

### 5.3 Outline of the Pilot Projects and Output

Pilot Project Report that is separately bound describing implementation methods, activities, output and assessment of the pilot projects. Refer to it for details, and this section summarize the results of the pilot projects.

#### 5.3.1 Khon Kaen Silk Textile Pilot Project

##### 5.3.1.1 (Khon Kaen) Outline of the Pilot Project

The pilot project in Khon Kaen is outlined below in Table 5.3-1.

**Table 5.3-1 Outline of the Pilot Project of Khon Kaen Silk Textile**

Name of Pilot Project:	Boosting of production of newly designed silk textile products
Target Group	Manufacturers of silk textile products in Khon Kaen including SMEs, production groups and workshops
BDS Facilitator/Provider	Sala Mai Thai (Silk Exhibition Hall)
Period of the project	Aug. 2004 – Feb. 2005

#### **Outline of the Pilot Project**

Overall Goal	New designed silk products are daily developed and produced in Khon Kaen and sold.
Project Purpose	Production of newly-designed silk-textile products is boosted.
Output	<ol style="list-style-type: none"> <li>1. Coordinators for product development are trained.</li> <li>2. Newly designed products based on Mud Mee production technology are developed.</li> <li>3. Exhibition is held for newly designed products.</li> </ol>

The JICA mission nominated Sala Mai Thai (Silk Exhibition Hall) as an implementation body or a BDS provider for the pilot project in Kohn Kaen. Sala Mai Thai has been serving rural women in technical training and design supply for silk textile production. The Hall periodically purchases silk textile from the rural women and exhibits and sells textile in its own shop in the Hall. Thus the Hall is a silk textile promotion center in the area. This is the reason why the mission nominated the Hall as the BDS provider. Sala Mai Thai was established in 29 July 1993 celebrating the 60th birthday of the Queen of Thailand. The building of the Hall is located in the campus of Khon Kaen Industrial and Community Education College and being managed by teachers and staff of the College.

### 5.3.1.2 (Khon Kaen) Output of the Pilot Project

#### (1) **(Output 1)** Training of coordinators for product development.

##### 1) Employment of Coordinators

Three coordinators were employed from August 2004 to February 2005 (six months) by JICA mission.

They were assigned in the following three fields of product development and they learned about the production process management skill.

- a) Product development and prototypes on the traditional value
- b) Product development and prototype based on the market needs
- c) Product development and prototype based on the newly use

##### 2) Study Tours for Coordinators

Coordinators participated in the following two study tours to obtain new knowledge about silk textile industry.

- a) From October 29 to October 31, 2004, a study tour for coordinators was carried out in Bangkok (at IMPACT and designers showrooms). Coordinators were expected to learn the needs of international market at International Exhibition and to make business connections with international buyers.
- b) From December 10 to 12, 2004, another study tour for coordinators was done in Chiang Mai. Coordinators were expected to study the advantages of a similar textile cluster in Chiang Mai.

After finishing each study tour, the market reports on each survey were prepared by them.

##### 3) Preparation of the training manual to guide product development

In the pilot project, the JICA expert tried to transfer the process management skill for new product development to coordinators. A training manual was prepared after assessment of coordinators' performance and distributed to participants in the second seminar in Khon Kaen of May 2005 by the JICA expert.

#### (2) **(Output 2)** Development of Newly designed products based on Mud Mee production technique

##### 1) The 1<sup>st</sup> Seminar

The first seminar was held on August 24 to 25, 2004 at Udonthani inviting stakeholders in the cluster: the target group including SMEs, production groups and workshops, and related officials and BDS providers. A total number of 40 persons participated in the seminar.

In the Udonthani seminar, JICA experts presented a master plan and action plans including 12 projects of Khon Kaen silk textile cluster development for participants to reach common perceptions among participants. Participants recognized their concrete tasks in each project. And for the pilot project, the JICA experts and four designers who were employed by JICA mission explained their activities to make groups of participants.

2) Study tour for silk textile producers

For the target group members who mainly participated in the Udonthani seminar and coordinators, the JICA mission prepared four-day study tour in Bangkok, from September 2 to September 5, 2004 to learn the market needs and to collect market information. A total of 40 participants could hear odor of the Khon Kaen silk textiles and silk products, collect market needs and market information directly from the customers. In addition, participants visited the show rooms which were managed by designers who join in pilot project and shared common perception with them.

3) Design Competition in Khon Kaen University

Khon Kaen University held a design competition on December 6, 2004 for CSCD. Over 60 university students made new designs for silk textiles products and for the competition. Six professors and a JICA expert selected, and prototypes of those new designed silk products were manufactured for the coming exhibition.

4) Development of new designs toward the exhibition

A total of 491 prototypes were produced for the exhibition: 262 textiles and 229 products including bags, cushions etc. Out of 262 textiles, 22 were selection of traditional patterns and 240 were new patterns designed for the exhibition. The traditional textiles of 22 were woven by master artisans so as to maintain and store its value. In this cluster, there is a significant traditional technique to weave silk textiles. The technique is called as Mud Mee and its historical value has been kept for hundreds years by master artisans.

Designers of 240 prototype textiles with new designs are as follows:

- a) JICA employed four designers: 73 new designed silk textiles and 20 textiles of silk and other materials
- b) Some teachers of Khon Kaen Industrial and Community Education College: 87 natural dying textiles
- c) Designers of SMEs: 40 new designed silk textiles
- d) JICA expert: 20 Batik dying textiles on the dead stock Mud Mee

A total of 229 silk products like bags and cushions were newly designed by professional designers, some teachers of the college, students of the Khon Kaen University selected by the competition, and a JICA expert.

(3) **(Output 3)** Opening of exhibition for newly designed production

1) Participation in Silk Festival in Khon Kaen Province

Annual Silk Festival was held in Khon Kaen Province independently from CSCD project from November 29 to December 10, 2004. IPC5 and Sala Mai Thai introduced CSCD and many activities of the Pilot Project to the visitors. IPC5 set the information panel of CSCD, introduction of Mud Mee and some textiles and products which were developed in the project at IPC booth.

2) Preparation for the exhibition

On February 10, 2005, press release had done to the open with 50 people of 27 media organizations including TV, Radio, and News paper and so on. JICA experts, DIP staffs, IPC5 staffs, Sala Mai Thai staffs and vice-governor of Khon Kaen Provincial Government participated in the conference. On February 11, 2005, concerned autonomous community staffs meeting, thirty staffs including amphur, tambon, police, provincial government, was held at Sala Mai Thai and discussed about cooperation to the exhibition.

In addition to these activities, IPC5 sent invitation letters and posters, two hundreds, to concerned people including hotels and tourism, interior and furniture, garment industries, and new entrepreneurs, educational institutions and governmental institutions and so on. Sala Mai Thai also sent them to the target group, about fifty. In addition to these, Community Development of Amphur Chonnabot informed thirty eight production groups including nearly two hundreds group members.

### 3) Opening of Exhibition

On February 17-21, exhibition was held at Sala Mai Thai. In these five days, about 1,800 visitors including about 200 target group members participated in the exhibition. Questionnaire survey to the visitors and participants had been done in the term of the exhibition. Interview activities had been done by 30 students of Khon Kaen Industrial and Community Education College. A total of 1,276 visitors answered.

#### 5.3.1.3 (Khon Kaen) Organizations Established for the Cluster

Khon Kaen Governor's Office set up Steering Committee and Working Group for Chonnabot Silk Textile Cluster Development to implement its Master Plan and Action Plans, 12 projects including the pilot project. In addition to this, Khon Kaen Provincial Governor notified the member of Steering Committee and Working Group and Secretariat on August 18, 2004. The first meeting of Steering Committee members and Working Group members was held on August 23, 2004 at Provincial Government Office. In this meeting, the JICA mission introduced Master Plan, Action Plans and the Pilot Project to all members including Provincial Governor as a chairman to share common understanding.

On October, 26, 2004, Steering Committee and Working Group Joint Meeting was held. In this meeting, candidate responsible organizations (BDS Providers) and persons in each project were appointed. On November 28, following subjects were endorsed by Provincial Governor officially.

- 1) Provincial government makes Silk Textile Cluster Development one of Provincial Development Strategies.
- 2) All organizations related to Action Plans (twelve projects) should submit their implementation schedule to the provincial government
- 3) All organizations related to cluster development should make network or linkage among them
- 4) Provincial government should ensure and allocate any budget in order to the implementation plan, and should do advertisement activities for the cluster development
- 5) All organizations implement their activities (BDS) toward the subjects of Design Development, Improvement of Production, and Market Development. Main theme of the cluster development is the silk textile and products weaver by natural dyed yarn.

#### 5.3.1.4 (Khon Kaen) Pilot Project Terminal Evaluation

This section is an excerpt from the separate “Pilot Project Report.” Terminal evaluation for the pilot project was carried out in the following areas: (1) verification of the implementation results (performance and implementation process); and (2) five evaluation criteria (relevance, effectiveness, efficiency, impact and sustainability).

##### (1) Verification of the implementation results

To examine the implementation status of the pilot project, the implementation process and results were reviewed and evaluated. It was found that the pilot project was implemented mostly according to the plan without a notable problem.

##### (2) Five evaluation criteria

###### 1) Relevance

The pilot project is judged to have high relevance for the following reasons.

First of all, the pilot project aims to promote the silk textile industry in Khon Kaen through cluster development activities, and the objective agrees with national policy and the province's regional development policy.

The cluster produces silk textiles (mainly used for clothing) by a traditional dyeing and a weaving technique called “Mud Mee”. However, it has been declining in terms of industry size because producers do not know market acceptance on their products and lack original design and production development capabilities. Also, there is a shortage of producers who can serve as local leaders to venture into new initiatives (product development, design, etc.) using the traditional Mud Mee technique. In response to the need for reinvigoration of the industry through official support, the pilot project was implemented to promote it in the form of cluster development activity.

Thus, the pilot project is considered to be relevant in meeting both the national and local needs. Secondly, the pilot project has successfully fostered Sala Mai Thai to take a leading role in the cluster development by reinvigorating its activities. This can be used as a model case for cluster activity in the area where there is a lack of initiative for such activity due to the absence or inability of a local organization to take leadership.

## 2) Effectiveness

The pilot project is judged to have high effectiveness in the following respect.

At present, new business initiatives are emerging to design and commercialize textiles of a new pattern in a joint effort between product development coordinators and designers hired by JICA. In this connection, staff of Sala Mai Thai provides technical assistance for product development. Clearly, the target group realizes the importance of textile design and has developed the weaving technique that matches with the natural dyeing technique and the new design.

The fact that silk textiles of new designs are being commercialized indicates that the project is on the way of achieving its goal. It should be noted that a strong leadership of the governor of Khon Kaen in promotion of the project serves as a major driving force.

## 3) Efficiency

Judging from the output made from the pilot project, input has been generally made in an efficient manner. More precisely, the input was made more or less as planned, and three outputs have been achieved. While there was a difference in skill level among the product development coordinators and the counterpart showed some problems relating to execution capability, they did not impede the smooth progress of the project.

## 4) Impact

The implementation of the pilot project has created or is creating the following impacts.

The project has initiated to promote Sala Mai Thai as a local leader, which helped producers to design and commercialize new products using the Mud Mee technique, which are sold in some markets. The

successful results attract producers in neighboring areas and other provinces, who visit Chonnabot district and propose a joint development project. Meanwhile, new initiatives continue to emerge, including creation of the Web site for the silk industry, expansion of marketing channels, and new product development using a natural dyeing technique. Furthermore, the silk textile industry is now designated as a strategic industry in Khon Kaen.

#### 5) Sustainability

As explained below, a support organization was established and a development budget was approved. As a result, the project is expected to become sustainable.

Sala Mai Thai appointed three staff members from members of the project management team for continuation of the pilot project. Then, a product development-related budget totaling 1.5 million Bahts (covering technical training, market study, PR, etc.) was allocated by the province. In addition, the project will hire a product development coordinator.

#### 6) Future direction

The pilot project has successfully built the foundation for commercial production of silk textile products of new designs. However, little support has been made in the area of product marketing, which must be addressed in the future.

### **5.3.1.5 (Khon Kaen) Conclusion, recommendations and lessons learned**

#### (1) Conclusion

- 1) The pilot project has been implemented as planned and has successfully achieved its original purpose.

The terminal evaluation has verified that the project has been carried out according to its implementation plan and almost satisfied the Five Evaluation Criteria including sustainability.

- 2) In the pilot project, it has been proved that the Mud Mee technique is fully adaptive to diverse designs as well as various types of raw yarns (combination of textile materials and silk yarns).



3) Through the several field tours and many meetings, a network consisting of the target groups and BDS providers was formed and contributed greatly to the smooth progress of cluster development activities.

4) The future direction of the silk textile industry development was set forth as a strategic industry of the Khon Kaen province using the master plan and the action plan developed in the pilot project.

5) There are several preferable factors to successfully progress the pilot project.

First of all, there is a system and institution in place to support the cluster. The provincial government continues support for cluster development of the silk textile industry and has allocated a project implementation budget. In technical and other aspects, official support continues, including the organization of weavers under the Chonnabot Community Development Office, guidance for textile production, and support for participation in exhibitions. Also, extension service on improvement of silk yarn quality is provided by the Khon Kaen Farmer Professional Development Promotion Center (Sericulture). Finally, product information is transmitted outside the province through promotional activities on tourism by the Tourism Authority and the provincial government.

6) Uncertainties for pilot project continuation are related to the capacity of the implementation body (Sala Mai Thai) responsible for continuation and development of the pilot project.

First of all, Sala Mai Thai is a non-profit organization and is managed by faculty members of the adjacent college, including the general manager. It needs to have professional management capability, including fundraising. As a result, its operational funds are relatively small and limit its activities in terms of both quality and quantity. Secondly, Sala Mai Thai does not have a sufficient number of full-time staff and lacks an adequate marketing capability. All in all, its market development activities are fairly limited in size and coverage.

## (2) Recommendations

1) Deployment of cluster development activities that involve SMEs

Cluster development activities under the pilot project have mainly focused women in farm villages. The future project should more encourage participation of SMEs and organize a strong network of producers, thereby contributing to the development of local economy.

2) Implementation of cluster development activities by implementation bodies with strong execution capability

The future project can be implemented by IPC5 and Sala Mai Thai. However, both organizations need some improvement measures to strengthen their execution capability. First of all, the role of IPC5 should be clarified in the context of the cluster development plan, and based on which, cluster support should be provided. In particular, the following efforts should be taken by IPC5:

- Clearly define what types of activities will be carried out for cluster development.
- Assign full-time staff and secure a budget required for project implementation.
- Get acquainted with stakeholders to establish personal and organizational relationships and maintain good communication with provincial government offices.

On the other hand, Sala Mai Thai is expected to improve the following functions as the organization responsible for project implementation:

- HR aspect: Staff has sufficient consultation and guidance capabilities, but market development capability needs to be reinforced by training present staff and hiring qualified specialists.
- Financial aspect: While Sala Mai Thai's operation is partially financed by the provincial government budget, it is desirable to develop its own financial sources.
- Organizational aspect: To execute the above measures, it is suggested that Sala Mai Thai to be separated from its parent body (college) to become an independent organization.

