medium-sized firms are lagging behind due to the huge capital investment required to cope with EO 259.

## 4) Investment promotion policy

According to the 1991 Investment Priorities Plan (IPP), basic oleochemicals including glycerol, methyl esters, fatty alcohols, fatty acids and alkanolamides are classified as non-pioneer which can benefit from exemption from income tax for a four-year period following the start of operations.

## 5) Small Coconut Farms Development Project (SCFDP)

The World Bank financed the Small Coconut Farms Development Project (SCFDP) for the implementation of programs for planting, replanting, fertilization and intercropping of coconuts. The SCFDP was signed in June 1990 and authorized by the the World Bank under conditions which provide for the formation of a new PCA organizational structure satisfactory to the World Bank, the establishment of a Central Project Operation Unit, and the establishment of a coconut seed garden.



The project calls for replanting of 25,000 ha (9,600 ha for Tall variety and 15,400 ha for hybrids) and fertilization of 348,000 ha in the initial five years. The project will be financed by World Bank loans worth US\$121.8 million. A total of 1,641 people of PCA will be mobilized under the project. As of the end of June 1991, 3,181 ha were replanted with 18,210 ha fertilized. PCA aims to realize harvests of 1.8 MT of coconuts per ha through this project.

### (3) Industry Organizations

#### 1) ASEAN Oleochemical Manufacturers Group (AOMG)

The ASEAN Oleochemical Manufacturers Group (AOMG) was formed by 12 oleochemical manufacturers in the Philippines, Indonesia, Malaysia and Thailand in August 1986.

#### 2) Philippine Oleochemical Manufacturers Association (POMA)

The Philippine Oleochemical Manufacturers Association (POMA) was formed based on the AOMG initiative. The member firms are Cocomchem, Colgate Palmolive, Proton Chemical, Pilipinas Kao and D&L.

### 3-2 Issues

#### (1) Stable Price and Supply of Coconut Oil

Coconut production depends on weather conditions and the results of harvests bring about fluctuations in the price of copra and coconut oil. A look at the trend in the domestic market price for coconut oil between 1979 and 1990 shows that the price peaked at 18.44 pesos per kilogram in June 1984. In more recent years, a price of 13.5 pesos was recorded in May 1989. In 1991, the coconut oil price has been showing a gradual rise due to a shortage of copra caused by typhoons and drought.

Palm kernel oil, a competing oil, contains less lauric acids than coconut oil and is produced in lower volumes. As a result, the international price of palm kernel oil is lower than that of coconut oil. However, consumption of palm kernel oil has been growing steadily on a volume basis due to steady growth in production of palm oil.

Production volume of palm kernel oil is estimated to account for between 13 and 14 percent to that of palm oil. Oil World magazine forecasts production of coconut and palm kernel oil to reach 3.37 million MT and 2.17 million MT respectively in 2000. For this reason it is expected that the shift toward palm kernel oil will further progress unless the stabilization of price and supply of coconut oil is realized through replanting, fertilization and increased yields.

#### (2) Small Market Size

According to an estimate by POMA based on the fatty alcohol requirement, the size of the Philippine market for oleochemical products in 1991 is estimated at 230,000 MT for detergents (powder and bars); 22,000 MT for soaps; 18,000 MT for shampoos.

Since the domestic market is small, as mentioned above, oleochemical manufacturers of both basic oleochemicals and derivatives depend on exports. Main user industries for surfactants and industrial agents include textiles, rubber, plastics and chemicals. However, they are still underdeveloped in the Philippines. The small scale of the domestic market has made it difficult for oleochemical manufacturers to expand production of surfactants, especially, because of the wide variety of products.

### (3) Difficulties in Procurement of Related Chemicals

Many kinds of chemicals are required to produce derivatives from basic oleochemicals. Among chemicals which Philippines oleochemical manufacturers can domestically procure are sodium hydroxide (which is being produced 67,500 MT per year) and sulfuric acid (1,028,500 MT).

The supply of all soda ash, sodium silicates, sodium sulfate and sodium phosphates are reliant on imports because of the lack of domestic production. The import duties levied on these chemicals result in higher production costs and influence the price competitiveness of derivatives.

### (4) Lack of Consistency of Measures Related to Oleochemical Industry

As to the development programs, many issues remain such as coconut levies, export tax, delayed distribution of hybrids and insufficient fertilization.

