

[4] They function as "regulatory valves" as they deal fluidly with business fluctuations and changes in the market.

#### **1-5. Necessity for Small- and Medium-Enterprise Policy**

There have been cases in some countries and industries where the growth of large corporations at a certain stage of development obstructed the growth of SMEs or else drove them out of the market. This is the so-called "formation of a monopoly" frequently pointed out by economists.

Industrial development of the type where the growth of the large corporations blocks or drives out the SMEs is disadvantageous to the consumer in that a "monopoly" is formed. It becomes difficult to deal with the "gaps" in demand and even the large corporations themselves are inconvenienced in their activities due to the loss of the SMEs in the supplementary business fields. The recognition has therefore gradually spread that this is disadvantageous to the growth of the economy and industry. Along with this, it is recognized that the SMEs are problematical in the achievement of the goal of economic growth or a proper balance in the industrial structure. As a means to deal with this, "small- and medium-enterprise policies" are often formulated.

Japan began implementing various measures to promote SMEs at an early date, but has only relatively recently made its SMEs policies the centerpiece of its industrial policy. This was with the establishment of the Small- and Medium-Enterprise Basic Law of 1963. The basic concepts of Japan's small- and medium-enterprise policies are clearly set forth in this law.

The Small- and Medium-Enterprise Basic Law, in its preamble, evaluates SMEs as having "contributed to development of the national economy in all fields such as expansion of mining and manufacturing production, smooth distribution of commodities, exploitation of overseas markets, increase of employment opportunity, and have at the same time rendered great services in the stability of the people's living" and considers them as "continuously important for the growth and development of the national economy as well as stabilization and elevation of the people's living." Further, it clearly sets down the basic concept that a policy of "the promotion of growth and development of SMEs by correcting disadvantages due to the economic and social deterrence of SMEs as well as by respecting initiative of SMEs and by encouraging their voluntary efforts while paying such appropriate consideration as to heighten the standard of living of employees in small scaled enterprises" is a duty imposed upon the people.

Based on this concept, the basic law sets the following three targets for the SMEs policy in its general provisions:

(1) Correction of disadvantages due to the economic and social conditions of SMEs

(2) Encouragement of voluntary efforts of SMEs

(3) Correction of various disparities of productivity, etc. among enterprises so as to promote the growth and development of SMEs and to improve the economic and social status of their employees

As measures required to achieve these three policy targets, Article 3 of the Small- and Medium-Enterprise Basic Law lists the following:

(1) Modernization of facilities (introduction of modern facilities etc.)

(2) Improvement of technology (technical research and development, training of engineers and technicians, etc.)

(3) Rationalization of management (introduction of modern management methods, improvement of ability of managers, etc.)

(4) Advancement of structure of SMEs (rectification of sizes of enterprises, joint operation of business, collective establishment of factories and stores, conversion of lines of business, and modernization of management in retailing)

(5) Correction of disadvantages in business conditions (prevention of excess competition and rectification of subcontracting deals)

(6) Promotion of demand (export promotion etc.)

(7) Ensurement of proper opportunities for business activities (coordination of business activities of parties other than SMEs)

(8) Rectification of labor relations, improvement of employee welfare, and ensurement of necessary labor force

The law also obligates the government to devise legal and fiscal measures to implement these policies and to make a report each year to the National Diet on the trends in SMEs and the measures taken.

The requisite measures are organized as follows by the Small- and Medium-Enterprise Basic Law:

(1) Advancement of structure of SMEs (modernization of facilities, improvement of technology, rationalization of management, rectification of size of enterprises, joint operation of businesses, conversion of businesses, rectification of labor relations)

(2) Correction of disadvantages in business activities (prevention of excess competition, rectification of subcontracting deals, ensurement of opportunities for business activities, ensurement of opportunities of orders from the state etc., promotion of exports, coordination with import volumes)

(3) Special measures such as improvement of management of small enterprises

(4) Special measures such as in financing and taxation (suitable facilitation of financing, improvement of capital of enterprises)

(5) Establishment of administration organizations and organizations of SMEs (establishment of organization for administering SMEs, establishment of small- and medium-enterprise organizations)

The establishment of this Small- and Medium-Enterprise Basic Law led to the creation of new systems and establishment of comprehensive policies. In the succeeding years, new systems were established to deal with the changing times to further improve and bolster the SMEs. The Small- and Medium-Enterprise Agency, which is the central organization for promotion of SMEs, manages the current laws and systems as shown in the following table. Specifically, Japan's SMEs policies ensures that SMEs are not placed in disadvantageous positions due to the very fact of their being SMEs and provides various systems for supporting the independent effort of the SMEs, providing financial and tax assistance to enable their stabilization and growth, in particular their ability to cope with the changing times. It implements the policies with special consideration given to the very many small enterprises .

Table IV-1. Organization of Small and Medium Enterprise Policies of Japan

1. Modernization and advancement of SMEs
  - (1) Modernization by industry: Measures for modernization of SMEs by industry (Small and Medium Enterprise Modernization Promotion Law)
  - (2) Financing for advancement: System of financing of Small and Medium Enterprise Corporation (Small and Medium Enterprise Promotion Fund Assistance Law)
  - (3) Improvement of management resources: System of diagnosis, guidance, information, training, technical promotion, guidance for internationalization, etc. by government, local bodies, Small Enterprise Corporation, etc. (Small and Medium Enterprise Guidance Law)
  - (4) Organization: System of promotion of joint operation of business and collective business (Small and Medium Enterprise Cooperative Association Law)
  - (5) Small and medium commerce and service measures: Promotion and coordination of commerce (Small and Medium Retail Commerce Promotion Law, Shopping District Promotion Association Law, Law on Special Measures for Adjusting Retail Commerce)
  - (6) Business conversion: Measures for business conversion (Law on Provisional Measures for Conversion of Business of Small and Medium Enterprises)
  - (7) Measures for regional SMEs: Measures for SMEs in production areas, indigenous industries, special industrial regions, etc. (Law on Provisional Measures for Small and Medium Enterprises in Production Areas, Law on Provisional Measures for Small and Medium Enterprises in Specific Recession Areas, Law on Provisional Measures for Small and Medium Enterprises in Specific Industries)

## 2. Stabilization of Management

- (1) Financial assistance: Financing by government financial institutions, fund assistance for strengthening SMEs, credit supplementation system
- (2) Tax measures: Reduced tax rates, remuneration to business owners, special depreciation, reserves, and other systems
- (3) Improvement of net worth: Investment by Small and Medium Enterprise Investment Promotion Co.
- (4) Prevention of bankruptcies: Mutual aid for prevention of bankruptcies, financing, consultations, guarantees, and other systems

## 3. Correction of Disadvantages in Business Activities

- (1) Promotion of subcontractors: Prevention of delayed payment of subcontracting fees, introduction of subcontracting business, and ensurement of fairness
- (2) Ensurement of government and public demand: Participation of SMEs in government and public demand
- (3) Rectification of business activities: Coordination and ensurement of business fields (Law for Adjustment of Fields of Small and Medium Enterprises, Large-Sized Retail Store Law, Law for Special Measures to Adjust Retail Commerce, Law Regarding Organizations of Small and Medium Enterprises, Small and Medium Enterprise Cooperative Association Law)

## 4. Small enterprise measures

- (1) Project for improvement of management: System of management guidance by commerce and industry associations and chambers of commerce and industry
- (2) Individual consultation and guidance system: Guidance by small business counsellors

- (3)System for financing improvement of management of small businesses:  
Financing without collateral or guarantor
- (4)System for funding modernization of equipment: Investment of funds for  
modernization of equipment and leasing of  
equipment
- (5)System of mutual aid for small businesses: Mutual aid system for  
abandonment of business etc.

Source: K. Fujita, M. Takeuchi, "Small Business Theory", Yuhikaku, 1987

## 1-6. Thailand's Small and Medium Enterprise Policies

The fifth 5-year development plan (1982 to 1986) announced by the National Economic and Social Development Board (NESDB) gives as some of the key development goals for long-term stabilization of the national economy "the relief from extreme poverty and the development of regional, undeveloped areas" and the "reconstruction of production systems in agriculture and industry". It sets down the following policies and measures to assist small and petty industries:

[1] Improvement and reinforcement of policies for raising productivity in cottage industries. By this, the government extends basic benefits to the small sized industries. These basic benefits include training, financing, and assistance in market expansion.

[2] Reinforcement and strengthening of policy of regional dispersion of industry so as to promote the establishment of greater numbers and types of small industries. In particular, the government is giving priority to exports and regional production of agricultural products, fabrics, machine tools, handicrafts, etc.

Further, it has set the following two targets for promotion of small and cottage industries:

[1] Promotion of increase in annual income of residents of regional areas throughout the country. The main source of revenue is from the cottage industries and handicraft industries.

[2] Promotion of increase of number of cottage industries and small industries in the regional areas to provide employment opportunities for about 400,000 people within five years, that is, creation of 80,000 new jobs a year.

To achieve these targets, the Department of Industrial Promotion of the Ministry of Industry has engaged in a series of projects to implement the government's policies.

One of the divisions of the Ministry of Industry, the Industrial Service Institute (ISI) works to promote the government's SMEs policies. This was established in 1966 as a joint project between the Ministry of Industry and the United Nations Development Program and provides technical information, consulting, and other services and offers seminars and training on a wide range of activities in the field of light industries. In addition, it functions to develop inexpensive, appropriate machinery and equipment to replace imports and runs technical and economic surveys to evaluate the requirements for technology, labor, and financing in the industrial sector and provides training to small businesses on technology, management, and trade.

On the other hand, there are two public financial institutions active in this field: the Small Industries Finance Office (SIFO), which handles financing to small businesses, and the Industrial Finance Corporation of Thailand (IFCT).

The main objective of the SIFO is to provide relatively low interest fund assistance and technical aid to handicraft and other cottage and small industries.

The IFCT has as its objectives the financing of various projects useful to Thailand's economic development, such as the establishment, expansion, and modernization of private businesses.

It would be difficult to say as of the present time that this series of measures for the promotion of SMEs, however, has been effective enough in view of the progress made in Thai's industrialization or the rapid growth of its export industries. There are many reasons for this. For example, the merits given to the SMEs under the small and medium enterprise policies are still smaller than those obtained by the large corporations and foreign affiliated firms from the investment incentives of the BOI. Further, the institutional financing provided through the IFCT and SIFO has not necessarily had the desired effect.

Several industrial fields in Thailand have reached the stage where the SMEs should play important roles as export industries or supporting industries. The present situation, where the SMEs are lagging far behind the rapid growth of the export industries, may prove a major restriction or barrier to future progress in Thailand's industrialization.

In particular, the mold and die and the toy industries are well suited for the growth and activity of SMEs. Further, they are important industries for Thailand's industrialization and export promotion. The promotion of SMEs in these two fields may be said to be an urgent task for Thailand.

#### **1-7. Sector Approach in Industrial Policy**

One more thing which can be pointed out in relation to the current state of the mold and die and the toy industries of Thailand is the need for a sector approach, i.e., policies covering specific, important industrial sectors and promoting the same. In present day Thailand, almost all of the investment incentives of the BOI (Board of Investment) function as a single industrial promotion policy. While some industries are designated for encouragement, no targets are set for promotion of specific industrial sectors and, further, one cannot say that any effects have appeared in that direction.

Several of the industrialized nations and South Korea and Taiwan have adopted sector-wise policies for the promotion of the development of "basic industries," "strategic



industries," "export industries," etc. important to the process of their industrial development. The general method used is to select the important industries and establish financing, tax, and tariff privileges for the same or assistance in the securement of the supply of materials and energy, research and development, etc. While the results aimed at may not have been achieved in more than a few cases, there have been many cases which may be considered to have been a success in the final analysis.

Even in policies for SMEs, there have been a number of cases where sector-wise promotional measures have been devised for fields in which many small businesses are active, industrial fields considered suitable for small businesses, etc. Japan, in its small business policies, designated several industries for promotion under a "small- and medium-sized enterprise modernization program."

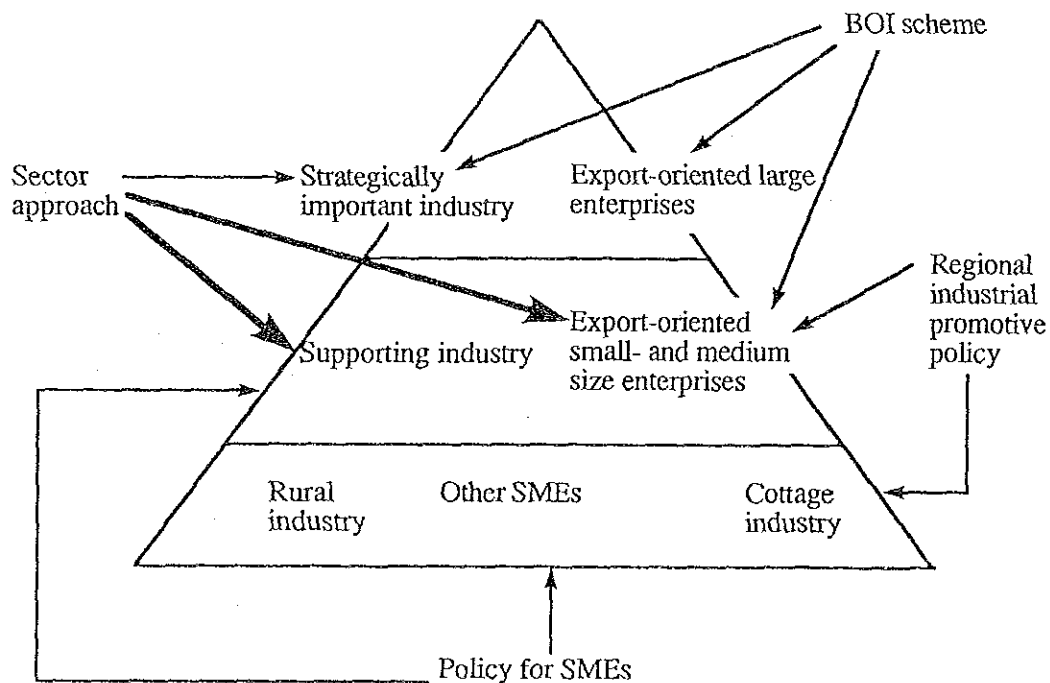
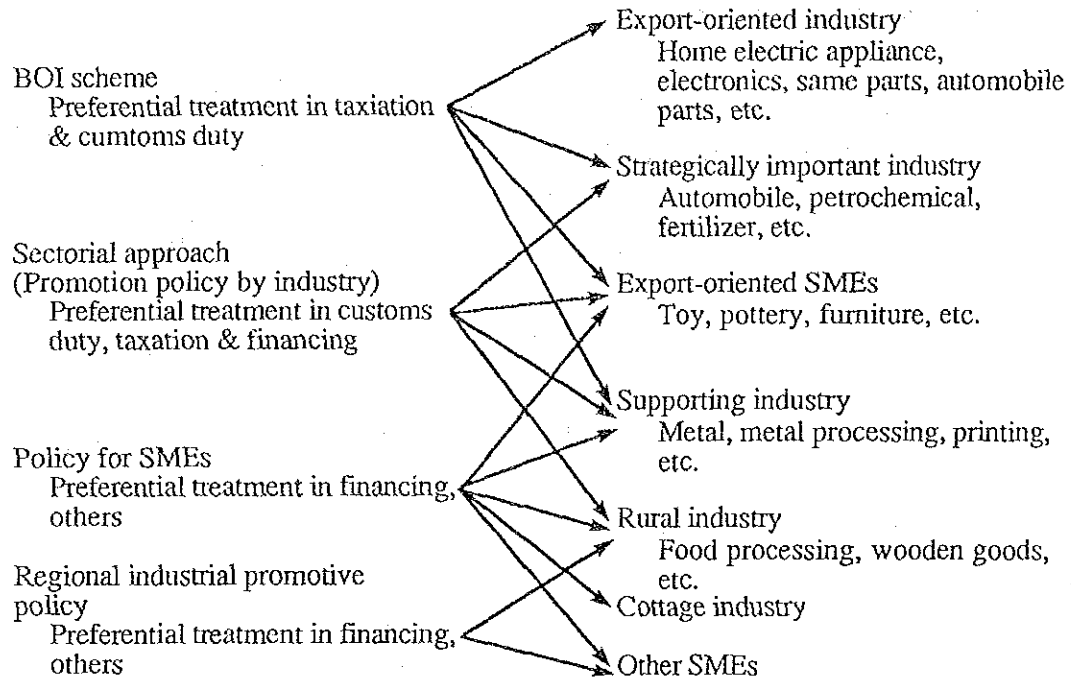
One important precondition of a sector approach is that the series of promotional measures cover selected "specific industrial sectors" and be "limited to a fixed period of time." This is because the "key industrial sectors" of any nation change with each stage of economic and industrial development. Further, by applying a series of promotional measures on a concentrated basis for a fixed period of time, a greater effectiveness can be achieved, it is believed.