3) Support measures by the Khon Kaen provincial government

- Continuation of financial support for Sala Mai Thai
- Early realization of proposed initiatives, including joint product development by University of Khon Kaen and weavers under the leadership of the provincial governor, participation of SMEs in the production and marketing process, and promotion of local production of silk or silk-based materials as well as quality improvement.
- Prioritization of promotion of the silk textile industry in the next-generation socioeconomic development strategy, continuation of periodical meetings, and promotion of effective linkages between BDS providers participating in the cluster development process

- 4) Focusing on marketing to build on market acceptance of products using the Mud Mee technique

As the Mud Mee production technique has been proved high enough to produce newly designed silk textile at the exhibition and Mud Mee products have received much attention from visitors, efforts should be taken to convert visitors' interest to actual sales, together with expansion of marketing channels to Bangkok.

(3) Lessons learned

- 1) Establishing a support organization in the initial stage of the project is essential in ensuring efficient implementation.

For the pilot project, the provincial government established a steering committee and a working group. This allowed the target group to form a common recognition on the project and to assign rules and activities in an early stage of the pilot project.

- 2) The fact that the primary objective of the pilot project accords with the province's development strategy serves as a strong drive for project implementation.

As the pilot project targeted the industry subsector that was also given of priority in the province's development strategy, the province was able to focus its budget and activity on the cluster development area.

- 3) The pilot project was planned using the PDM method and was designed to converge motivation of participants to the same direction (project purpose) for efficient and effective implementation.

- Note that the project has three outputs – fostering of product development coordinators, new product development, and the holding of exhibitions – that are closely interrelated with the project purpose.
- The exhibitions were held to obtain reaction and evaluation from the market. The evaluation results were then used as feedback for additional product development, which is very important.

## 5.3.2 Chon Buri Automobile / Machinery Parts Pilot Project

### 5.3.2.1 (Chon Buri) Outline of the Pilot Project

The pilot project in Chon Buri is outlined below in Table 5.3-2.

**Table 5.3-2 Outline of the Pilot Project of Chon Buri Automobile / Machinery Parts**

Name of Pilot Project:	Establishment of BDS facilitator for cluster networking
Target Group	Thai SMEs engaged in auto-parts and machinery- parts industry in Chon Buri (CAMC)
BDS Facilitator/Provider	IPC 9
Period of the project	Aug. 2004 – Feb. 2005

#### Outline of the Pilot Project

Overall Goal	Capacity and network of BDS providers are strengthened.
Project Purpose	IPC9 functions as a BDS facilitator of the target group (CAMC).
Output	<ol style="list-style-type: none"> <li>1. Organization for cluster promotion of CAMC is structured in the region.</li> <li>2. IPC 9 is equipped with capability as a facilitator for CAMC.</li> <li>3. Training courses are held for successors of CAMC and young entrepreneurs.</li> <li>4. Functions of IPC 9 in collection and distribution of information is improved.</li> <li>5. Joint projects among enterprises, academics and governments take root in the region.</li> <li>6. A foster parent program is proposed to large scale companies.</li> </ol>

### 5.3.2.2 (Chon Buri) Output of the Pilot Project

#### (1) (Output 1) Establishment of the Cluster Promoting Organization

##### 1) Kick-off and team building workshop

A two-day or an overnight workshop was held to understand what JICA is doing and team building of cluster members with 37 participants. The objectives of the workshop are as follows:

- Presentation on 9 projects proposed in the master plan
- Presentation on the pilot project (PP)
- Team building of PP participants

The participants understood the concept of Master Plan and PP and it was a good opportunity to know and understand each other.

##### 2) Visits of SMEs and BDS providers by the JICA mission (3<sup>rd</sup> field survey)

The JICA mission had to know first what SMEs and BDS providers do as well as to explain the concept of the pilot project for their cooperation. The JICA mission visited six enterprises, five universities and colleges and two training institutions.

The JICA mission found the following in the course of the field surveys:

- There is a difference in level of production technology and production management among SMEs, and they wish to improve them.
- All SMEs and BDS providers have interest in the pilot project activities.
- Universities and colleges wish to make collaboration with industry, but do not know how to make it.

Therefore, the JICA mission is confident that there are strong needs for the pilot project to upgrade the level of cluster members etc.

3) Mutual visits to organizations of cluster members (3<sup>rd</sup> field survey)

The cluster members, who joined the Kick-off and Team Building Workshop, discussed the necessity of mutual group visits of cluster members for better understanding each other. Without it, nothing can happen. This recognition is the first step for the pilot project activities. They visited the following cluster members during the 3<sup>rd</sup> field survey and after the 3<sup>rd</sup> field survey. Importantly, they decided it by themselves, and planned and carried it out by themselves.

- Asia Precision
- BT Autopart
- Sumota
- Parts Manufacturing (1999)
- Amnuayyon Engineering (VIP Property)
- Burapha University
- E-TECH
- Thai-Austria Technical College
- No.3 Training Center, Chon Buri

4) Formulation of APCB and CAMC

The beneficiary of the cluster promotion was mainly SMEs that manufacture auto parts in Chon Buri. Therefore, the cluster name was decided as Auto Parts Chon Buri (APCB in short). Then the logotype of "APCB" was used at the initial stage in materials for public relations such as catalogues,

newsletters and WEBSITE. As the APCB activities became known among SMEs in Chon Buri, companies manufacturing parts similar to automotive parts such as parts for agro machinery and motorcycle consulted IPC9 for joining APCB. Since the cluster accepted those enterprises to join APCB, the naming became inappropriate. Then the new name of the cluster was decided as "Chon Buri Automobile and Machinery-parts Cluster" (CAMC). CAMC Promoting Committee, which was organized in December 2004, decided a new logotype "CAMC".

In order to confirm the cluster members, IPC9 prepared a written form for admission to CAMC. Since CAMC activities and objectives became widely known and accepted in the region, SMEs of CAMC members increased to 23 companies (as of May 2005) from 8 promoter companies. An official CAMC formulating ceremony was held on 19 May 2005, where the Chon Buri governor's office, IPC9, CAMC and these academies signed on Memorandum of Understanding on Technical Cooperation. Thus, the cluster network has been gradually strengthened.

(2) **(Output 2)** Capacity Building of IPC9 as Facilitator

1) Project schedule and trouble shooting

The progress of PP (pilot project) preparatory work was reviewed by item by item based on WBS (Work Breakdown Schedule) which had been made by discussion with the JICA mission and IPC9 in the 2<sup>nd</sup> field survey. Then IPC9 and the JICA mission identified what a problem was up to now and made a revised schedule for the 3<sup>rd</sup> field survey.

WBS is a table to summarize the activities to be performed in the form of 5W1H plus "How much" and "What output". Using this table, the work to be accomplished can be surely checked. Therefore, the desired output is obtained as scheduled, if PIC (a person in charge) follows actions specified in the table as it is.

It is considered that IPC9 recognized and regarded it as important that the unit work should be finished according to the project schedule. Otherwise the project does not progress as expected. After the 3<sup>rd</sup> field survey, there was no significant problem occurred that cause delay of the project.

2) Coordination of meetings, etc.

IPC9 planned to hold a cluster meeting on September 16, 2004 to evaluate the results of mutual visits and clarify the mission of PP. IPC9 also decided that such cluster meeting would be held once a month. IPC9 organized 6 cluster meetings in the absence of the JICA mission. Before holding a meeting, a lot of preparatory work is necessary such as decision of agenda, preparation of supporting papers, schedule adjustment, etc. IPC9 did them by themselves. This independent action is a proof that IPC9 is getting capability as a facilitator.

3) Present capability of IPC9

IPC9 acquired capabilities as a facilitator and promoted activities by themselves such as organizing committees, invitation and admission of new cluster members, coordination of industry-academy-government liaison and administration of cluster meetings.

IPC now carries out the following activities as a facilitator:

- Administration of CAMC regular meetings (once a month)
- Preparation of short and mid-term planning based on the master plan
- Plan, prepare and administrate varied seminars
- Coordination of industry-academy-government liaison
- Administration of WEBSITE and mini-library
- Administration of CAMC members
- Coordination of organizations concerned

(3) **(Output 3)** Training of Young Entrepreneurs

1) First training seminar for young entrepreneurs

- Period: October 29-October 30, 2004
- Place: Horse Shoe Point Resort Hotel
- Participants: 66 persons including 23 persons from SMEs and 13 persons from BDS providers
- Objective: To understand cluster development (1<sup>st</sup> day) and marketing method/production management for SMEs (2<sup>nd</sup> day)

2) Plant visit to DENSO

The plant tour of DENSO was made on December 23, 2004 when the JICA mission was not in Thailand. IPC9 organized the visit successfully by themselves. 33 cluster members, in which 27 were SMEs, joined the plant observation. The plant visit was a good opportunity for the cluster

members to see how the production was managed in an advanced factory. The following is the summary of comments of participants:

3) Second training seminar for young entrepreneurs

When the 2<sup>nd</sup> training seminar was planned, the JICA mission reviewed the books purchased for mini-library and found a good textbook for TPM (Total Productive Maintenance) which is a translation from Japanese textbook. The translator is Dr. Somchai Akarathiwa, Assistant Professor, Mahanakorn University. The JICA mission decided him as the lecturer. It is one of the good methods to select a theme of seminar. The JICA mission advised IPC9 to consider books in the mini-library when they select the theme of seminar.

A two-day seminar was held concerning TPM using textbooks of Thai version of "New TPM Development Program for Innovative Production" (compiled and published by JIPM) and "Total Productive Maintenance (TPM)" (compiled by lecturer). The outline of the training seminar is as follows:

- Period: February 19-February 20, 2005
- Place: Jomtien Palm Beach Hotel
- Lecturer: Dr. Somchai Akarathiwa, Assistant Professor, Mahanakorn University
- Participants: 50 persons including 40 persons from SMEs
- Objective: To understand TPM and learn how to apply TPM to own factory

According to the questionnaire survey after the seminar, almost all participants answered that they were satisfied with the contents of the seminar and wanted to apply what they had learned to their factories. And positive answers were given for other questions as well. Therefore, the seminar was very successful. The reply to the questionnaire is analyzed in Pilot Project Report.

(4) **(Output 4)** Collection and Delivery of Information

1) Mini-library

There are few SMEs who have a library within the company. A library is necessary to satisfy SMEs who want to learn basic and advanced knowledge which is useful to develop their capabilities. Therefore, the JICA mission opened a mini-library in IPC9 as outlined in Table 5.3-3. It is called "CAMC Library." Finally, the mini-library has about 800 books, 20 magazines, CD-ROM and Video



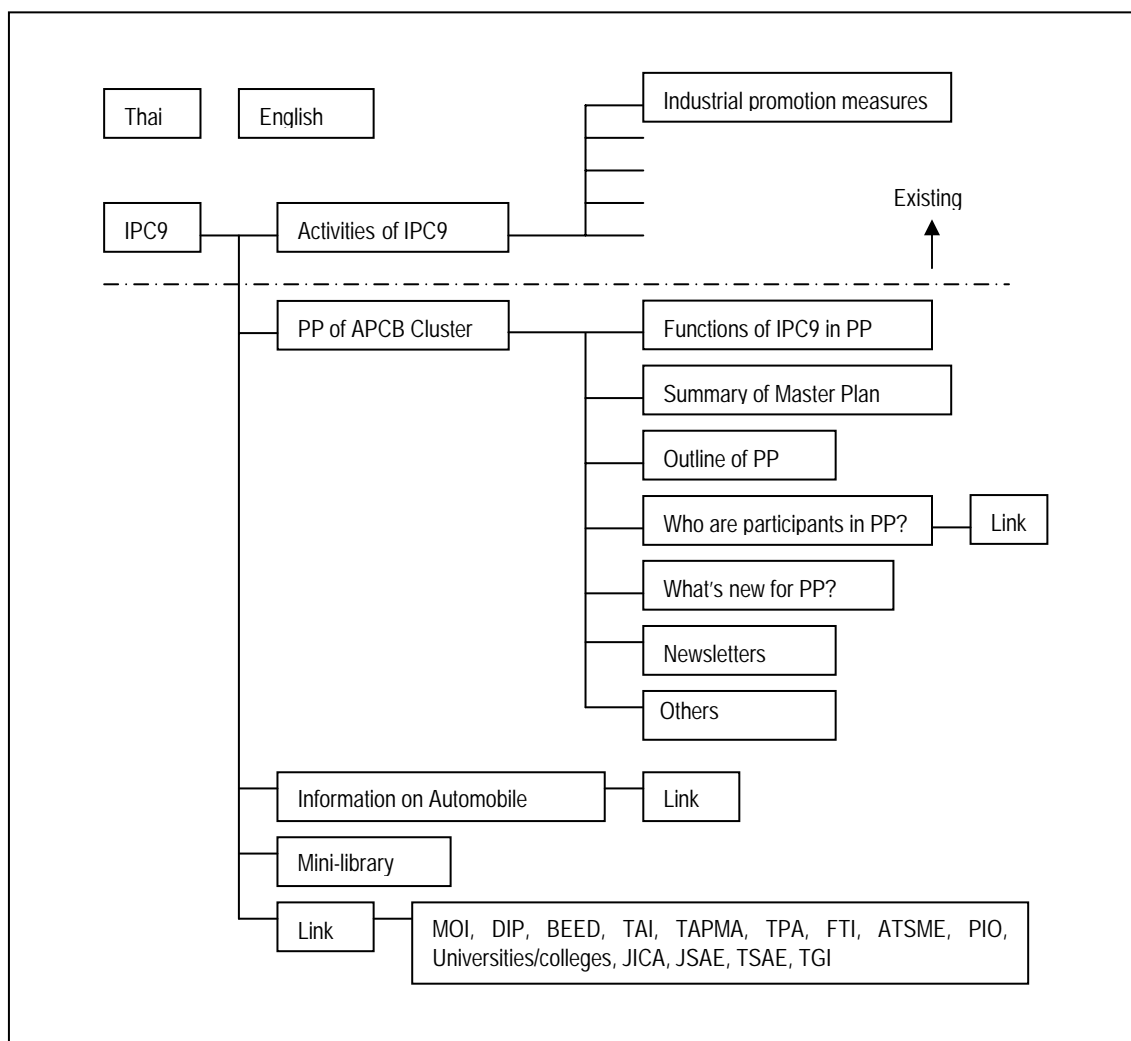
tapes. CAMC members borrowed 100 books before the opening of the mini-library. Mini-library opening ceremony was held by inviting about 30 guests on February 22, 2005.

**Table 5.3-3 Outline of Mini-Library**

1. Location: 6th floor of IPC9 (See Figure 5-1-1 for the layout of mini-library.)
2. Languages of books and magazines: Mostly Thai languages with some English
3. Category
  - Automobile
  - Machinery
  - Industrial technology (Materials, Plastics & Rubber, Mold & Die, Inspection, etc.)
  - Engineering
  - Information & Communication Technology (ICT)
  - Electrical & Electronics
  - Industrial standards (including JIS)
  - Production and quality management (control)
  - Corporate management
  - Human resources management
  - Financing & Accounting
  - Directory & Year Book
  - Textbooks, Reports & Papers
  - Language
  - Magazines
4. Link to WEBSITE of IPC9
  - Guidance for use including registration and procedure for lending/borrowing
  - Book list and information on new books

## 2) Website

Basic concept for WEBSITE was completed in the 3<sup>rd</sup> field survey, followed by the WEBSITE design and input of related information. The server of DIP is used for the WEBSITE. WEBSITE of CAMC can be seen from the WEBSITE of IPC9 (<http://ipc9.dip.go.th>). The JICA coordinator made several presentation to cluster members about how to use WEBSITE and what is included in WEBSITE. The outline of WEBSITE is illustrated in Figure 5.3-1.