Table III-3-1: Demand and Supply of Oleochemical Finished Products in Industrialized Countries

	Production (tons)		Export (tons)		Import (tons)		Consumption (tons)		Per Capita Consumption (kg)	
	Volume in 1990	AAI in 1985-1990	Volume in 1990	AAI in 1985-1990	Volume in 1990	AAI in 1985-1990	Volume in 1990	AAI in 1985-1990	in 1990	in 1985
Soaps	1,241,000	-1.1	229,000	+6.6	136,200	+6.6	1,089,000	-1.8	1.5	1.6
Detergents	13,698,000	+2.1	1,160,500	+9.6	1,147,300	+19.5	13,678,000	+2.6	15.2	14.0
Shampoos	622,100	+5.9	78,850	+4.8	67,700	+4.8	607,000	+5.8	0.8	0.7
Surfactants	7,972,000	+6.5	306,600	+2.0	48,600	+9.7	7,407,000	+4.2	-	-

Note: Industrialized countries include U.S., Japan, and Western European countries.

Source: Japan Soap & Detergent Association  
 Japan Cosmetics Association  
 MITI, Chemical Statistics  
 U.S. Department of Commerce

Table III-3-2: Demand and Supply of Basic Oleochemicals in the World

	1985			1990		
	Production (A1)	Consumption (B1)	A1-B1	Production (A2)	Consumption (B2)	A2-B2
<b>Fatty Acids</b>						
Western Europe	920	866	54	900	953	-53
U.S.	580	716	-136	580	800	-220
Japan	280	229	51	307	284	23
Southeast Asia	140	-	140	223	-	223
Others	80	-	80	120	-	120
Total	2,000	1,811	189	2,130 (+6.5)	2,037 (+12.5)	93
<b>Glycerol</b>						
Western Europe	200	148	52	218	160	58
U.S.	140	139	1	144	152	-8
Japan	45	40	5	52	48	4
Others	145	-	145	149	-	149
Total	530	327	203	563 (+6.2)	360 (+10.1)	203
<b>Fatty Alcohols</b>						
Western Europe	240	240	0	265	280	-15
U.S.	390	398	-8	440	455	-15
Japan	95	100	-5	106	110	-4
Southeast Asia	35	4	31	44	5	39
Others	-	-	-	-	-	-
Total	760	742	18	855 (+12.5)	850 (+14.6)	50

Source: Henkel, Montreux 1986 (1985 & 1990)  
Japan Soap & Detergent Association

Table III-3-3: Production of Basic Oleochemicals in Japan

	(Units: tons, %)		
	1985	1990	Annual Average Increase
Fatty Acids	242,274	307,003	+ 5.3 %
Glycerol	45,244	52,279	+ 3.1 %
Fatty Alcohols	37,548	45,688	+ 4.3 %
<b>Total</b>	<b>325,066</b>	<b>404,970</b>	<b>+ 4.9 %</b>

