III. RECOMMENDATION

III. RECOMMENDATION

1. Proposal for the Comprehensive Industrial Promotion Programs

1-1. Comprehensive Promotion Program of the Mould and Die Industry in Malaysia

1-1-1. Basic Strategy

In the mould and die industry of Malaysia, a portion of the foreign-owned industry is equipped with high technology. However, the industry comprises mostly small scale local enterprises.

The mould and die industry in Malaysia is dedicated widely to the electrical, electronics, plastics, metal working and rubber industries. The industry is expected to grow in the future at a yearly rate of 30%.

The problems the mould and die industry of Malaysia faces are as follows:

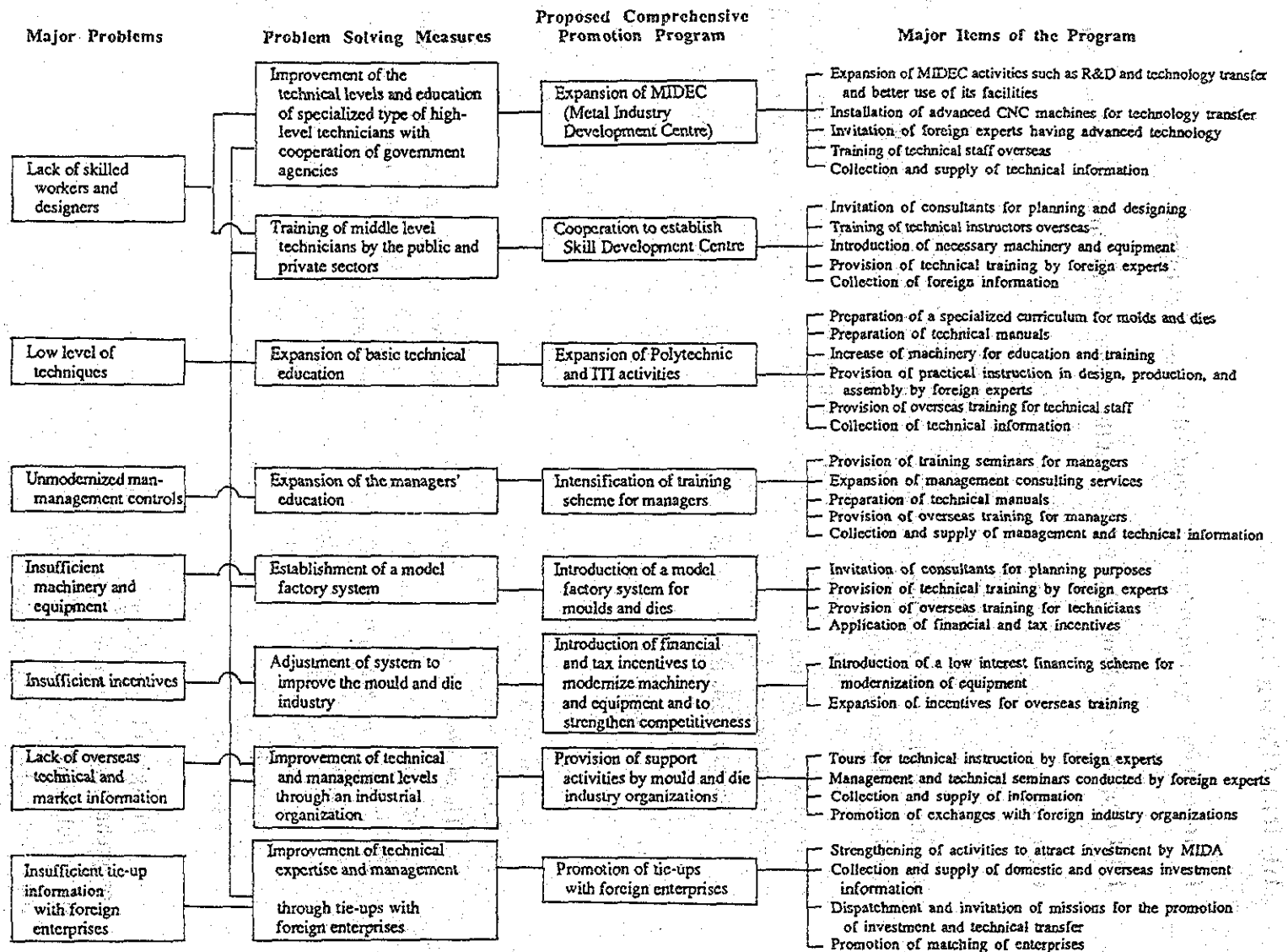
(1) Lack of skilled workers and designers
Most companies lack skilled workers and designers, a situation for which urgent solution measures are needed. To raise technical levels, it is necessary to develop skilled workers and designers.

(2) Lack of modern management control systems
There are many enterprises which do not have modern management control systems. An improvement in the management systems of firms is needed.

(3) Insufficient cooperation with international enterprises
Cooperation with multi-national companies is a very effective method for improving technical levels. For producing precision moulds and dies in particular, for which demand is increasing, cooperation with foreign enterprises is a shortcut.

In light of the above circumstances, following are the basic concepts of a comprehensive program to build up the mould and die industry in the future. The details of the relationships among the present major problems of the industry, problem solving measures and an overall promotion program are shown in Fig. III.1-1.

Fig. III.1-1 Proposed Comprehensive Program of Mould and Die Industry in Malaysia —Problems and Solution—



Basic Strategy

(1) In order to improve technical levels and to train high-level special technical staff for the mould and die industry, the mould and die section of MIDEC (Metal Industry Development Centre) would have to be expanded.
(2) To train middle-level technicians in local areas, with the cooperation of the public and the private sector, prompt establishment of the Skill Development Centre would be expected.
(3) Additional education is a necessary step to improve production and business administration skills.
(4) There should be more promotion to attract investment from overseas enterprises.

1-1-2. Comprehensive Promotion Program of the Mould and Die Industry

Program (1)

<Package of measures (1)>

This measure is to promote technology development & transfer and education of any specialized type of high-level technicians with the cooperation of government agencies. The Metal Industry Development Centre (MIDEC) is in Shah Alam, Selangor, the centre of mould and die industry. In the mould and die section of MIDEC, new machineries such as the Wire Cut EDM, EDM, and CNC MC, have been installed, and technical staff have attained certain levels with these equipments. It is most realistic and effective to develop and transfer the latest mould and die technology and train and educate skilled workers and mould and die designers as well as MIDEC's technical staff using these existing and expanded facilities.

-- Program --

Expansion of MIDEC (Metal Industry Development Centre).

- Expand MIDEC activities such as R&D and technology transfer of mould and die and make better use of its facilities.
- By fully utilizing MIDEC's existing and expanded facilities, promote R&D and technology transfer and intensify the training program for skilled workers and designers as well as MIDEC's technical staff.
- Install advanced CNC machines for technology transfer.

- A variety of machines already has been installed in MIDEC. However, in order to expand the training program, more advanced CNC machine tools should be introduced and operation know-how has to be extended.
• Invite foreign experts having advanced technology.
- It is recommended that foreign experts be invited on a long-term assignment basis to carry out the training of MIDEC's and private sectors' senior technical staff.
• Train technical staff overseas.
- It is desirable to continue the overseas training of MIDEC's technical staff.
• Collect and supply technical information.
- It is desirable to collect technical information that helps to improve technical levels and to supply it for the use of private enterprises.

Program (2)

<Package of measures (2)>

This measure is to train middle-level technical staff with the cooperation of both the public and private sectors.

At present, mould and die firms are eager to establish a Skill Development Centre, with the cooperation of the public and the private sector, as a more practical skill development and training agency.

The IMP (Industrial Master Plan), which is the basis of industrial policy, notes the importance of cooperation between the public and private sectors. The Skill Development Centre plan would fit IMP's above policy.

-- Program --

Establishment of Skill Development Centre

• Invite consultants for planning and designing.
- The use of consultants is desirable from the F/S stage for its realization.
• Train technical staff overseas.
- It is useful to have overseas training for technical staff at the initiation stage of this center.
• Introduce necessary machinery and equipment.
- It is desirable to introduce high-level machinery and equipment from overseas for use in the operation of the center.
• Have practical technical training by foreign experts.

- It is desirable to have experts from overseas give training to private technical staff, including training on the usage of advanced machineries.
- Collect and supply technical information.
- Collect technical information that helps to improve technical levels and use it for private enterprises.

Program (3)

<Package of measures (3)>

This measure is designed to expand basic technical education.

Practical education and training are not usually carried out in polytechnics or in vocational schools. And even when they are, they are not taught to a satisfactory extent, and most of what is taught is not useful in the work place. The establishment of a training curriculum specializing in making moulds and dies, and expansion of machinery and equipment should be carried out in ITI and polytechnics located both in Penang and in Kuala Lumpur, the two main sites of the mould and die industry.

-- Program --

Expansion of Polytechnic and ITI Activities

- Prepare a curriculum specifically for moulds and dies.
- For training in the mould and die course, creation of a well prepared curriculum would be effective.
- Prepare technical manuals.
- Preparation of technical manuals for education and training regarding moulds and dies is needed.
- Expand the machinery for education and training.
- It is necessary to expand the variety of machines for practice use in the design and manufacturing of moulds and dies.
- Have foreign experts provide practical instruction in design, production and assembly of moulds and dies.
- Train technical staff overseas.
- Collect technical information.
- In addition to the importation of teaching materials, foreign technical information has to be collected and then supplied to private enterprises.

Program (4)

<Package of measures (4)>

This measure is designed to expand education of managers.

As the history of the mould and die industry is still short, and there are many small- and medium-scale industries, modern management control systems are not advanced. Therefore, it is necessary to strengthen the business administration training of many young managers. The NPC (National Productivity Centre) would be a main training center for such activities.

-- Program --

Intensification of Training Scheme for Managers

- Provide training seminars for managers.
- Training seminars are necessary for the education of managers.
- Expand management consulting services.
- It is useful to expand consulting services in order to help private enterprise and to supply modern management techniques.
- Prepare technical manuals.
- As part of a managers' education, it is necessary to prepare technical manuals, which are needed from a management point of view.
- Train managers overseas.
- Collect and supply management and technical information.

Program (5)

<Package of measures (5)>

This measure is to set up several model factories and have them authorized by a competent authority. The establishment of these model plants will encourage other enterprises. Since there are few training facilities, the model factories could also be used for practical training purposes.

-- Program --

Introduction of a Model Factory System for Moulds and Dies

(Expansion of SIRIM activities)

- Invite consultants to make plans.

- To plan the introduction of this system, it is desirable to have the assistance of consultants.
• Have foreign experts provide technical training.
- Technical instruction by experts would be done at model plants as a model for other enterprises.
• Train technical staff overseas.
• Apply financial and tax incentives.

Program (6)

<Package of measures (6)>

This measure is to introduce incentives to modernize equipment and expand incentives for technical training for small- and medium-scale mould and die enterprises.

-- Program --

Introduction of Financial and Tax Incentives to Modernize Machinery and Equipment

• Introduce a low interest financing scheme for modernization of equipment.
• Expand incentives for training.

Program (7)

<Package of measures (7)>

This measure is to improve technical abilities and management levels through an industrial organization.

The mould and die industry still has no independent association and association activity is limited. By activating these groups, improvement of management levels and technical abilities used in the industry overall will be promoted.

-- Program --

Provision of Support Activities by Mould and Die Industry Organizations

• Have tours of technical instruction by foreign experts.
- To improve the technical levels of the mould and die industry overall, it is desirable to have industry experts make tours of technical instruction.
• Hold management and technical seminars by foreign experts.
• Collect and supply information.

• Promote exchanges with foreign industry organizations.
- To promote technical cooperation and exchange of information, it is desirable to cooperate with overseas industry organizations.

Program (8)

<Package of measures (8)>

This measure is to improve technical expertise and management through tie-ups with foreign enterprises.

To correspond to the increasing demand for precision moulds and dies and to improve technical management levels, tie-ups with foreign enterprises are effective shortcuts.

-- Program --

Promotion of Tie-ups with Foreign Enterprises

• Strengthen activities to attract investment by MIDA.
- MIDA performs many activities to attract investment. It is necessary to continue and strengthen these activities.
• Collect and supply domestic and overseas investment information.
- To attract foreign enterprises, it is necessary to introduce the domestic situation, such as the investment environment. For this reason, collection and extension of essential information as a guide to investment is necessary for foreign investors.
• Dispatch and invite missions for the promotion of investment and technical transfers.
- Dispatch missions on moulds and dies. Invitations should be continued.
• Promote the matching of enterprises.
- To realize joint ventures and technical tie-ups with foreign enterprises with the provision of institutional support.