**Figure 5.3-1 Outline of WEBSITE**

### 3) Newsletter

Three newsletters were published during the pilot project period. The contents of the newsletter are as follows:

- a) Address by IPC9
- b) Summary of the master plan of CSCD and pilot project
- c) Activities of CAMC
- d) Case study for Japanese industrial cluster (Series)
- e) Notice for CAMC events
- f) Introduction of mini-library and WEBSITE
- g) List of CAMC members

4) Catalogue

Four kinds of catalogue were published.

- a) Pilot project
- b) Cluster member catalogue (IPC9, BDS providers and 8 SME members)
- c) Additional cluster member catalogue (8 companies)
- d) CAMC catalogue

The catalogue is a good tool to introduce what an industrial cluster in Chon Buri is. And it is also useful to introduce member companies, because some SMEs do not have good company brochures. IPC9 and BDS providers such as Burapha University effectively utilize it for making network etc. IPC9 distributed the Nos. 1 and 2 catalogues (more than 1,000 sets) to visitors at "Eastern Seaboard Industrial EXPO" held in September 2004.

(5) **(Output 5)** Joint Projects among Industries, Academies and Governments

1) Drafting of Joint-Development Contract and General Agreement on Industry-Academy Cooperation

The JICA mission proposed in the 3<sup>rd</sup> field survey on necessity to exchange a contract before starting a joint development of new products among or between parties concerned including industries, academies and governments. The objective was to avoid troubles in sharing cost and expenditure for development and various rights of new products. The JICA mission drafted Joint-Development Contract and a guideline of it which were filed in the website of IPC 9.

In addition, in order to achieve long-term cooperation among industries, academies and governments, it will be effective for three parties to document their minds to the cooperation in the form of a general agreement. It is commonly done in Japan. The JICA mission proposed it and drafted the general agreement in the fifth field survey. It is just for reference that Burapha University and Amata Nakorn Industrial Estate exchanged an agreement on human resource development.

For the cluster of CAMC, Memorandum of Understanding on Technical Cooperation was signed on May 19, 2005 among five entities. The following eight items are mentioned as the scope of collaboration:

- Human resource development including training and seminar

- Technical instruction and consultation
- Preparation of skill certification system
- Internship
- Development of parts, components and equipment
- Research and Development (R&D) of new parts, components and equipment
- Exchange of related information
- Other subjects that IPC9, Universities and CAMC request

Signers are following five persons:

Industry

Chairman, CAMC: Mr. Sombat Temiyasathit

Government

Director, Industrial Promotion Center Region 9: Mr. Wanchai Radchadamas

Academy

Dean of Faculty of Engineering, Burapha University: Dr. Wirogana Ruengphrathuengsuka

Director, Thai-Austria Technical College: Mr. Watchara Anusarsanakun

Director, Eastern College of Technology (E-TECH): Mr. Prasert Klinchoo

2) Joint Development between industry and academy

Through discussions with SMEs and universities, the following joint development was made and is underway:

i) E-TECH

The JICA mission decided to provide students of E-TECH with financial assistance of 50,000 THB for purchasing parts to make 4 prototype products: Electric vehicle (F-1), Electric wheel chair, Small rice huller, Water pump with tappet valve. The students completed the prototype production at the end of January 2005. E-TECH made a demonstration of the following 4 products to the JICA mission in the 6<sup>th</sup> field survey. All products were confirmed to demonstrate satisfactory performances.

ii) E-TECH/Asia precision

E-TECH and Asia precision will develop a compacting machine of metal chips from machine tools. The JICA mission provided E-TECH with assistance in purchasing parts at about 45,000THB.

iii) Burapha University/TMC

Semi-automatic folk lift was developed jointly by TMC and Burapha University. The JICA mission provided TMC with assistance in purchasing parts at about 20,000THB.

iv) Others

Following talks are made for joint product development:

- Mini tractor between TMC, SUMOTA, PROYOTT Tractor
- Grass cutting tractor between TMC and SUMOTA

3) Education

The following plans are underway between academy and SMEs after the 5<sup>th</sup> field survey:

- Academy will assist SMEs in improving productivity and quality.
- SMEs will accept students in their factories as an internship program.

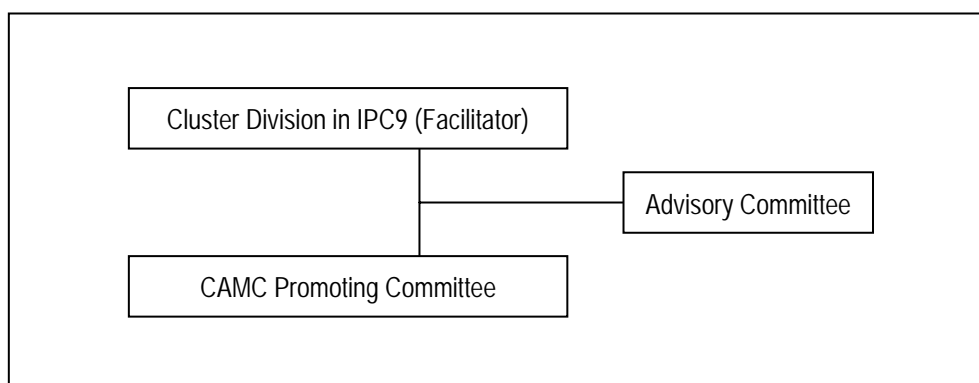
(6) **(Output 6)** Foster Parent Program

This program aimed at development of business relation between large companies and Thai SMEs by preferential 3-year employment of sons and daughters of Thai SMEs. However, since both of Thai SMEs and large companies did not show interest in the program until the end of the pilot project, this program was left for future consideration.

**5.3.2.3 (Chon Buri) Organization Established for the Cluster**

(1) Overall Structure

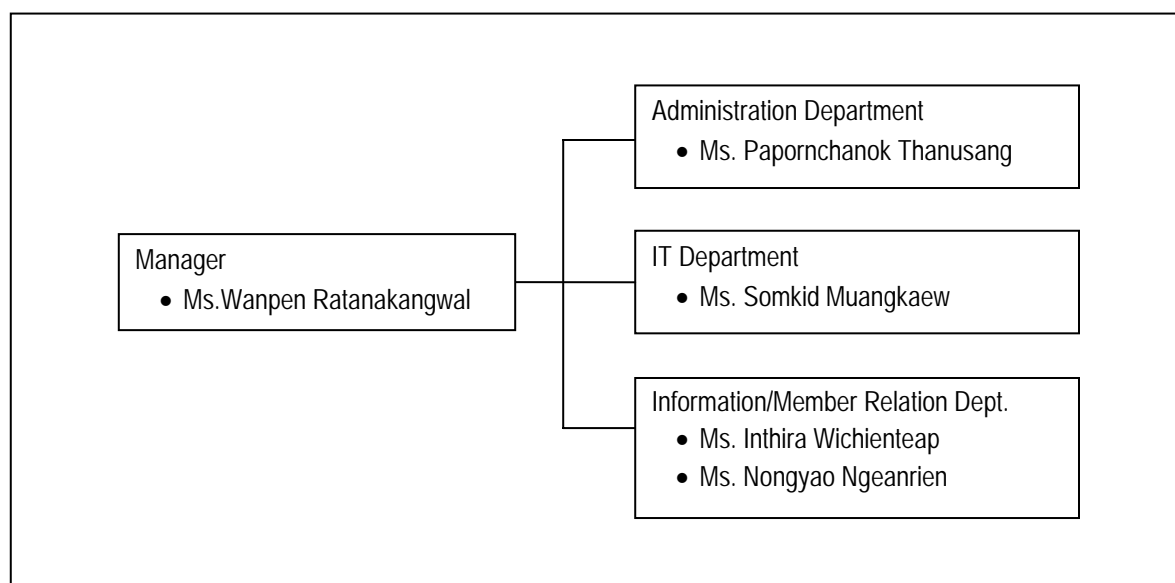
Three organizations have been established to promote CAMC activities as shown in Figure 5.3-2.



**Figure 5.3-2 Organizations to Promote CAMC**

(2) Cluster Division within IPC9

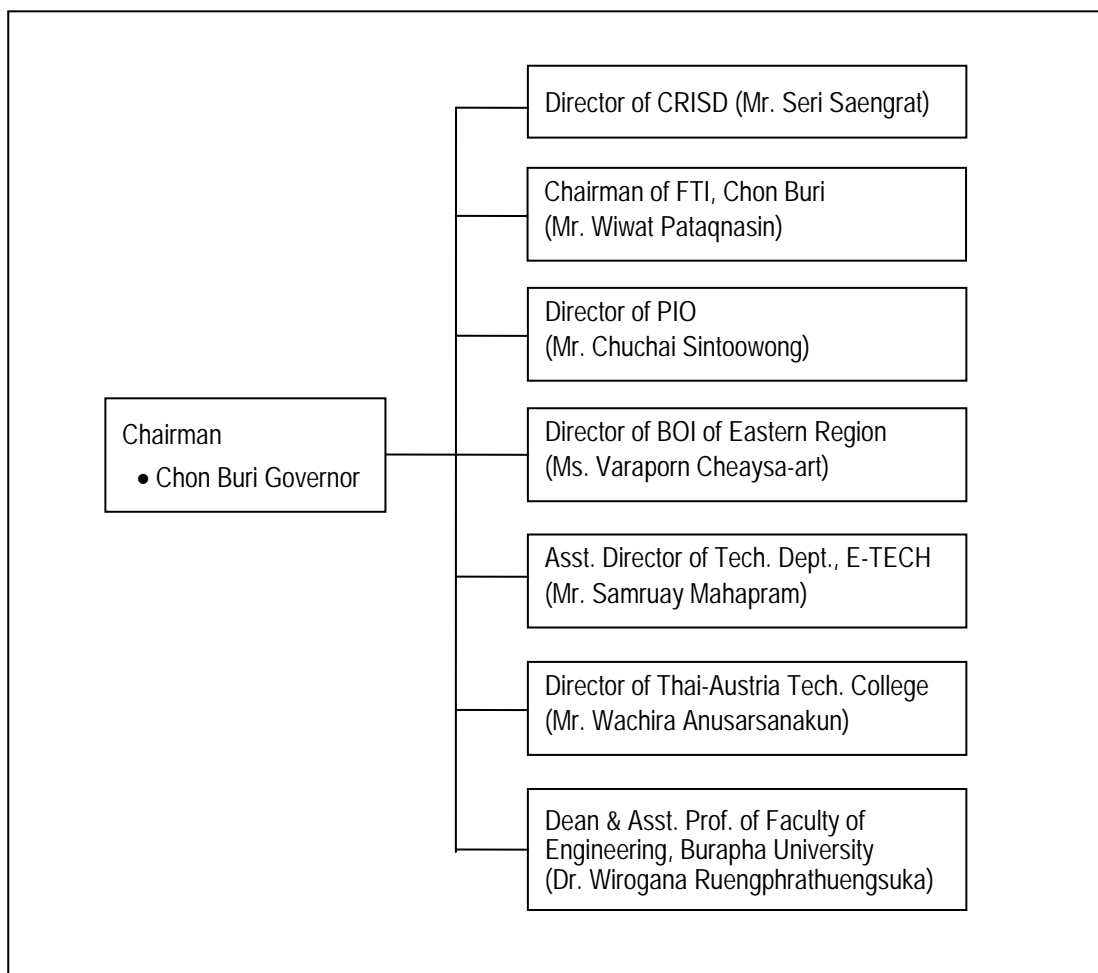
The Cluster Division has been organized within IPC9 as shown in Figure 5.3-3. The objective of the division is to coordinate and administrate the cluster activities as a facilitator of CAMC.



**Figure 5.3-3 Cluster Division within IPC9**

(3) Advisory Committee

Advisory Committee chaired by Chon Buri Governor has been established to review the plan and activities of CAMC and give appropriate advice to CAMC as shown in Figure 5.3-4.

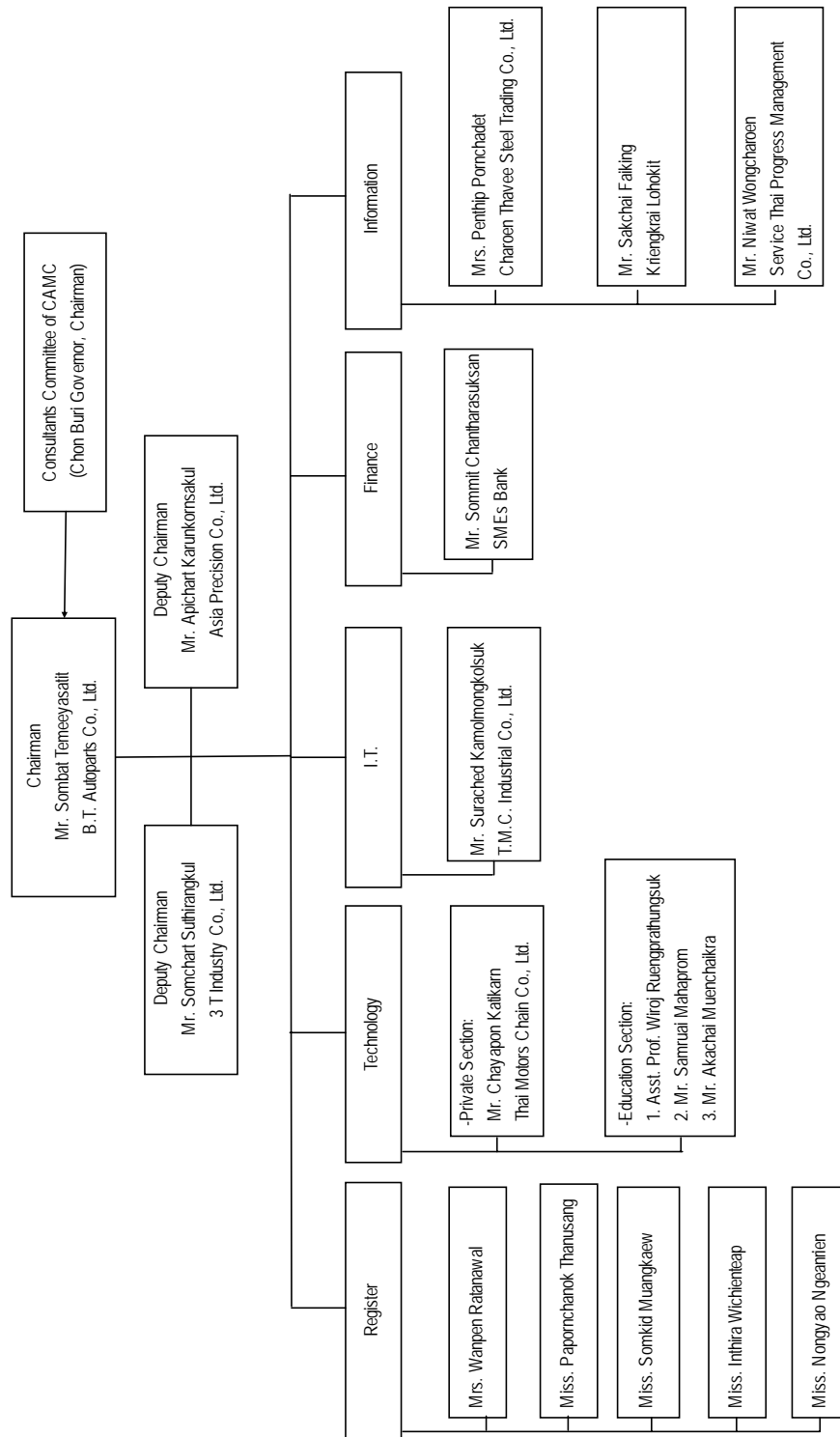


**Figure 5.3-4 Advisory Committee**

(4) CAMC Promoting Committee

CAMC Promoting Committee has been organized to plan and manage activities of CAMC as shown in Figure 5.3-5.