In the experience of Japan and the other industrialized nations, overall small business policies are established as permanent policy schemes while sector-wise promotional policies are devised as limited duration policy schemes. Further, the privileges given under the overall small business policies are "broad, but shallow," while those of the sector-wise policies are "narrow, but deep."

Therefore, the SMEs in key industrial sectors can make use of the both policy schemes.

The mold and die industry of Thailand has an extremely important role as a supporting industry for the export industries. The toy industry holds forth the possibility of major growth as an export industry. Seen from this perspective, it is essential, and would be considered effective, for industrial development in Thailand to establish promotional measures for small businesses, which constitute the mainstream of businesses in the two industries, and limited-duration promotional measures for just the two industries.

Chart IV-2. Industrial Policies in Thailand ( 4 types of approach)



## **2. Current State and Problems in Policies and Industry**

### **2-1. Industrial Promotion Policies**

The current state of and problems in Thailand's industrial promotion policies may be summarized as follows from the viewpoint of matters common to the mold and die and the toy industries:

#### **<Investment Promotion Measures>**

In Thailand, the investment incentives of the BOI play the central role in promotion of industry. Without question, the investment incentives of the BOI have been effective, as evidenced by the rapid progress made in industrialization in these past few years.

On the other hand, however, these measures applied after approval based on individual examinations and there is a tendency for giving priority in processing to more effective, larger projects, so they are difficult to use by the existing SMEs and cottage industries, which account for the vast majority of enterprises in Thai's industrial world. As a result, they have not helped the development of a broad ranged industries including SMEs . Further, the delay in the developing of supporting industries, which are necessary for the development of export industries, may also be considered to have been due in part to this.

#### **<Industrial Policies>**

With regard to the overall industrial policies, the Ministry of Industry is traditionally organized with an emphasis on technical guidance and, in this arena, has played an important role. However, it has little experience with drafting and implementing policies for industrial promotion and does not function well yet in these areas. Further, industrial organizations often play a major role in the drafting and concrete formulation of industrial policies, but in Thailand the manufacturers' organizations are still weak. Further, as part of the delay in establishment of full industrial policies, Thailand does not have full systems and measures for promotion of SMEs.

These factors are also believed to have led to the delay in development of SMEs and supporting industries and have inhibited the development of the mold and die and toy industries.

#### <Taxation>

Thailand imposes taxes on transactions at all stages of commerce. This system has many defects from the viewpoint of industrial development, as previously debated among the EC nations. Specifically, as compared with the large corporations which deal in-house with everything from raw materials to semifinished materials, parts, and finished products, the SMEs are taxed at every stage of transaction, so the system works to the disadvantage of the SMEs. This is also considered to be a major reason behind the delayed development of the SMEs and the supporting industries.

#### <Financing>

Thailand still does not have systematic small and medium enterprise policies, but offers financing for the promotion of SMEs through the IFCT and SIFO.

However, at least up until now, enterprises have not been able to handle the complex procedures required for making use of this institutional financing and there has been no credit supplementation system for the same. Further, the institutions themselves are short of funds, branch networks, and staff and the interest rates themselves are not that low. As a result, the desired effects have not been able to be realized.

#### <Information>

Aside from this, there is in general a serious lack of information in the Thai industrial world. This is a problem often encountered in developing countries with their own languages. To overcome this, the government and public organizations have to exert effort to collect and disseminate information.

However, in Thailand, the public organizations, industrial organizations, etc. are not yet that active in providing information to the SMEs. Therefore, despite Thailand's being in a period of rapid industrial growth, the SMEs, in particular, find themselves with a decisive lack of information in both quantitative and qualitative terms. Further, SMEs do not know what level they are internationally speaking in management and technology due to the lack of information and thus fail to recognize the need for improvement of their operations. This is also believed to be an important reason for the delayed development of the SMEs.

Table IV-2 Current Situation, Problems and Countermeasures in Industrial Promotion

CURRENT SITUATION OF POLICIES	PROBLEMS	COUNTERMEASURES
<p>&lt;Investment Encouragement Measures&gt; BOI plays a key role.</p>	<p>Not helpful in nurturing a wide range of industries. Slow-development of supporting industries.</p>	<p>"Sector approach" - targets are to be set up, promotion measures are to be drawn up and implemented for each of the priority industries.</p>
<p>&lt;Industrial Policy&gt; Technological guidance emphasized by the Ministry of Industry.</p>	<p>Poor function of the Ministry of Industry. Weak Industrial Organizations. Imperfect systems &amp; policies for SMEs.</p>	<p>Strengthening &amp; improvement of functions &amp; activities of the Ministry of Industry. Setting up of industrial association. Preparations for a small- &amp; medium-sized enterprises law are now under way.</p>
<p>&lt;Tax System&gt; Systematic detects of the current transaction tax.</p>	<p>Cumulative taxation being unfavorable to SMEs.</p>	<p>Materializing an exceptional tax reduction or exemption measures for export industries &amp; their supporting industries.</p>
<p>&lt;Financing&gt; Systematic financing by IFCT &amp; SIFO.</p>	<p>Complicated application procedures. Imperfect credit supplementation system. Insufficiency of money supply, the network of branches and their staff. interest rate is not very low.</p>	<p>The improvement of systematic financing by IFCT &amp; SIFO. A special scheme of low-interest loans for priority industries (SIFO). Expanding SIFO's business. The promotion of bank loans to SMEs, and a reduction of their interest rate.</p>

CURRENT SITUATION OF POLICIES	PROBLEMS	COUNTERMEASURES
<p data-bbox="300 1865 331 2047">&lt;Information&gt;</p> <p data-bbox="347 1608 427 2047">Insufficient supply of information to SMEs.</p>	<p data-bbox="347 1120 427 1529">No recognition of the necessity of improving management by SMEs.</p>	<p data-bbox="347 544 379 1048">Setting up a "data and information center"</p>

## **2-2. Export Promotion Policies**

### **<Taxes and Tariffs>**

Thailand provides special privileges in taxes and tariffs to investments in the export industries through the investment incentives of the BOI and these have proven effective in promoting exports. Further, export companies may make use of a rebate system for taxes and tariffs on imports of materials and domestic transactions.

However, the investment incentives of the BOI can only be used by "limited companies", as mentioned earlier. Further, the rebate system for taxes and tariffs (which reportedly has recently been considerably improved) had many problems, such as the complex procedures and the long time before the rebates are actually made.

### **<Export Financing>**

Looking at export financing, there is the export refinance system of the Bank of Thailand. This is primarily used, however, by exporters in the primary industries, such as exporters of rice, a traditional Thai export, and is still relatively little used by exporters of industrial goods. Therefore, the manufacturing sector, particularly the small- and medium-sized exporters, rely on high interest funding in many cases.

### **<Activities of DEP>**

In the Thai government, the Department of Export Promotion of the Ministry of Commerce is in charge of export promotion activities. It participates in trade fairs, provides information, and otherwise supports export companies.

However, with the rapid growth of exports of Thai's industrial goods, the DEP must function in a rapidly increasing number of arenas. Unfortunately, it suffers from budgetary restraints and cannot sufficiently expand its operations, so cannot fully cope with demand from the export industries. In particular, it is not able to collect enough information from abroad and supply the same to industry. This is believed to be one major reason for the lack of information among Thailand's SMEs.

## **2-3. Mold and Die Industry**

The mold and die industry plays a large role as a supporting industry of the export industries. This industry is comprised of in-house mold and die manufacturing divisions of large firms and foreign affiliated enterprises and independent SMEs. For the time being, it is the independent SMEs which should be promoted. Therefore, the summary of

Table IV-3 Current Situation, Problems and Countermeasures in Export Promotion

CURRENT SITUATION OF POLICIES	PROBLEMS	COUNTERMEASURES
<p>&lt;Tax System &amp; Customs Duties&gt;</p> <p>BOI's preferential treatment.</p> <p>A system of refunding taxes &amp; customs duties for raw materials.</p>	<p>Not available for non-encouraged enterprises by BOI.</p> <p>The system of refunding taxes &amp; customs duties needs completed procedures &amp; time.</p>	<p>Similar preferential treatment needs to be applied to important, but non-encouraged enterprises by BOI.</p> <p>As for the preferential treatment of exports, more effective measures for priority items will be necessary.</p>
<p>&lt;Import Financing&gt;</p> <p>The central bank has a system of refinancing exports.</p>	<p>Few export enterprises have utilized it.</p> <p>Small - &amp; medium-size exporters depend on high-interest funds.</p>	<p>Preferential treatment to exports of industrial goods, particularly priority items.</p> <p>Applying a floating interest rate system.</p>
<p>&lt;Activities of DEP&gt;</p> <p>Trade fairs &amp; supply of information to export enterprise.</p>	<p>Insufficient budget &amp; business of DEP</p> <p>Insufficient information from abroad.</p>	<p>Expanding activities of DEP.</p> <p>Strengthening overseas marketing activities.</p> <p>Supplying overseas market information.</p> <p>Cooperation between the Ministry of Commerce and the Ministry of Industry, and clear division of the work between them will be needed.</p>



industry and the problems therein given below primarily relate to the small, medium, and very small independent manufacturers.

#### <Management>

Thailand's mold and die industry is characterized by a large number of independent SMEs with old fashioned operations. In particular, there are striking numbers of companies lacking sales activities or without sufficient book keeping and accounting skills. This is believed to be principally due to a lack of the basic information and knowledge required for business management.

On the other hand, most of these enterprises are weak in funds. Further, they often do not make use of the institutional financing or even seek financing from the general banks, but rely on high interest funds from finance companies, etc. Due to this situation, they are slow to introduce machinery enabling them to cope with the changes in their clients' needs accompanying industrialization.

#### <Design and Production>

The small- and medium-sized mold and die manufacturers of Thailand are in general immature when it comes to design concepts. This is mainly due to a lack of engineers and skilled draftsmen. As a result, many companies rely on experience and sense in production.

On the other hand, many companies lack sufficient process control. Therefore, they produce molds and dies of an inferior quality and precision and further are often late in deliveries.

#### <Facilities>

Many of Thailand's small and medium mold and die manufacturers are equipped with outdated, antiquated machinery. This is due in part to the lack of funds, mentioned above, and the problems in institutional financing, but in many cases is also thought due to a lack of basic information and knowledge.

As a result, these SMEs cannot produce high precision molds and dies. Further, even when they go to the trouble to introduce new machinery, the new and old machinery work side by side and balance of machinery is poor, so in many cases the new machinery cannot operate at full performance. Further, in the peripheral industries, there are often cases where inexperience with heat treatment ruins the precision of the molds and dies. To deal with this, there are cases where the mold and die manufacturers themselves must purchase high priced facilities for peripheral sectors.