Table III.1-1 Proposed Comprehensive Program of Mould and Die Industry in Malaysia

Problem Solving Measures	Comprehensive Promotion Program	Execution Means and their Schedule: Means	1st year	2nd year	3rd year	4th year or after
Improvement of the technical levels and education of specialized type of high-level technicians with co-operation of government agencies	Expansion of MIDEC (Metal Industry Development Centre)					
	• Expansion of MIDEC activities such as R&D and technology transfer and better use of its facilities	Use of foreign experts	o	o	o	o
	• Installation of advanced CNC machine tools for technology transfer	F/S by foreign experts	o			
		Introduction of new equipment		o		
	• Invitation of foreign experts having advanced technology	Use of foreign experts	o	o	o	o
	• Training of technical staff overseas	Overseas training	o	o	o	o
	• Collection and supply of technical information	Information gathering	o	o	o	o
Training of middle level technicians by the public and private sectors in local areas	Cooperation to establish Skill Development Centre					
	• Invitation of consultants for planning and designing	F/S by foreign experts	o			
	• Training of technical staff overseas	Overseas training		o	o	o
	• Introduction of necessary machinery and equipment	Introduction of new equipment		o		
	• Provision of technical training by foreign experts	Use of foreign experts		o	o	o
	• Collection of foreign information	Information gathering	o	o	o	o
Expansion of basic technical education	Expansion of Polytechnic and ITI activities					
	• Preparation of a specialized curriculum for moulds and dies	F/S by foreign experts	o			
	• Preparation of technical manuals	Preparation of manuals	o	o	o	
	• Increase of machinery for education and training	Introduction of new equipment		o		
	• Provision of practical instruction in design, production, and assembly by foreign experts	Use of foreign experts	o	o	o	o
	• Provision of overseas training for technical staff	Overseas training	o	o	o	o
	• Collection of technical information	Information gathering	o	o	o	o
Expansion of the managers' education	Intensification of training scheme for managers					
	• Provision of training seminars for managers	Use of foreign experts	o	o	o	o
	• Expansion of management consulting services	Use of foreign experts	o	o	o	o
	• Preparation of technical manuals	Preparation of manuals	o	o	o	
	• Provision of overseas training for managers	Overseas training	o	o	o	o
	• Collection and supply of management and technical information	Information gathering	o	o	o	o

Establishment of a model factory system	Introduction of a model factory system for moulds and dies					
	• Invitation of consultants for planning purposes	F/S by foreign experts	o			
	• Provision of technical training by foreign experts	Use of foreign experts		o	o	o
	• Provision of overseas training for technical staff	Overseas training		o	o	o
	• Application of financial and tax incentives		o			
Adjustment of system to improve the mould and die industry	Introduction of financial and tax incentives to modernize machinery and equipment and to strengthen competitiveness					
	• Introduction of a low interest financing scheme for modernization of equipment		o			
	• Expansion of incentives for training		o			
Improvement of technical and management levels through an industrial organizations	Provision of support activities by mould and die industry organization					
	• Tours for technical instruction by foreign experts	Use of foreign experts	o	o	o	o
	• Management and technical seminars conducted by foreign experts	Use of foreign experts	o	o	o	o
	• Collection and supply of information	Information gathering	o	o	o	o
	• Promotion of exchange with foreign industry organizations	Promotion of exchanges	o	o	o	o
Improvement of technical expertise and management through tie-ups with foreign enterprises	Promotion of tie-ups with foreign enterprises					
	• Strengthening of activities to attract investment by MIDA	Promotion activities	o	o	o	o
	• Collection and supply of domestic and overseas investment information	Promotion activities	o	o	o	o
	• Dispatch and invitation of missions for the promotion of investment and technical transfer	Promotion activities	o	o	o	o
	• Promotion of matching of enterprises	Promotion activities	o	o	o	o

1-2. Comprehensive Promotion Program of the Automotive Metal Parts Industry in Malaysia

1-2-1. Basic Strategy

At the core of Malaysia's automobile industry is PROTON, which produces the national car. Major part of its aim is to promote related industries. Considering the fact that the country's population is 16.5 million, its purchasing power is not very large, and a recent decrease in auto production has affected the automotive parts industry very badly.

Following are the problems of the automotive metal parts industry in Malaysia:

(1) A gap between production and manufacturing technology.
Both enterprises having foreign tie-ups and those without them have low technical levels. A plan to cope with this situation is necessary.

(2) Noncompetitive prices.
Considering present technical standards, production levels and control prices are not competitive. It is necessary to take measures to promote domestic production.

(3) Low production volumes.
Expansion of exports is needed in order to assure volume production of automobiles in Malaysia.

Noting the above background and problems, the basic concepts for a comprehensive program to promote automotive metal parts industry in Malaysia are as follows. The details of the relationships among the present major problems of the industry, problem solving measures and an overall promotion program are showin in Fig. VIII.1-2.

Basic Strategy

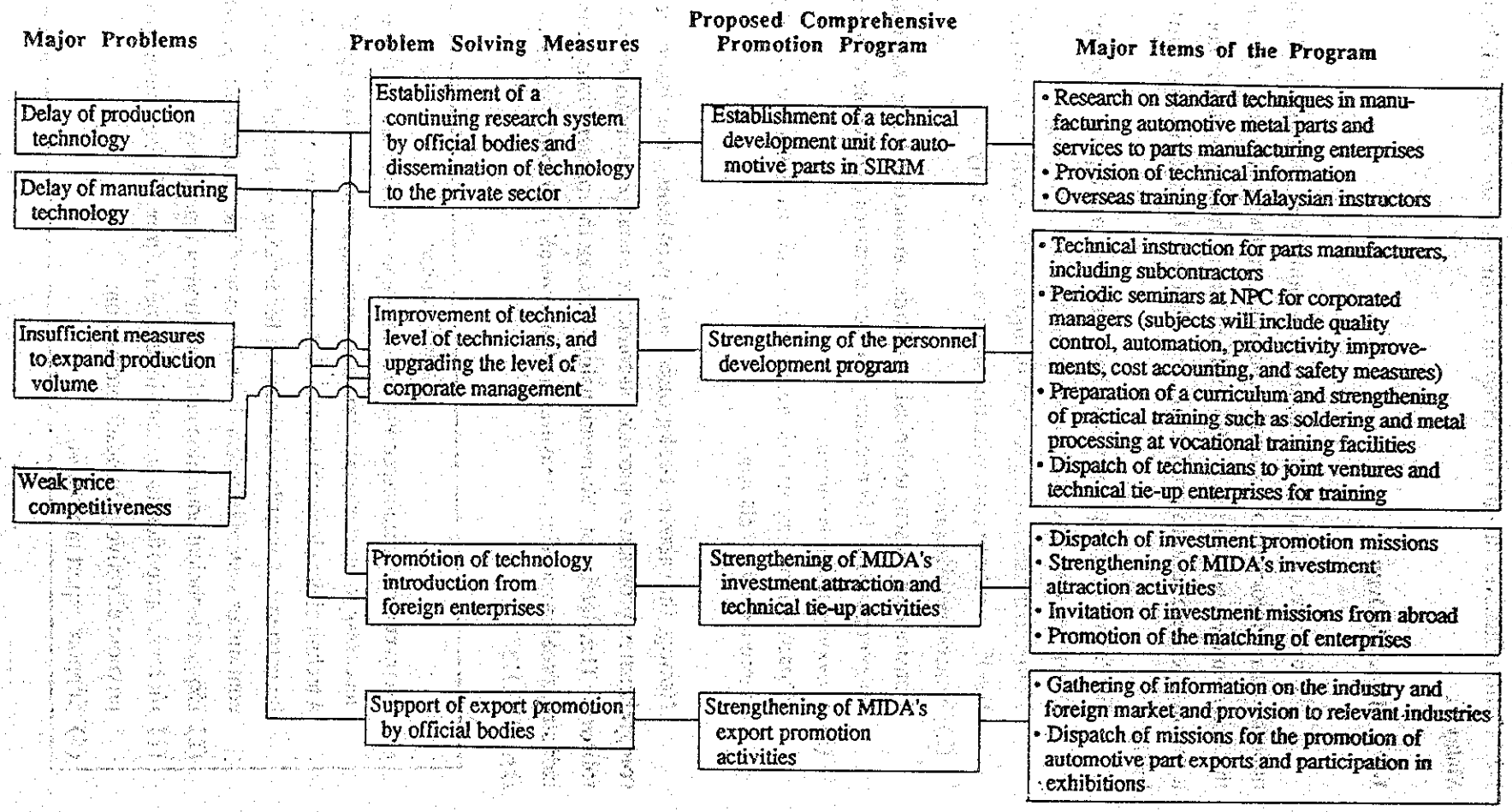
(1) To promote domestic production of components for automotive metal parts, it is necessary to master production and manufacturing technology. Establishment of a technical development unit for domestic automotive parts within the SIRIM is to be carried out in order to make up for lacking technical abilities, to establish a continuing system of research, and to extend the results to the private sectors.

(2) Expand technical education and education of managers.

(3) Increase activities to attract investment from foreign enterprises in order to promote effectively domestic production.

(4) Support export promotion.

Fig. III. 1-2 Proposed Comprehensive Program of Automotive Metal Parts Industry in Malaysia — Problems and Solution —



1-2-2. Comprehensive Promotion Program of the Automotive Metal Parts Industry

Program (1)

<Package of measures (1)>

This measure is to establish a continuing research system to promote domestic production in the long term, to promote activity to supply research results to the private sector and to cope with the lack of technical ability. This will be handled by an official organization.

It is necessary to acquire production and manufacturing technology in order to promote domestic production, especially for automotive parts. Extension of the results of research to the private sector is also important.

-- Program --

Establishment of a Technical Development Unit for Automotive Parts in SIRIM

- Establish a technical development unit for automotive parts in SIRIM to supply information concerning metals. Research materials will be introduced and field surveys will be carried out by experts when necessary.
- Research manufacturing techniques for parts and provide services to manufacturers.
- Carry out research on production and manufacturing technologies.
- Hold technical seminars or short-term consulting in order to supply technology to private companies.
- Supply technical information to private enterprises.
- Offer technical information such as seminar reports and research results to private enterprises.
- Provide overseas training for Malaysian instructors.
- Send persons for training abroad who will take a leadership role in technical research sections.

Program (2)

<Package of measures (2)>

This measure is to improve the skills of workers and upgrade the level of enterprise management.

It is necessary to improve the technical abilities of workers and technicians to cope with the gap between production and manufacturing techniques. Also, training for enterprise managers is necessary.

-- Program --

Expansion of the Program to Educate Technicians and Workers in such organization as ITI or to Educate Managers at NPC

- Provide technical instruction for parts manufacturers including subcontracted enterprises.
- In order to improve quality standards, technical instruction should be given on the spot to manufacturers.
- Organize seminars at NPC for managers. (Subjects will include quality control, automation, improvements in productivity, cost accounting, multiple equipment operation and safety measures.)
- Prepare a curriculum to strengthen actual training such as of soldering and metal manufacturing at vocational training facilities.
- Provide training for technicians dispatched to joint and technical tie-up enterprises.
- To be enforced at each enterprise. However, to improve the technical abilities of technicians it is necessary to dispatch and have them trained at joint and technical tie-up enterprises.

Program (3)

<Package of measures (3)>

This measure is to have official bodies attract foreign investment for the effective promotion of domestic production, and establish joint enterprises and promote technical tie-ups.

Continued promotion of tie-ups is necessary to improve management-level technical abilities as well as production. They will be achieved the launching of foreign enterprises.

-- Program --

Promotion of Technical Tie-ups and Attraction of Investment

- Dispatch missions to promote investment.

- There already are many missions dispatched abroad to promote foreign investment; however, it is necessary to continue these missions for attracting investment to the automotive parts industry.

• Strengthen investment attracting activities of MIDA.

- MIDA promotes many activities to attract investment. However, it is necessary to continue strengthening these activities.

• Invite investment missions from abroad.

- In order to create an actual investment environment for investors from overseas, it is necessary to invite as many foreign investment missions as possible.

• Promote the matching of enterprises.

- Individual support is needed to have definite technical and joint tie-ups with foreign enterprises.

Program (4)

<Package of measures (4)>

This measure is to give support for official export promotion organizations.

For export promotion in Malaysia, MEXPO supports many activities. However, it is not yet satisfactory.

-- Program --

Strengthening of the Promotional Activities for Export of Automotive Parts by MEXPO

• Collect and supply information on the industry and foreign markets and refer this to the proper industries.