## Chon Buri Automotive/Machinery-parts Cluster (CAMC)



**Figure 5.3-5 CAMC Promoting Committee**



#### 5.3.2.4 (Chon Buri) Pilot Project Terminal Evaluation

This section is an excerpt from the separate "Pilot Project Report". Terminal evaluation for the pilot project is carried out by: (1) verification of implementation results (verification of performance and verification of implementation process) and (2) Five Evaluation Criteria (relevance, effectiveness, efficiency, impact and sustainability).

##### (1) Verification of implementation results

Verification of performance and implementation process was undertaken for the verification of implementation results of the pilot project. As the result, the pilot project was completed almost as scheduled and is judged that there were no significant problems.

##### (2) Five Evaluation Criteria

###### 1) Relevance

The pilot project is judged to have high relevance by the following reasons:

This pilot project, which aims at SME promotion by cluster activities, is consistent with the local development policy of the Thai government and the provincial government.

There is a big difference in technology level between foreign capital companies and local SMEs. The SMEs in Chon Buri have a sense of crisis that they would decline unless they can close the gap, and they need some countermeasures. In response to this need, the pilot project was implemented aiming at the industrial promotion by the cluster activities.

As mentioned above, this pilot project is judged to have relevance in terms of national benefits and local needs. In Chon Buri Province in which there were no actual cluster activities, the SME development promoted through the cluster activities for automotive and machinery parts industry would be a model case for other cluster projects not only in this region but also in the whole region.

###### 2) Effectiveness

The pilot project is judged to have high effectiveness by the following reasons:

The capability of IPC9 for facilitator strengthened by the pilot project propels the development of cluster activities. The cluster activities have provided quality training, strengthened information

capability and formed the foundation of industry-academies-governments collaboration to achieve joint product development as well as human resources development. These results enhance the effectiveness of the pilot project.

As the contribution factors, it is pointed out that the cluster activities have been conducted based on the master plan which specifies the vision and purpose of the cluster development, and that the Thai people made efforts to prepare the master plan, resulting in raising a sense of ownership for the project.

3) Efficiency

Seen from the achieved outputs, the input was provided efficiently.

The input was provided as planned and the outputs were achieved except Output 6. The input to the Output 6 was relatively small. Since the result that the Output 6 was not successful does not influence the achievement of the Project Purpose directly, it is judged that the Input has been provided efficiently.

4) Impact

Implementation of the pilot project gives impact upon the industrial cluster development policy of DIP.

DIP plans to develop cluster projects nationwide. Now, 33 plans on cluster project have been applied from all over the country. The continuation plan of this pilot project is among them. DIP plans to apply the methodology that JICA has implemented and proposed, with some modification according to the Thai situation, to 33 cluster plans DIP will promotes. Therefore, this pilot project, together with two JICA's pilot projects in other regions, gives impact on the decision of policy of Thai government.

5) Sustainability

The prospects of project's sustainability will be possible by further development of the pilot project.

Two cluster promotion organizations have been established: the Cluster Promotion Department within IPC9 and CAMC Promotion Committee for cluster development, enabling continuation of cluster activities for a long time. As for BDS providers, some discussion is necessary. Namely,

addition of BDS providers from academic sector is necessary for industry-academies-governments collaboration. Since there are some fields that the present three universities could not cope with, the invitation of another universities and research institutes outside of Chon Buri Province is now under investigation. Therefore, it is judged that the sustainability will be kept if the plans for budget acquisition and addition of BDS providers are realized as scheduled.

(3) Direction for the future

The project purpose will be performed, although the period for the pilot project was as short as 7 months. However, all the activities are not always successful, because the cluster activities are new in most of provinces in Thailand. For instance, industry-academies-governments collaboration is the first experience in Chon Buri and the foundation for it has been only built up. Therefore, it is considered necessary to provide JICA's concentrated assistance in joint development by industry-academies-governments collaboration, not whole outputs in the pilot project.

**5.3.2.5 (Chon Buri) Conclusion, recommendations and lessons learned**

(1) Conclusion

- 1) The pilot project was completed as planned and achieved the expected results.

According to the terminal evaluation, it is evaluated that the pilot project was almost implemented as planned and judged that the Five Item Evaluation including prospects for sustainability is almost fulfilled.

- 2) "Participatory-type enlightenment approach" which was employed in the CSCD project was demonstrated to be viable.

In the past, there had been no systematic cluster approach and comprehensive cluster activities in Chon Buri Province. However, the CAMC has grown to the expected level by the implementation of the pilot project. This satisfactory results stem from "Participatory-type enlightenment approach" which was employed in the CSCD project and enthusiastic cooperation by IPC9.

- 3) CAMC completed the initial stage of cluster activities and move forward to the next step.

It can be said that the CAMC completed the cluster activities by "assistance and guidance by public

sectors including donors" and reached to the level that it can promote the cluster activities by itself. CAMC, in cooperation with IPC9, is expected to act as the leading cluster organization in Thailand.

(2) Recommendations

1) CAMC should continue the pilot project.

It is demonstrated that this pilot project is viable as a tool for SME development. Therefore, CAMC should continue the pilot project further.

2) CAMC should draw up a short term action plan to realize medium and long term plans for cluster activities.

CAMC has already specified the medium and long term framework including vision, mission, strategies and projects. In order to realize the medium and long term plans, short term program/projects are necessary. It is proposed that CAMC should draw up a short term action plan using PCM and PDM.

3) CAMC should raise the level of the whole CAMC members by promoting collaboration between industry, academies and governments.

The foundation of industry-academies-governments collaboration was laid down by the pilot project and human resources development and joint product development are under way. Network between industry, academies and governments should be strengthened and the collaboration should be promoted to raise the level of CAMC.

4) CAMC should select additional BDS providers as required.

IPC9 should take a leading part in selection of additional BDS providers by hearing ideas of CAMC members. BDS providers are not necessarily located in Chon Buri, but they can be selected from related organizations around Bangkok.

5) CAMC should organize sub-committees within the CAMC Promoting Committee.

Now, CAMC members are as many as 33 organizations and companies, and their needs become versatile. Since it is difficult to deal with the whole needs by one organization, CAMC should organize sub-committees by their objective to ensure smooth operation of CAMC.

6) The results of CAMC activities should be published.

It is recommended that DIP and IPC9 take a leading part to publish the outcome of this pilot project.

It was implemented based on the master plan and used a new cluster development method. The publishing of what CAMC achieved would be helpful for those who plan SME development by cluster promotion in other Thai regions as well as implement cluster activities overseas.

(3) Lessons learned

- 1) The success of the pilot project was greatly attributed from the human resources.  
The capability, leadership and enthusiasm of key persons of IPC9 and CAMC members were satisfactory. It is important for the future similar projects that the JICA mission should find out key persons of the project at an early stage, while grasping the project circumstances, and implement the project with their understanding.
- 2) Two Thai coordinators who assist JICA mission contributed much to the good results.  
Two Thai coordinators carried out their duties efficiently under the guidance of JICA mission. After JICA mission left Thailand, they contributed to the smooth implementation of the pilot project by following up the project. It is necessary for selection of coordinators who play an important role for the project that capable persons should be hired by prior interviewing etc.
- 3) It is necessary for promoting cluster activities to place emphasis on building up the following system:
  - a) Thai people should take a leading part in preparation of a master plan. The master plan should specify the vision, mission and strategy for cluster development so that they can be a guidance for the cluster activities.
  - b) The action plan in the master plan should be drawn up by a participation method such as PCM so that the ownership to the project by cluster members is enhanced.
  - c) Logframe (PDM) is designed for implementation of the project so that the project purpose, output, input and activities are clarified.
  - d) Effective networking method should be sought.
  - e) The organization for cluster activities should be established.
  - f) The requisite for the cluster activities should be put in writing (Regulations, Memorandum of Understanding for collaboration between industry, academies and governments, etc.)
  - g) Based on the above, the cluster activities should be implemented step by step by getting understanding of people concerned.

### 5.3.3 Surat Thani Parawood Processing Industry Pilot Project

#### 5.3.3.1 (Surat Thani) Outline of the Pilot Project

**Table 5.3-4 Surat Thani Parawood Processing Industry Pilot Project (Outline)**

Name of Pilot Project:	Increasing of value-added of the parawood industry (up-stream and down-stream)
Target Group	SMEs in Suratthani (saw mills, parawood working factories, furniture companies, etc.)
BDS Facilitator/Provider	IPC 10, Surat Thani Institute for Skill Development Region 11, Walailak University
Period of the Project	Aug. 2004 - Feb. 2005

#### **Out line of the Pilot Project**

Overall Goal	Innovating thrust is strengthened in Suratthani parawood industry.
Project Purpose	Value-added of the parawood industry (including up-stream and down-stream) increases in Suratthani.
Output	<ol style="list-style-type: none"> <li>1. A private coordination body is set up for managing the pilot project and/or cluster activation.</li> <li>2. Factories of the parawood working industry in Surat Thani make prototype furniture using designs given by the JICA mission.</li> <li>3. Factories in Surat Thani are investigated in view of waste reduction and loss minimization of lumbering processes.</li> <li>4. An exhibition is held for parawood furniture and other parawood products made in Surat Thani.</li> </ol>

#### 5.3.3.2 (Surat Thani) Output of the Pilot Project

##### (1) **(Output 1)** Establishment of a Coordination Body for the Pilot Project

A preparatory founding committee for Parawood Industry Cluster - Surat Thani Design Center (PiC-SDC), a tentative naming, was established during the two-day with one-night stay over seminar of 21 and 22 August 2004 with the following assignment. The committee called PiC-SDC did not function well mainly because of the positions of members, who were No.2 level in the company having limitation for the time available for cluster activities and persuasiveness to the top management.

The JICA mission targeted to persuade three young presidents of influential companies for formulating PiC-SDC giving up the idea of persuading the former five persons. At the meeting on December 15, 2004 at IPC10, some of the three young presidents did not show interest in the concept of PiC-SDC. They interested in short-sight activities like the exhibition but consensus was not obtained for execution of the long-term master plan even it was planned by consensus of people related to the parawood industry in the region. In this circumstances, the organizational establishment was left pending.

This output was not materialized within the time frame of the pilot project and left as a subject in the future. It is supposed, however, that a working group will be formulated at a provincial level to monitor performance of the cluster activation program which is implemented using the new provincial budget allocated to the Surat Thani parawood cluster.

(2) **(Output 2)** Prototype Making of Parawood Furniture by Given Designs

1) Outline

The training course of woodwork were divided into two courses i.e. beginners' for new comers into the furniture-making industry and advance course for engineers and skilled workers of furniture manufacturing companies. In the beginner course, instructors of Surat Thani Institute for Skill Development Region 11 (SISD11; administrated by Ministry of Labor) mainly gave class room and practice course based on 60-hour curriculum having a JICA mission expert's advice. Participants were workers of five companies and four students of SISD11. As the practice course for beginners, the training was made based on given drawings of the mission expert. As for the advanced course, a traveling clinic was done by the expert visiting three companies participated to this program.

2) Donation of designs (drawings) of furniture

This activity of Output 2 was aimed that participants learned to prepare full-scale drawing on given basic drawing and manufacture furniture on it. Mr. Odawara who is an expert of the JICA mission as well as a famous furniture designer in Japan donated about 80 designs of furniture with drawings that he developed to IPC 10 for use in the pilot project. Much prototype furniture was made by beginners and professionals of the advanced course using these donated designs, and prototypes were exhibited in the exhibition.

3) Training course for beginners

As for new comers for furniture production including employees in saw mills, graduates and students of SISD11 and individuals, it was decided to train their employees at SISD11. The training curriculum was prepared and training period was adjusted, followed by start of training there. SISD11 prepared a 60-hour training curriculum, as shown in Table 5.3-5, with advice of the JICA mission. The JICA expert visited SISD11 several times for guidance of lecture and practice.

**Table 5.3-5 Curriculum for SISD11**

	Subject	Class room lecture hour (H)	Practice hour (H)
1	Safety in workshop	0.5	
2	Calculation of wood work mathematics	0.5	
3	Use and maintenance of wood work equipment and tools	1	4
4	Use and maintenance of wood work machinery	1	5
5	Design standards of various furniture	1	
6	How to read design drawing	2	9
7	Wood working technology	2	10
8	Chairs	2	5
9	Practice for the donated drawings	2	13
10	Cost estimate of wood work and furniture	2	2
	Total	12	48

Applicants for the beginner course were employees of five companies (Mean Mile, BNS Wood Industry, Choosak Prasang Parawood, Choosak Union Parawood and Pyramid Parawood) and four graduates and students of SISD11.

#### 4) Trial manufacture of furniture

The three companies of the advance course, which are manufacturing and selling furniture, made prototype furniture using the donated designs for the exhibition from August 2004 to January next year in their factories. Four beginners from SISD 11 also did same activities in the same period of time in the factory of SISD 11. Other beginners who were mostly workers for saw mills and had no experience in furniture making made prototypes in their factories or SISD 11. During the period of time for prototype making, the JICA expert did technological guidance visiting their production places and SISD.

### (3) **(Output 3)** Study of Loss Reduction in Parawood Lumbering Processes

#### 1) Work flow of the loss reduction survey

Output 3 is a result of a research and a survey work in cooperation between an academy and factories with guidance of the JICA mission. The JICA mission designed the following procedure before making a task team.

- a) To make a task team for Output 3 with an academy and five or more cooperative factories, which shall be saw mills with drying process.



- b) The task team makes a fact finding survey in the cooperative factories so as to identify the quantity of losses by process and the reasons of the losses.
- c) The task team scrutinizes the existing best practice in sawing and drying process in view of less loss.
- d) The task team reports effectiveness of the technologies to the public.

2) Formation of a task team and the scope of work

The JICA mission visited Walailak University first in May 2004, which is located in the neighboring Nakhon Si Thammarat province to Surat Thani province and has long experiences in utilization of parawood for industrial use in the Wood Science and Engineering Unit. Dr. Buhnnum agreed to formulate a task team for the loss reduction survey inviting nine researchers inside and outside of the university, and postgraduates of the university.

On September 9, the JICA mission, Walailak group or the task team and the participating enterprises had a meeting about the scope work of the loss reduction survey at IPC 10. Taking into account requirements of cooperative enterprises target processes for loss reduction and improvement were determined as follows.

- a) Sawmilling of parawood logs
- b) Kiln drying of parawood lumbers
- c) Treatment for improving quality of parawood lumber (Chemical treatment of lumber)

3) Cooperative factories to join the loss reduction survey

The JICA mission requested factories to join the survey visiting more than 10 factories in Surat Thani. The following five companies allow the researcher to investigate their factories and open the results to the public.