Table IV-4 Current Situation, Problems and Countermeasures of Mold & Die Industry

CURRENT SITUATION OF INDUSTRY	PROBLEMS	COUNTERMEASURES
<p>&lt;Management&gt;</p> <p>Lagging behind in modernization.</p> <p>Weak in financing capacity.</p>	<p>Insufficient information &amp; knowledge.</p> <p>Sales activities are absent.</p> <p>Poor in bookkeeping &amp; accounting.</p> <p>High interest rate funds from finance companies.</p> <p>Introduction of equipment lags behind the current needs.</p>	<p>Setting up a data &amp; information center.</p> <p>Information supply services; publishing specialized mold &amp; die periodical publication.</p> <p>Management consulting and study and training courses for managers.</p> <p>Invitation of foreign manufacturers and joint ventures with local manufacturers.</p> <p>Long-term, low-interest funds.</p> <p>Two-steps loan and two-step investment.</p> <p>Publicity activities for utilizing international financing.</p>
<p>&lt;Design and Production&gt;</p> <p>Design ideas are immature.</p> <p>Process control is poor.</p>	<p>Short supply of engineers &amp; draftsmen.</p> <p>Industry are not well organized.</p> <p>Heavy rely on experience &amp; institution</p> <p>Products are inferior in quality and precision.</p> <p>Late Delivery.</p>	<p>Expanding university courses on engineering.</p> <p>Expanding "Mold &amp; die courses" in technical high schools and vocational training high schools.</p> <p>Fulfilling MIDI's study and training functions, and training draftsmen.</p> <p>Perfecting a qualification system for skilled workers.</p> <p>Standardization of various technology &amp; management.</p> <p>Holding lecture courses &amp; seminars.</p> <p>Technical exchanges with big and foreign affiliated enterprises.</p>

CURRENT SITUATION OF INDUSTRY	PROBLEMS	COUNTERMEASURES
<p data-bbox="443 1899 475 2047">&lt;Facilities&gt;</p> <p data-bbox="491 1644 571 2047">Many are outdated, obsolete, and ill-balanced.</p> <p data-bbox="587 1630 619 2047">Peripheral industries are immature.</p>	<p data-bbox="491 1093 571 1541">Mold &amp; die of high precision can not be manufactured.</p> <p data-bbox="587 1128 667 1541">New machines are combined with outdated ones.</p> <p data-bbox="683 1093 762 1541">Precision of metal mold is harmed by poor heat treatment.</p> <p data-bbox="778 1151 858 1541">The peripheral sections needs to purchase expensive equipment.</p>	<p data-bbox="300 367 427 1055">Inviting foreign manufacturers &amp; promoting joint ventures. Translating &amp; spreading manuals and teaching materials for training courses &amp; technical education.</p> <p data-bbox="491 376 571 1055">Supply long term, low-interest funds for introduction of new equipment.</p> <p data-bbox="587 376 667 1055">The preferential treatment of equipment purchases under the tax and customs duties system.</p> <p data-bbox="683 367 762 1055">Expensive equipment will be "jointly purchased or used."</p> <p data-bbox="778 546 810 1055">Measures to facilitate peripheral industries.</p> <p data-bbox="826 367 906 1055">Setting up "common facilities" or "common factories" for heat treatment &amp; other peripheral processes.</p> <p data-bbox="922 443 954 1055">Setting up an industrial park for the mold industry.</p> <p data-bbox="970 367 1050 1055">Inviting foreign firms and promoting joint ventures in the area of peripheral industries.</p>

## 2-4. Toy Industry

### <Toy Industry in General>

Looking at the state of the toy industry as a whole, one thing which may be pointed out is the large percentage of OEM production for foreign firms, by both the large corporations and SMEs, subcontracted production, and production of copies and quasi-copies. This is due in part to the lack of product development and design capabilities, but in any case it means that the industry is not yet stable in position as an export industry in the medium and long term.

Along with this, there are many enterprises which suffer from a decisive lack of information on foreign markets and toy industries and which rely on foreign firms for their exports, i.e., there are strikingly few companies which strive to export on their own or develop their own markets. This also suggests that many problems remain to be solved before the industry achieves stable status as an export industry.

In addition, mention may be made of the low general awareness of the need for safety and quality. This is believed to be not only obstructing the improvement of the quality and image of Thai toys, but also becoming a major cause for future concern. Further, the lack of peripheral supporting industries, such as for production of molds and dies, is also important. Toy manufacturers therefore often rely on imports for their materials and parts.

### <Plastic Toys>

Thailand's plastic toy industry is dominated by large enterprises and foreign affiliates engaged in OEM production for large overseas companies. However, numerically, there are also large numbers of SMEs and cottage industries.

The problem is that most of the production, including that by large enterprises and foreign capital affiliates, is for medium grade, low value added products comprised of only a few parts. Also, almost no companies have their own development and design divisions.

Looking at just the SMEs and cottage industries, there are problems in insufficient production systems and quality control systems, insufficient awareness of safety and insufficient inspection systems, and a lack of information on overseas markets.

### <Metal Toys>

Metal toys represent an industry which Thailand could easily promote. At the present time, however, only one company, a Hong Kong based one, has invested in it and there is only one other investment being planned, so production is still low. Domestic

toy makers and related industries also appear little interested in the field at the present time.

#### <Stuffed Toys>

Fabric toys (stuffed toys) are mostly manufactured under OEM arrangements or order by a handful of large manufacturers. The SMEs mostly produce copies or quasi-copies.

As problems, first, there is little production of original products by manufacturers, including large enterprises, under their own brands. Also, the SMEs lack sufficient quality control and have low awareness of the need for safety, another important problem. There are large numbers of cottage industries around Chiangmai in Northern Thailand which are producing ethnic dolls for tourists. However, these are poor in both design and quality. Further, the sales methods and channels are still undeveloped.

Table IV-5 Current Situation, Problems and Countermeasures of Toy Industry

CURRENT SITUATION OF INDUSTRY	PROBLEMS	COUNTERMEASURES
<p>&lt;The Toy Industry in General&gt;</p> <p>Depending on OEM production &amp; manufacturing of copies.</p> <p>Relying on foreign enterprises for export.</p> <p>Low recognition of safety.</p> <p>Insufficient peripheral industries.</p>	<p>This industry is not in a medium-and long-term stable position as an export industry.</p> <p>Short supply of information on overseas market &amp; toy industries.</p> <p>Few firms make independent efforts to export.</p> <p>Heavily depending on imports of raw materials and parts.</p>	<p>Nurturing talented people.</p> <p>Supplying overseas information necessary for product development and the assurance of safety.</p> <p>Strengthening tie-up relations with foreign manufacturers in the area of information.</p> <p>Diffusing information on overseas market.</p> <p>Strengthening DEP's export promotion activities.</p> <p>Strengthening publicity activities among overseas markets.</p> <p>Setting up an authorized inspection organ.</p> <p>Expanding study and training courses and technical guidance to ensure safety.</p> <p>Advancing foreign enterprises and establishing joint ventures in the area of toy and its supporting industries.</p> <p>Strengthening the linkage with peripheral industries.</p>
<p>&lt;Plastic Toys&gt;</p> <p>OEM production by major firms &amp; foreign enterprises.</p> <p>Many SMEs produce copies or imitations.</p>	<p>Many products are of medium grade, or low value added.</p> <p>Hardly any firm has in-company development and design sections.</p> <p>No overseas market information.</p>	<p>Strengthening study &amp; training courses and technological guidance on product development &amp; design.</p> <p>Supplying overseas information on toy &amp; toy markets.</p> <p>Strengthening study &amp; training courses covering production control, quality control &amp; safety.</p>

CURRENT SITUATION OF INDUSTRY	PROBLEMS	COUNTERMEASURES
<p>&lt;Metal Toys&gt;</p> <p>A Hong Kong firm has entered into the market, and there's another plan.</p> <p>&lt;Stuffed Toys&gt;</p> <p>OEM production or manufacturing upon receipt of orders by a few major firms.</p> <p>Copies or imitations by many SMEs.</p> <p>Ethnic dolls for tourists by many small-sized firms in the north &amp; elsewhere.</p>	<p>Imperfect production &amp; quality control system .</p> <p>Deficient inspection system &amp; recognition of safety.</p> <p>Production is still small.</p> <p>Not much interest from domestic toy manufacturers &amp; peripheral industries.</p> <p>Few self-developed products.</p> <p>Insufficient quality control and low recognition of safety.</p> <p>Both design &amp; quality of products are at low level.</p>	<p>Setting up an authorized inspection organ.</p> <p>Promoting joint ventures or technical tie-ups with foreign enterprises.</p> <p>Expanding OEM production through the invitation of foreign enterprises and encouragement of joint ventures.</p> <p>Arising interest among toy &amp; related industries by supplying information.</p> <p>Strengthening study &amp; training courses and technical guidance on product development and design.</p> <p>Supplying information on product development.</p> <p>Strengthening study &amp; training courses and technical guidance for upgrading quality &amp; design.</p> <p>Setting up an authorized inspection organ.</p> <p>Creation of organs and sales channels for ethnic dolls.</p>

### **3. Studies on Countermeasures**

Based on the above-mentioned situation and problems, a study will be made on a measures for alleviating each of these problems and promoting industry and exports in each of these industries.

#### **3-1. Industrial Promotion Policies (Common for Molds and Dies and for Toys)**

The most important point is to eliminate the restrictions and barriers to the development of SMEs and cottage industries in industries important for supporting exports, such as molds and dies, and in industries showing promise in exports, such as toys, so as to promote the same. The following four types of measures may be considered:

##### **1) Organizational and Institutional Approach**

[1] Reinforcement of the so-called "sector approach", wherein targets are established for specific key industries such as molds and dies and toys and measures are formulated and realized for promotion thereof.

[2] Toward this end, delegation of responsibility over promotion of key industries (that is, molds and dies and toys) to the Ministry of Industry and establishment of sectors and staff to act as promoters for action on various promotional measures.

[3] Establishment of industrial organizations in the key industries (in particular for molds and dies) under promotion so as to facilitate cooperation and consensus within the industries, cooperation with the government, and supply of information. (For this, positive government assistance is considered necessary.)

[4] Early establishment of Small and Medium Enterprise Act now being prepared by Department of Industrial Promotion and establishment of system for promotion of SMEs, desirably.

##### **2) Tax and Tariff Approach**

[1] Quick realization of introduction of ad valorem tax now under study.

[2] Apart from [1], implementation of special tax and tariff abatement measures for important export industries and their supporting industries as part of the "sector approach" mentioned in 1)-[1].



### 3) Financial Approach

[1] Positive use of SMEs financing of the IFCT and SIFO for capital investment of SMEs in molds and dies and in toys.

[2] In relation to the above, establishment of a special low interest loan scheme for key industries, in particular through the introduction of two-step loans.

[3] Promotion of use of institutional financing to the SMEs by expansion of the branch networks of the institutional financing organizations (in particular the SIFO), PR campaigns on the systems, and stronger consultation services.

### 4) Approaches to Lack of Information and Knowhow

[1] Establishment in Ministry of Industry of "Reference and Information Center" for promoting collection, organization, translation, dissemination, etc. of reference materials, information, and training materials, with emphasis on molds and dies, toys, and other key SME industries.

[2] Promotion of cooperation, ties, and sharing of responsibilities with Department of Export Promotion (DEP) of Ministry of Commerce for collection and dissemination of overseas information, materials, etc.

[3] Establishment of system for urgent collection and supply of references and information relating to molds and dies and to toys, without waiting for [1], in view of urgency of situation. (Systems to be established for molds and dies by MIDI and industrial organizations and for toys by section in charge in DIP and industrial organizations.)

[4] Promotion of effective dissemination of information collected by the Reference and Information Center of [1] through establishment and expansion of industrial organizations (see 1-[3]) and provision of same with information service capabilities.

[5] Increase of overseas inspections and training for managers in key industries of SMEs.

### 3-2. Export Promotion Policies

As possible export promotion policies, mention may be made of extension of privileges for capital investment, technical development, and production activities of companies producing export goods, direct privileges to the export activities of the companies (financing, tax system, etc.), and sideline support measures for export activities. From the current situation in Thailand, the following three types of measures are conceivable now for promotion of exports of toys. (Molds and dies are not

considered to be at a stage where growth as an export industry can be expected, so will not be considered here.)

#### 1) Tax and Tariff Approach

[1] The investment incentive of the BOI include generous privileges in taxes and tariffs for investments into export industries. Measures may be devised enabling application of similar privileges to exporting SMEs as well (for example, reduction of import tariffs on raw materials and machinery).

[2] Measures may be designed for more functional, effective application of the system of rebates on taxes and tariffs, after export, for imports of raw materials and domestic transactions.

#### 2) Financial Approach

[1] Incentives may be devised with regard to the export refinance system of the Bank of Thailand, e.g. raising of the credit ceiling and establishment of preferential interest rates, in particular for key export items.

[2] Regarding the preferential interest rates for export financing of [1], implementation of a "floating system" enabling adjustment of rates along with changes in the commercial interest rates.

[3] New establishment of export credit guarantee organization for small- and medium-sized exporters.

#### 3) Activities of Department of Export Promotion (DEP) of Ministry of Commerce

[1] Expansion of the export promotion activities of the DEP to cover promotion of exports of key goods.

[2] Along with [1], strengthening of such activities, in particular with surveys of overseas markets (including dissemination of reports to industry), participation in exhibitions, dispatch of missions, and industry-wise overseas PR.

[3] Provision of abundant overseas market information to production companies in key export industries and to export companies. In particular, expansion of media and channels for supply of information and strengthening of supply of information to SMEs with potential for export. Further, for collection of overseas material and information, establishment of system for cooperation, liaison, and sharing of responsibilities between DEP and Ministry of Industry. Toward this end, establishment of "Overseas Information Liaison Group" on administrative level between sections in charge of materials and information in the DEP and Ministry of Industry.

### 3-3. Mold and Die Industry

There are few problems in the mold and die industry in terms of the in-house production divisions of the large corporations and the foreign capital affiliates. Rather, the problems appear in the small and medium and the petty independent manufacturers. Almost all of these enterprises have been slow to modernize in all areas, including management, finances, and production facilities, and cannot cope with the rapid growth of Thailand's export industries and the accompanying surge in mold and die demand. In view of the importance of molds and dies as a supporting industry, particularly the significance of the SMEs, promotion of the same is an urgent task. The following four approaches may be considered for dealing with this.

#### 1) Approaches on Lack of Information and Knowledge and Delay in Modernization of Management

[1] Establishment of Reference and Information Center in Ministry of Industry.

[2] For time being, quick start by relevant section of Ministry of Industry (MIDI is considered suitable) of collection of information and materials required for development of mold and die industry, without waiting for establishment of [1].

[3] Quick establishment of industrial organization for mold and die manufacturers.

[4] Reinforcement of information service activities to mold and die manufacturers through the activities of [2] and the establishment of an industrial organization. In particular, issuance and distribution of a "Mold and Die Information Magazine" including information useful to the many SMEs is considered effective.

[5] Reinforcement of consulting activities, training of managers, etc. for through the related departments of the Ministry of Industry, industrial organizations, etc. (including invitation to foreign experts and overseas dispatch of study teams of managers)

[6] Promotion of investment from foreign mold and die manufacturers and promotion of joint ventures with local firms. (Establishment of joint ventures between foreign mold and die manufacturers and Thai domestic mold and die manufacturers is considered effective.)

## 2) Approaches on Lack of Funds

[1] Supply of long-term low interest funds to small- and medium-sized mold and die manufacturers for the purpose of capital investment and purchases of equipment by efficient use of the institutional financing offered to the SMEs by the IFCT and SIFO.

[2] For [1], effective use of two-step loans and two-step incentives.

[3] Stronger PR activities (in particular of SIFO) on institutional financing available to small- and medium-sized mold and die manufacturers so as to promote effective use of the institutional financing available to small and medium enterprises.

## 3) Approaches on Lack of Design and Production Capabilities and Human Resources

### <Provisional Approaches>

[1] Expansion of training function of MIDI for molds and dies. (In particular, stress on raising of level of design and drafting technology and process control)

[2] To compensate for overwhelming shortage of skilled labor, establishment of urgent training program and expansion of seminars, technical guidance, etc. by invited experts.

[3] In relation to [1] and [2], translation of materials and manuals for training and vocational education and dissemination of same to SMEs.