- Provision of information through publications is being done. Collect marketing information concerning automotive parts, and supply it to enterprises.

• Dispatch automotive part export promotion missions and hold exhibitions (support for enterprises with no tie-ups overseas).

- Dispatch missions to markets that seem to be promising, mainly with manufacturers that do not have relations overseas. This information can come through joint tie-ups. It is necessary to study the feasibility of utilizing exhibits.

Table III.1-2 Proposed Comprehensive Promotion Program of Automotive Metal Parts Industry in Malaysia

Problem Solving Measures	Comprehensive Promotion Program	Execution Means and their Schedule: Means	1st year	2nd year	3rd year	4th year or after
Establishment of a continuing research system to promote long-term domestic production handled by official organizations. Extension of research results to the private sector. Technical support to the private sector.	Establishment of a Technical Development Unit for automotive parts in SIRIM. • Services to parts manufacturing enterprises for research on standard techniques in manufacturing automotive metal parts.	• F/S by foreign experts	o			
		• Introduction of materials		o	o	
		• Use of foreign experts Research on production and manufacturing technology		o	o	o
		• Use of foreign experts. (Service and cooperation from private sector) Technical seminars.	o	o		
		Short-term consulting	o	o	o	o
	• Offer of technical information		o	o	o	o
	• Overseas training for Malaysian instructors	• Overseas training (Long-term)			o	o
		Overseas training (Short-term)		o		
Upgrading of the level of enterprise management and improvement of the skills and technical abilities of workers and technicians.	Strengthening of personnel development program • Technical instruction for parts manufacturing including subcontractors	Use of foreign experts	o	o	o	
	• Periodic seminars at NPC for managers (Subjects will include quality control, automation, productivity improvements, cost accounting, and safety measures).	Use of foreign experts	o	o		
	• Preparation of a curriculum and strengthening of practical training such as soldering and metal processing at vocational training facilities	Use of foreign experts	o	o		
	• Dispatch of technicians to joint ventures and technical tieup enterprises for training.	Overseas training	o	o	o	

Have official bodies attract foreign investment for the effective promotion of domestic production, establish joint enterprises and promote technical tieups	Promotion of technical tieups and attraction of investment				
	• Dispatch of investment promotion missions.	Promotion activities	o	o	o
	• Strengthening of MIDA's investment attraction activities	Promotion activities	o	o	o
	• Invitation of investment missions from abroad	Promotion activities	o	o	o
	• Promotion of the matching of enterprises	Promotion activities	o	o	o
Support of export promotion by official bodies	Strengthening of the promotion activities for export of automotive parts by MEXPO				
	• Gathering of information on the industry and foreign markets and provision to relevant industries				
	• Dispatch of missions for the promotion of automotive part exports and participation in exhibitions (support for enterprises with no tieups overseas)	Discovery of potential clients by experts		o	
		Cooperation from foreign country		o	

1-3. Comprehensive Promotion Program of the Chinaware Industry in Malaysia

1-3-1. Basic Strategy

Except for a small number of foreign-affiliated firms having high production technology, most Malaysian chinaware manufacturers are family-management type small-scale firms. These manufacturers are classified into several groups creating separate enclaves, which makes balanced growth of the ceramic industry difficult. The technical level of the majority of local manufacturers is less developed when compared with neighboring countries such as China and Thailand.

Although Malaysia abounds in the major raw materials for chinaware production, they are not fully utilized to produce high value-added products.

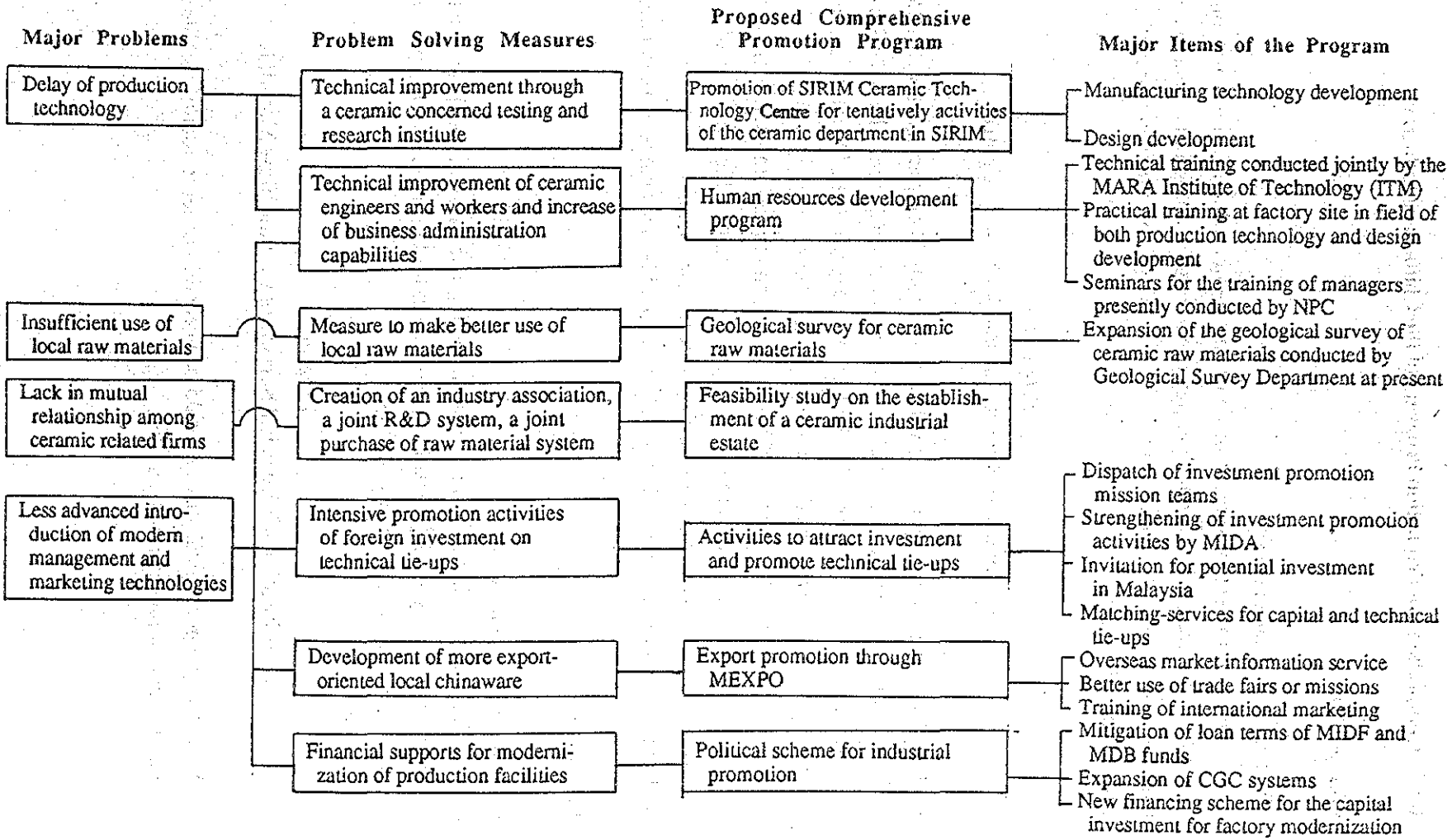
Small domestic market size is another major problem for Malaysian chinaware manufacturers. To expand sales into overseas markets, most local manufacturers have no experience in exports or else they do not have enough capability to produce or design sufficiently competitive products for overseas markets.

Under the above mentioned circumstances, the basic concepts of the comprehensive program for the development of the chinaware industry in Malaysia could be summarized as follows. The details of the relationships among the major problems of the industry, problem solving measures and an overall promotion program are shown in Fig. III.1-3.

Basic Strategy

(1) Establish the Ceramic Technology Centre which was already proposed by SIRIM at the earliest stage in order to upgrade the production technology levels of general chinaware manufacturers.
(2) Expand the geological surveys of ceramic raw materials.
(3) Improve the overseas marketing capabilities of local chinaware manufacturers through overseas market information services and support for design development.
(4) Promote the invitation of foreign investors.

Fig. III.1-3 Proposed Comprehensive Program of Chinaware Industry in Malaysia
— Problems and Solution —



1-3-2. Comprehensive Promotion Program of the Chinaware Industry

Program (1)

<Package of measures (1)>

Through the establishment of a ceramic center which would carry out R & D activities on the manufacturing technology of various products and extend the results to local manufacturers, the technology level of Malaysian chinaware manufacturers in general should be upgraded.

-- Program --

Promotion of SIRIM Ceramic Technology Centre

- The Ceramic Technology Centre which has already been proposed by SIRIM should be established as soon as possible. Before its establishment, the necessary R & D activities should be promoted by the Ceramic Department of SIRIM. Following are the major activities expected from the proposed Centre.
- R & D activities in the mixing of raw materials, and in forming and burning and other techniques, particularly those related to the production of high-quality tableware and artware, as well as extension of results to local manufacturers.
- Development of new types of designs which could be acceptable in export markets.

Program (2)

<Package of measures (2)>

This measure is to enhance more effective use of such local raw materials as Kaolin or plastic clay, which exist in abundance in Malaysia but are not presently used for the production of high quality products.

-- Program --

Intensification of Geological Surveys of Ceramic Raw Materials

- A nationwide geological survey would be needed in order to identify stable and high quality mineral raw material deposits.

Program (3)

<Package of measures (3)>

This measure is to upgrade the technical abilities of ceramic engineers and workers, and improve the business administration capabilities of Malaysian managers.

-- Program --

Execution of Human Resources Development Programs

- Give technical training to ceramic engineers and workers which are generally conducted jointly by the MARA Institute of Technology and SIRIM.
- Provide practical training on factory sites in the areas of both production technology and design development.
- Have seminars and training programs of Malaysian managers in the area of business management which are usually conducted by NPC.

Program (4)

<Package of measures (4)>

This measure is to establish a nationwide industry association of chinaware manufacturers and introduce a joint R & D or a joint purchasing system of ceramic raw materials, which would contribute largely to the harmonized development of the industry.

-- Program --

Feasibility Study for the Establishment of a Ceramic Industrial Estate

- After finding a good mineral raw material deposit, a feasibility study on the establishment of a ceramic industrial estate having a joint R & D institution and an organization to supply all the necessary raw materials to all manufacturers located in the estate should be conducted.

Program (5)

<Package of measures (5)>

This measure is to upgrade the production, sales and administration capabilities of the Malaysian chinaware industry through capital and technical tie-ups with foreign manufacturers.

-- Program --

Intensive Promotion Activities for Foreign Investment and Technical Tie-ups

- Dispatch investment promotion mission teams to potential investors' areas.
- Expand MIDA investment promotion activities.
- Invite investment mission teams to Malaysia.
- Strengthen matching services for capital and technical tie-ups between local and foreign firms.

Program (6)

<Package of measures (6)>

This measure is to support local chinaware manufacturers to be more export-oriented.

-- Program --

Chinaware Export Promotion through MEXPO

- Gather and supply to local manufacturers overseas market information on chinaware.
- Actively participate in trade fairs overseas, and dispatch trade mission teams to potential markets.
- Have training programs and seminars which target international marketing know-how for chinaware.

Program (7)

<Package of measures (7)>

This measure is to provide financial support in order to strengthen the competitive power of local firms through the modernization of chinaware factories.

-- Program --

Establishment of a Political Schemes for the Development of the Chinaware Industry Particularly in Regard to Financing

- Mitigate lending terms of MIDF or MDB loans.
- Expand the CGC scheme.

- Establish new financing schemes for capital investment directed for factory modernization.