- a) Choosak Prasang Parawood Co., Ltd.
- b) Ecofurn Co., Ltd.
- c) Wattana Parawood Co., Ltd.
- d) Pyramid Parawood Co., Ltd.
- e) VS Surat Parawood Limited Partnership

The Taiwan based gigantic furniture-making company, Fancy Parawood Industry largely contributed by providing the researchers, at the initial stage of the survey, with its daily operation data and useful suggestions for the methodology of the survey as one of supporting members for CSCD.

4) Reports of the loss reduction survey

In sawing process, the survey task team measured actual state of differences in yields and quality depending on the state of teeth of saw, use of bogie, combination of sawing machines, etc. to investigate the measures for loss reduction.

In drying process, the survey task team measured scale of drying room, number of fans in the room, number of motors, state of heating coils, wind velocity/volume, temperature, humidity, drying time, kinds of dried wood, control method, etc. to obtain measures for loss minimization of wood and energy.

In impregnation process, the survey task team measured kinds of chemicals to be used, concentration of the chemicals, state of pressurized time by plate thickness, state of residual chemicals, state of check of chemical treatment results, etc. to obtain measures for securing safety.

On December 14, 2004, the survey task team made interim explanation about study results to the JICA mission, the participating enterprises and IPC 10 staff at IPC10 office. The study was the first joint study between industry and academy in the region. Interesting results were given concerning difference of 5 companies in sawing, drying and chemical treatment. The draft final study report was submitted on of 4 March 2004 with a summary report in English. The JICA mission reviewed the report and submitted DIP for open to the industry concerned for reference.

The outline of the study and research was exhibited at the First Parawood Woodwork Technology Exhibition as well as presented to 90 audiences at the forum on February 19, 2005.

5) Effects of the survey for loss reduction

The survey for the loss reduction has devised the following ripple effects.

- a) The Surat Thani province appropriated one-year budget of Bt 440,000 for the continuation of the survey made in the pilot project.

- b) Pyramid Parawood Co., Ltd. that participated in the survey improved efficiency of the drying process by 30% incorporating high quality of lumbers as a result of the survey.
- c) Chinese buyers stopped importation of low-grade lumbers including products in Surat Thani. However the survey already indicated countermeasures in its report.
- d) Saw mills in other provinces have offered to Walailak University to join the loss reduction survey as partners from industry.

(4) **(Output 4)** Opening of a Furniture Exhibition Including the Prototypes

1) Press conference on 7 February 2005

The JICA team announced the open of the exhibition to press at the conference room of provincial office on February 7. About 60 persons including press people, universities and parawood industry attended the press conference where prototype furniture was exhibited as products of the beginners of SISD11. Intensive work schedule, including distribution of posters and direct mails, preparation for reception of Japanese visitors, check of contents of exhibition and change of layout, was overcome.

2) Opening of the First Woodwork Technology Exhibition

At the final stage of the pilot project, a parawood woodwork technology exhibition was held in the following manner. The main objective was to introduce the output of the pilot project to regional people, buyers and all the persons related to the parawood industry in Surat Thani. The exhibition showed not only prototype furniture made under the pilot project but also existing parawood products made by factories in Surat Thani area.

- Period: 18 - 21 February 2005
- Location: Exhibition hall of IPC10 (667.5 m<sup>2</sup> for 1st and 2nd floors)
- Layout of hall
  - a) History of rubber industry
  - b) Present situation of parawood industry and dream of industry
  - c) HRD organizations (SISD 11, Surat Thani Campus of Prince of Songkla University, Rajabhat University, Walailak University)
  - d) Demonstration of hand craft (Batik, hand knitting goods)
  - e) Product exhibit by company

- f) Exhibits for reference
    - Exhibits, exhibiting companies and organizations
      - a) Exhibits of newly designed furniture: BNS, Ecofurn, KCL, Wattana, SISD 11, F&C/DIP (BNS and SISD 11 was new comers in furniture industry)
      - b) Own woodwork products: BNS, Ecofurn, KCL, Wattana, Ruang Utai, Fancy, Sun Paratech, Prison
- 3) Events in the exhibition
- a) Opening ceremony and panel discussion on 18 February 2005

The opening ceremony was held by inviting Mr. Pramode, Director of DIP, and Ms. Pattanan Sonboonpong, Vice Governor. The attendants to the opening ceremony were over 100.
  - b) Forum on 19 February 2005

(In the morning)

    - "Presentation of study results on loss reduction in process of sawing, drying and impregnation treatment", by Dr. Buhnnum, an expert of parawood engineering who involved in PP
    - Lecture about situation of the industry, by representative management in Thai sawing factories

(In the afternoon)

    - Panel discussion on "Direction and opportunity of parawood industry in international market"
- Mr. Mitsuru Kato, President of Universal Home, gave a special lecture titled "Present situation of Japanese housing industry" at the beginning of the forum. He visited Surah Tani to observe the First Parawood Technology Exhibition. 91 attendants, who were more than expectation, joined the forum and presentation for long hours from 9:00 to 16:30. Many local students were among attendants including people from parawood industry, which seemed to show a growing interest in local industry among youngsters.
- 4) Number of visitors to exhibition
- a) Thai people

It was considered that visitors could only enter from the front entrance, but another entrance/exit to the direct access to the hall was open. Therefore, it seemed that there were significant number of

visitors who were not given the questionnaire sheet. It was estimated about half of visitors entering from the front entrance got the questionnaire sheets, which were 436 sheets in total. Therefore the estimated number of visitors was double of the questionnaire sheets to be handed over.

b) Japanese delegation

What is emphasized is that as many as 17 delegations of 12 enterprises came from Japan just to visit the exhibition. The Director General of DIP not only attended the opening ceremony but also sponsored the welcome party for the delegation. He showed strong intention to promote parawood industry. The Japanese delegation not only observed the exhibition but also visited companies including exhibit companies to observe workshops and exchange talks with managements, resulting in building reliability between Japanese and Thai managements. It is expected that these activities would lead to extension of business relations in the future.

**5.3.3.3 (Surat Thani) Organizations Established for the Clusters**

Lessons from execution of the pilot projects suggest that a cluster should have two organizations: one is of a provincial level and the other is of private sector or SMEs. The provincial governor's office takes care of the provincial level organization in order to manage the master plan and the action plans. The latter or a group of SMEs takes care of sustainable operation of the pilot project including opening of an exhibition per year, which was requested by 98.6 % of Thai guests and all of Japanese guests.

The Surat Thani province has gradually shown interest in the parawood industry in accordance with the progress of the CSCD project. At the opening ceremony of the exhibition in February 2005, the vise governor announced that the province had designated the parawood industry as a strategic industry of the province. Accordingly the province appropriated a budget for the parawood cluster activation in amount of Bt2.89 million which was valid until September 2005. Objective of the budget and allocation are as follows:

(Objective)

- 1) To improve parawood processing industry, propel business promotion and increase competitiveness.
- 2) To formulate the parawood industry cluster in the Surat Thani province.

**Table 5.3-6 Budget for the Parawood Industry Cluster in Surat Thani**

Allocation	Amount (Bahts)	Usage
IPC10	2,200,000	CF: 4 projects, TF: 100 persons, Overseas study tour (10% subsidy): one tour, Cluster formulation: 1 group
SISD-R11	250,000	Human Resource Development: 100 persons (Technology: 50 persons, Management: 50 persons)
Walailak University	440,000	Continuation of the survey for the loss reduction implemented in the pilot project

Note) CF: Consulting Fund TF: Training Fund SISD: Surat Thani Institute for Skill Development Region 11

The vice governor of the Surat Thani province said that a working group would be formulated at a provincial level for activation of the parawood industry cluster. In addition, on May 17 2005, the participants in the 2nd seminar in Surat Thani made a group discussion on the organization of the cluster in the future. Table 5.3-7 shows a summary of the group discussion. Thus, building of consensus is on-going towards organizing the cluster.

**Table 5.3-7 Results of Group Discussion at the 2nd Seminar**

17th of May, 2005

Group 1	Group 2
1. Leader of excision next year <ul style="list-style-type: none"> <li>- IPC10</li> <li>- Surat Thani province</li> <li>- FTI Surat Thani Chapter</li> <li>- TCC Surat Thani Chapter</li> <li>- ORRAF</li> <li>- Thai Furniture Association</li> <li>- SISD11</li> <li>- Financial Institutions in Surat Thani</li> </ul>	1. Leader of excision next year <ul style="list-style-type: none"> <li>- Sponsor: Surat Thani province, IPC10</li> <li>- Supporter: ORRAF, Saw mills</li> </ul>
2. Liaison with Japanese buyers <ul style="list-style-type: none"> <li>- Export Promotion Center</li> <li>- Parawood Association</li> <li>- Thai Furniture Association</li> <li>- Trading companies</li> </ul>	2. Liaison with Japanese buyers <ul style="list-style-type: none"> <li>- Surat Thani Export Promotion Center</li> </ul>
3. Responsibility for cluster activation <ul style="list-style-type: none"> <li>- Initiation: IPC10 and FTI</li> <li>- Strengthening: Private sector</li> </ul>	3. Responsibility for cluster activation <ul style="list-style-type: none"> <li>- First step: Governments formulate a center PIO/IPC10 Leaders of saw mills, Manufactures, 5 companies participated CSCD</li> <li>- Second step: Enterprises formulate a center (Ex.: Fancy, Ruang Utai, Rainbow)</li> <li>- IPC10 supports for strengthening</li> </ul>

#### **5.3.3.4 (Surat Thani) Pilot Project Terminal Evaluation**

This section is an excerpt from the separate “Pilot Project Report”. Terminal evaluation for the pilot project in Surat Thani was carried out in the following areas: (1) verification of the implementation results (performance and the implementation process); and (2) five evaluation criteria (relevance, effectiveness, efficiency, impact, and sustainability).

##### **(1) Verification of the implementation results**

To examine the implementation results of the pilot project, the implementation process and results were reviewed and evaluated. The results indicate that the project was implemented according to the plan, excepting output 1, i.e., any organization for the cluster activation under private initiative was not achieved during the period of the pilot project.

##### **(2) Five evaluation criteria**

###### **1) Relevance**

This project is judged to have high relevance for the following reasons.

Surat Thani boasts the largest area of rubber plantation in the country (accounting for more than 17% of the total) and development of the parawood industry cluster is overwhelmingly recognized to meet the needs of local communities and industries (a questionnaire survey in the 2nd seminar). In fact, the provincial government has recognized the pilot project as relevant and has designated the parawood industry as the second strategic industry next to tourism. It has allocated a budget for continuation of the pilot project. Also, some universities have started to emphasize on research in the field of woodworking or to train engineers and technicians with an emphasis on design and workmanship in the modern production process. These moves create a supportive environment for development of the industrial cluster, which can be said that the pilot project revealed latent relevance of the project.

###### **2) Effectiveness**

The project is judged to have high effectiveness for the following reasons.

According to the results of the questionnaire survey of participants in the second seminar, a very high percentage of respondents (83.3%) think that the initiatives in the pilot project, e.g., the training of engineers and technicians to create furniture of new design, and research on loss reduction in the lumbering process. Thus, the pilot project is widely accepted by local stakeholders as an effective means to achieve the upper goals.

For instance, one of the companies that participated in the task of the loss reduction research has successfully improved the drying effect by 30% under technical guidance of the task team that was provided in the course of the project, while achieving significant quality improvement. In light of the fact that the industry receives complaints about product quality from China – the largest importer of parawood products, more companies are expected to use the result of the research for improvement of their lumbering processes. Also, a Japanese delegation (potential buyers) who visited the exhibition contributed to increase effectiveness of the pilot project by leading manufactures in Surat Thani to market development, product development, and technical assistance.

### 3) Efficiency

Judging from the outputs made of the pilot project, input has been made efficiently.

The JICA mission in vain spent some man-hours for the establishment of an organization for the cluster activation though it was caused by low level interest in clustering among local enterprises.

Other three outputs that could be managed mostly by the JICA mission were produced as led by the mission and were highly valued in terms of efficiency, including human input, the assignment period, and content of support. Furthermore, there was no impediment to affect efficiency, and industry-academic cooperation such as the loss reduction research project progressed smoothly. Also, technical assistance in production of furniture of new design provided by the JICA mission, including prototype production, was conducted in an efficient manner within a limited period of time.

### 4) Impact

Implementation of the project has produced the following impacts and effects and is expected to accomplish the upper goals in three to five years.



The project sets forth the cluster vision to “innovate the parawood industry in Surat Thani,” with the overall goal of “reinforcing a driving force toward industry-wide innovation,” and activities were conducted with the project purpose to “increase valued added of the parawood industry.” The results of the questionnaire survey conducted during the second seminar indicates that over 90% of respondents expected that reinvigoration of cluster activities would drive innovation. It can be said that the project purpose “the increase in value added of the parawood industry” is linked to the vision via the overall goal.

In addition, the cluster activities have successfully raised public awareness of environmental protection and there is an increasing interest in obtaining certification from the Forest Stewardship Council (FSC) and the Chain of Custody (COC). Furthermore, several groups of parawood producers in Chon Buri and Songkhla are stimulated by the cluster development activity in Surat Thani and are talking about formulation of their own clusters. Similarly, a few companies in a neighboring provinces show a clear intent to participate in the loss reduction research project. Thus, the cluster activities and their effects are spreading in a variety of ways and directions.

#### 5) Sustainability

The project is considered to be viable by continuing and developing the pilot project further, for the following reasons:

- a) The provincial government has allocated a budget for parawood industry cluster development, which forms the basis of sustainability of the project.
- b) The cluster is building an effective linkage with the market as sales negotiations with Japanese buyers are underway.
- c) The effect of the industry-academic cooperation project is recognized by the industry.
- d) The BDS network is being formed.

DIP and Surat Thani are building an organization and a system to promote cluster development, including the formulation of a program for policy implementation and budget allocation. However, the largest impeding factor is the lack of the private initiative organization for cluster activation activities.

(3) Future direction

- 1) It is widely accepted that the pilot project makes significant contribution to the parawood industry in Surat Thani. Thus it is important for development of the cluster activity to implement the project on a continuous basis. The exhibition should be held at least once per year.
- 2) Promotional activity should be conducted for beneficiaries (the target group) of the parawood industrial cluster in order to encourage their organization. It is imperative to find the industry's leaders.
- 3) For the time being, the future direction of the cluster will be governed by the ability of IPC10 to serve as its facilitator.

**5.3.3.5 (Surat Thani) Conclusion, recommendations and lessons learned**

(1) Conclusion

- 1) The pilot project was implemented according to the original plan and has achieved its purpose.

The terminal evaluation confirms that the project has been carried out according to its implementation plan and satisfied the Five Evaluation Criteria including sustainability.

- 2) The networking of the cluster has made a significant progress.

Prior to the project, there was little interaction between parawood companies in Surat Thani and the industry had few contact or communication with universities and other HR development organizations or government organizations responsible for industrial promotion. The project has created opportunities for interaction between related parties in the industry, government and university sectors and has built up the cluster network. In particular, after the exhibition on woodworking technology and products, talks on possible of cooperation between participating companies increased at an accelerated pace.

- 3) Parawood companies in the cluster area increased interest in the downstream sector.

The project purpose was set to accord with the needs of local communities and industries, i.e., increase in value added of the parawood industry (upstream and downstream). In particular, an increasing

number of companies find the downstream sector (furniture) to be attractive in the course of the pilot project, i.e. prototype production using new designs provided by the JICA mission, participation in the exhibition, and visit by Japanese buyers.

- 4) The joint research project on loss reduction has produced measurable results.