[4] In relation to [1], promotion of exchange of technology (for example, through MIDI) between in-house mold and die production divisions of large corporations and foreign capital affiliates in Thailand and the independent SMEs

[5] Attraction of foreign manufacturers and promotion of joint ventures. Toward this end, matching and introduction of partners. In particular, joint ventures between large Thai users and foreign mold and die manufacturers would be promising. (Same as above-mentioned 1)-[4])

### <Medium- and Long-Term Approaches>

[6] Expansion of "metalworking course" in industrial colleges and vocational schools for training of skilled workers with basic knowhow.

[7] Expansion of engineering courses in universities.

[8] Establishment of qualification system for skilled workers undergoing training.

## 4) Approaches to Antiquated Facilities and Lack of Facilities

[1] Supply of long-term low interest funds to small- and medium-sized mold and die manufacturers making use of institutional financing of above-mentioned [2] and promotion of purchases of new machinery suitable for needs and capabilities. (short term)

[2] Extension of privileges in taxes and tariffs (same as those to BOI promoted companies, for example) for the purchase of machinery used for mold and die production. In particular, exemption of import duties on important machinery would be considered effective.

[3] Realization of establishment of "joint use" of machinery and equipment or "jointly operated factories" for high priced machinery or facilities in the heat treatment and other peripheral industries.

[4] Devising of similar promotional measures as the above-mentioned [1] and [2] for promotion of other peripheral industries such as heat treatment.

[5] Invitation of foreign manufacturers and promotion of establishment of joint ventures for mold and die industry and also peripheral industries. Toward this end, matching and introduction of partners.

[6] In relation to the above-mentioned [3] and [5], establishment of industrial estates for "molds and dies" or for "metalworking". (Use of tax and tariff privileges and BOI scheme mentioned in [2] would be desirable.)

### 3-4. Toy Industry

In the toy industry too, the problems concentrate in the SMEs, which are producing copies, imitations, and low quality products. However, there are problems in the large enterprises and foreign capital affiliates too in regard to product development, design, and other expertise. The following four approaches are considered.

#### 1) Approaches on Lack of Development and Design Capabilities

[1] due to the poor new product development and design capabilities of the industry, including large enterprises and foreign capital affiliates, which primarily engage in OEM production, reinforcement of training, technical guidance, and seminars to raise the accumulation of technical knowhow and foster development capabilities for the future. (Accompanied by invitations to experts from abroad.)

[2] In relation to [1], provision of abundant information on foreign toy industries and markets to serve as basic data on product development and reference material. (Use of the above-mentioned Reference and Information Center of the Department of Industrial Promotion of the Ministry of Industry may be considered, but for the time being it is urgent to set up a system for the collection and supply of information through related government organizations and industrial organizations. At this time, issuance and distribution of a "Toy Information Magazine" would be effective. Further, for foreign market information, it is considered effective to strengthen and utilize the functions of the DEP.)

[3] For the time being, promotion of expansion of OEM production and production on order from foreign companies so as to raise the accumulation of technology. Further, for the small- and medium-sized toy manufacturers not in this field, promotion of entry into OEM production and production on order through joint ventures and technical tieups with foreign companies. Toward this end, matching and introduction of partners.

#### 2) Approaches to Delayed Development of Production and Quality Control Systems and Awareness of Safety

[1] Reinforcement of training, lectures, seminars, etc. on production control, quality control, safety, etc. (including invitations to foreign experts.)

[2] Establishment of authorized inspection organization for safety and quality and thoroughgoing inspections of quality by same. (Establishment of "Toy Industry Promotion Center", main portion of which is to be comprised of inspection organization, but also equipped with information and training functions.)

### 3) Approaches to Lack of Market Information and Lack of Independent Export Activities

[1] Expansion of supply of information on foreign toy industries and markets. (Covering not only export manufacturers, but also manufacturers with future potential for export.) (Same as above-mentioned 3-1)-[2])

[2] Strengthening of exchanges of information with affiliated foreign manufacturers.

[3] Wide expansion of export promotion activities of Department of Export Promotion of Ministry of Commerce regarding toys. (Supply of market information, participation in exhibitions, dispatch of missions overseas, etc.)

[4] Overseas PR activities on Thai toy industry as a whole (sector PR).

[5] In future, consideration of organization of international toy fair in Thailand.

### 4) Approaches to Lack of Peripheral Industries

[1] Devising of tax, tariff, and financial privileges (same as mentioned for mold and die industry) for enterprises in peripheral industries of toys.

[2] Promotion of investment and joint ventures of foreign companies in peripheral industries of toys.

## **4. Comprehensive Program**

### **4-1. Comprehensive Program for Promotion of Mold and Die Industry**

#### **Package of Measures [1]**

"Private-Sector-Oriented Services by the Government Aimed at Increasing Skilled Labor and Raising the Level of Production and Management."

The effective use of the government institution MIDI by private industry, established with the cooperation of Japan, would be extremely important and effective for the development of Thailand's mold and die industry.

In particular, for the most effectiveness in its activities, it will be essential to quickly train consultants and provide services for private business (in particular the SMEs ).

(Program)

#### **Active Use of MIDI Functions**

Positive use should be made of the functions of MIDI so as to organize industry and raise the level of private SMEs. Toward this end, the following measures might be considered:

- Invitations of experts in organizing industry
  - Invitations of foreign experts with experience in organizing and running industrial organizations in the field of metalworking.
- Expansion of vocational training programs for private business (including night-time)
  - Organization of short term courses, night courses, etc. which could be expected to be effective for private SMEs and to which employees could easily be sent.
- On-the-job training of skilled labors in private businesses using MIDI facilities
  - Bringing to MIDI by mold and die manufacturers of part of the mold and die production ordered along with their employees for on-the-job training.
- Provision of information to private business through industrial associations
  - Information service for issuance of journals by mold and die industrial association, mentioned later.
- Establishment and operation of scholastic associations
  - Organization and operation of scholastic associations of engineers on industry level.



## Package of Measures [2]

### "Raising Level of Skills and Management Through Activities of Organization of Industry"

Establishment of industrial organizations and provisions of services through the same are essential for the development of the Thai mold and die industry, which as yet has no such industrial organization.

(Program)

#### Establishment and Activities of Mold and Die Industry Association

- Vocational training for member companies through use of MIDI facilities (mentioned above)
  - PR activities, canvassing, and introductions on training and seminars of MIDI aimed at member companies.
- Arrangement of on-the-job training using MIDI facilities (mentioned above)
  - PR, canvassing, and introductions for on-the-job training program mentioned above.
- Technical and management consulting for member companies
  - Employment of experts in design, production technology, management, accounting, etc. and provision of consulting services and roving guidance etc. to member companies.
- Publication and distribution of "Mold and Die Journal"
  - Editing, publication, and distribution to member companies of journal including information believed useful to small- and medium-sized mold and die manufacturers.
- Seminars for member companies on design, processing technology, process control, management, and accounting
  - Organization of seminars, study sessions, etc. on themes desired by large numbers of member companies.
- Consideration of cooperative projects (joint purchases of materials and machinery, establishment of joint factories, etc.)
  - Consideration, as a future issue, of cooperative projects benefiting member companies in common and execution of possible projects.
- Exchanges with foreign mold and die industry associations
  - For the time being, participation in international organizations now being formed by Japan and other nations of Asia, exchange of information, exchange of technology, etc.

### Package of Measures [3]

#### "Improvement of Level of Production, Technology, and Management Through Investments by Foreign Companies"

To raise the level of technology and management in accordance with the increase in demand for molds and dies, investments by foreign companies and establishments of joint ventures would be considered extremely effective. Already, some foreign companies are making use of the BOI schemes for investment. This trend must be further promoted in the future.

#### (Program)

#### **Matching up of foreign mold and die manufacturers, and Thai mold and die users, in particular**

Promotion of investments by small- and medium-sized foreign mold and die manufacturers (foreign industries are also principally comprised of small businesses) and establishment of joint ventures with leading domestic Thai mold and die users (plastic workers, automobile and electronic component makers, etc.) - considered of considerable promise.

- Active use of BOI scheme
  - Positive, active use of BOI investment incentives for investments by foreign manufacturers and establishment of joint ventures, in view of effectiveness of incentives.
- Establishment of metalworking industrial estate in accordance with need
  - Consideration to establishment of metalworking industrial estate, in case of need, upon investment and joint ventures by foreign manufacturers, in view of problems in use of BOI incentives and securing of sites.

### Package of Measures [4]

#### "Joint Project for Training Skilled Workers"

With mold and die demand rising in the export-oriented industries etc., a severe shortage has occurred in skilled mold and die technician, necessitating an urgent training program. In this regard, it would be effective to obtain cooperation from educational institutions which have proven effective in training skilled labor.

(Program)

#### **Emergency Program for Training Mold and Die Workers**

In view of the urgent need for training skilled labor, an emergency training program run jointly by MIDI and the King Monkhut Institute of Technology may be run.

The annex school of King-Monkhut has been producing results in training of mechanical workers, but suffers from a shortage of instructors and facilities compared with demand and has a little capacity. It would be desirable to establish two courses in the program:

- Newcomer training course
- Retraining course

The necessary equipment would have to be provided and the instructors secured (including foreign experts) etc.

#### **Package of Measures [5]**

##### **"Financing, Tax, and Tariff Privileges for Modernization of Equipment and Reinforcement of Competitiveness"**

Much of the equipment of the SMEs is old fashioned and antiquated. To meet with demand, replacement of the equipment and modernization are considered unavoidable.

(Program)

#### **Establishment of Policy Scheme for Promoting Mold and Die Industry**

The following privileges may be given to members of the mold and die industry association. (In view of the meaning of the promotion of organization of the industry, it would be desirable to give preferential treatment to member companies, but if this were difficult, then a "designated industry" scheme could also be considered.)

- Designation as an industry for investment promotion of the BOI (clear indication of same)
  - At the present time, examinations are made case by case, but it is believed that display of a clear stance welcoming "molds and dies" or "metalworking" would be effective for promoting investments in the industry.
- Exemption on import duties for metalworking machinery (including inspection and test equipment, tools, etc.)

- Limited duration tariff exemptions (when imports are not covered by the BOI scheme) would be desirable for important machinery for fabrication of molds and dies (either industry designation or model designation possible).
- Positive application of institutional financing (in particular SIFO) to mold and die industry
  - The special scheme of low interest financing (policy loans) now under consideration at the SIFO might be applied to the mold and die industry.
- Abatement of taxes on turnover (to level comparable to export companies)
  - The drawback system of taxes on materials etc. allowed for export companies could be applied as well to mold and die manufacturers contributing to exports.

#### Package of Measures [6]

##### "Nurturing of Engineers and Skilled Workers"

There is an overwhelming shortage in engineers and skilled workers throughout the mold and die and the metalworking industries and measures to cope with this in the educational field are extremely important.

##### (Program)

##### **Expansion of Engineering Training at University and High School Levels**

In addition to the above-mentioned emergency training program, there is a great need for improving education overall. This must be done by:

- Training instructors
- Increasing the enrollment in engineering courses at university engineering departments
- Increasing the enrollment in the metalworking departments of vocational schools, etc.

Table IV-6 Programme for Promotion of Mold &amp; Die Industry (1)

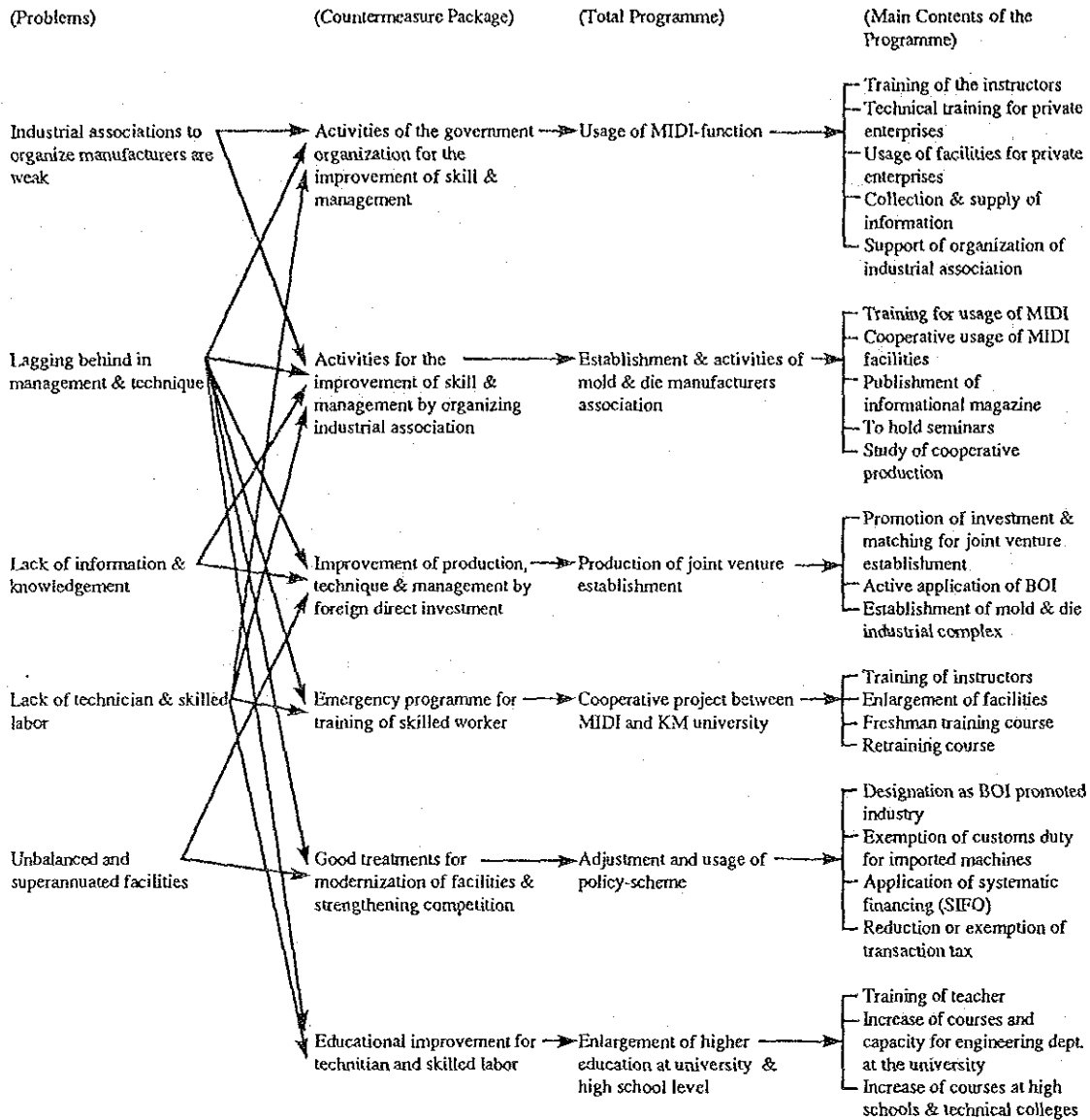
COUNTERMEASURE PACKAGE	PROGRAMME	METHOD AND SCHEDULE			
		1st year	2nd year	3rd year	4th year & after
Service activities for improvement of skill, production and management, to private sectors by governmental organization  It's vitally important and efficient for the development of Thai mold & die Industry that private industries could make the efficient use of MIDI, a governmental organization which was established by Japanese grant aid (1.6 bio yen).	Usage of MIDI function MIDI (Metal-Working and Machinery Industries Development Institute) should be used in a direction for organizing the industrial association and for improving private SMEs. • Invitation of the specialist of organizing the industrial association. • Enlargement of skill-training (night course included) for private enterprises. • Usage of MIDI facilities for OJT for skilled workers in private enterprises. • Information supply for private enterprises via manufacturers association. • Establishment and management of academic conference.	○	○	○	
Activities for the improvement of skill & management by organizing industrial association For the moment Thai mold & die industry doesn't organize manufacturers' association. It's indispensable for this industry's development to establish manufacturer's association firstly and to supply information through the network.	Establishment of Mold & Die Manufacturers Association • Skill training for member companies using MIDI facilities • Arrangement of OJT using MIDI facilities • Technical and Management Consulting Invitation of the specialist for member companies • Publication & distribution of Information magazine for Mold & Die manufacturers.	○	○	○	○
	Invitation of the specialist Training of the instructors Training of the instructors Supply of material	○	○	○	○
	Invitation of the specialist Invitation of the specialist Invitation of the specialist Supply of material & information activity	○	○	○	○