Table III.1-3 Proposed Comprehensive Program of Chinaware Industry in Malaysia

Problem Solving Measures	Comprehensive Promotion Program	Means	Execution means and their schedule 1st year	2nd year	3rd year	4th year or after
Improvement of manufacturing technology level of local chinaware manufacturers through the establishment of a ceramic concerned testing and research institute	Promotion of SIRIM Ceramic Technology Centre (or tentatively the activities of the Ceramic Department in SIRIM) Activities are to be directed into the development of chinaware industry by solving major technical problems most of firms are now facing.					
	• Manufacturing technology development of various kinds of Products	Recruitment of new equipment		○	○	○
		Use of foreign experts	○	○	○	○
		Overseas training	○	○	○	○
	• Design development	Use of foreign experts	○			
		Overseas training	○	○		
Development of measure to make better use of domestic raw materials	Intensification of geological survey of ceramic raw materials					
	• Expand the survey activities of the Geological Survey Department	Use of foreign experts	○	○		
		Recruitment of new equipment	○	○		
The improvement of the technical level of ceramic workers and the managerial skills of the managers of private firms	Execution of Human Resources Development Programs					
	• Promotion of technical training conducted jointly by MARA/ITM and by SIRIM	Use of foreign experts	○	○	○	○
		Overseas training	○	○	○	○
	• Practical training at factory site of each private firm in the field of both production technology and design development	Use of foreign experts	○	○	○	○
	• Seminar of business management for managers of private firms conducted by NPC	Use of foreign experts	○	○		

Problem Solving Measures	Comprehensive Promotion Program	Means	Execution means and their schedule 1st year	2nd year	3rd year	4th year or after
Improvement of cooperation among ceramic related firms through association, joint R&D and joint use of raw materials	Feasibility study for the establishment of a ceramic industrial estate	Use of foreign experts	○			
The improvement of manufacturing and managerial capabilities through capital and technical cooperation with foreign manufacturers	Intensive promotion activities of foreign investment and technical tie-ups					
	• Dispatch of Investment promotion mission teams	Promotion activities	○	○	○	
	• Expansion for MIDA promotion activities	Promotion activities	○	○	○	
	• Invitation of foreign investor mission teams to Malaysia	Promotion activities	○	○	○	
	• Matching service for capital and technical tie-ups between local and foreign manufacturers	Promotion activities	○	○	○	
Support for local chinaware manufacturers to be more export-oriented	Chinaware export promotion through MEXPO					
	• Gathering and dispatch of overseas market information		○	○	○	
	• Better use of trade fairs or trade missions	Cooperation from receiving country	○	○	○	
	• Training programs and seminars for international marketing	Use of foreign experts	○	○	○	
Financial support in order to strengthen the competitive power of local firms through modernization of production facilities	Establishment of political schemes to develop chinaware industry					
	• Mitigation of loan terms handled by MIDF and MDB		○			
	• Expansion of CGC system		○			
	• New financing schemes for the capital investment for factory modernization		○			

1-4. Comprehensive Promotion Program of the Glassware Industry in Malaysia

1-4-1. Basic Strategy

There are only 3 manufacturers that produce glass products from mineral raw materials (except for sheet glass) in Malaysia at present. All of these firms have relatively strong relationships with leading foreign glassware manufacturers, and have modernized mass-production facilities. Due to stagnant market demand for glass bottles, their total production capacity far exceeds the present domestic market demand, and all of these firms are faced with the urgent necessity of strengthening their managerial bases by product diversification, export promotion or productivity.

Domestic market demand for glass tableware is nearly as large as that for glass containers, and significant portion of this domestic demand is expected to be filled by a new glass tableware factory to be established by an Indonesian investor. As for other glass products such as electric lights, pharmaceutical or chemical containers or measurement cylinders, only finishing work is conducted in Malaysia. Their present production volumes in Malaysia are considered to be insufficient to start production from mineral raw materials.

For the future development of the glassware industry in Malaysia, export promotion would be an essential element, for which cooperation with foreign manufacturers having high production capabilities and established overseas sales networks would become a major factor.

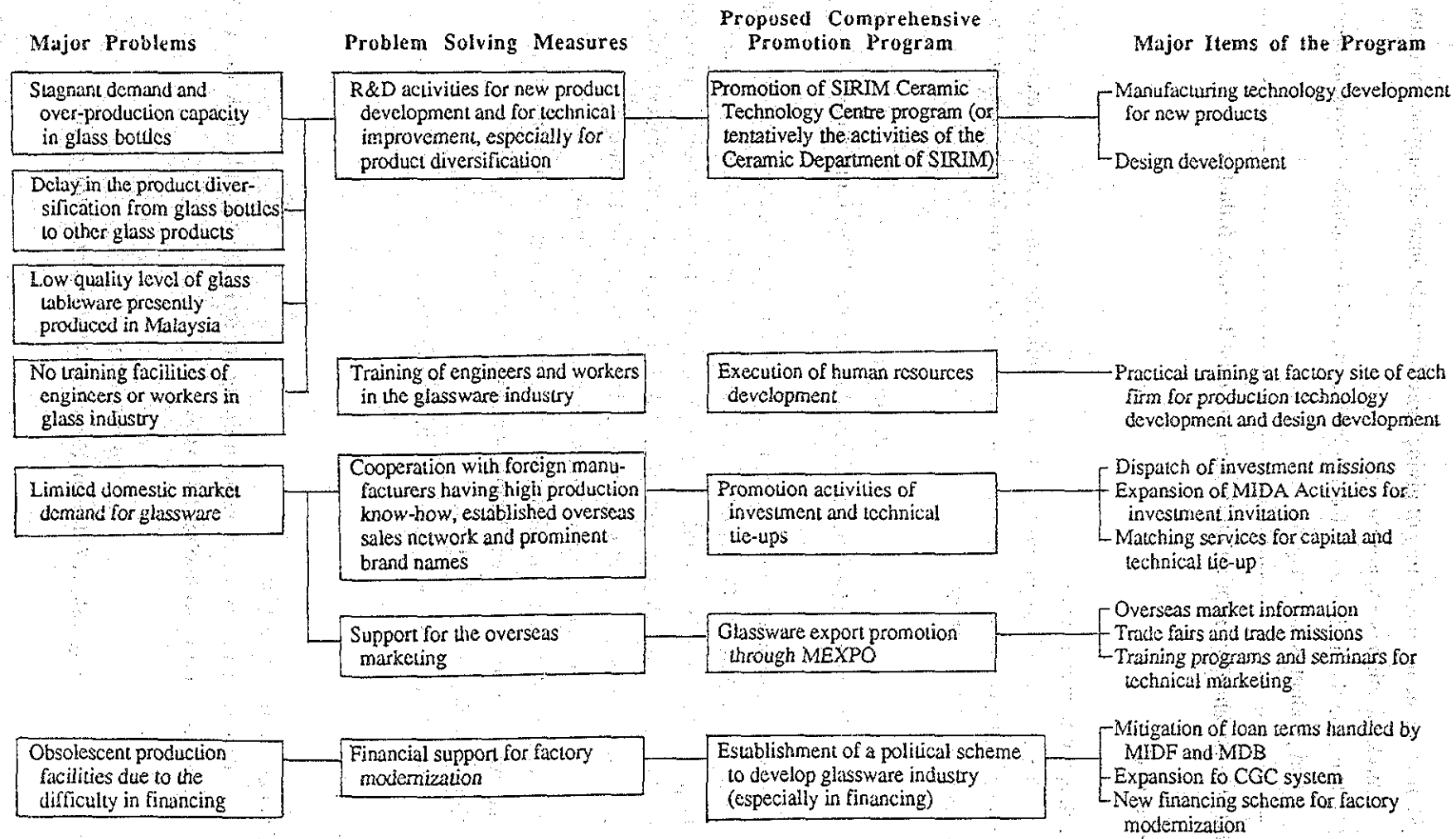
From the above present status of the glassware industry in Malaysia, the basic concepts for the comprehensive industrial development program would be summarized as follows. The details of the relationships among the present major problems of the industry, problem solving measures and an overall promotion program are shown in Fig. III.1-4.

Basic Strategy

(1) Establish an R & D glass production technology centre (a glass laboratory in the proposed SIRIM Ceramic Centre), which would support the product diversification and productivity development of existing firms.

(2) Improve export capability of glassware manufacturers through governmental support for overseas market information collection, for improved container transport facilities and for the establishment of an inspection system on exported glass products.

Fig. III.1-4 Proposed Comprehensive Promotion Program of Glassware Industry in Malaysia — Problems and Solution —



(3) Investigate the possibility of giving more favorable financial support for factory modernization or expansion.
(4) Promote the invitation of foreign investors having established overseas networks and product brand images.

1-4-2. Comprehensive Promotion Program of the Glassware Industry

Program (1)

<Package of measures (1)>

This measure is to promote product diversification and the improvement of overall technological levels of glassware manufacturers by extending to Malaysian manufacturers the results of R & D activities.

-- Program --

Promotion of a Ceramic Technology Centre (Glass Laboratory)

The establishment of a Glass Laboratory in the Ceramic Centre, which has already been proposed by SIRIM, should be promoted. Before its establishment, the Ceramic Department of SIRIM should engage in R & D activities to promote the development of the glassware industry, including R & D to improve technological levels. The following are the major activities expected from the proposed Centre.

- Carry out R & D activities on various production technologies.
  The results of R & D on production technology by type of product such as glass, tableware, or containers will be provided to manufacturers.
- Engage in design Development.
  Promote the improvement and development of designs.

Program (2)

<Package of measures (2)>

This measure is to provide training to technicians and workers at private enterprises to improve technological levels.

-- Program --

Execution of Human Resources Development Programs

- Practical training at a factory site of each firm for production technology development and design development will be especially effective to increase the skills of technicians and workers.

Program (3)

<Package of measures (3)>

This measure is to promote investment by leading foreign manufacturers which have established brands and production know-how for high-grade products and to promote tie-ups with those companies. Cooperation of major foreign manufacturers is required in order that the Malaysian glassware industry can manufacture products which will meet domestic demands for high-grade products and can compete in the world market.

-- Program --

Promotion Activities for Foreign Investment and Technical Tie-ups

- Dispatch investment mission teams.
- Mission teams whose objectives are focused on the promotion of investment and technical tie-up should be dispatched.
- Expand MIDA promotion activities.
- MIDA's role in investment promotion should be reinforced.
- Provide intermediary services between domestic and foreign enterprises.
- Individual, concrete support should be provided in order to match the conditions of both sides and to promote joint-venture businesses and technical tie-ups.

Program (4)

<Package of measures (4)>

This measure is to provide support for overseas marketing activities including product planning, production for foreign markets and sales activities.

-- Program --

Glassware Export Promotion through MEXPO

- Gather information on overseas markets and provide it to the industry.

- The gathering and provision of information focused on glassware are necessary because present information services are insufficient to grasp the situation of overseas markets.
- Participate in trade fairs and dispatch trade missions.
- Participation in trade fairs and the dispatch of inspection and trade missions are necessary to promote exports.
- Have training programs and seminars on overseas marketing activities.
- It is desirable to provide to private enterprises as much information as possible on overseas market trends and sales methods.

Program (5)

<Package of measures (5)>

This measure is to provide financial support for plant modernization and for the improvement of competitiveness. A financial support scheme is required because there are domestic manufacturers which need to modernize their plants and equipment or which have poor fund raising abilities.

-- Program --

Establishment of a Political Scheme for the Development of the Glassware Industry Particularly in Regard to Financing

- Mitigate loan terms on MIDF and Malaysia Development Bank funds.
- Expand activities of the Credit Guarantee Cooperation (CGC).
- The activities of CGC should be expanded because this system gives loan borrowing opportunities to medium- and small-scale enterprises in particular.
- Establish new financing schemes to promote capital investments for plant modernization.

Table III.1-4 Proposed Comprehensive Program of Glassware Industry in Malaysia

Problem Solving Measures	Comprehensive Promotion Program	Means	Execution means and their schedule			
			1st year	2nd year	3rd year	4th year or after
Increase of product diversification capabilities and overall technical levels of glassware manufacturers through R&D	Promotion of a SIRIM Ceramic Center (or tentatively the activities of the Ceramic Department in SIRIM)					
	• Manufacturing technology development of various kinds of new products	Recruitment of new equipment		○	○	○
		Use of foreign experts	○	○	○	○
		Overseas training	○	○	○	○
	• Design development	Use of foreign experts	○			
		Overseas training	○	○		
Training of engineers and workers in the glassware industry	Execution of Human Resources Development	Use of foreign experts	○	○	○	○
	• Practical training at factory site of each firm for production technology development and design development					
Cooperation with foreign manufacturers having high level of production know-how, established overseas sales-network and brand names	Promotion activities of foreign investments and technical tie-ups					
	• Dispatch of investment mission teams	Promotion activities	○	○	○	
	• Expansion of MIDA promotion activities	Promotion activities	○	○	○	
	• Matching service for capital and technical tie-ups	Promotion activities	○	○	○	
Support for overseas marketing	Glassware export promotion through MEXPO					
	• Gathering and dispatch of overseas market information		○	○	○	
	• Participation in trade fairs and dispatch of trade missions	Cooperation from foreign countries	○	○	○	
	• Training programs and seminars for international marketing		○	○	○	

Problem Solving Measures	Comprehensive Promotion Program	Means	Execution means and their schedule 1st year	2nd year	3rd year	4th year or after
Financial support for factory modernization	Establishment of a political scheme to develop glassware industry					
	• Mitigation of loan terms handled		○			
	• Expansion of CGC system		○			
	• New financing schemes for the capital investment for factory modernization		○			

1-5. Industry Promotion Program Proposed from Macro Policy Framework

1-5-1. Background

The followings are the brief summary of the major findings in macro policy framework relative to the foreign investments, local industry promotion and export promotion.