The research project started with selection of five parawood mills that had the lumbering, drying and chemical (insecticide/fungicide) treatment processes and were willing to improve lumber yields and the processing method. A task team led by experts at Walailak University was organized and conducted field surveys to identify present conditions and analyze problems, followed by research and development on loss reduction measures. Some companies implemented proposed improvement measures and confirmed positive results.

A formal report on the request project was compiled in February 2005 and the results were presented at a forum held at the exhibition on woodworking technology and products. Managers of local companies were impressed by the fruit produced from the industry-academic cooperation. And the Surat Thani provincial government has allocated a budget for continuation of the research project.

- 5) The pilot project has established the basis of the provincial government's action to designate the parawood industry as a strategic industry in Surat Thani.

The provincial government watched the progress of the pilot project carefully and decided to position the parawood industry as the second strategic sector in Surat Thani. For its FY2005 budget, the province allocated 2.89 million Bahts for continuation of the cluster development activity.

- 6) The project faced difficulty in organizing the cluster led by private enterprises

At the first seminar, the establishment of a cluster promotion organization, so-called "Design Center," was proposed and agreed. A special committee was established and five members were selected. However, because selected persons were secondly ranked in the company as their position, they could not serve enough for the voluntary work of the committee. Thus, the committee discontinued its activity in late October 2004. Although an effort has been made to establish the organization led by corporate owners or managing directors with strong leadership, no result was produced at the end of the pilot

project. At present, however, the need for the organization is increasingly recognized within the industry and its establishment will become an important agenda in the near future.

(2) Recommendations

- 1) The establishment of the cluster promotion organization led by local companies should be promoted to support continued implementation of the pilot project and the cluster development activities.
- 2) To provide hands-on training for engineers and technicians in the fields of furniture production and woodworking, formal measures should be examined to hire experts as instructors.
- 3) To promote understanding and communication between cluster members, the following activities should be carried out:
  - Mutual factory visits and tours by managers of cluster member companies
  - Joint research projects led by cluster members and presentation meeting to report results
  - Overseas market study tours
  - Establishment of rules for management and use of furniture designs furnished by the JICA mission
- 4) Market development activities, both domestic and overseas, should be planned and carried out vigorously.
  - Promotion of exchange of information with members of the Japanese delegation who visited the exhibition
  - Collection and publication of information on market and technology relating to housing, interior design, and furniture
  - Creation of a logo representing a Surat Thani brand and establishment of rules for its use
- 5) To establish the Surat Thani brand, industrial standards for woodworking, jointed boards and sawn wood products, including the measurement and inspection methods, should be established and enforced.

(3) Lessons learned

- 1) The cluster activity should be planned and implemented under the initiative and will of local stakeholders.

This CSCD project was initiated without the presence of local promoters from private sector and an organization to promote the cluster development activity. At the initial stage of the project, as little support from IPC10 and the Surat Thani provincial government was expected, substantial time and effort was spent to organize the cluster activity itself, including promotion of a wide understanding and acceptance by potential stakeholders. Therefore, such supporting environment should have been provided prior to the start of the cluster activity.

- 2) The pilot project proved that the cluster activity could maximize its effectiveness by networking related parties.

The pilot project has produced successful results where that the network between private companies, and industry, government and academic sectors functioned very well. In fact, networking is a major potential power to promote a cluster in any area. Effective use of the local network is undoubtedly the key to the success of the cluster activity.

- 3) A strong leadership is an essential element of the cluster activity.

The pilot project was started by a strong leadership of the JICA mission in Surat Thani where there was no cluster activity. In the future, local parties must take leadership if the pilot project continues to produce results. Only a sustainable leadership can energize the cluster activity.

- 4) The cluster activity must establish an effective market linkage.

In particular, the exhibition is an integral part of marketing activity and the visit by 17 Japanese potential buyers had significant impacts on local parawood product manufacturers. They must have learned that the exhibition and its results could lead to sales expansion, export opportunity, and technical cooperation. Thus, the industrial cluster needs to operate by having an eye to a market development opportunity facing it.

## Chapter 6 Plan for Nationwide Evolvment of Cluster Promotion

## Chapter 6 Plan for Nationwide Evolvement of Cluster Promotion

In this chapter, we shall first discuss several controversial points as to the concept of "industry cluster" so that all the parties concerned can have common recognition of industry clusters in their discussions. Then, on the assumption that industry clusters are to be promoted throughout Thailand, we shall make clear the necessity of promoting industry clusters and the problems involved, present a framework for promotional measures and propose an organization for implementing them.

### 6.1 Characteristics of "Industry Cluster Approach"

#### 6.1.1 Industry Cluster and Its Competitiveness (Theory)

(1) What the industry cluster is

Since the 1980s, various schools have carried on studies of the source of the extra competitiveness that a specific industry can obtain through concentration. Namely, when a specific industry concentrates in an area, it often becomes more competitive. The studies focus on the reasons for it (i.e., the source of extra strength). Prof. Michael E. Porter, one of the most prominent figures in this particular field, explains the cluster as follows ("On Competition", 1998).

*Michael Porter defines clusters this way:*

*"Clusters are geographic concentrations of inter-connected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies or common inputs. Finally, many clusters include governmental and other institutions - such as universities, standard-setting agencies, think tanks, vocational training providers, and trade associations - that provide specialized training, education, information, research, and technical support."*

(2) Where the competitiveness of the industry cluster springs from

Assume that some core industry is concentrated in a specific area and that it has a dynamic linkage (network) with the related industries and supporting institutions. In this case, why does the core industry have a competitive edge? To this question, Prof. Porter gives the following answer.

*Within the cluster, there are many well-experienced experts in highly specialized fields and accumulated assets of professional information about markets and technologies. Therefore, it is easy for the cluster to procure management resources and cut the costs of transactions, etc. In addition, as the constituent members of the cluster work in close cooperation with one another, they can produce better results than when they work independently. As a result, the productivity of the constituent members of the cluster and the speed of innovations within the cluster become much greater than stand-alone competitors. All this lessens the risk involved in undertaking new businesses and facilitates attracting investors. New businesses which are continually created help the cluster to continue growing. A favorable cycle like this leads to a lasting competitive edge of the cluster.*

On the other hand, UNIDO attributes the competitive edge of an industry cluster to the following four factors. Although these factors are nearly the same as those of the diamond model presented by Prof. Porter, they are expressed in more specific terms as introduced below.

- 1) The cluster has easy access to raw materials and other resources.
- 2) A properly commercialized BDS (Business Development Service) is available.
- 3) The cluster has long been famous and has many customers.
- 4) The workers have high levels of skill.

It is a generally accepted conclusion drawn from the cluster studies that well-developed industry clusters have the above characteristics in common.

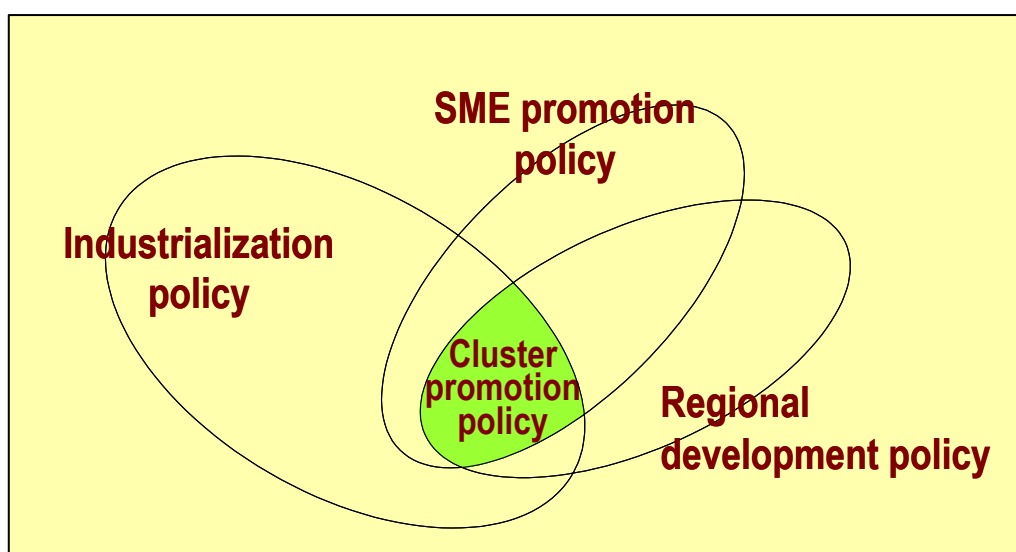
### **6.1.2 Positioning of Cluster Promotion Policy in Various Development Policies**

Around the mid-1990s, the donor organizations that were feeling the need to employ an effective new method of helping to promote small and medium enterprises of developing countries began making an attempt to apply the cluster theory in their activities as the theory was being practically established. Namely, it was the attempt to utilize the results of analyses of industry clusters, which had spontaneously occurred in advanced countries and which had been fully developed by that time, in the promotion of small and medium enterprises of developing countries. The above donor organizations include both multilateral aid organizations (WB, ADB, UNIDO, etc.) and bilateral aid organizations (JICA, JBIC, GTZ, USAID, etc.).



Many countries have carried out their own policies intended for industrialization, promotion of small and medium enterprises and regional development. It is said that the cluster promotion policy represents the part where those three types of development policies overlap. Unlike the case of a policy on promotion of a specific industry (or a specific sector or sub-sector), no priority industry is specified in cluster promotion. In cluster promotion, no priority area is specified either. Besides, cluster promotion has nothing to do with the administrative division of district. The only condition for cluster development is the existence of some form of industry concentration.

The cluster approach differs from the traditional development policies in the manner that no priority is given to specific clusters. Therefore, the cluster development policy or approach structures part of the industrialization policy (including sector development policy), the SME promotion policy and the regional development policy. In other words, the three policies should contain the cluster promotion policy in it and the overlapped area of three policies represents the cluster development policy (See Figure 6.1-1).



**Figure 6.1-1 Position of Cluster Promotion Policy**

In other point of view, however, it can be said that the cluster promotion policy has is not same as the other three policies. The overlapped area of the above table defines "Small- and Medium-scale Industry located in a specific space". Conversely, the overlapped area or the cluster promotion policy does not contain primary industries, services and commerce, large enterprises, and nationwide industrial sector promotion. Table 6.1-1 shows a comparison table between the cluster approach and its opposite approaches, clarifying the characteristics of the cluster approach. When the cluster approach is

employed for SME promotion, mix-up of the cluster approach with the opposite approaches should be avoided for maximum use of the characteristics of the cluster approach for SME promotion.

**Table 6.1-1 Cluster Approach and its Opposite approaches**

Cluster Approach	The Opposite
Industrial promotion policy (Efficient use of resources)	Social security policy (Provision of safety net)
Promotion of a core industry accumulated in limited area	Promotion of strategic sub-sectors over the country
Strengthening of competitiveness of growing industries	Protection and fostering of cottage or weak industries
Private initiative approach	Government initiative approach
Promotion of any accumulated and growing sub-sectors	Promotion of designated priority sub-sectors

### **6.1.3 BDS (Business Development Service)**

#### **(1) Relationship between BDS and cluster promotion**

It was around the mid-1990s that the concept of BDS began to be clearly recognized in the promotion of small and medium enterprises. The BDS theory was established by donor organizations. It arose from the recognition that "in planning the promotion of small and medium enterprises in developing countries, the continuity of support for those enterprises is indispensable." One theory that underlies this concept is that in order to maintain the continuity, the government of each of the developing countries should minimize or idealistically, abolish its direct support for small and medium enterprises. According to this theory, the continuity should be guaranteed only by market principles, which are influenced by government intervention.

As described above, the concept of BDS is based not on the cluster development theory, but on the small and medium enterprise development theory. When industry cluster promotion is discussed, BDS is discussed as well. This is because it is always small and medium enterprises that constitute the core industry of an industry cluster.

#### **(2) Contents of BDS**

BDS may be defined as any support service supplied by a third party to small and medium enterprises. It includes the following services. It should be noted that in the present study, financial backup is also included in BDS, although it is usually excluded from BDS.

- Management/technical training
- Management/technical consulting
- Repair/maintenance
- Product design service
- Quality control, technology development and dissemination
- Accounting service
- Financial backup
- IT-related service
- Logistics service
- Market survey
- Brokerage
- Business start-up consulting service

(3) BDS provider and BDS facilitator (new approach)

According to the Committee of Donor Agencies for Small Enterprises Development (hereinafter called the Donor Committee), etc., the roles of BDS are collectively named a new approach and systematized as shown in Table 6.1-1.

**Table 6.1-1 BDS Actors and Their Roles**

Actor	Position and role of actor	Organization involved
① SMEs	BDS demand side, customer of BDS provider	Small enterprises and their proprietors
② BDS provider	Agency providing service directly to SMEs	Private profit enterprises, NGOs, quasi state-managed enterprises, government agencies, industrial associations, etc.
③ BDS facilitator	1) Supporting BDS providers. Examples: Developing new BDS products, disseminating successful BDS and developing abilities of BDS providers. 2) Acting upon SMEs. Examples: Disseminating usefulness of BDS and encouraging utilization of BDS. 3) Evaluating BDS providers, assuring quality of BDS and helping to improve and maintain policy environment.	Public organizations in the main, plus government agencies, NGOs, donor project offices, industrial associations, management associations, etc. Government and donors provide funds.
④ Donor	Providing funds for BDS projects/programs. Roles are limited to supporting promotional activity, technical cooperation and incentives to develop and improve efficiency of support services of BDS provider.	Bilateral/multilateral cooperation agencies.
⑤ Government (of developing country)	Providing funds for BDS projects/programs and improving and maintaining environment for reinforcement of BDS. Examples: Policy regulations, software/hardware infrastructure and educational/information service. The government must not intervene in the BDS market.	—

Source: Donor Committee Guiding Principle (2001), etc.

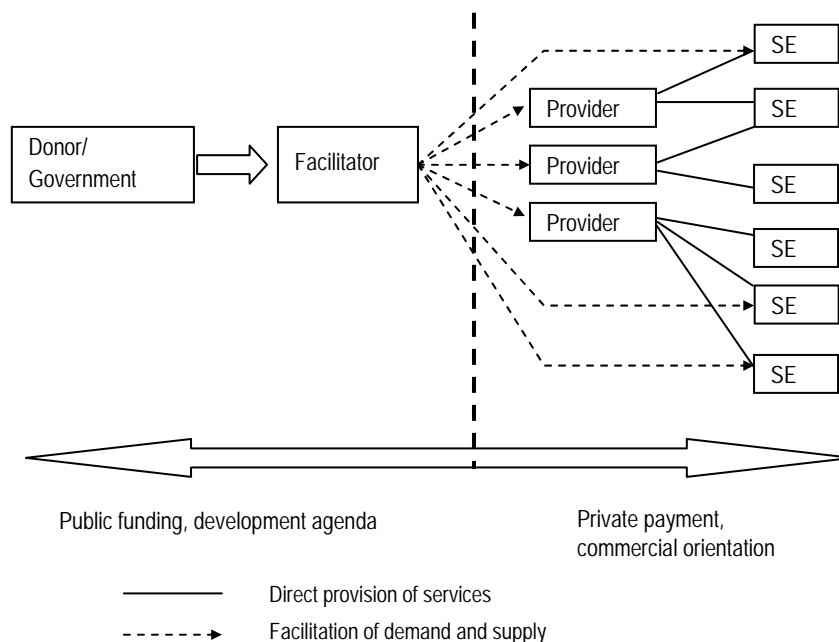
The contents of the above table are diagrammatically shown in Figure 6.1-2. In the figure, A. New Approach is compared with B. Old Approach. Briefly speaking, the new approach is characteristic in that each actor offering service to small enterprises is called a BDS provider and that government intervention in the BDS market is not allowed. The new approach demands that the services offered by BDS providers should be based entirely on market principles and managed with the compensation paid by the beneficiaries. As already mentioned, in the new approach, it is considered that the government's granting of subsidies, etc. goes against market principles and breaks the continuity of measures to support small enterprises.