Source: MITI, Yearbook of Chemical Industries Statistics

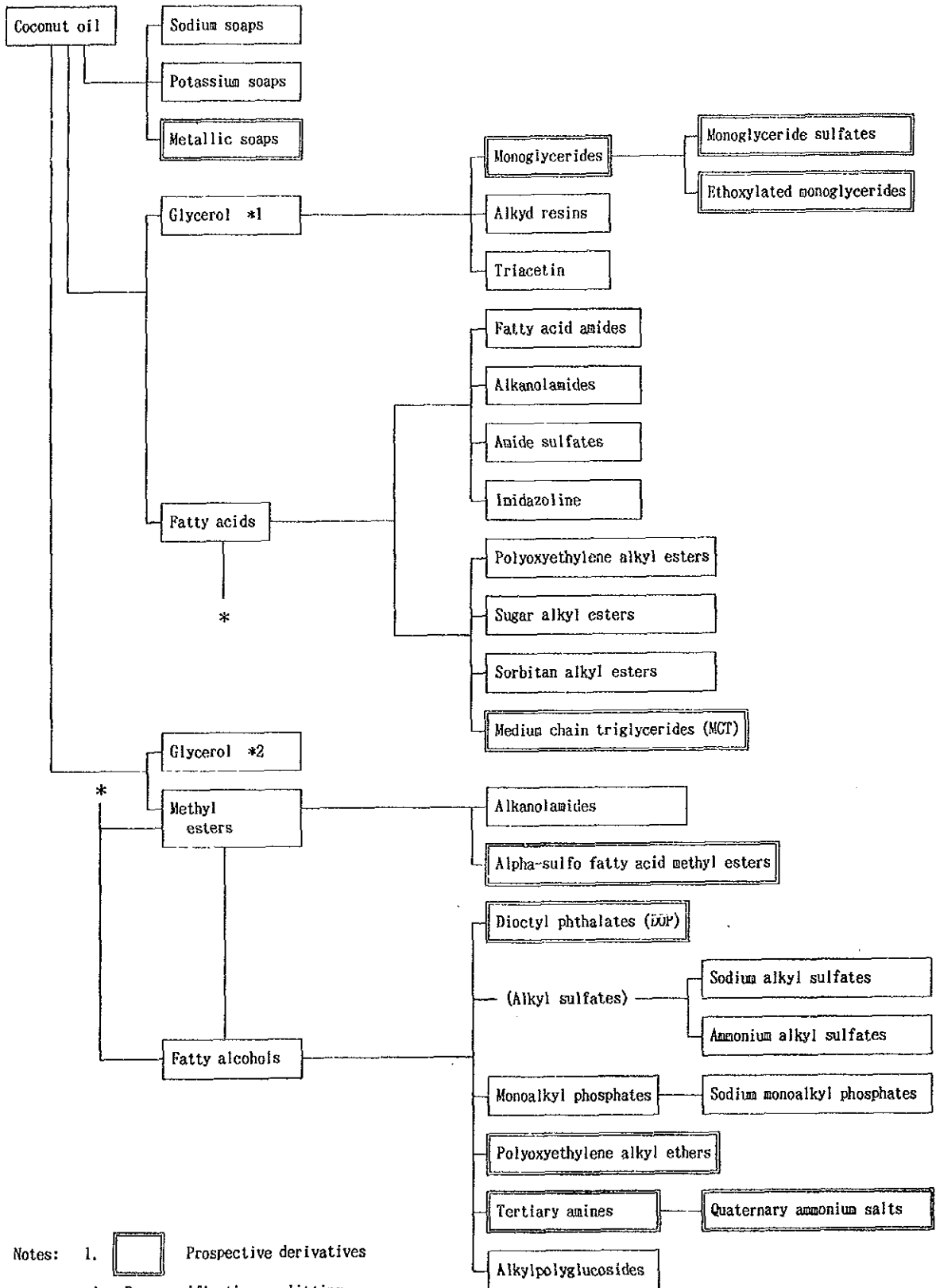
Table III-3-4: Production Capacity of Major Oleochemical Manufacturers

	(Unit: Metric Tons)				
	ME	CFA	CFAS	G	Others
Cocochem	X	O (36,000)	Pilot Plant	O (8,000)	C. Fatty Acid (30,000)
Pilipinas Kao	O (36,000)	O (24,500)	X	Refined (4,200)	Tertiary Amines (4,300) MAP (400)
Colgate	O (*4,200)	O (*3,600)	O (*21,600)	O	DOP SLES
P & G	X	X	O (*32,400)	X	X
Proton	Refined (9,600)	X	X	Crude (1,300)	Alkanolamides (1,000)
Sakamoto	X	X	X	Refined (6,500)	X
D & L	Refined (3,000)	X	X	Refined(98%) (1,800)	Monoethanolamides Diethanolamides (1,200)
Chemphil Speciality	X	X	O (10,400)	X	SLES/SLS Planning
Phil. Refining Company	X	X	O (*21,600)	X	X

Note: ME=Methyl Esters      CFAS=Coco Fatty Alcohol Sulfates      SLES=Sodium Lauryl Ether Sulfate  
 G=Glycerol                  CFA=Coco Fatty Alcohols  
 O=Operating                  X=Not Operating                  SLS=Sodium Lauryl Sulfate  
 \* converted into per annum based on as follows:  
 (hourly production) X (24 hours) X (300 days)

Source: JICA Study Team (Field Survey)

Figure III-3-1: Flow Chart of CNO Derivatives



Notes: 1.  Prospective derivatives  
 \*1 By saponification; splitting  
 \*2 By transesterification