Table IV-6 Programme for Promotion of Mold &amp; Die Industry (2)

COUNTERMEASURE PACKAGE	PROGRAMME	METHOD AND SCHEDULE			
		1st year	2nd year	3rd year	4th year & after
Improvement of production, technique and management by foreign direct investment. Foreign direct investment and/or establishment joint venture are considered to be vitally efficient to cope with the demand increase of mold & die and to improve their technical/managerial level.	<ul style="list-style-type: none"> <li>• Seminars for the associated member about designing, processing technique, process control, management and accounting</li> <li>• Study of cooperative production (Joint purchase of material and machine, establishment of cooperative factory)</li> <li>• Communication with foreign association</li> </ul>	○	○	○	○
	Promotion of joint venture establishment <ul style="list-style-type: none"> <li>• Especially, matching of foreign mold &amp; die manufacturers with local mold users.</li> <li>• Usage of BOI scheme</li> <li>• Establishment of metal working industrial complex acc. to the necessity</li> </ul>	○	○	○	○
	Investment Promotional activity	○	○	○	○
Enforcement of cooperative project for skilled workers training. Training plan for skilled worker is urgently required, since the lack of skilled worker is serious in the increase of molds & die demand by export oriented industries.	Emergency programme for metal mold worker training To enforce emergency training programme by cooperation with MIDI, King-Monkhut Technical University (also Mold & Die manufacturer's association) taking the emergency of skilled worker training. (Technical college attached to King-Monkhut University is fruiting, however, they are lack of materials & equipment and their capacity is too small.)	○	○	○	○
	Supply of material Invitation of instructors	○	○	○	○



Chart IV-3. Total Programme for Promotion of Mold & Die Industry





Step-by-Step Program for Active Use of MIDI Functions and Establishment of Mold and Die Industry Association		
	MIDI	Mold and Die Industry Association
First Stage	<ul style="list-style-type: none"> <li>• Invitation of experts in organizing industry <ul style="list-style-type: none"> <li>- Invitation of foreign experts with experience in organizing and operating industrial organizations</li> </ul> </li> <li>• Preparation of vocational training for private businesses <ul style="list-style-type: none"> <li>- Consideration and preparation of curriculum, methods of execution, etc. for vocational training to produce skilled workers for private small businesses. Further, securement of instruction for same</li> </ul> </li> <li>• Preparations for OJT for skilled workers of private businesses <ul style="list-style-type: none"> <li>- Consideration and preparation of program of OJT at MIDI for processing actual orders accepted by small and medium sized mold and die makers (including training of instructors).</li> </ul> </li> <li>• Preparation for supply of information <ul style="list-style-type: none"> <li>- Consideration and preparation of system for collection and supply (including translation) of useful information and data to private mold and die makers.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of group of representatives of private businesses <ul style="list-style-type: none"> <li>- Establishment of group comprised of representatives of private business to promote effective use of MIDI. Summarization of demands etc. of private business on vocational training, OJT for skilled workers, provision of information, etc. mentioned in left column.</li> <li>- It is envisioned that this group would form the original body of the Mold and Die Industry Association.</li> <li>- MIDI would act as the administrative office.</li> </ul> </li> </ul>
Second Stage		<ul style="list-style-type: none"> <li>• Establishment of Mold and Die Industry Association (or club) <ul style="list-style-type: none"> <li>- At first, the administrative offices of the above-mentioned representative group could be used as the administrative office of the Association.</li> <li>- Call to mold and die makers, including</li> </ul> </li> </ul>

MIDI		Mold and Die Industry Association
Second Stage	<ul style="list-style-type: none"> <li>• Start of provision of information for "the information journal" <ul style="list-style-type: none"> <li>- In particular, provision to industrial association of information useful to small and medium sized mold and die makers and of PR articles on MIDI activities.</li> </ul> </li> <li>• Start of vocational training and OJT for skilled workers <ul style="list-style-type: none"> <li>- Implementation of training and OJT considered and prepared for in first stage. (Consideration given also to establishment of "night course" for private SMEs.)</li> </ul> </li> </ul>	<p>SMEs and including in-house production divisions and makers in peripheral industries. Invite participation of interested companies as members. Initial membership fees should be kept as low as possible (about amount for subscription to "journal").</p> <ul style="list-style-type: none"> <li>• Issuance and distribution of "journal" <ul style="list-style-type: none"> <li>- Issuance of "journal" based on information supplied from MIDI and distribution of same to members of Association.</li> <li>- PR for MIDI vocational training, OJT for skilled workers, and other services to also be made through "journal".</li> </ul> </li> <li>• Participation and cooperation in MIDI training activities <ul style="list-style-type: none"> <li>- Recommendations on and introductions to participation in the vocational training and OJT mentioned in the left column for member companies.</li> </ul> </li> <li>• Recommendations for membership <ul style="list-style-type: none"> <li>- Recommendations for membership to nonmember mold and die makers through PR of "journal" and PR of use of MIDI.</li> </ul> </li> </ul>
	Third Stage	<ul style="list-style-type: none"> <li>• Establishment of independent administrative office for the Association <ul style="list-style-type: none"> <li>- Establishment of administrative office independent from MIDI for the Association.</li> </ul> </li> </ul>

	MIDI	Mold and Die Industry Association
Third Stage	<ul style="list-style-type: none"> <li>• Continuation of information supply, vocational training, and OJT for skilled workers</li> <li>• Support to Mold and Die Industry Association               <ul style="list-style-type: none"> <li>- Support to and promotion of the Association from administrative side, including promotion of use of MIDI functions.</li> </ul> </li> <li>• Establishment and operation of academic society</li> <li>- Organization and operation of an academic society comprised primarily of industrial level engineers (at the beginning, MIDI to serve as administrative office).</li> </ul>	<ul style="list-style-type: none"> <li>• Technical and management consultation activities               <ul style="list-style-type: none"> <li>- Employment by the Association of experts in technology and management (including finances) and offering of consulting and guidance by visits etc. upon request from member companies (in particular the small and medium sized mold and die makers).</li> </ul> </li> <li>• Training and seminars               <ul style="list-style-type: none"> <li>- Training sessions and seminars on themes desired by member companies, for example, design, machining technology, process control, management, accounting, etc. (At this time, consideration may be given to use of MIDI facilities.)</li> </ul> </li> <li>• Consideration of joint projects               <ul style="list-style-type: none"> <li>- Consideration of possibilities for joint projects in form leading to common benefit based on requests from member companies, for example, joint purchase of materials and machinery and establishment of joint factories. Implementation of same when effective and feasible.</li> </ul> </li> <li>• Exchanges with foreign industrial associations               <ul style="list-style-type: none"> <li>- Exchange of information with foreign industrial associations, participation in international organizations, etc.</li> </ul> </li> </ul>

### **Implementation of Emergency Program for Training Mold and Die Workers**

In view of the urgency of securing skilled workers, an emergency training program should be carried out jointly by MIDI and King Mongkut's Institute of Technology (KMIT).

At present, the KMIT has established a training course for skilled workers based on the "Meister" system of West Germany. A summary of this is given below 1-3:

1. Object

Training of skilled workers. Persons completing the courses are given a "Meister" qualification.

2. Course

The course aims at strengthening both practical and theoretical aspects. (In Thailand, there is a tendency to neglect practical skills.)

The duration of an initial course is three years, followed by five years and then two years, for a total of 10 years.

The first three years are devoted to practical skills. Vocational training is given four times a week, with theory added, and practical training is given twice a week at the dispatching company. For the next five years, the trainees are involved in practical work at the factories. At the same time, KMIT curricula are carried out with levels checked by testing. The final two years the students return to the KMIT and receive training in various specialized courses (including a course for molds and dies).

The practical skills cover basic areas such as filing and scraping to the operation of advanced machine tools. The theoretical courses include mathematics, machining theory, metallurgy, measurement principles, drafting, the labor law, and ethics.

3. Persons Covered

Persons dispatched from private enterprises, up to 40 persons a year.

4. Emergency Program

The emergency program being considered would broaden the current skilled workers training course ("newcomer's course") to a "retraining course" for persons with practical experience.

- There would be a total of 100 trainees in the two courses.
- The retraining course would extend over five years, the first three years for practical skills and theory, and the second two years for specialized courses. Persons eligible for the course would be graduates of vocational high schools or junior colleges having five years or more of practical experience.

- Due to the shortage of university teachers, it would be urgently necessary to train teachers.

Therefore, suitable persons will be sent overseas for training, and advisory instructors invited from overseas to provide guidance to the same.

The advisory instructors would handle the course for 6 years until the termination of training of the local instructors.

Facilities of MIDI and KIMIT will be mainly used. In addition, the following machines should be installed.

#### Additional Necessary Machines

(For manufacturing molds and dies for presses and plastics, very basic facilities)

(Unit: ¥ million)			
Vertical milling machine (NC, with profiling apparatus)	@27	2 sets	54
Vertical milling machine	@25	10 sets	250
Surface grinder	@10	2 sets	30
Profile grinder	@15	2 sets	30
Jig grinder	@15	2 sets	30
Jig boring machine	@30	2 sets	60
Setting machine	@10	2 sets	20
Press machine (50t)	@10	2 sets	20
NC programme	@8	2 sets	16
Total			500

- Curriculum and practical skills in a retraining course  
Duration: 5 years (the first 3 years for overall theory and training of practical skills and the remaining 2 years for specialized courses)

#### Curricula

- (1) Mechanical Engineering, Hydromechanics, Heat Conduction, Strength of Materials, Mechanism, Measurement (2 instructors)
- (2) Electric Engineering, Mathematics (1 instructor)
- (3) Design and drafting of molds and dies (2 instructors)  
Design and drafting of products

#### Practical Skills

- (1) Machining of molds and dies (2 instructors)
  - Manufacturing of auxiliary devices (including jigs)
  - Maintenance of hand tools, machinery and equipment
  - Boring • Centering
  - Jig boring and profile grinding
  - Turning, milling, EDM and die sinking
- (2) Finishing skills (assembly) of molds and dies (2 instructors (2) - (4))
  - Marking • Filing • Scraping

- Chiselling
- Drilling
- Polishing
- Assembly
- Sawing
- Reaming
- Soft and hard soldering
- Fitting
- Grinding

(3) Testing

- Measuring
- Try-out
- Fixing

(4) Modification

Practical Skills (Optional)

- Arc and gas welding
- Working with index heads
- Working on shaping, broaching and CNC machining
- Assembly of pneumatic and hydraulic components
- Designing of molds and dies
- CAD/CAM application
- Forging of parts and tools
- Basic computer programming

Allocation of Staff and Students

	Year	1	2	3	4	5	6	7	8	9	10	11
No. of Staff & Students												
Instructor		5	10	10	10	10	8	5	5	5	5	3
Partner		5	10	10	10	10	8					
Newcomer Course		25	50	50	50	50	50	50	50	50	50	25
Retraining Course		25	50	50	50	50	25	0	0	0	0	0

- Foreign experts invited as instructors for the first 6 years, promotion of partners to instructor's position after the 7th year
- Students chosen twice: the 1st year and the 2nd year  
The number of students accepted is 25 each for both the Newcomer and the Retraining Course in the 1st and 2nd years (total number 100).

Number of Lessons (curriculum, practical skills)

- 46 weeks/year, 4 days/week, 3h./day  
180 (day) x 3 (h.) = 540 h.  
540 (h.) x 5 (year) = 2,700 h.

Expenses

- Additional necessary machines      ¥500 million
- Maintenance      ¥10 million/year
- Tuition fee -- Provided from enterprises  
(The whole tuition fee ought to be refunded to the enterprises in case of retiring before completion of a course, or within 5 years after graduation)
- Wages and allowances -- 50% subsidiary from government during training

## **4-2. Comprehensive Program for Promotion of Toy Industry**

### **Package of Measures [1]**

**"Establishment and Operation of Central Body for Organization of Industry and Improvement of Management and Technological Level"**

For sustained rapid growth as an export industry, it is essential to eliminate copies and crude products and to ensure quality and safety. The industry must cooperate as a whole toward this end with the help of the government. To realize this, a central body should be set up and run based on cooperation between the government and private sector.

(Program)

### **Establishment and Operation of Organization for Promotion of Toy Industry**

Thailand may set up an organization serving principally as an inspection institute for the quality of toys and also provided with training facilities and information functions. The inspection institute could take the form of an independent nonprofit organization with facilities and equipment provided by the government. For this, the following means would have to be devised for the time being:

- Training of specialists in inspection
  - Candidates could be sent for training abroad so as to train a minimum of one expert each in the fields of chemical inspections and mechanical inspections.
- Establishment of inspection system
  - An inspection system could be newly established based on safety standards and quality standards. A mandatory inspection system would be preferable in view of promoting toys as an export industry.
- Establishment of authoritative inspection organization
  - Assuming the above two points, an organization could be established for performing inspections from a public standpoint. (However, it is considered that government support would be needed in the form of provision of facilities and equipment.)
- Collection and dissemination of information (including collection and display of samples)
- Training and seminars on safety, design, product development, and production technology

- Strengthening of industrial organization (Toy Association) through such activities
  - The industrial organization could cooperate in the operation of the promotion organization and simultaneously engage in its own activities, such as information collection, training, and seminars, and services to members.
- Sponsoring of "International Toy Fair" in Bangkok
  - Consideration should be given, as a matter for the near future, to sponsoring an international toy fair in Bangkok each year so as to facilitate business talks with foreign buyers.