On the other hand, there are several donor agencies that are against the new approach saying that it is ideal but not realistic. They maintain that in developing countries, there are really no markets in which BDS providers can continue offering services on a self-paying basis. In addition, they consider it difficult to draw a clear-cut demarcation line between the roles of BDS facilitators and those of BDS providers. In the present study, while we consider that the government's direct intervention in the supply of BDS services should be avoided as far as possible and that the subsidies, etc. should be made indirect and granted only for limited periods of time, we do not completely preclude the government from intervening. Thus, we intend to put forward proposals which are based on the realities of Thailand.

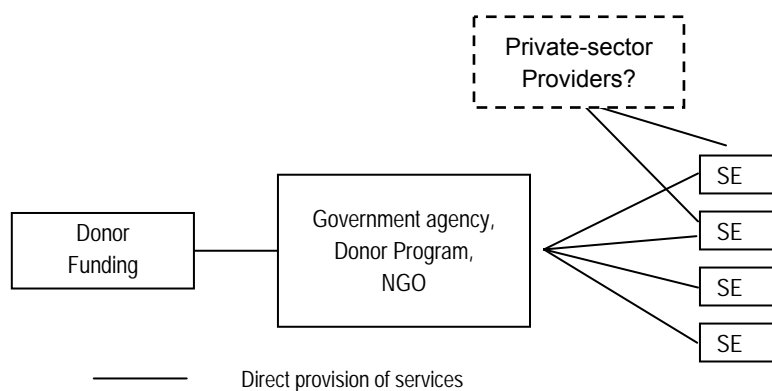
#### **6.1.4 The Cluster Approach for Competitive Advantage of SMEs**

There is an approach for SMEs to promote handicraft production for women or cottage industries for micro enterprises in rural area. This type of approaches is often categorized in a social policy for poverty rather than an industrial policy. OTOP can be categorized into a social policy. It should be clearly understood that the cluster approach is to be an industrial policy to strengthen international competitiveness of SMEs. In this regards, industrial clusters which have higher growth potential and higher expected benefit to cost for promotion are to be given priority for promotion. In addition, it should be noted that the cluster approach does not aim at newly creating industrial accumulation but upgrading efficiency or productivity by networking of the existing industrial accumulation for competitive advantage.

### A. New Approach: Facilitate Market Development



### B. Old Approach: Substitute of the Market



[Writer's notes]

SE: Small enterprises (scale not defined).

Market: The term "market" as used here may be interpreted as the "demand for support services needed by SEs."

Source: Business Development Services for Small Enterprises:

Guiding Principles for Donor Intervention 2001 Edition, Committee of Donor Agencies for Small Enterprises Development

**Figure 6.1-2 Actors and Their Roles in BDS Network**

## 6.2 Significance of Nationwide Evolvement of Cluster Promotion and Problems Involved in Cluster Promotion in Thailand

### 6.2.1 Necessity of Nationwide Evolvement of Cluster Promotion

In the present project, we consider the condition in which a certain number of enterprises in the same industry (includes the related industries) are concentrated in a specific area as an essential requirement of an industry cluster. Therefore, when the whole country is regarded as a specific area, the condition mentioned above should be called an industry sector or industry sub-sector, not an industry cluster. How many industry clusters are there in Thailand? We estimated the number using the 2001 statistical data of the individual provinces and the following conditions.

- 1) There are 100 or more enterprises in the same industry in a province.
- 2) The average number of employees per enterprise is 10 or more.

Counting the industry concentrations that meet the above conditions, there are 120 clusters in 17 industries throughout Thailand as shown in Table 6.2-1. The total number of employees of those clusters is 1,760,179. Since the estimation is based on data of the individual provinces, the actual degrees of industry concentration must be measured by a detailed survey. Even so, the figures shown will serve as a yardstick. Figures in parentheses below represent the number of employees of sub-sectors;

1) Food processing:	19	(248,422)	9) Chemicals:	4	(49,208)
2) Textile:	5	(206,619)	10) Rubber products:	4	(47,110)
3) Clothing:	2	(159,781)	11) Plastics products:	6	(120,246)
4) Leather goods/footwear:	2	(52,297)	12) Nonmetal products (ceramics):	14	(112,948)
5) Lumber/woodwork:	16	(119,980)	13) Basic metal products:	3	(25,380)
6) Furniture/fixtures:	5	(26,027)	14) Structures (metal processing):	13	(165,797)
7) Paper/paper products:	2	(17,089)	15) Machinery:	11	(123,765)
8) Printing, publishing and related products:	1	(27,429)	16) Electrical machines/supplies:	4	(131,001)
			17) Transportation equipment:	9	(127,080)
			Total	120 clusters (1,760,179)	

In the present JICA project, only three clusters out of 120 were picked up as samples. Therefore, it is considered worthwhile and necessary to promote the other industry clusters throughout the country as a national policy.

**Table 6.2-1 Prefectures with more than 100 Companies in Each Classified Manufacturing Sector (2001)**

IPC No.	Province No.	GDP/capita (1000BHT)	Provinces	Basic agro-Industry	Food	Beverage	Textile	Wearing Apparel	Leather Prod. & Footwear	Wood & Wood Prod.	Furniture & Fixture	Paper & Paper Prod.	Printing, Publishing, Allied Prod.	Chemical & Chemical Prod.	Petroleum Prod.	Rubber Prod.	Plastic Prod.	Non-metal Prod.	Basic Metal Prod.	Fabricated Prod.	Machinery	Electrical Machinery and Supply	Transport Equipment
1	1	55.9	Chiang Mai	(940)	O255					O192	O104							O132					O275
1	2	30.7	Chiang Rai	(916)	O100													(121)					
1	4	25.5	Phae	(209)						O170													(109)
1	6	41.2	Lampang	(1028)	O122					O174	O140							O331					(126)
1	7	68.9	Lamphun	(304)						O138													
2	9	38.4	Uttaradit	(588)																	(121)	(106)	
2	10	41.2	Phitsanulok	(999)	(117)													(106)			O240		(283)
3	13	46.5	Kamphaeng Phet	(713)																	(103)		
3	14	31.8	Pichit	(373)																	(116)		
3	16	38.3	Nakhon Sawan	(674)	O120													O101			(235)		
4	20	38.8	Udon Thani	(2984)														(176)					(334)
4	21	22.4	Sakon Nakhon	(745)																			(112)
4	22	21.3	Nakhon Phanom	(1770)																			(159)
5	23	40.6	Khon Kaen	(3307)	O149													O232		(178)	O159		(250)
6	27	38.7	Nakhon Ratchasima	(5094)	O259		O105											O236		O161	O254		O466
6	39	46.0	Lopburi	(144)																			
6	40	114.4	Saraburi	(211)														O244					(102)
8	42	49.5	Suphanburi	(400)	O125																(184)		(204)
8	43	113.7	Ayutthaya	(213)						(118)										O105	O126		(278)
8	44	63.2	Kanchanaburi	(329)																			
8	45	80.1	Nakhon Pathom	(243)	O282		O276			O134								O266	O180	O243	O100		O248
8	46	102.7	Nonthaburi	(108)	(108)					O187	O150									O198			O239
8	47	207.5	Pathum Thani	(108)	(108)					O181				O134			O150	O153		O250	O147	O127	O200
8	49	232.2	Samut Sakhon		O347		O404			(129)				O142			O383	O125	O294	O556	O112	O105	(190)
8	52	69.6	Ratchaburi	(232)	O177					O141								O224		O110	O152		O256
8	53	54.6	Peichaburi	(252)	O110																		(120)
8	54	66.7	Prachuap Khiri Khan		O137																		
9	48	234.1	Bangkok	(146)	O787		O918	O1767	O510	O676	O545	O444	O1518	O435			O1937	O272	O142	O4320	O1209	O688	O2403
9	50	198.8	Samut Prakan	(121)	O348		O703	O178	O316	O269	O142	O133		O401			O600	O159	O227	O1386	O480	O339	O505
9	56	53.6	Phrachin Buri	(325)																			
9	57	89.8	Chachoengsao	(336)	(108)																		(111)
9	58	243.5	Chonburi	(426)	O261					O165							O100	O190		O208	O143		O238
9	59	523.2	Rayong	(346)	O122					O170										O126			
10	63	50.8	Chumphon	(175)	O130																		(100)
10	65	58.5	Suratthani		O173					O174								(123)			(103)		(104)
10	68	227.7	Phuket																				(120)
10	71	42.2	Trang							O112													
11	69	44.4	Nakhon Si Thammarat	(255)	(116)					O170								O264					(162)
11	73	62.2	Songkhla		O180					O182										O141	(100)		(155)
11	76	31.4	Narathiwat	(381)																			(107)

(Attention) Numbers are the existing companies' numbers. Only for those companies' numbers are above 100 are listed here by the order of industrial sectors. Symbol Mark O means companies averaging more than 10 workers; Symbol Mark ( ) means less than 10 workers.  
 \*Other Manufacturing Industries\* is deleted at this table.

### 6.2.2 Problems Involved in Cluster Promotion in Thailand

As the cluster promotion projects now under way in Thailand, there are the UNIDO-led ceramic project in Lampang Province involving DIP/IPC 5, IFCT, FTI, SMEDB and producers' associations and the four industry cluster promotion projects (food, textile, automotive parts and motorcycles) implemented by DIP/BSID of the Ministry of Industry. The promotion of the motorcycle parts cluster is also known as an activity of SMEs 007 PLUS led by private enterprises.

About 200 SMEs participate in the ceramic project in Lampang Province. In the cluster promotion projects of DIP/BSID, the food cluster promotion project involves some 150 enterprises, the great majority of which are situated in the Bangkok area and the eastern and western parts of the country. The textile cluster promotion project is participated by 21 enterprises situated in Chaiyaphum Province in the northeastern part of the country. The cluster promotion projects for automotive parts and motorcycles involve about 50 SMEs and about 30 SMEs, respectively, mainly in the Bangkok area and eastern part of the country. It should be noted, however, that the figures are those available as of the end of May 2004.

These cluster promotion activities have the following problems in common, causing a sort of ambiguity in the implementation of cluster promotion in Thailand.

- (1) The definition and requirements of clusters are unclear. Sometimes disregarding for "accumulation in a region".

UNIDO selected the place of production of ceramics in Lampang Province as a model for its cluster development program since the place is a typical case in which many SMEs are concentrated. In the projects of DIP/BSID, the four industry clusters shown above were selected from among more than 20 candidate clusters on the basis of three criteria: 1) the cluster is among the country's priority industries (food, fashion, automobile, computer software, tourism), 2) the cluster has a large impact on the national economy and 3) the cluster contributes to the fostering of entrepreneurs.

In any of the above projects, it was not that clusters were defined before selection of suitable clusters. Besides, the requirements of clusters—the area and the degree of concentration of SMEs in the same industry—are left unclear.



Since the definition and requirements of clusters are unclear, different agencies in charge and different industries have a different view of clusters. In the present cluster movements such as the ceramics and textile industries, cluster promotion is based on "places of origin" which are not greater than the province scale, whereas in the food, automotive parts and motorcycle industries, the SMEs involved in cluster promotion are distributed not only in the Bangkok area and its environs but also in various parts of the country, forming nationwide clusters. In the latter case, the relationships between clusters and places of origin become weak, making it difficult to promote the clusters with the places of origin as the base.

- (2) The roles of BDS offered by the local government agencies and donor agencies are treated lightly and the importance of the local organizations for supplying BDS is not duly recognized.

The current promotion of SME clusters still focuses on grouping managers of the same industry. It lacks the standpoint of building a BDS network. This is probably due to insufficient recognition of the importance of promoting the regions and places of origin in cluster promotion. In addition, despite the fact that the roles of the local government agencies, etc. as BDS facilitators are indispensable for cluster promotion, there is still insufficient awareness of the need of support for improvement of the abilities of the BDS facilitators. This is probably due to inadequate recognition of the fact that all measures to promote SME clusters ultimately become measures to reinforce the BDS network.

- (3) The purposes of industry cluster promotion and the specific activity policy are unclear.

The ceramics cluster in Lampang and the motorcycle cluster over the country carry on specific activities with definite objectives, even though the scope of their activity remains within the managers of the same industry. At present, the other clusters are still at the stage of beginning to organize managers of the same industry. They have not yet established techniques to set objectives, formulate specific activity policies, etc. They should establish a method of formulating specific activity policies referring to our set of techniques employed in the processes of the present project, from the diagnosis of places of origin to the selection and execution of pilot projects.

## **6.3 Basic Framework for Industry Cluster Promotion in Thailand (Proposal)**

### **6.3.1 Definition of Industry Cluster and Application to SME Promotion**

If industry clusters are to be promoted on a nationwide scale as a national policy, it is necessary to make clear the definition and requirements of industry clusters. Namely, if the government is to provide various supports for cluster promotion, it should first clarify the scope of its support.

First of all, the basic concept needs to be clearly defined. Theoretically, the industrial cluster has a very broad meaning. For instance, while an industrial cluster may extend over several countries, other cluster may be confined to a village or a small community where production activities such as burning ceramic water jars or burning palm shells at backyards are carried out in an unorganized and traditional way. On the other hand, when the industrial cluster is talked about in the context of SME promotion or industrial policy, it must be defined in a narrower sense than the above. For the purpose of this report, the industrial cluster approach should be designed on the basis of the following principles.

- 1) The industrial cluster approach is designed to create industrial policy, which aims to raise prospective clusters to the internationally competitive levels, rather than social policy to support the weak.
- 2) The industrial cluster approach is not an endeavor to create a new industrial accumulation but promotes networking of existing industrial accumulation with a view to improving competitiveness of the industry as a whole.
- 3) The industrial cluster approach should give priority to industrial clusters that will produce large benefits compared to costs incurred by government. Thus the cost/benefit ratio should be considered as the selection criteria, for it represents effectiveness of industrial promotion.
- 4) The industrial cluster approach should be designed to promote the development of a specific industry in a specific area. Thus, an industrial cluster that has a nationwide coverage (making up a supply chain) should be promoted by the sectoral approach other than the industrial cluster approach. Similarly, concentration of diverse industries in an area should be dealt with by the regional development approach, rather than the industrial cluster approach.

It should be noted that the above principles define the position of the industrial cluster approach in industrial policy, not negating other approaches (social policy, sectoral, and regional development) for

which some programs already exist in Thailand. The industrial cluster approach that will be newly introduced to Thailand should be unique from traditional approaches and should not duplicate with other approaches in its program concept.

The JICA mission, in its interim report submitted in October 2004, proposed the definition of the industrial cluster in Thailand, followed by presentation to the steering committee. Thus, discussions have been made with related organizations in an attempt to reflect lessons learned from implementation of the pilot projects. The following proposals are made in due consideration of the results of discussions.

Table 6.3-1 shows a proposal on requirements of industry clusters which will be applied to a promotion program in government policies.