Invitation of Foreign Investment

(1) The present levels of domestic technology and technical know-how are not sufficient for further development of these four industries. So, aggressive policy measures to invite foreign investors or technologies in Malaysia would be required in some areas of these industries.
(2) For the invitation of foreign investors, a compilation system of basic information required from potential investors has to be established.
(3) For site selection, information relative to the development of local supporting industries is especially needed. From the viewpoint of the establishment of macro industrial development policy, the compilation of industry information, which would even include the activities of each firm in the industry, would be needed.

Local Industry Development

(1) The FTZ system has contributed largely to the invitation of many foreign affiliated firms in Malaysia. In the system, however, the linkage between foreign affiliated firms located in FTZ and local industry groups has been neglected. Thus, the development of local supporting industries which would supply their products mainly to firms located in FTZ is still insufficient.
(2) The market is, however, gradually expanding from foreign affiliated firms located in FTZ to local supporting industries. For one, the sales to FTZ area are regarded as exports and the all of the tax and other incentives relative to exports are applicable. For another, the foreign affiliated firms, especially those from Japan, are intentionally increasing the recruitment of the parts from the local market due to the rapid rise in the prices of imported parts and materials.
(3) One of the major problems that many the local firms face for the sales to foreign affiliated firms is their very strict requirement for product quality control of the products.

(4) As one of the policy measures to improve the product quality of Malaysian products, the "Scheme for the Assessment and Registration of Quality System" has been started in SIRIM. For the implementation of the scheme, however, trained experts who could evaluate the quality level of various products are lacking in SIRIM.

Export Promotion

(1) The many private enterprises in Malaysia, often point out the lack of information on overseas markets, and insufficient opportunities to approach the foreign buyers are often pointed out.
(2) MEXPO has been established as an organization to promote exports from Malaysia. Their activities in trade inquiry matching services or consulting services for product improvement for exports are highly evaluated by private firms. Due to the limit of the present budgetary allocation, further expansion of these MEXPO activities is very difficult. More active participation in overseas trade fairs is another area that MEXPO desires to expand, but they are not succeeding due to their budgetary limitation.

Under the above circumstances, the promotion programs, which are proposed from a macro policy framework, and which would contribute for the development of the 4 selected industrial product, are as follows:

1-5-2. Programs Proposed from the Macro-Political Framework

Programs proposed from a macro political framework would lead to the promotion of the four selected industries and to the acceleration of their exports.

Program (1)

<Package of measures (1)>

One part of this measure is to intensify activity to attract foreign investment. One of the measures to be carried out is the collection of nationwide information related to investments and the quick supply of it. Data-based information such as on industrial estates, labor demand and supply, or labor cost, is to be collected by MIDA for the convenience of investors.

Another part of this measure is to establish a data base on domestic enterprises. Some SEDC (State Economic Development Corporation) produce "Supporting Industry Directory." MIDA is collecting information and putting it into a computer data base. MIDA could become a one-stop agency for foreign investors interested in tie-ups with Malaysian firms. Effective use of up-to-date information on supporting enterprises would provide domestic enterprises with opportunities to expand. The information shall be collected and used by both MIDA and SEDC in each state.

-- Program --

Expansion of Investment Attraction Activities by MIDA

- Connect MIDA and SEDC in each state with an on-line system, and make possible the usage of information related to investment and enterprises.
- In addition, for concentrated activity to attract specific target industries, or the publication of a guidebook on the subjected industry, dispatch and acceptance of investment missions, etc., would be needed. For intensified consulting services to potential investors, experts with broad knowledge of specified industries shall be assigned.

Program (2)

<Package of measures (2)>

This measure is to put more emphasis on the activities to support local enterprises for export promotion such as those presently conducted by MEXPO.

-- Program --

Expansion of Export Promotion Activities through MEXPO

- Collect information on foreign markets regarding target items, guidelines to improve quality, and the holding of seminars.

Program (3)

<Package of measures (3)>

This measure is to improve the quality of Malaysian products by the enforcement of the "Scheme for the Assessment and Registration of Quality System", which is presently planned at the SIRIM.

In order to put this system on the right track, a program to train SIRIM staff members to be quality evaluation experts, with guidance by a foreign expert, should be performed. In addition, through the seminar, knowledge regarding the importance of quality control shall be diffused.

-- Program --

Promotion of the Scheme for the Assessment and Registration of Quality System by SIRIM

- Educate experts from among the SIRIM staff members in order to promote the above scheme.
- Invite foreign experts to be instructors for seminars.

Program (4)

<Package of measures (4)>

This measure is to introduce modernized management systems for the development of the industry. Therefore, educational opportunities to managers of small and medium scale domestic enterprises should be expanded.

-- Program --

Expansion of Manager Training at NPC (National Productivity Centre).

- Establish a training center for small and medium scale enterprises within the NPC for the education of managers which aims to implant modern business administration skills

Table III.1-5 System and Policy

Comprehensive Promotion Program	Execution Means and their Schedule				
	Means	1st year	2nd year	3rd year	4th year or after
Expansion of MIDA (Malaysian Industrial Development Authority)					
• Centralize all information regarding investment at MIDA and supply it to investors. Concretely, connect SEDC (State Economic Development Corporation) and MIDA by an on-line system and supply information on investment and enterprises.	F/S by experts for data base of information	o			
	Recruitment of machinery and facilities		o		
• Publish materials regarding target industries, dispatch and invite foreign investor mission teams. And for the intensification of counseling, assign experts to industries concerned.	Use of foreign experts	o	o	o	o
	Supply of basic industrial information	o	o	o	
	Promotion activities	o	o	o	
	Implementation of match making	o	o	o	
Expansion of export promotion activities of MEXPO (Malaysian Export Trade Centre)					
• Collect overseas market information regarding the target items, guide design and quality, and organize seminars.	Guidance for the improvement of products	o	o	o	
Promotion of Scheme for the Assessment and Registration of Quality System by SIRIM					
• Train experts in SIRIM to promote this scheme	Use of foreign experts		o	o	o
	Overseas training		o	o	o
Expansion of NPC (National Productivity Centre)					
• Establish a training centre in the NPC for managers of small and medium sized enterprises.	F/S by experts		o		

2. Integration and Prioritization of the Proposed Programs

2-1. Positioning of the 4 Selected Industries of the Study

The positioning of the 4 targeted industries of the study, which were selected in the process as mentioned in the introduction chapter, are examined in this section in order to provide the framework for the integration and priority evaluation of the programs proposed separately for each of the 4 industries.

Outlines of the four industries are summarized and compared in Table VIII.2-1.

2-1-1. Moulds and Dies

Moulds and dies are widely used in the production processes of various products including electronics and electrical apparatus, automobiles, machinery and equipment such as office equipment and optical instruments, glass containers, rubber products, etc. The development of the mould and die industry, which plays the role of supporting every industrial sector, will decide the future of the country's industrial development.

The mould and die industry basically engages in diversified small lot production. The production system can be divided into various types, from the type which requires high technology and know-how to more basic labor-intensive production. Medium- and small-sized enterprises occupy the dominant position in the mould and die industry. Even in advanced countries, mould and die manufacturers often engage in production with little capital and a small number of employees. As for the manufacture of moulds and dies, hence, there are several areas which are suited for the developing countries.

The Malaysian government fully recognizes the importance of the mould and die industry as a supporting industry of export-oriented industries. The government, in the IMP published in January, 1986, accorded priority status to the development of the mould and die industry as the central sector in the machinery and engineering industry. Among development strategies for this industry, the government put emphasis on the improvement of technological levels and production efficiency in order to decrease dependence on the import of moulds and dies. The mould and die industry is designated as a promoting industry in the Promotion of Investment Act and various incentives such as tax reduction are provided.

The main focus of the mould and die industry in Japan has shifted from the expansion of production to the improvement of quality. Japanese manufacturers tend to transfer the production bases of labor-intensive manufacturing which does not require

precision to developing countries. Some Japanese-affiliated enterprises manufacturing moulds and dies in developing countries export their products to Japan.

Under these circumstances, the Malaysian mould and die industry will be expected to play a more important role in supporting export-oriented industries. Foreign investment in this sector is also expected to increase.

2-1-2. Automotive Metal Parts

The vehicle registration rate in Malaysia is estimated at 14.1 persons per vehicle, which is, as well as that in Singapore, a relatively high rate among ASEAN countries. Considering the demand for automobiles in the population of 16.5 million, the domestic market for automobiles is not large.

It is estimated that 34,000 passenger cars and 15,000 commercial vehicles were assembled in Malaysia in 1987. Malaysia has promoted local content development as have neighboring countries. However, the limited production scale has raised the problem of high production cost. The government has taken a flexible policy for automotive parts. Because of these factors, local content development has not made much progress. The expansion of production volume is fundamentally required to develop local content. The promotion of parts exports is considered as one solution to this problem.

In 1983, PROTON, which had been one of the projects of greatest concern, was established as a joint-venture with a Japanese enterprise to manufacturer the national car. PROTON started production and sale of the national car in 1985. The government positions the national car project as a focal point of development and intends to promote the development of the automobile industry and related industries. Besides the Mandatory Deletion Programme, the government announced a parts procurement schedule for the national car and invited the supply of parts from domestic and overseas manufacturers. The local content ration of PROTON is estimated to reach approximately 40% because PROTON has a sheet metal plant. The industry has to look towards the export market, which has been considered a medium- and long-term target, in order to achieve economies of scale. PROTON has already embarked on experimental exports.

Excluding the national car, the local content ratio of automobile manufacture is estimated at approximately 20-30%. It is difficult to increase the application of domestic parts because of the limitation of production scale.

The biggest problem of the automotive metal parts industry is that investment in the industry should be restrained because of limited demand. But there are some encouraging factors. For example, Japanese automobile manufacturers are increasing

their procurement of parts from overseas suppliers. And Japanese parts manufacturers are tending to set up production bases in Asian countries. By promoting investment foreign enterprises including Japanese firms and technological tie-ups, it may be possible to expand the export of OEM automotive parts. The development of the automobile industry and the automotive parts industry will generate substantial spin-off effects on the related industries as expected in the IMP. Among these industries, the development of the automotive metal parts industry, above all, is an important task because the promotion of local content for this sector is considered relatively difficult.

2-1-3. Chinaware

In the IMP 1986/95 released in January, 1986, the Malaysian government accorded priority status to the non-metallic mineral products (NMMP) industry, which covers a wide range of products including chinaware as well as cement, glass, and glass products, as a resource-based industry. Although the importance of the NMMP industry in the Malaysian economy is still relatively small, the government expects much from the development of this industry. It said that the industry has a strong potential for promoting related development projects and encouraging overall economic activities. IMP stressed those aspects and pointed out the following roles which the industry should play in the future.

- To develop and utilize abundant local resources
- To reinforce the structure of affiliated industries, especially to provide essential inputs to the construction sector
- To promote large-scale, capital-intensive and high technology industries
- To disperse industries to less-developed regions
- To encourage the growth of small-scale industries.

The IMP described the basic policy toward chinaware in the section on product strategies. The Malaysian government expects the future market acceptability of Malaysian chinaware and has an interest in promoting its exports. The following are product strategies for chinaware.

- High-grade ceramic tableware
  Malaysia still imports a large volume of ceramic tableware from China, Japan, Taiwan, etc. Imported tableware is of higher quality and/or is less expensive than domestic goods. Imported tableware occupies a dominant position in the market

ranging from prestigious hotels and restaurants to households. Domestic products can enter the high-grade tableware market and substitute for imports when the Malaysian industry introduces modern technologies, utilizes high-quality mineral resources, develops excellent designing ability, and introduces thorough quality control.

- Other ceramic products

  Other ceramic products which are recognized for promotion are novelties and handicrafts, and various ceramic products for industrial use.

Some Japanese chinaware manufacturers have moved their production bases to the ASEAN countries including Malaysia reflecting the appreciation of the yen. Some manufacturers have made applications for investment projects.

2-1-4. Glassware

The glassware industry is identified as a priority industry in one sector of the NMMP industry. The IMP considered, in the section on product strategies, that there is a potential demand for glassware in the domestic market and also the high possibility of export.

Among glassware, tableware and kitchenware are listed as development targets. Although the present demand for those products is not large, potential demands are regarded as large.