#### Package of Measures [2]

"Raising of Level of Production, Technology, Management, and Sales Capabilities Through Promotion of Investment by Foreign Enterprises, Establishment of Joint Ventures, Technical Tieups, Etc. "

There are believed to be large numbers of Japanese, Hong Kong, Taiwanese, and other foreign toy manufacturers which are interested in investing in Thailand or tying up with Thai companies. The possibilities for this should be exploited.

#### (Program)

##### Activities for Promotion of Investment, Joint Ventures, and Tieups

- Dispatch of investment and joint venture missions by BOI, Ministry of Industry, and toy makers
- Activities for attracting companies by BOI and Ministry of Industry, covering fields of peripheral industries as well
  - Apart from the general investment and joint venture promotional measures taken up until now, activities for the promotion of investment and joint ventures focused on the toy industry and peripheral industries would be effective. The regions covered by such activities should include Japan, Hong Kong, South Korea, Taiwan, the U.S., and the EC countries.
- Invitations of investment and tieup missions from abroad
  - As possible activities for promotion of investment and joint ventures, consideration may be given to not only dispatch of missions from Thailand and provision of materials and information, but also invitations



of interested foreign businessmen to Thailand to show them the state of the toy industry.

- Matching of joint ventures between interested companies
  - In the case of interest shown by domestic and foreign toy manufacturers, the BOI and Ministry of Industry or industrial bodies should engage in positive matchmaking.

#### Package of Measures[3]

#### "Strengthening of Sectoral Function of Ministry of Industry and of cooperation with Related Organization"

For growth of Toy Industry as an export industry, it's necessary to clarify the section and person in charge as its promoter. It's also required to embody promotion policies in linkage and cooperation with the related government organization and the industry.

#### (Program)

#### Strengthening of Administrative Organization for Promotion of Toy Industry and Establishment of Policy Scheme

- Establishment of Section and Staff in Ministry of Industry (Clarification)
  - To promote cooperation in development of the toy industry, it is necessary to establish a specific section and staff in the Ministry of Industry for overall control and promotion of promotional measures and cooperation among the related agencies and industry.
- Establishment of inspection system

As mentioned above. Full assistance from the Ministry of Industry would be required.
- Assistance in organization of industry
  - In formulating specific promotional measures, it is essential to strengthen industry organizationally. For this, positive support by the government section in charge will be required.
- Provision of the following privileges to member firms of the Toy Association
  - These would also be of important assistance in the organization of the industry.
- Application of institutional financing (IFCT, SIFO) to the toy industry
- Positive application of export financing (refinance system of central bank) to toy exports

- Exemption of tariffs on imported machinery (injection molding machines, sewing machines, cutting machines, etc.)

#### Package of Measures [4]

#### Strengthening of Export Promotion Activities of Ministry of Commerce and Cooperation with Ministry of Industry

For the expansion of exports of the toy industry of Thailand, including products of the SMEs, it is desirable to greatly strengthen and expand the activities of the Ministry of Commerce. At this time, full consideration should be given to coordination and cooperation with the Ministry of Industry.

#### (Program)

#### Strengthening of Activities for Promotion of Toy Exports by Department of Export Promotion (DEP) of Ministry of Commerce

- Strengthening of collection of information on overseas markets and industries and provision of same to industry (in cooperation with toy industry promotion organization mentioned above)
  - The DEP should cooperate with the Ministry of Industry and promotion organization for collection of information relating to the overseas toy industries and toy markets, summarize it, in particular information useful for the product development, production, and sales by small- and medium-sized toy makers, in a journal and distribute the same periodically. Further, it should continuously collect product samples overseas and display them domestically.
- Participation in trade fairs and increase in numbers of inspection and sales missions dispatched
  - To cope with the surge in toy exports, it would be desirable to provide increased assistance to participation in trade fairs and dispatches of missions.
- Strengthening of PR activities overseas for Thai toy industry
  - To raise the image of the Thai toy industry, PR activities would have to be conducted in the main markets.
- Training and seminars on overseas marketing etc.

- Training and seminars on overseas industries, markets, and product development could be offered to SMEs lacking knowledge about the situation overseas.

#### Package of Measures [5]

##### "Improvement of Design and Quality of Ethnic Dolls for Tourists"

The number of foreign tourists has been increasing. If the design and quality of ethnic dolls can be improved and sales channels established, there would be a great possibility for development of a new market. In particular, western tourists present a large source of demand for ethnic dolls as souvenirs. If the quality and design can be improved and sales channels established, there is a possibility for a large increase in sales.

##### (Program)

##### Technical and Management Guidance for Improvement of Ethnic Dolls

- Training for improving design and quality
  - Foreign experts could be invited to provide repeated training and seminars for designers and workers actually engaged in the fabrication of ethnic dolls. Along with this, on-the-job-training should be effective.
- Creation of organization for exploiting tourist market and establishment of sales channels
  - Consideration should be given to establishment of sales outlets aimed at foreign tourists at the airports, stations, hotels, near tourist areas, etc. and for sale of various products there.

Table IV-7 Programme for Promotion of Toy Industry (1)

COUNTERMEASURE PACKAGE	PROGRAMME	METHOD AND SCHEDULE			
		1st year	2nd year	3rd year	4th year & after
<p>A leading organ for organizing toy association and for improvement of management/technique will be set up and be managed.</p> <p>It's indispensable for toy industry to get rid of copies and inferior articles and to make sure of safety in cooperation with government in order to keep growing rapidly as an exporting industry.</p>	<p>Establishment/management of Toy Industry Promotion Organization</p> <p>The Organization will be set up with quality inspection organ specialized only in toys as the core. A toy association office, training center, and an organ for collection/supply of information and material are expected to be put aside.</p> <p>The Organization will be managed in the cooperation both with private and public sectors.</p> <p>Government equips an inspection organ with facilities and machines and lends them to an other organ in the 3rd sector.</p> <ul style="list-style-type: none"> <li>• Inspection expert will be nurtured</li> <li>• Inspection system will be set up</li> <li>• An authorized inspection organ will be set up.</li> <li>• Collection/supply of information is encouraged. (Collection/exhibition of samples included.)</li> <li>• Study and training seminars on safety, design, production development, production technique will be held.</li> <li>• Toy association will be strengthened through these activities.</li> </ul>				
		Training at abroad			
		Invitation of the expert	○	○	
		Supply of the equipment		○	○
		Supply of the material & information	○	○	
		Invitation lectures	○	○	
		Invitation of the expert	○	○	○
		Invitation of the expert	○	○	○

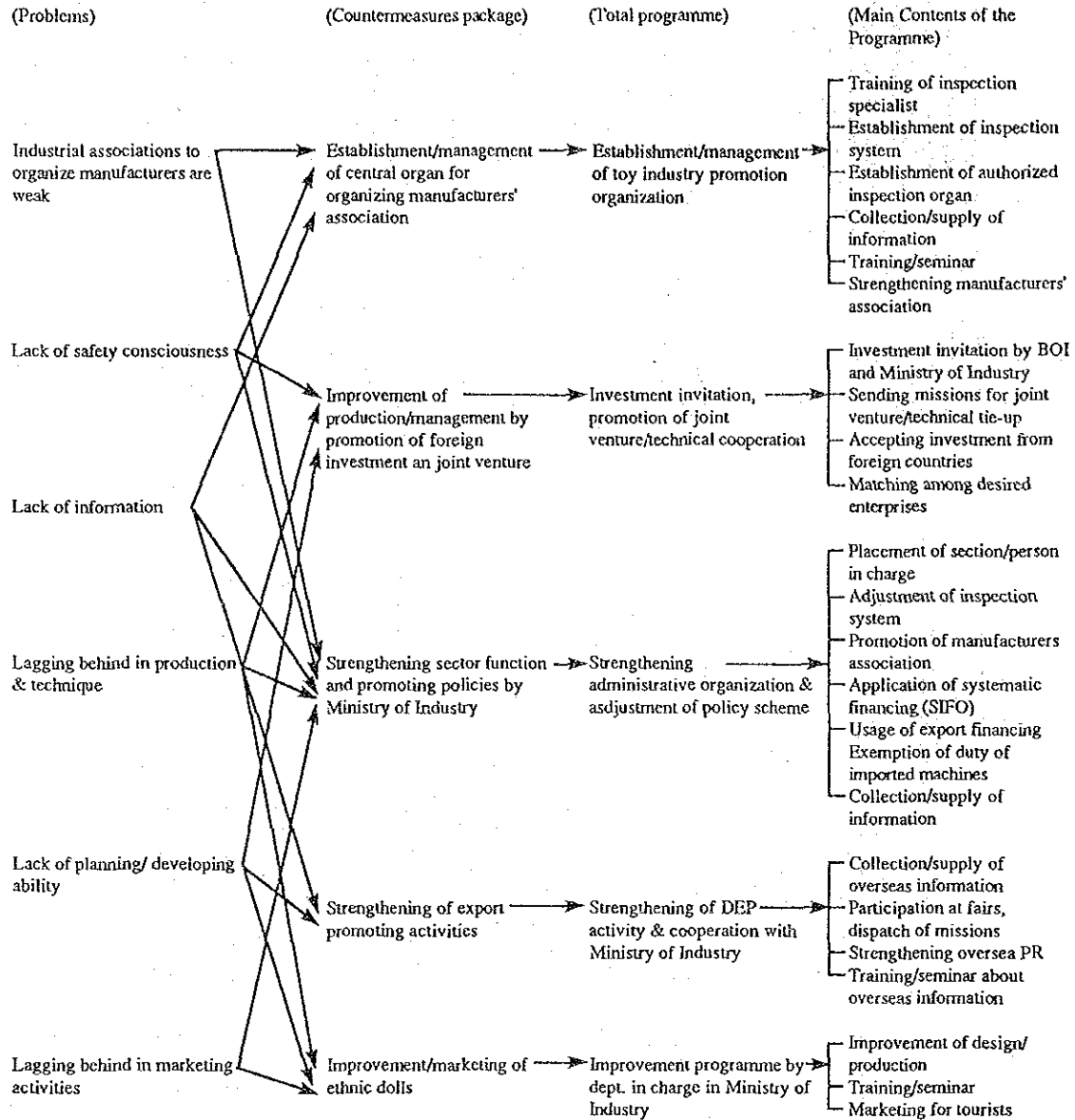
Table IV-7 Programme for Promotion of Toy Industry (2)

COUNTERMEASURE PACKAGE	PROGRAMME	METHOD AND SCHEDULE			
		1st year	2nd year	3rd year	4th year & after
Improvement of production, technique, management and sales ability promoted by investment of foreign enterprises, establishment of joint ventures, technical tie-ups etc. Many toy manufacturers in Japan, Hong Kong, R.O.C etc. are considered to be interested in investments in Thailand and/or technical tie-up with Thai enterprises. Such possibilities will be developed.	Investment invitation, joint ventures, tie-up promotion will be worked out. • Missions for invitation of investment & joint ventures organized by BOI, Ministry of Industry and toy manufacturers will be dispatched. • Invitation of toy manufacturers (supporting industries included) by BOI and Ministry of Industry • Mission for investment & tie-up from Japan will be dispatched. • Joint ventures matching among enterprises.	○	○		
Sector function of Ministry of Industry and cooperation with the related organs will be strengthened. Section and person in charge as a promoter will be made clear in order to grow the toy industry as the exporting industry. Planning and materialization of the promotion policies are required to be proceeded in communication cooperation with the related government organs and toy association.	Strengthening of administrative organization and adjustment of policy scheme for promoting toy industry. • Section/person in charge will be set up in Ministry of Industry. (clearization) • Adjustment of inspection system • Organization of toy association will be supported. • The following preferential treatments will be given to the associated enterprises with toy association. • Application of systematic financing (IFCT, SIFO) to toy industries. • Active usage of export financing (a system of refinancing exports at the central bank) for	○	○	○	○
		○	○	○	○
		○	○	○	○
		○	○	○	○

Table IV-7 Programme for Promotion of Toy Industry (3)

COUNTERMEASURE PACKAGE	PROGRAMME	METHOD AND SCHEDULE			
		1st year	2nd year	3rd year	4th year & after
<p>Strengthening of export promotion by Ministry of Commerce and cooperation with the Ministry of Industry</p> <p>Ministry of Commerce is desired to expand and to strengthen widely in order to expand export of toys including SMEs.</p> <p>On that occasion, sufficient consideration is required for cooperation/communication with the Ministry of Industry</p>	<p>toy-exporting</p> <ul style="list-style-type: none"> <li>•Duty exemption of the imported machine (injection machine, sewing machine, cutting machine, etc.)</li> </ul>		○	○	○
	<p>Export promotion of toy by DEP will be strengthened.</p> <ul style="list-style-type: none"> <li>•Collection of overseas market and industry information and supply to toy association will be strengthened. (It will be cooperated also with the a/m toy industry promotion center.)</li> <li>•Participation at fairs and missions for inspection and sales will be increased.</li> <li>•Oversea PR activities about Thai Toy industry will be strengthened.</li> <li>•Study and seminars about oversea marketing affairs etc.</li> </ul>	○	○	○	○
<p>Design and quality control of ethnic dolls for tourists</p> <p>In the background of foreign tourist's increase, the possibility of market expand is high, if the design and quality of the ethnic dolls are improved and if sales channel is adjusted.</p>		○	○	○	
	<p>Technical &amp; managerial guidance for improvement of ethnic dolls</p> <ul style="list-style-type: none"> <li>•Training courses for design and quality</li> <li>•Adjustment of organization &amp; sales channels for development of tourist market.</li> </ul>	○	○	○	○
		○	○	○	

Chart IV-4. Total Programme for Promotion of Toy Industry



## Concept of Establishment of Thai Toy Industry Promotion Organization

### 1. Object

- (1) To improve the inspection system so as to ensure the quality and safety of products.
- (2) To improve the level of production technology and dissemination of various production control techniques.
- (3) To disseminate knowledge and implementation of PR activities on product development, design, safety, marketing, etc. for toys.

### 2. Details of Activities

#### (1) Inspection Activities

- a. Implementation of entrusted inspections on commission for toy manufacturers
- b. Implementation of inspections for toy exports. However, this assumes establishment of an export inspection system by Thailand and coverage of toys by such export inspections.
- c. Establishment and maintenance of Thai toy safety standards acceptable internationally. Further, Implementation of safety inspections based on the standards. However, this assumes the establishment of a safety inspection system by Thailand.
- d. Dissemination and PR activities on the toy specifications and standards of various countries to the toy industry.

#### (2) Technical Guidance

- a. Guidance on designs aimed at development of safe toys.
- b. Technical guidance aimed at improvement of product quality. Technical guidance to make Thai toys meet the quality levels acceptable in the international market.
- c. Guidance in production control techniques to contribute to improvement of productivity and to ensurement of stable quality.
- d. Guidance visits to toy companies by visits of technical guidance personnel of the organization. Technical consultation activities based on requests from toy companies. However, it will be necessary to train the technical guidance personnel of the organization.



- (3) Technical Information Library
    - a. Collection of overseas toy related information and opening of the library for companies. Primarily of technical content. As media, books, videos, etc. will be used.
    - b. Collection of first class overseas products and display of same for companies. Primarily dolls.
    - c. Provision of overseas toy related information in the Thai language.
  - (4) Overseas PR
    - a. Overseas PR activities on safety, quality, design, and other facets of Thai toys.
    - b. Overseas PR activities on production volumes, quality control capabilities, productivity, and other features of capabilities of Thai toy makers.
3. Necessary Buildings and Materials
  - (1) Buildings
    - a. Office
    - b. Inspection room
    - c. Design room
    - d. Workshop
    - e. Library
  - (2) Main Equipment
    - a. Inspection equipments
    - b. Workshop equipment such as industrial sewing machines and cutting machines, etc.
    - c. Library equipments
4. Operating Entity
 

This will be established as an independent public organization jointly by the government and the toy industry. However, further study is required on the government involvement, and participation by the toy industry, etc.
5. Sources of Operating Funds
  - (1) Revenue from Inspection Fees
    - a. Entrusted inspection fees
    - b. Export inspection fees

c. Toy safety examination fees

- The inspection equipment and inspection methods for toys can be used widely for other products as well (in particular household goods, light industrial products, etc.), so it would be possible to increase inspection fee revenues by making use of any excess capabilities.

(2) Technical Guidance Fees

- Technical guidance and consulting will be given to toy makers based on the inspection data.

(3) Membership Fee Revenues

(4) Others

Step-by-Step Program for Establishment of Toy Industry Promotion Organization		
	Government Agencies	Private Industry
First Stage	<ul style="list-style-type: none"> <li>• Clarification of sections and staff in charge of toys in MOI               <ul style="list-style-type: none"> <li>- Sections and staff in charge perform role of promoters for the establishment of a promotional organization and of an inspection system and act as liaison and coordinators among related agencies.</li> </ul> </li> <li>• Invitation of experts in inspection of toys               <ul style="list-style-type: none"> <li>- Cooperation in preparations for inspection system.</li> </ul> </li> <li>• Overseas training of staff to train toy inspectors               <ul style="list-style-type: none"> <li>- Dispatch to overseas inspection institutes one chemical and one mechanical engineer.</li> </ul> </li> <li>• Establishment of preparatory committee for establishment of promotional organization               <ul style="list-style-type: none"> <li>- Use of the above-mentioned section of MOI as administrative offices and launching of committee comprised of related agencies and private industry.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of study group in Toy Association               <ul style="list-style-type: none"> <li>- Summarization of industry opinions and cooperation with government for of a promotional organization and establishment of an inspection system.</li> </ul> </li> <li>• Training and seminars on toy quality, safety, product development, design, etc.               <ul style="list-style-type: none"> <li>- Active use of experts to improve awareness of toy maker (Government to cooperate here too.)</li> </ul> </li> <li>• Participation in committee of left column.</li> </ul>
Second Stage	<ul style="list-style-type: none"> <li>• Preparation of plans for preparatory committee for establishment of promotional organization               <ul style="list-style-type: none"> <li>- Preparation of plans for establishment and operation, of inspection system, inspection organizations, information services, training, etc. (Feasibility studies performed in accordance with need.)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Cooperation to preparation of left column</li> <li>• Continuation of above training and seminars</li> </ul>

	Government Agencies	Private Industry
Second Stage	<ul style="list-style-type: none"> <li>• Cooperation in matters of right column               <ul style="list-style-type: none"> <li>- In particular, effort in PR of privileges able to be used by companies.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Issuance and distribution of "information journal" on toy industry               <ul style="list-style-type: none"> <li>- Issuance and distribution of "journal" to members of Toy Association.</li> <li>- Stress on raising awareness of quality and safety.</li> </ul> </li> </ul>
Third Stage	<ul style="list-style-type: none"> <li>• Establishment of Toy Industry Promotion Organization               <ul style="list-style-type: none"> <li>- Government to provide full cooperation in establishment of inspection system, procurement of equipment, and securing of inspection experts.</li> </ul> </li> <li>• Start of inspection activities</li> <li>• Implementation of activities in cooperation with the Association               <ul style="list-style-type: none"> <li>- Training and seminars on quality and safety</li> <li>- Training and seminars on products, design development, etc.</li> <li>- Training and seminars on overseas situation and marketing</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Participation in left and cooperation therewith               <ul style="list-style-type: none"> <li>- Participation of industry representatives in operation of Promotional Organization and sharing of responsibility for same.</li> </ul> </li> <li>• Cooperation in matters in left column</li> <li>• Cooperation in matters in left column, with some handled by the Association               <ul style="list-style-type: none"> <li>- Strengthening of organization of industry through the same.</li> </ul> </li> </ul>

**Details of Technical and Management Guidance Program  
for Improvement of Ethnic Doll Industry**

1. Object

The object is the improvement of quality and design of ethnic dolls of northern region (around Chiangmai) produced and sold for foreign tourists and development of sales channels thereof.

2. Implementing Organization

- The Northern Industrial Promotion Center (NIPC, in Chiangmai) of the Department of Industrial Promotion (DIP) will be the central organization, while the related sections of the DIP will provide cooperation.
- If possible, private organizations (such as the Toy Association) will also cooperate in the sense of pushing industrial organization.

3. Implementing Method

(1) Technical and Design Guidance

- Experts in fabric dolls (foreign producers and designers with established reputations) will be invited to give training in design and technical guidance through actual fabrication for ethnic dolls.
- The first training will be provided over three to four days and then the second and later training and design guidance will be considered to the response, results, etc.
- Note that another proposal would be to have foreign experts prepare model products in advance of this.

(2) Management and Sales Guidance

- Management seminars will be held on management of petty industries.
- Along with this, seminars will be held on sales to stores handling souvenirs for tourists (department stores, souvenir shops in airports, hotel shops, etc.)
- It would also be effective to collect foreign superior ethnic dolls and lecture of the methods of their production and sale.
- Studies and guidance on means for exploiting the tourist market will be performed at the NIPC.

#### 4-3. Policy and Institutional Approach

Promotion of the mold and die and the toy industries requires and would be more effective with, in parallel with the comprehensive programs mentioned above, support in government policy and institutions. In this regard, some matters considered important and proposals are given below:

##### Approach [1]

##### "Promotion of Investment and Joint Ventures"

To expand production in key businesses and to raise the level of technology and management, it is necessary and most important to promote investments by foreign enterprises and joint ventures.

##### (Proposal)

##### Positive Use of BOI Investment Incentives

To promote investments and joint ventures by foreign companies, including SMEs, in key industries such as molds and dies and toys, these industries should be clearly defined as ones to be promoted and positive promotional activities should be engaged in. For this, the following are considered important:

- Clear definition of key industries (in particular, it is necessary to clearly state the stress on supporting industries)
- Promotion of investment and matching of joint ventures
  - To attract investment and arrange joint ventures in industries dominated by SMEs carefully and effectively, the BOI and Ministry of Industry must cooperate to positively uncover potential companies and introduce them to each other.

##### Approach [2]

##### "Strengthening of Policies and Functions of Ministry of Industry and Organization of Industry"

The policies and functions of the Ministry of Industry, which has previously stressed technical guidance, should be strengthened. In particular, staff must be established on a sectorial basis and organization of the industry must be pushed in a sector-wise policy.

(Proposal)

**Establishment of Sector-Wise Policies and Functions of Ministry of Industry and Promotion of Industrial Organizations**

- Establishment of sector-wise sections and staff and pushing forward of promotional measures
- Establishment of linkages and systems of cooperation with other ministries and related departments
  - For sector-wise promotion measures, financing, tax, and tariff privileges would be effective. Further, explanations, arguments to, and cooperation with other ministries and departments would be extremely important.
- Establishment of industrial organization and promotion of industry through its use
  - In executing sector-wise promotion measures, it is essential to obtain the cooperation of the private sector through organization of the industry and promotion of industrial organizations. It would be effective for the government to provide specific assistance (not exercise controls) through the industrial organizations.

Approach [3]

**"Strengthening of Small and Medium Enterprise Policy and Establishment of System for Same"**

It is important to recognize the importance of the SMEs and to establish laws and systems for their promotion. At the present time, Thailand is in the process of preparation of the same and it is hoped that they will be realized early.

(Proposal)

**Clarification of Sections of Ministry of Industry in Charge of Small and Medium Enterprises and Establishment of System for Same**

- Establishment of Small and Medium Enterprise Law
  - It is necessary to recognize the importance of SMEs and to establish laws forming the basis of promotional measures.
- Strengthening of funds of SIFO, reinforcement of branch network, and strengthening of PR activities

- The present institutional financing system is insufficient in funding, networks, and staff when seen from the viewpoint of the urgency of promotion of SMEs. Quick expansion is desired. Further, it will be necessary to establish a loan guarantee system (in particular, through participation of the SIFO in the Small Industry Credit Guarantee Financing (SICGF)).
- Strengthening of management guidance for SMEs
  - Increased guidance in general management and accounting and other areas (seminars, training, roving guidance, consulting, etc.) for managers of small businesses would be desirable.

#### Approach [4]

##### "Expansion and Strengthening of Information Service for SMEs "

The SMEs suffer from a severe lack of information. The alleviation of this shortage is an important policy issue. Many of the SMEs lack even basic knowledge and information and this must be urgently dealt with.

##### (Proposal)

##### **Establishment of Information Function for Ministry of Industry and Positive Use of Same**

For the time being, Thailand should strengthen its information supply capabilities for key industries, regional industries, etc. In the future, it should aim at the construction of a comprehensive information service system for SMEs through consolidation and linkage of the same. In the future, establishment of a "Small Business Promotion Center" with such information facilities plus training, consultation, and other functions might be effective.

#### Approach [5]

##### "Linkage and Cooperation Between Ministry of Commerce and Ministry of Industry"

For administrative services and promotion of the development of export industries, it is necessary to strengthen the activities of the DEP and to further promote linkage and cooperation with the Ministry of Industry.



(Proposal)

**Establishment of System for Cooperation Between DEP and DIP**

The linkage and cooperation between export promotion activities of the Department of Export Promotion (DEP) of the Ministry of Commerce and the Department of Industrial Promotion of the Ministry of Industry should be strengthened. Linkage and cooperation are important in the following two regards. It is considered necessary to organize cooperative committees in both areas.

- Collection and supply of overseas information
- Training and seminars for export industries and strengthened activities of the DEP, in particular, market surveys, participation in trade fairs, dispatch of missions, and overseas PR are necessary.

Table IV-8 Policy Countermeasure, Programme for Promotion of Mold & Die and Toy Industry (1)

COUNTERMEASURE PACKAGE	PROGRAMME	METHOD AND SCHEDULE			
		1st year	2nd year	3rd year	4th year & after
Promotion of investment invitation and joint venture Promotion of foreign investment and promotion of joint venture is necessary and most efficient to expand production at stressed industries and to improve technique and management.	Active usage of BOI investment invitation policy The important industries such as mold & die, and toy, will be clearly announced and then, active investment promotion will be worked out in order to invite foreign investment including SMEs and to set up joint ventures.  •Clearization of important industries (The importance of supporting industry will be clearly stressed) •Investment invitation and joint venture matching will be promoted.				
Strengthening of policy function at Ministry of Industry and promotion of industry association Policy function of Ministry of Industry which has stressed on technical guidance will be strengthened. Sectional policy should be promoted by promoting industry organization and establishing sectional assignment	Establishment of sectorial policy function and nurturing industrial association •Establishment of section and person in charge by sectors; implementation of promotion policy •Establishment of conjunction and cooperation with other ministries and related section •Establishment of industrial association, and nurturing through it.				
Strengthening of SMEs policy and adjustment of system The importance of SMEs will be confirmed.	Section in charge of SMEs at Ministry of Industry will be cleared and the system will be adjusted				
	BOI	○	○	○	○
	Promotion of Investment	○	○	○	○
		○	○	○	○
		○	○	○	○
		○	○	○	○

Table IV-8 Policy Countermeasure, Programme for Promotion of Mold & Die and Toy Industry (2)


COUNTERMEASURE PACKAGE	PROGRAMME	METHOD AND SCHEDULE			
		1st year	2nd year	3rd year	4th year & after
<p>The urgent matter is to adjust a law and system which could be a base of promotion policy.</p> <p>Expansion/strengthening of material/information service for SMEs. Lack of information at SMEs is serious. The overcome is the important policy assignment.</p>	<ul style="list-style-type: none"> <li>• Settlement of a law for SMEs.</li> <li>• Enlargement and active use of systematic finance for SMEs (IFCT, SIFO).</li> <li>• Fund capacity of SIFO, branch office net work and PR activity will be strengthened.</li> <li>• Managerial guidance for SMEs will be strengthened.</li> </ul>		○	○	
		Invitation of expert	○	○	
	Adjustment of material/information function at Ministry of Industry and its active use. Material/Information function will be strengthened on the important industries and regional industry etc. for the time being. In future it aims at total information service for SMEs using conjunction.		○	○	○
	In this relation "Promotion Center for SMEs" which has not only material/information function but also training/consultation function etc. might be efficient in future.				
<p>Conjunction/Cooperation between Ministry of Commerce and Industry.</p> <p>It's indispensable for administrative service and promotion policy on export industry development to conjunct/cooperate with Ministry of Industry as well as strengthening the activities of DEP.</p>	<p>Conjunction/Cooperation between DEP in Ministry of Commerce and DIP in Ministry of Industry will be strengthened.</p> <ul style="list-style-type: none"> <li>• Collection and supply of overseas information</li> <li>• Study and seminar for export industry will be held</li> </ul>	Supply of material & information Invitation of lecturers	○	○	
			○	○	

Table IV-8 Policy Countermeasure, Programme for Promotion of Mold & Die and Toy Industry (3)

COUNTERMEASURE PACKAGE	PROGRAMME	METHOD AND SCHEDULE			
		1st year	2nd year	3rd year	4th year & after
	•DEP activity will be strengthened (market research, participation at fairs, dispatch of missions oversea PR.)	○	○	○	

## Proposals on Policy Approaches in Financing

### 1. Object

The object is to promote new investment and investment in modernization of facilities by SMIs and thereby promote export-oriented small businesses (toy industry) and export-related supporting industries (mold and die industry) and, further, to contribute to strengthening the constitution of the industry and strengthening its international competitiveness.