Malaysian glassware, especially glass bottles, are exported to neighboring countries such as Singapore, Hong Kong, and Pakistan. The exports have tended to increase in recent years. On the other hand, the production volume of such glassware as tableware and novelties is still small. Those sectors would be export industries with the development of marketing techniques and designing abilities, and the acquisition of technologies.

Table III.2-1 Positioning of 4 Selected Industries

	Moulds and Dies	Automotive Metal Parts	Chinaware	Glassware
1. Size (M$ million)				
Production	40-50 (1987)	93 (1985)	80 (1986)	78 (1987)
Exports (FOB)	25 (1987)	16 (1987) 1)	34 (1986)	29 (1986)
Imports (CIF)	105 (1987)	622 (1987) 1)	20 (1986)	36 (1986)
2. Growth rate (%)				
Production	200-250 (1985-87)	97.8 (1981-85)	13.8 (1982-86)	N.A.
Exports	230 (1985-87)	0.6 (1983-7)	57.0 (1982-86)	18.5 (1983-86)
3. Overseas market				
Major competitors	Basically not appropriate for exports and imports	Developed countries/ Asia NIES	Developed countries/ Asia NIES/China etc.	Developed countries/ Asia countries
Competition		Very hard	Very hard	Very hard
Competitive power of Malaysian products		Low	Low	Low
4. Domestic raw materials				
Self-Sufficiency rate	Low	Low	Medium	Medium
5. Impact to other industries	Large	Medium	Medium	Small
6. Future growth prospect for domestic production	Large	Medium	Medium	Medium
7. Future growth potential of exports	Large (but indirect)	Small	Medium	Small

Note: 1) Total exports or imports of automotive parts including CKD parts.

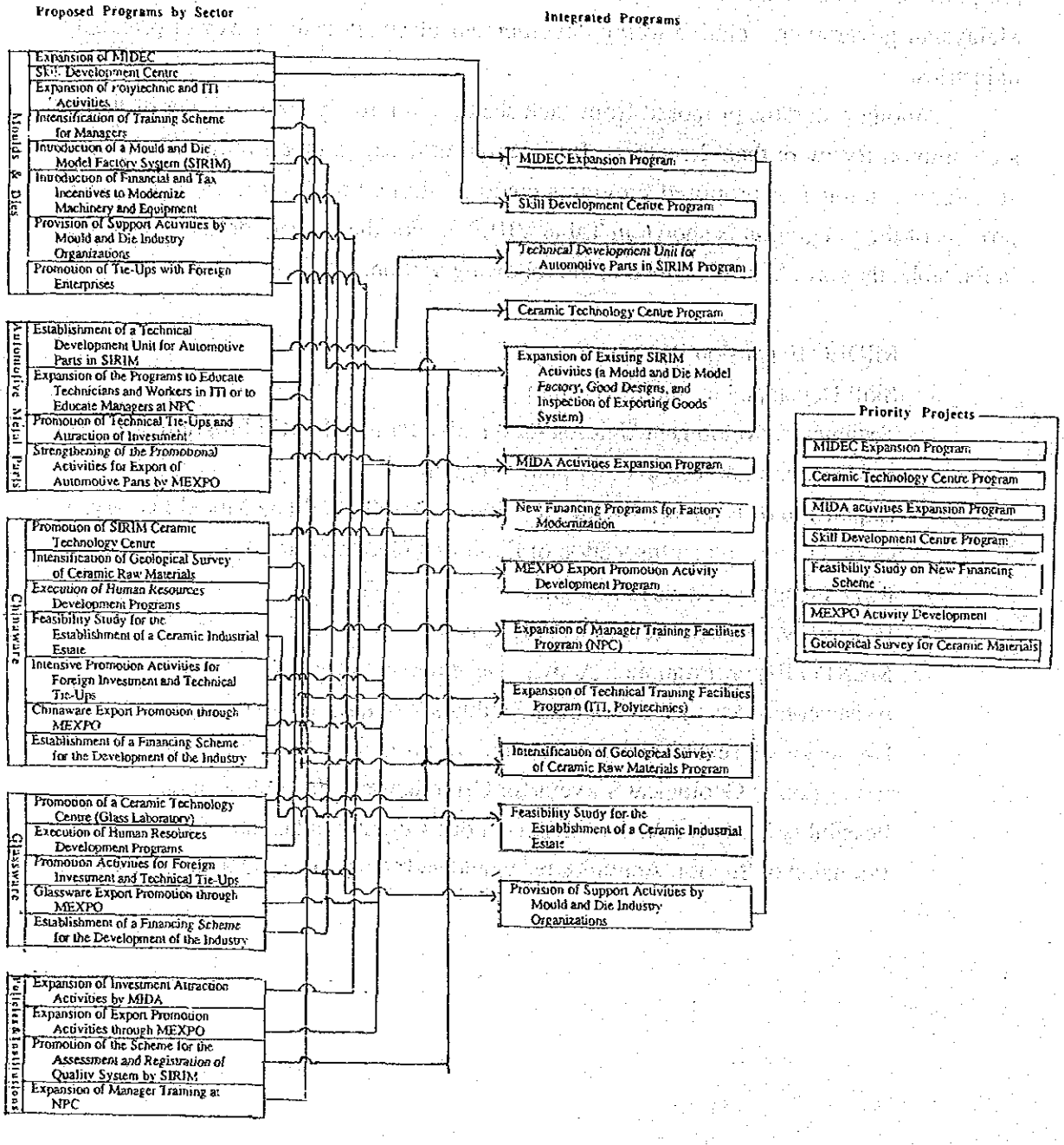
2-2. Integration of the Proposed Programs

A package of programs is separately proposed as an overall industrial promotion program for each of the 4 selected industries and for the macro policy framework of the Malaysian government relative to the development of small-scale or export-oriented industries.

Among programs proposed from each sector, a relatively large number of them are common for more than 2 sectors. By integrating these common programs among sectors, the number of proposed programs could be limited to the following 13. The process of the integration is shown in Table VIII.2-2. For the priority projects showing in the table, they would be described in the following section.

- MIDEC Expansion Program
- Skill Development Centre Program
- Technical Development Unit for Automotive Parts in SIRIM Program
- SIRIM/Ceramic Technology Centre Program
- Expansion of Existing SIRIM Activities (a Mould and Die Model Factory, a Good Design and an Inspection of Exporting Goods System)
- MIDA Activity Expansion Program
- Feasibility Study on New Financing Scheme
- MEXPO Export Promotion Activity Development Program
- Expansion of Managers' Training Facilities Program (NPC)
- Expansion of Technical Training Facilities Program (ITI, Polytechnic)
- Expansion of Geological Surveys for Ceramic Raw Materials Program
- Feasibility Study for the Establishment of a Ceramic Industrial Estate
- Provision of Support Activities by Mould and Die Industry Organizations

Fig. III.2-1 Integration of Programs and Priority Projects



2-3. Review of the Priority Projects

To develop the industries selected for this study, it is desired that all of the programs proposed as an overall industry promotion program for each industry sector should be put into practice at once with full efforts.

In practice, however, it is necessary to make a rough priority selection to each proposed program in order to implement the programs under the very tight limitations on both funds and human resources.

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

As a second best approach, the selection of priority projects was made based on the rather subjective judgement of the Study Team on the following basic criteria:

(1) Existence of established organizations in charge of the project
For those projects that have already established organizations for their implementation are given higher marks than those having no existing organizations in charge, due to their readiness for implementation.

(2) Maturity level of the project
Those projects which support some existing schemes are regarded as being at a high maturity level and are given high marks for priority ranking. Those projects for which the plans are already approved by the Government but not implemented are given the evaluation of medium, and those projects which have to be started from the planning stage are regarded as low maturity projects and given low marks.

(3) Urgency of the needs of the project
Those projects for which implementation is urgently needed are given high marks, while those projects of which implementation is needed but not urgent are given a relatively low marks.

(4) Scale of investment in the project
This criteria is one of the basic factors to evaluate project cost-performance. Due to the lack of benefit evaluations for each project, the cost scale was not directly used as the criteria for priority evaluation.

(5) Level of direct impact of the project on the development of the targeted industry

For those projects which have direct impact on the targeted industries high marks are given while for those which would have only indirect influence lower marks are given.

(6) Necessity for support from other organizations
Those projects for which supports from other organizations are needed for implementation are given higher marks than those projects that would be implemented by the self-efforts of the existing organizations.

(7) Industries to which the project effects would extend
Judging from the position of each industry in and the levels of influence that each industry would extend to the total Malaysian industry, a relatively high mark was given to mould and die industry and a rather low mark to glassware industry.

The results of the review of the priority ranking are summarized in Table VIII.2-3, from which the following 4 high ranking programs were selected as priority projects.

— MIDEC Expansion Program
— SIRIM/Ceramic Technology Centre Program
— MIDA Activity Expansion Program
— Skill Development Centre Program
— Feasibility Study on New Financing Scheme
— MEXPO Activity Development
— Geological Survey for Ceramic Materials

Table III.2-2 Summary of the Results of Priority Project Identification

	MIDEC	Skill Development Centre	Ceramic Center	Technical Development Unit for Automotive Parts	Various SIRIM Activities	MIDA Activity Expansion	New Financing Scheme F/S	MEXPO Activity Development	Training Center for Business Administration	Technical Training Expansion at ITI	Geological Survey for Ceramic Materials	Ceramic Industrial Estate F/S	Mould and Die Industrial Association
1. Existence of established organizations in charge	Yes (SIRIM/ MIDEC)	None (Under planning)	Yes (SIRIM)	None	Yes (SIRIM)	Yes (MIDA)	None	Yes (MEXP0)	Yes (NPC)	Yes (ITI)	Yes (Geological survey Dept.)	None	None
2. Maturity level of the project	High (Support for existing scheme)	Medium (Planning stage)	High (Planning completed)	Low	Medium (New/ Expansion)	High (Support for existing schemes)	Low	High (Support for existing scheme)	High (Support for existing scheme)	High (Support for existing scheme)	High (Support for existing scheme)	Low	Low Support
3. Urgency of the project	High	Medium	High	Medium	Medium	High	Medium (Complementary schemes exist)	High	Medium	Midium	High	Low	Medium
4. Scale of the investment amount	Large	Large	Large	Large	Small	Medium	Small	Medium	Small	Small	Medium	Small	Small
5. Level of the direct impact of the project for target industries	Large	Large	Large	Medium	Medium	Large	Large	Medium	Medium	Medium	Large	Small	Medium
6. Necessity for support from outside of the organization in charge	Large	Large	Large	Large	Small	Small	Large	Small	Small	Small	Medium	Medium	Medium
7. Industries covered	Moulds & dies Automotive metal parts	Moulds & dies Automotive metal parts	Chinaware Glassware	Automotive metal parts	Moulds & dies Chinaware Glassware	Moulds & dies Automotive metal parts Chinaware Glassware	Moulds & dies Chinaware Glassware	Moulds & dies Automotive metal parts Chinaware Glassware	Moulds & dies Automotive metal parts Chinaware	Moulds & dies Automotive metal parts Glassware	Chinaware	Chinaware	Moulds & dies
Priority selection	A	A	A	B	B	A	A	A	B	B	A	B	B

Note: A shows that the project is selected as a priority project.
B shows that the project is not selected as a priority project.

3. Outline of the Priority Project

3-1. Expansion Plan of the SIRIM/MIDEC

(1) Background of the project

The mould and die industry will play a more important role in the future as a supporting industry.

In the mould and die division of MIDEC, the latest mechanical facilities have been installed, and appropriate personnel are being fostered. By using the existing and expanded mechanical facilities and personnel, a plan to promote the development and to transfer advanced mould and die technology to senior level engineers of private companies by inviting foreign experts is considered necessary for the further development of the mould and die industry.

(2) Proposed Expansion Plan

In addition to the existing facilities, the following types of machinery are to be added.

a) Mechanical facilities

i. Latest CNC wire cut EDM	Work size 600 x 400mm class,	1
ii. Latest CNC EDM	Work size 650 x 350mm class,	1
iii. Accessories necessary for above 2		1 set
iv. CAD system to which linkage is possible for the above 2		1 set
v. Latest CNC milling machine	Work size 100 x 700mm class,	1
vi. Latest CNC forming grinder		1
vii. Accessories necessary for above machines		1 set
viii. 50 ton high-speed press machine, feeder and accessories		1 and 1 set

The disbursement schedule of the project costs for both development and operating expenditures is as shown below.