### 2. Approaches in Institutional Financing

- 1) Expansion of funds for the following institutional financing for SMIs, securing of low interest funds, streamlining of procedures:
  - a) IFCT: Small Scale Industries Finance Facility
  - b) IFCT: Export Industry Modernization Program (EIMP)
  - c) IFCT: Small Industry Credit Guarantee Fund (SICGF)
  - d) MOI: Small Industry Finance Office (SIFO) financing scheme
- 2) Creation of SIFO special low interest loan scheme and application of same to mold and die and to toy industries.
- 3) Application of credit supplementation system (SICGF scheme) to the direct loans of SIFO.
- 4) Expansion of branch network of SIFO
- 5) Expansion and training of SIFO staff
- 6) Strengthening of PR activities of SIFO
- 7) Reinforcement of management consultation function of SIFO

### 3. Proposals for Promoting Approaches in Institutional Financing

- Experts being invited for expanding and improving the institutional financing for SMIs would be better to stay more 2 to 3 years.
- For creation of the special low interest loan scheme of the SIFO, "policy loans" based on advice from experts are going to be created. However, the current draft of the scheme does not include molds and dies or metal toys among the industries eligible for the financing. It would be desirable for them to be included.
- The credit supplementation system (SICGF scheme) has not been used for the direct loans of SIFO up until now since the SIFO is not an investor in

the SICGF. Special measures should be taken to devise means for use of this for the direct loans of SIFO.

- Regarding the increase and training of the staff of the SIFO, experts should be invited (short-term invitation of about six months, one person) and trainees dispatched overseas (short-term dispatch of about six months) for training in banking business such as project evaluation and evaluation of collateral.
- For strengthening the management consultation capabilities, experts in management of SMIs should be added to the staff of SIFO or such staff should be trained. To train experts from the existing staff, it would probably be necessary to bring in one outside experts for a long period of about three years or dispatch trainees overseas for about one year.

#### 4. Approaches and Proposals in Export Financing

- 1) Regarding the export refinancing system of the Bank of Thailand, special measures should be devised such as the expansion of the limit of credit for toys and the establishment of special preferential interest rates. If it is difficult to set special preferential interest rates for special items, consideration should be given to floating interest rates wherein the refinancing interest rates of the commercial banks and the refinancing interest rates of the Bank of Thailand slide along with trends in the interest rates of the city banks.
- 2) An export credit guarantee system should be newly established for small and medium sized exporters.
- 3) Regarding improvement of the export financing system, there are at present no programs underway including invitation of experts etc. The Ministry of Finance, which is in charge, should consider such programs as bringing in of outside experts.

#### **4-4. Review of the Priority Ranking of the Proposed Programs**

It is necessary to give a rough priority ranking to each proposed program in order to implement the programs under the very tight limitations on both funds and human resources, etc.

A priority ranking of the proposed comprehensive programs for the mold & die and toy industries is provided in the order as shown in the table.

Because all the programs proposed in this study were not identified through sufficient feasibility studies, a priority ranking of each could not be given using very strict criteria such as figures of the IRR (international rate of return) of each program.

As a second basic approach, a priority ranking of each program was given by the rather subjective judgement of the study team according to the following criteria:

- (1) Existence of established organizations in charge of the program
- (2) Maturity level of the program
- (3) Urgency of the needs of the program
- (4) Scale of investment of the program
- (5) Level of direct impact of the program on the development of the targeted industry
- (6) Necessity of external supports such as international organizations.

Finally, separate from the program's priority ranking, it should be emphasized that for putting the program into practice, the establishment of the section and authorities in charge of the relevant sector in the Ministry of Industry and the establishment of its function as policy planning and practical realization of the program in particular is essential. The section and authorities in charge will become the core for concrete planning of policies concerning the relevant industries and will fill a role as promoters of the program's practical realization (See Chart IV-5). If this body is not established, realization of the program is likely to be extremely difficult.

Table IV-9. Summary of the Results of Review of Program Priority Ranking (Mold & Die)

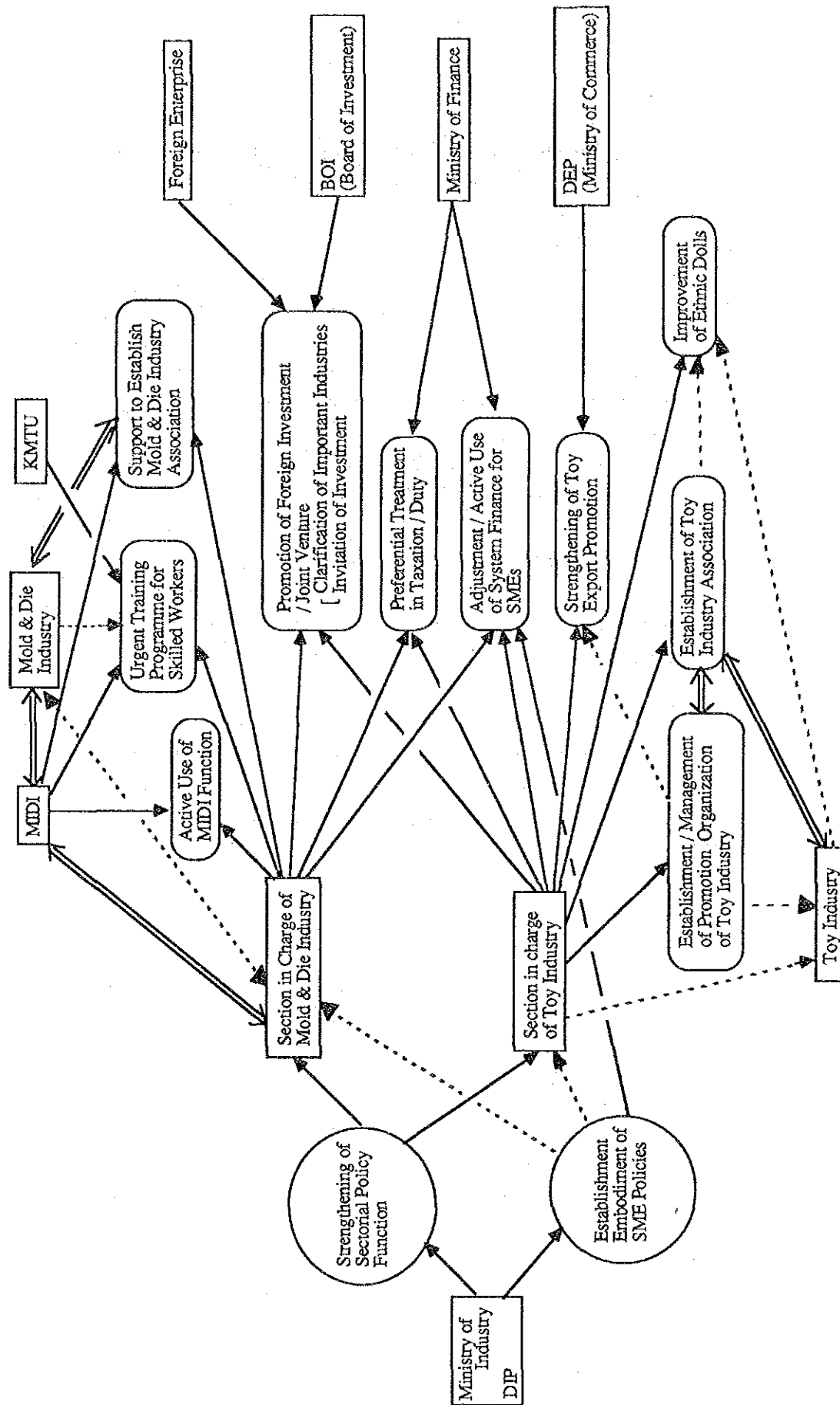
	Active use of MIDI	Establishment & active use of the Industry Association	Promotion of establishment of joint venture	Enforcement of urgent training programme for mold worker	Preparation of policy scheme for Mold & Die Industry development	Enlargement of engineering education at university / high school level
1. Existence of established organizations in charge	Yes	None (Under consideration)	Already investment by mold&die manufacturer	Yes (Ranking at KMIT by WestGermany)	None	Yes
2. Maturity level of the program	High (Support for present situation)	Medium	High	Low	Low	Medium
3. Urgency of the needs of the program	High	High	High	High	Medium	Medium
4. Scale of investment	Small	Small	Large (If industrial estate is established)	Medium	Small	Medium
5. Level of direct impact	Medium	Medium	Large	Medium	Large	Medium
6. Necessity of external support	Large	Medium	Large	Large	Small	Large
7. Priority	1	2	3	4	5	6



Table IV-10. Summary of the Results of Review of Program Priority Ranking (Toy)

	Establishment and management of Toy Industry Promotion Organization	Development of promotion activity for joint venture and cooperation	Strengthening of administrative organization and preparation of policy scheme for development of toy industry	Strengthening of promotional activity by DEP	Technical & managerial guidances for improvement of ethnic dolls
1. Existence of established organization in charge	None	Already investmet by Toy Manufacturer	None	Yes	None
2. Maturity level of the program	High	High	Low	Medium	Low
3. Urgency of the needs of the program	High	High	Medium	Medium	Medium
4. Level of direct investment	Large (incl. buildings)	Large	Small	Small	Small
5. Scale of direct impact	Large	Large	Medium	Medium	Medium
6. Necessity of external support	Large	Large	Medium	Medium	Medium
7. Priority	1	2	3	4	5

Chart IV-5. Action Taken by Ministry of Industry Concerning Enforcement of Comprehensive Programme



**Work of the Sections and Authorities in Charge of Each Industry**  
(Example from Ministry of International Trade and Industry in Japan)

**<Extent of Basic Work>**

Planning for promotion, improvement, and adjustment of production, distribution, consumption, export, and import for industries of which the section is in charge.

**<Example of Manufactured Products and Industries of Which the Section is in Charge>**

**Cast and Wrought Products Division, Machinery and Information Industries  
Bureau**

Cast and forged products, iron manufacturing machines, welding machines, forging machines, molds and dies, rollers, industrial furnances, bulbs, manufacturing tools, iron pipes and joints, files, powder metallurgy, metal patterns, and heat treatment.

**Recreation and Miscellaneous Goods Division, Consumer Goods Industries  
Bureau**

Sports equipment, stationery goods, musical instruments, records, personal accessories, umbrellas, leather, leather products, tannin, glue, gelatin, footwear, briefcases, bags, packaging material, packaging.

**<Extent of Authority and Responsibility (Standard Example)>**

- Creation of plans and writing drafts on basic measures concerning production of goods, distribution, consumption, and trade in the field of which the section is in charge.
- Promotion of technology in the field.
- Establishment of industrial standards in the field.
- Promotion of import and export in the field.
- Promotion of the necessary measures relating to international agreements or transactions connected with trade in the field.
- Approval and supervision of the agreements and pacts between industrial groups and associations in the field.
- Establishment of inspection standards for goods of which the section is in charge, appointment of an authorized inspection agency, and supervision of its operation.

## Appendix: List of Members Concerned

### Steering Committee

- |     |  |                 |
|-----|--|-----------------|
| 1.  | Director-General<br>Department of Industrial Promotion (DIP)   | Chairman        |
| 2.  | Deputy director-General (Mr. Manu Leopaiprote)<br>Department of Industrial Promotion (DIP)                               | Vice-Chairman   |
| 3.  | Director of Planning Division<br>Department of Export Promotion (DEP)  |                 |
| 4.  | Director of Industrial Economics & Planning Division<br>Office of the Permanent Secretary, Ministry of Industry          |                 |
| 5.  | Director of Planning Division<br>Board of Investment (BOI)   |                 |
| 6.  | Mr. Thamnu Vasinonda<br>(Director of Thailand Management Development and Productivity Center)                            |                 |
| 7.  | Dr. Damri Sukhotanang<br>(Director of the Metal-Working and Machinery Industries Development Institute)                  |                 |
| 8.  | Chief of Industrial Planning Coordination Section<br>Office of the National Economic and Social Development Board(NESDB) |                 |
| 9.  | Representative of the Association of Thai Industries   |                 |
| 10. | Director of Planning Division<br>Department of Industrial Promotion  | Secretary       |
| 11. | Director of Industrial Development Center<br>Department of Industrial Promotion  | Asst. Secretary |

### ADVISORS

1. 1st Secretary, Embassy of Japan (Mr. Shoichi Ikuta)
2. JICA Expert (Mr. Akira Kuroda)
3. JICA Expert (Mr. Kenichi Kohata)

### **List of Thai Delegation**

#### **Department of Industrial Promotion (DIP)**

- |     |                              |   |
|-----|------------------------------|---|
| 1.  | Mr. Manu Leopairote          | Deputy Director-General (Chairman)<br>Acting for Director-General                         |
| 2.  | Mr. Padetpai Meekun-iam      | Director of Planning Division   |
| 3.  | Mr. Somsak Kuptakanchanakul  | Director of Industrial Service Division   |
| 4.  | Dr. Damri Sukhotanang        | Director of the Metal-Working and<br>Machinery Industries Development Institute<br>(MIDI) |
| 5.  | Miss Yawanit Thongpahusatcha | Chief of Design Promotion Group<br>Industrial Service Division                            |
| 6.  | Mr. Sivasak Boonayodom       | Chief of Research & Development Group,<br>MIDI  |
| 7.  | Mr. Suwat Siwasaranond       | Chief of Survey & Research Sub-Division<br>Planning Division                              |
| 8.  | Mr. Protpimol Sukhavanija    | Chief of Product Design Section<br>Industrial Service Division                            |
| 9.  | Mr. Wirat Amornlervit        | Chief of Industrial Study Section<br>Planning Division                                    |
| 10. | Mrs. Suda Thongsri           | Industrial Technical Officer<br>Planning Division   |
| 11. | Miss Suwanee Tassanapirom    | Economist<br>Industrial Development Center  |
| 12. | Mrs. Sunimol Supangrat       | Industrial Technical Officer, MIDI  |
|     | Mr. Koki Suganuma            | ISD. JICA EXPERT  |



JICA