(Unit: ¥1 million)

	1st year	2nd year	3rd year	Total
Development Expenditures				
Equipment and facilities	300	0		300
Operation Expenditures				
Salaries and allowances	20	20	20	60
Supplies and materials	50	50	50	150
Professional services	10	10	10	30
TOTAL	380	80	80	540

b) Invite trainers from abroad:

Qualifications for experts necessary for technical development and training are as follows:

i. Design, CAD (Press Die & Plastic Mould)	2 persons (aged 40 to about 60)
ii. Machining, Assembly (Press Die & Plastic Mould)	2 persons (aged 40 to about 65)
iii. Period	3-5 years

(3) Activities

The following activities should be conducted in addition to the present activities.

- Promote development and transfer of mould & die technology
  - Intensify R&D activities and positive technology transfer to private sectors
- Provide very high level technical training.
  - By the foreign experts, this training shall be carried out both at MIDEC and at factory sites of private companies.
- Hold technical seminars.
  - Make use of the MIDEC facilities to hold technical seminars by the foreign experts.
- Technical staff training in foreign countries.
  - Continue to carry out the training of MIDEC's technical staff in foreign countries.
- Collect and supply technical information.
  - Collect technical information which contributes to the improvement of technical levels in Malaysia and offer it to private enterprises.

(4) High-Level Technical Training

Considering the present rapid growth of the Malaysian mould and die industry, each company has very little room to send technical staff to MIDEC. In addition, there is a possibility that sending valuable company technical staff for a long period will become a hindrance to company activities. Therefore, it is necessary to conduct some sort of short-term practical training and to establish incentive systems which will contribute to some degree to Malaysian companies.

Advanced Grade-1

1) Press Die Machining & Assembling

a) Trainees: 5-10 trainees having 2-4 years actual die production and comparable experiences
b) Period: 1 course = 40 hours per week Totally 15 weeks
c) Courses: "Press Technology", "Precision Cutting Technology", "Jig Milling Technology", "EDM Technology", "Wire Cut EDM Technology", "Forming Grinding Technology", "Jig Boring Technology", "Jig Grinding Technology", "Heat Treatment Technology", "Machining Centre Technology", "Precision Measuring Technology", "Precision Surface Grinding Technology", "Assembling Technology", etc.
Totally 15 courses
d) Target: Making mono-functional press dies such as precision blanking die, precision drawing die and precision bending die with the products' accuracy of 0.05-0.1mm order.

2) Press Die Designing

a) Trainees: 5-10 trainees having 2-3 years actual die designing and comparable experiences
b) Period: 1 course = 40 hours per week Totally 10 weeks
c) Courses: Designing mono-functional press dies such as precision blanking die, precision drawing die and precision bending die.
Totally 10 courses
d) Target: Designing mono-functional press dies such as precision blanking die, precision drawing die and precision bending die with the products' accuracy of 0.05-0.1mm order.

3) Plastic Mould Machining & Assembling

a) Trainees: 5-10 trainees having 2-4 years actual mould production and comparable experiences
b) Period: 1 course = 40 hours per week Totally 15 weeks
c) Courses: "Plastic Forming Technology", "Precision Cutting Technology", "Jig Milling Technology", "EDM Technology", "Wire Cut EDM Technology", "Forming Grinding Technology", "Jig Boring Technology", "Jig Grinding Technology", "Heat Treatment Technology", "Machining Centre Technology", "Precision Measuring Technology", "Precision Surface Technology", "Assembling Technology", etc.
Totally 15 courses

d) Target: Making precision plastic moulds with the products' accuracy of 0.1mm order.

4) Plastic Mould Designing

a) Trainees: 5-10 trainees having 2-3 year actual mould designing and comparable experiences
b) Period: 1 course = 40 hours per week Totally 10 weeks
c) Courses: Designing precision plastic moulds.
Totally 10 courses
d) Target: Designing precision plastic moulds with the products' accuracy of 0.1mm order.

Advanced Grade-2

1) Press Die Machining & Assembling

a) Trainees: 5-10 trainees having 3-5 years actual die production and comparable experiences.
b) Period: 1 course = 40 hours per week Totally 10 weeks
c) Courses: "CNC Forming Grinding Technology", "CNC EDM Technology", "CNC Wire Cut EDM Technology", "High Speed Press Technology", "CAD Technology", etc.
Totally 10 courses
d) Target: Making high precision dies such as progressive die and transfer die with the products' accuracy of 0.01-0.02mm order.

2) Press Die Designing

a) Trainees: 5-10 trainees having 3-5 years actual die designing and comparable experiences.
b) Period: 1 course = 40 hours per week Totally 5 weeks
c) Courses: Designing high precision dies such as progressive die and transfer die.
Totally 5 courses
d) Target: Designing high precision dies such as progressive die and transfer die with the products' accuracy of 0.01-0.02mm order.

3) Plastic Mould Machining & Assembling

a) Trainees: 5-10 trainees having 3-5 years actual mould production and comparable experiences.
b) Period: 1 course = 40 hours per week Totally 10 weeks
c) Courses: "CNC Forming Grinding Technology", "CNC EDM Technology", "CNC Wire Cut EDM Technology", "CAD Technology", etc.
Totally 10 courses
d) Target: Making high precision plastic moulds or multi-slide moulds with the products' accuracy of 0.05mm order.

4) Plastic Mould Designing

a) Trainees: 5-10 trainees having 3-5 year actual mould designing and comparable experiences.
b) Period: 1 course = 40 hours per week Totally 5 weeks
c) Courses: Designing high precision plastic moulds or multi-slide moulds.
Totally 5 courses
d) Target: Designing high precision plastic moulds or multi-slide moulds with the products' accuracy of 0.05mm order.

3-2. SIRIM/Ceramic Centre Project

(1) Background

The plan to establish a Ceramic Technology Centre, which would support the development of the domestic ceramic industry, started in 1978. The plan was forwarded in 1982. The plan, for which around M$8 million was required from the budget, was suspended due to the very tight budgetary constraints at that time. In March 1986, the Malaysian government officially approved the proposed establishment of a center under the 5th Malaysia Plan with a budgetary allocation of M$6 million. Due to the subsequent bad economic conditions in Malaysia, however, the implementation of the project still has been suspended.

Because of the above delay of the establishment of the proposed center, SIRIM has been proposing separate development programs annually as "R & D Programs of Ceramic Technology." In 1988, 5 programs with an investment amount of M$538 thousand and in 1989, 2 programs worth M$4.07 million were or are going to be implemented. One of the 2 projects scheduled to be implemented in 1989 is the Fine Ceramic Development Project (M$2.5 million), for which the assistance of JICA has already been committed.

(2) Objectives of the Centre

The main objectives of the Ceramic Technology Centre are as follows:

a) To develop and appropriate ceramic technology to help promote and upgrade the technological and economic status of the local industry, particularly the traditional, small and medium-scale sectors through R &D, consultancy, extension and training.
b) To introduce and disseminate technology to help resolve the numerous present and future industrial problems faced by the industry.
c) To coordinate and encourage the growth of a local ceramic industry with respect to the industrial strategy and investment climate in Malaysia.
d) To encourage the growth of a new generation of entrepreneurs, professionals and related groups within the industrial and government institutions with good technical and scientific abilities in various aspects of ceramic technology.
e) To promote the growth of high technology ceramics in a long term perspective.

(3) Major Activities of the Centre

Major activities expected from the Ceramic Technology Centre are as follows:

a) To conduct R & D to broaden the scope and utilization of local ceramic resources, and to develop the production technology at each stage of chinaware production such as forming or burning.
b) To conduct various consultancy and technical extension services, and also include troubleshooting exercises.
c) To conduct design and fabrication activities involving preparation of ceramics and fabrication of equipment and tools, dryers and kilns.
d) To test and inspect the product quality.
e) To conduct in-house training programmes for quality control and production process control.
f) To prepare data, statistics, market knowledge and other relevant economic indicators, and also technical information on products, machinery and components, suppliers, etc.

(4) Outline of the Building and Facilities

a) Building: Main building for laboratories, total 3,080 m^2
Pilot plant, work, shop, kiln, etc., total 1,000 m^2

b) Number of pieces of equipment by laboratory:

Material Processing Lab.	10
Geological Lab.	8
Instrumentation Maintenance Lab.	Not yet decided
Glass Lab.	11
Whiteware & Decoration Lab.	11
Heavy Clay Lab.	13
Refractory & Advanced Materials Lab.	18
Chemical Analysis Lab.	7
Physical Testing Lab.	9
Fuel & Combustion Lab.	17
Microstructure Lab.	5
Pilot Plant	17

Kiln Dept.	4
Metal & Woodworking Shop	6
TOTAL	153

(5) Glass Laboratory

The center is planned to consist of 11 laboratories, a pilot plant, a metal and woodworking shop and a kiln department. A Glass Laboratory is one of the above 11 laboratories, the details of which are as follows:

Objective:

To conduct various R & D program related to glass and the development of glass products.

Activities:

- Investigate the utilization of local silica sand resources for glass products
- Investigate the utilization of agrowaste residue as a source of silica and silica based products
- Develop optical glass
- Develop and improve products
- Make technical publications.

Equipment:

Sink Float Apparatus
Knife Edge Tester
Thermal Expansion Apparatus
Head Capacity Calorimetry
Strain and Annealing Point Apparatus
Softening Point Apparatus
Flow Point Apparatus
High Temperature Viscosity Rotating Cylinder Apparatus
Glass Melting Furnace
Brinell Hardness Tester. ect.

(6) Project Cost Estimate

The total project cost estimated at the planning stage in 1986 was M$6.0 million for initial development expenditures and M$5.1 million for operating expenditures covering the initial 4 years. The break-down of the development expenditures is as follows:

Building Construction	M$3.0 million
Equipment & facilities	M$3.0 million
Total development costs	M$6.0 million

The disbursement schedule of the project costs for both development and operating expenditures is as shown below.

(Unit: M$1,000)

	1st year	2nd year	3rd year	4th year
Development Expenditures				
Construction	800	2,200	0	0
Equipment and facilities	300	700	1,000	1,000
Operation Expenditures				
Salaries and allowances	166	286	512	752
Supplies and materials	100	200	700	605
Professional services	100	250	400	500
Others	20	65	168	245
TOTAL	1,486	3,701	2,780	3,102

(7) Organization

In the proposed plan, the Ceramic Technology Centre would be established based on the existing staff and facilities of the Ceramic Technology Section, Research Unit in SIRIM. From this background, the major organization in charge of the center would be SIRIM. However, the relationships with the Geological Survey Department, which is in charge of geological surveys of ceramic raw materials and with SEDC of each state, have to be taken fully into consideration.

(8) Implementation

The Ceramic Technology Centre program covers not only the chinaware industry but also all other ceramic industries. There are still many issues to be examined or determined such as the project scale, implementation stages, updating of cost estimates, location, financing sources, and operating programs.

At this stage, it is recommended that a further feasibility study be made in advance of its implementation.

3-3. Intensification of the Functions of MIDA

(1) Activate investment invitation activities.

The following should be considered. Specifically, the activities should be targeted on the development of the 4 industries which are the target area in the study (moulds and dies, automotive metal parts, chinaware, glassware products).

a) Compile and supply investment guide books (subject to the 4 products).

Investment guidebooks which inform one of general investment climate of Malaysia such as institutions labor conditions or infrastructure, and already being published at MIDA. In addition, there are a number of investment guides published by financial agencies and consulting companies. Therefore, it is easy to gather information regarding general conditions for the enterprises which are considering investments. However, information on specific industries or enterprises is lacking. Investment guidebooks to supply such specific industrial information should be produced.

b) Dispatch and receive investment promotion missions and implement matching services for capital or technical tie-ups.

It is advisable to accept more actively investment environment investigation business organized by foreign enterprises which are interested in investing in Malaysia. Especially for the promotion of joint ventures, it would be effective to list the Malaysian enterprises interested in joint ventures, prepare precise information on enterprises, and perform aggressive matching services such as arranging mutual visits. In addition, it is also recommended to dispatch investment missions from Malaysia, and give seminars on the investment environment in Malaysia.

c) Intensify consulting functions.

Assign experts with the knowledge of targeted industries, and perform consultancy services for potential investors. A two year period of assignment for experts of the priority industries should be considered.

(2) Organization information.

a) Information on investment climate

General information is already prepared by MIDA. However, in order to supply more precise and new information at one place, it is desirable to connect MIDA and the SEDC of each state by an on-line computer system. The data base should cover information on estates, labor supply, or labor costs, etc, and the volume of information should be gradually increased.

b) Information on enterprises

The information most often required when foreign enterprises select an investment site is that of specific industries or the requirements for specific enterprises. Preparation of list of domestic parts suppliers and subcontracting enterprises should be considered. By simplifying this supply of information, additional opportunities for domestic enterprises to increase their business with foreign enterprises can be expected. Some SEDC are working out supporting industries in their own states. They have produced supporting industry directories and are supplying them to foreign enterprises. MIDA, with the cooperation of W. Germany, has also produced various kinds of supporting industry directories. At the first stage, data in such directions should be input into a computer data base, allowing for efficient updating and quick data retrieval. Data input should be continually updated. As the next step, the number of firms input into the data base should be expanded gradually.

Although industrial statistics are available, their classification are too rough. Data about production items and production size is included in company data, it will become very easy to identify industrial trends.

In the process data base creation, SEDC may collect information in their own states for more frequent updating. However, an agreement and coordination of activities between MIDA and SEDC will be required because costs are involved in the preparation and updating of data. One must also consider available human resources.

The following points could be considered for cooperation from overseas.

i. Implement investigations for establishment of data based and necessary systems and equipment.
ii. Supply necessary equipment (supply host computers to MIDA, supply terminals to each SEDC, and develop software).

Example Cost of Hardware

- Host Computers to MIDA
  - Central Processing Unit (Memory Size 5-6MB)
  - Magnetic Disk (Memory Size 300-600)
  - Printer 1 unit
  - Magnetic Tape Unit 1 unit
  - Terminal (In-house) 3-5 unit

  About 30-50 million yen
- Terminal to Each SEDC

  3 million yen x 14 unit = 42 million yen

Total: 72-92 million yen

3-4. Promotional Plans for Establishment of Skill Development Centre

(1) Background of the project

At present, in Malaysia the demand for precision moulds and dies is increasing together with the development of the electronics industry, and there is a pressing need for the training of skilled workers and also middle level workers.

This project is to especially foster middle level workers for providing a more practical training programs and facilities with the cooperation of both the public and private sectors.

(2) Proposed plan

a) Levels of training: The center should offer the following training programs for middle-level engineers.

Grade 1: 15 persons having 1-3 years experience in mould and die production.
Provide knowledge for designing and production of compound dies. Make it possible for trainees to understand for progressive blanking die layout.
In the area of plastic moulds, make it possible for trainees to design and produce precision segmental moulds.

Grade 2: 15 persons having 3-5 years experience in mould and die production.
Make it possible for trainees to design and produce dies for progressive blanking and drawing. Also make it possible for them to understand the concept of automation and higher speed operation.
In the area of plastic moulds, make it possible for trainees to design and produce multi-slide type high precision moulds.

b) The required facilities are as follows:

Machining center, large and small (one each), forming grinder (5), surface grinder (3), profile grinder (1), zig borer (1), zig grinder (1), CNC EDM, large and small (one of each), CNC wire cut EDM (2), profile projector (2), 3-dimensional measuring instruments (1), CAD system (2), heat treatment equipment, large and small (one of each), high speed press machine and injection moulding machine for trial (one of each), lathes, general purpose machine tools such as milling machines, radial drilling machines, etc. (10), measurement tools (complete set), peripheral equipment for the above

(complete set). Total price for machines and equipment of 0.8 to 1 billion yen, excluding buildings.

c) Invitation of experts from abroad

i. 2 experts for designing press dies (including CAD), machining (including EDM), and assembly.
ii 2 experts for designing plastic moulds (including CAD), machining (including EDM) and assembly.
iii 4 years period.
iv. Depending on the training course, (for example, heat treatment experts can be invited under temporary contracts for 1-2 weeks.)

(3) Activities

With the introduction of mechanical machines and equipment mentioned in (2), the following activities shall be performed.

- Practical technical guidance.
- Perform practical technical guidance conducted by the foreign experts.
- Training of technical instructors in foreign countries.
- Since this is a new center, training in foreign countries for the education of technical instructors is beneficial.
- Gather and supply technical information.
- Gather technical information which will be useful for the improvement of technical standards, and supply it for the use of private enterprises.

(4) Target Achievement

The most urgent need at present is the training of mid-level technical staff with immediate work potential, and emphasis should be placed on this.

1) Machining and Assembly

1st - 6th month: At the completion of this stage, trainees will have mastered basic cutting and grinding techniques for machine tools. The ability to process with precision up to 0.1mm, knowledge of measuring technology, and the ability to read drawings will be obtained.

6th month - 1st year: After the completion of this stage, trainees will be able to process with precision up to 0.01mm. Ability to control roughness of cut surfaces will be obtained.

1 - 2 years: This stage involves not only precision but also includes high level application of cutting and grinding techniques and understanding of processing technology for the entire mould and die process. At this stage, an international technical level is reached for the first time.

2) Design

Targeted People: Those who at minimum have a level of knowledge comparable to that of polytechnic school graduates are desirable.

Time Period: 6 months to 2 years

1. Starting with the basics of design, the main goals are as follow.

Metal moulds and dies: The level where compound moulds and dies, simple drawings, and progressive dies can be designed.

Plastic moulds and dies: The level where moulds and dies for miscellaneous goods and parts of household electric appliances can be designed.

2. After completion of the first set of goals, the secondary goals are as follow.

Metal moulds and dies: The level where the trainee can design precision progressive dies and precision compound moulds and dies.

Plastic moulds and dies: The level where the trainee can design moulds and dies for precision electronics goods.

3) Establishment of High Level Technology

Targeted People: Technicians with over 5 years experience

Time Period: Not decided, but the time target per each time is short. For example, 1 week or 10 days.

Subject Matter: Mastery of CAD, CAM, and CNC precision processing technology. This class is to play a role in raising Malaysian mould and die technology and must be designed from the standpoint of guiding beginners. Emphasis is to be placed on training top level workers.

3-5. New Financing Scheme (F/S)

(1) Background

Malaysia presently offers institutional financing through its development banks (MIDF, Development Bank of Malaysia and two other main banks), and a loan guarantee system for SMIs under the Credit Guarantee Corporation (CGC). In spite of these existing financing schemes, many of Malaysian firms interviewed raised difficulty in financing as one of their major management problem areas. The complicated lending procedures, insufficient security and high interest rates are expressed as the major causes of the above difficulty in the questionnaire survey conducted in Malaysia.

(2) Objective of the study

1) To review the existing institutional financing schemes in Malaysia and to investigate the possibility of improving them in order to better meet the industry demand;

2) To investigate the institutional financing schemes in other nations such as Japan; and

3) To examine the possibility of establishing a new financing scheme to support the development of the selected 4 industries.

(3) Outline of the proposed new financing scheme

The study has to be started from the stage of the establishment of the basic design of a new financing scheme, including the review of existing schemes and their improvement plans. However, the basic concept of the proposed new financing scheme is roughly as follows:

1) The scheme is to provide financial support for plant modernization and hence for the improvement of competitiveness of Malaysian firms in the selected industries.

2) To meet above objective, a program loan which could provide soft-term investment credit for the factory modernization projects should be either newly created or developed from existing schemes.

3) The credit should be extended not only for the establishment of new facilities but also for the expansion or the replacement of existing facilities.

3-6. Expansion of MEXPO's Export Promotion Activity

(1) Project Background

MEXPO, which was established in 1980 as an agency for export promotion, has been supporting Malaysian companies through trade information supply, trade inquiry service, and the assistance or participation in overseas exhibits and missions for the purpose of bolstering access to overseas' markets. The demand from the private sector for this kind of backing has been rising, and the further development and enrichment of MEXPO activities are desired. However, under the present conditions, there is a large limitation on the sizes of both the budget and personnel, and expansion of these will be needed as a first concern. Further, in order to achieve higher efficiency of MEXPO under the limitation, it is necessary to concentrate into more selected export items and to conduct concentrated efforts both in information collection and product improvement guidance.

(2) Contents of the Plan to be Proposed

The plans given below are basically not the new projects but rather the development of activities which MEXPO presently conducts.

1) Expansion of Information Collection and Supply

The amount of information relating to the foreign markets and the trends of product development and improvement in such areas as design and technology will have to be increased. Most of the documents published by foreign Industrial Associations and foreign Trade Promotion Organizations should be continuously collected, simultaneously, the marketing activities for each selected export item should be conducted and the results should be supplied widely to private companies.

2) Expansion of Advertisement Overseas

Newsletters which introduce Malaysian products, Malaysian companies, etc. should be distributed widely to overseas potential importers for the purpose of raising the level of recognition of Malaysian products overseas. In addition, the support for participation by Malaysian companies in overseas exhibitions and missions should be increased.

3) Trade Inquiry Service

The PR activities should be conducted in order both to increase the number of companies registered in the inquiry data base and to promote its active use. In order to make the access to the data base easier, a larger number of computer terminals are recommended to be installed in the library. The supply of hard copies of the data base should also be made swifter.

4) Product Improvement Guidance

The "Technical Assistance Project" which is now proceeding should be expanded. For that purpose, instructors should be sought from private domestic companies, including foreign affiliated companies.

5) Education of Exporters

Export incentive seminars, which are already taking place at present, and the publication of export guide books should be continued, in order to raise the domestic producers' interest in export. The PR activities of MEXPO's operations should be vigorously pursued, and usage of its services be expanded.

(3) Areas in which Overseas Cooperation is Anticipated

- Staffs of MEXPO should be sent overseas in order to train them as specialists of market surveys and trade procedures.
- The number of instructors invited form overseas should be increased for (2) - 4) and the levels of these service be expanded. In addition, the overseas training of the staff member of MEXPO should conducted in order to have a consultant group in MEXPO.
- Instructors should be invited form overseas for (2) - 5). The seminars on export procedures and on the methods to approach foreign market, etc. should be expanded.
- Reviews of the operation and organization of MEXPO should be conducted by foreign consultants in order to raise the efficiency of MEXPO activities.

3-7. Intensification of Geological Survey of Ceramic Raw Materials

(1) Background

Although Malaysia abounds in major mineral resources used for chinaware production, these materials are not fully used for high quality products. In order to enhance more effective use of local raw materials, a further intensive, nation-wide geological survey for ceramic raw materials, as well as the analysis and testing of exploited materials, has to be conducted.

From the view of overall non-metallic mineral products industry development, including the chinaware as one of the core items, the Geological Survey Department (GSD) put out a paper entitled "IMP Plan of Action for Implementation" in May 1986. In this paper, GSD proposed an increase in man-power for NMMP work and upgrading of laboratory facilities. Due to the magnitude of the project cost and the government policy to reduce expenditure, this proposal was not put into practice.

In February 1987, GSD submitted the revised expansion proposal to the Ministry of Primary Industries and later to the Task Force on NMMP industry. Further, a working group was formed by GSD in March 1987 to review these initial proposals and to come up with a new GSD expansion plan.

(2) Outline of the expansion program proposed by the GSD working group.

The expansion program proposed by the GSD working group formed in March 1987 can be briefly summarized as follows.

Manpower requirement

	Projected requirement	Existing posts	Additional requirement
a) Managers, project heads or supervisors	33	12	21
b) Assistant geo-chemist	3	2	1
c) Geological and laboratory assistants and technicians	35	8	27
d) Junior geological and laboratory assistants	24	13	11
Total	95	35	60

Cost requirement

a) Capital costs of M$1.2 million for acquisition of equipment and vehicles

b) Annual recurrent budget of M$1.6 million to cover costs of emoluments and other allowances, field expenses, space rental and purchase of expendable items

Training requirement

a) Field related training

– Current techniques of geological survey particularly in deposit modelling, determination of reserves, and assessment of potential end uses.

– Drilling and other related instrumentation techniques related to assessment of non-metallic mineral deposits.

– Exploration and assessment of mineral commodities, such as phosphate and gypsum, the occurrence and potential of which is still unknown.

– Computer techniques in mineral resources data management.

b) Laboratory-related training

– Current methods in the interpretation and treatment of test results, including the setting-up of a data bank, and electronic data processing techniques.

– Quantitative and semi-quantitative analyses of non-metallic minerals using modern instruments.

– Beneficiation of clay and silica sand using hydrocyclone, magnetic separator, and other modern techniques.

(3) Comments

1) The GSD expansion program mentioned above covers not only the chinaware industry but the total NMMP industry group. Thus, an evaluation of the scale and contents of the proposal would be beyond the scope of the study.

2)Because of the urgent need for the identification of high quality mineral resources for chinaware production, the GSD expansion program in the area of NMMP work would be supported.

3) Support from the international organizations in the following training areas would especially be required.

– Short period attachment of the GSD staff member at some geological survey or similar organization in the field of non-metallic minerals, or at the overseas companies producing chinaware or supplying raw mineral materials.

– Sending of experts to GSD for reasonable time period (ex. one year) to provide on-the-job training and to recommend / oversee upgrading of facilities. Experts in testing and evaluation of raw ceramic materials are also required.

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