**Table 6.3-1 Requirements of Industry Clusters in Thailand (Proposal)**

An industrial concentration of local SMEs which form the core of the regional economy is called an industry cluster.

**a. Existence of a core industry**

One industry which belongs to an industrial classification shall be specified. Enterprise groups which resemble one another and enterprise groups which form supply chains may be regarded as one industry cluster.

**b. Accumulation of enterprises and space requirements**

There shall be 10 or more enterprises or groups in the "core industry" within a certain uninterrupted area. A certain uninterrupted area refers to an uninterrupted area whose habitable part is within 100 km<sup>2</sup> (10,000 ha) in area regardless of whether or not the area be in an administrative district. A habitable part refers to the total area minus the areas of forests, lakes and marshes, rivers and farmland.

**c. Scale of enterprise**

Industries that have growing potential shall be given priority to government supports in cluster activation. The average number of employees of the enterprises in the specified industry shall be 10 or more.

**d. Requirement for BDS**

There shall be some of the engineering department of a university, technical high school, research institute, technical center, chamber of commerce and industry, trade association, etc. within the area under consideration.

**e. Existence of promoters**

Three to five (or more) SMEs or groups forming the core industry shall be included in the promoters of the cluster activation.

(1) Existence of core industry

Industry cluster promotion is an SME promotion measure based on cluster approach. Since the cluster approach is applicable only when a specific industry is concentrated in a certain area, the industry type that forms the core of the cluster under consideration must be specified.

(2) Accumulation of enterprises and space requirements

The basic idea of industry cluster approach is to bring the effects of industrial concentration into full play and increase the competitiveness of the industry cluster. Therefore, the existence of a certain degree of industrial concentration is an essential prerequisite for any industry cluster activation programs. For example, a program which initiates an entirely new industrial concentration in a certain area is not a cluster approach: it belongs to the category of industrialization policy approach. In addition, a specific industry with the whole country or a very wide area as the "certain area" is not promoted by the cluster approach either. It is a sector promotion approach with some proposed priority industry and hence, the cluster approach can hardly be applied to industries scattered in wide area.

The definition of a cluster with special reference to the degree of concentration differs from country to country. In Indonesia, for example, it is provided that there shall be 15 or more enterprises in the same industry within an area having a radius of 5 km (78.5 km<sup>2</sup>). A law for the concentrated industry promotion of Japan stipulates that there shall be 50 or more enterprises in the same industry within an area of 700 km<sup>2</sup>. The population SMEs, however, seems too low and the area does too wide. It should also be noted that the actual degree of industry concentration in Japan is such that 500 to a maximum of 2,000 enterprises cluster together in a confined space of 35 km<sup>2</sup> to 90 km<sup>2</sup>. For Thailand, we made an attempt to statistically determine the degree of concentration of the same industry during the present study. It was, however, difficult to confirm the results due in part to the absence of necessary data about small enterprises. The number of enterprises concentrated shown in our proposal (a minimum of 10 core enterprises per 100 km<sup>2</sup>) is a mere hypothesis derived from empirical figures. On the other hand, it might safely be said that unless there are at least about 10 enterprises in the same industry in a certain area, the term "cluster" does not seem appropriate. In any case, it will be necessary to apply this particular requirement only as a reference at the time of initiation of the program and modify it as required according to the progress of the program. At present, there is only insufficient data about the industry concentration in Thailand.

In the cluster approach, the area classification by administrative division is ignored, and even an area stretching over two or more amphurs, tambons, provinces, etc. may be regarded as one cluster area.

#### Same trade groups

The target groups of the industry cluster approach shall be SMEs because the approach has been principally developed for SME promotion. In case of the Khon Kaen silk industry, however, there are 41 silk textile production groups for OTOP having 42 members per group as an average. It is supposed that this type of industry cluster shall be eligible for supports of the Government too. As there might be various types in such same trade groups in the country, eligibility of same trade groups shall be carefully examined one by one upon application to supports of the Government.

#### (3) Scale of enterprise

Clusters can be divided into the following three classes according to the stage of development.

- 1) Survival cluster: A cluster of so-called family businesses, ranging from very small enterprises called the backyard business or barn business to small enterprises.
- 2) Advanced cluster: A cluster in the process of growth. A leading enterprise appears in the cluster, promoting the development of the cluster.
- 3) Mature cluster: A full-grown cluster. In this cluster, the core enterprises and related enterprises or BDS (described later) form a network (otherwise called a linkage). Clusters of this class have international competitiveness.

Of the above three classes of clusters, 2) advanced cluster is most efficient in terms of the input of resources vs. the output (effect) in cluster promotion. 1) Survival cluster would take several decades to become really active. Some clusters of this class might remain inactive forever. This requirement of "enterprise scale" was set, as 10 or more average number of employees, with the aim of improving the effect of industry cluster promotion.

#### (4) Requirement for BDS

The presence of a base for BDS shall be set as one of the requirements for industry cluster promotion. As a matter of fact, in the pilot projects of the present project too, the importance of cooperative relationships between enterprises and BDS providers has been confirmed.

### (5) Existence of promoters

A review of the history of cluster development shows that a powerful leader appeared in any successful cluster. This leader may be the manager of an enterprise or the head of a local self-governing body and so on. Assuming that Thai Government introduces a supporting program for the cluster activation, a promoter(s) who apply to the program is required for initiation of cluster activation. In any case, in all the successful clusters, the small and medium enterprises ultimately have joined forces to push the cluster activity as their common task.

The pilot projects, too, show that in both Chon Buri and Surat Thani, the managers of more or less 8 SMEs have tackled the cluster activation movement corresponding to a call of the JICA mission and IPCs and have even organized a committee for clustering. In view of this, we added the presence of promoters as one of the requirements of an industry cluster. The JICA mission is here proposing a requirement that three to five (or more) managers of SMEs or groups shall be included in the promoters of the cluster. This requirement is less severe than actual figures in the pilot projects, because the coming nation-wide cluster activation program is to be designed on self-application method from clusters without assistance from outside like the JICA mission in pilot projects. In the Khon Kaen pilot project (silk textile), the cooperative associations (groups of weaving farm households) play a more active role than the enterprises.

### **6.3.2 Basic Policy on Nationwide Evolvement of “Cluster Promotion Program”**

Described below are the basic policy and the roles of the government, etc. in the “Program for Nationwide Evolvement of Cluster Promotion” (hereinafter referred to as the “Program”) proposed in this report.

#### (1) The cluster activation shall be promoted through private initiative.

The cluster activation shall be carried out on a private initiative by minimizing interventions of governments. Therefore in the cluster approach development, the governments shall not apply a top down method e.g. determining strategic business, priority sub-sectors or designating target regions. Nevertheless as for initial stage of the cluster approach, the governments shall assist clusters in guidance, enlightenment and technical and financial supports. Transition from the government initiative to the private initiative will be

divided into three phases in promotion of a cluster as follows. From experiences in the pilot projects, the transition period from Phase I to Phase II will require one year or less.

Phase I: Cluster activation by guidance of the government

Phase II: Collaboration between the government and the private sector

Phase III: Self-operation of the cluster by the private sector

(2) Cluster promotion shall be initiated by a voluntary application from the candidate clusters.

Industry cluster promotion is a community-based industry promotion measure. It is also a community activity of a group of core enterprises in the same industry. Therefore, cluster promotion must be based on the voluntary will to develop of a body consisting mainly of the local industry. In this context, the commendable procedure is this. Upon receiving a request for support from some local cluster of enterprises, BDS, etc., the government shall discuss providing various types of support. The written application shall be submitted to each IPC via the IPO and the provincial governor office. The application must contain the following items.

- 1) Description and supporting data about each of the requirements (items a through e in Table 6.3-1) of industry cluster.
- 2) Outline of the purpose and method of the industry cluster activity.
- 3) Content of the request for government support and approximate budget.

(3) The government shall examine the application on the basis of the requirements of industry cluster.

The government that has received the application via the IPC shall examine it to determine whether the applicant cluster meets the above requirements. If the cluster meets all the requirements, it shall be approved as an industry cluster qualified to obtain government support. The examination may be implemented by the government staff or entrusted to an outside consultant (qualified business consultant, etc.). Alternatively, it may be entrusted to each individual IPC. However, from the viewpoint of maintaining impartiality, examination by the central government is considered more rational.

(4) The government shall help formulate each individual industry cluster promotion plan (technical support).

As mentioned earlier, the current cluster promotion plans in Thailand have not gone beyond organizing bodies of managers in the same industries. Few of them have a specific scenario and definite activity

plans. Therefore, the government shall analyze the present conditions of the industry to which the qualified cluster belongs, grasp the problems involved, study the conditions of BDS, etc. and then, propose a master plan and an action plan for promoting the cluster. In addition, the government shall provide necessary advice as to the purposes and methods of the cluster activities described in the application. This constitutes the government's technical support for the cluster promotion.

During the present project, the JICA study team provided 19 Thai assistant business consultants with lectures for about 10 days and had them prepare diagnostic reports on three model clusters as part of the subsequent one-month OJT. The SME diagnosis project in Thailand has been carried on since 1999. To date, the project has produced 482 Thai Shindanshi (SME diagnosis consultant) as of August 2005. By employing Thai assistant business consultants with the above 19 persons as the core to diagnose many and varied clusters, it should be possible to implement the present program fairly smoothly. This will make it possible to establish cluster diagnostic techniques and implement local industry diagnosis projects on a routine basis in Thailand.

(5) The government shall provide financial backup for the program (financial support).

The government shall provide funds for activities to carry out the program. It should be noted, however, that the government's financial support, including subsidies, to SMEs that are the final beneficiaries of BDS is undesirable since it distorts market principles. Therefore, as a rule, the government's financial support should be limited to a part of the fund for management granted to the BDS providers. When the government grants subsidies to donor services, they shall be provided on a fixed-term basis.

Commercial banks, SMEDB, IFCT, SICGC and other financial institutions will, in line with their own policies, provide loans and credit guarantees to individual SMEs and cooperative projects that are the final beneficiaries. The BDS providers are, by nature, service industries and non-profit organizations, hence will not transact much with financial institutions.



## **6.4 Plans for Execution of “Program for Nationwide Evolvment of Industry Cluster Promotion”**

In accordance with the basic framework for the “Program” described in 6.3, we shall propose specific organizations and procedure for executing the Program below.

### **6.4.1 Forms of Organizations**

Two types of committees shall be installed: a Central Committee in Bangkok, and a Regional Committee in each province. Cluster activation shall be promoted by private initiative or a bottom-up approach instead of government initiative or top-down approach. Therefore, it should be noted that Regional Committees must not necessarily be installed in all the 76 provinces at the time of initiation of the Program: they may be installed at the time when industry clusters in the provinces apply for participation in the Program. A province may apply to assistance by the Program for two or more clusters and some provinces might not apply at all.

In Thailand, the prime minister office initiated National Committee on Competitive Advantage (NCC) by a command of 20 May 2002, in a frame of which cluster activation is now being elaborated. In the frame, the National Economic and Social Development Board (NESDB) was assigned for planning policy and work system, while Ministry of Industry (MOI) and Department of Industrial Promotion (DIP) were assigned for being the key organization to promote cluster activation in the country. Hence, the Central Committee and its working group shall be established along this frame.

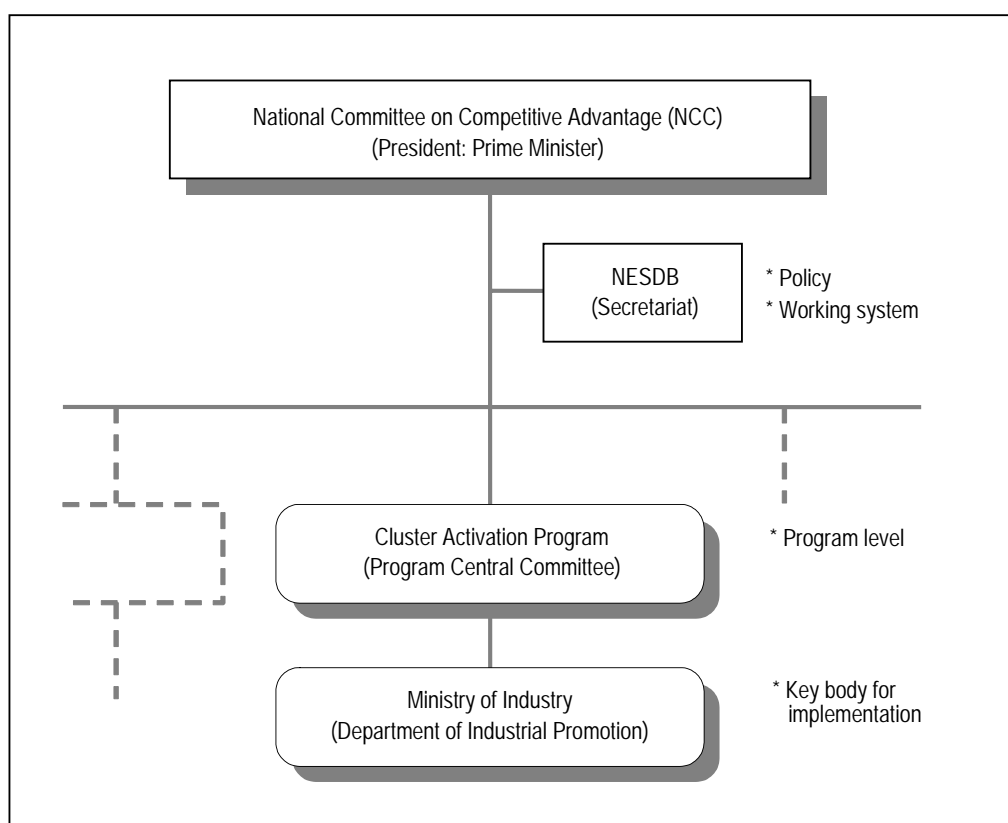
The organizational structure of OTOP can be referred to in formulating regional organizations for cluster activation and a coordination system between the central and regional organizations. At the end of this chapter as 6.5, the organization of OTOP and the organizational frame under NCC are explained for reference. The following proposals on a organization of cluster activation are examined on the basis of lessons from pilot projects and information about the OTOP and NCC.

### **6.4.2 Central Organization**

The central organization for cluster development will be established under the NCC (See Figure 6.4-1). Conceptually, one of several programs planned and implemented by the NCC is a cluster development program, and the NESDB, which serves as the secretariat for the NCC, will be responsible for policy

formulation and the planning of an overall working system. Individual cluster development programs will be managed by the Program Central Committee, which will be created for the purpose, and program implementation will be responsibility of DIP under the MOI.

As cluster development requires local organization, the central organization is established under the name of the Program Central Committee in order to distinguish it from a regional organization. The Program Central Committee should expand beyond the members defined in the Memorandum of Understanding dated June 10, 2004 (see 6.5) in order to activate a province-level local organization. It is therefore recommended to involve representatives of the MOIT, the MOL and other related ministries and agencies. This reflects a lesson learned from implementation of the pilot projects.



**Figure 6.4-1 NCC and Central Organization for Cluster Development**

The central organization shall be composed of a Central Committee for Cluster Activation Program or a Program Central Committee and a Secretariat.

(1) Roles of the Program Central Committee for Nationwide Cluster Promotion

- 1) Making policy and working system on the "Cluster Activation Program"
- 2) Making adjustments with the government organizations concerned
- 3) Selecting projects to be executed on the basis of "written applications"
- 4) Approving cluster diagnosis reports (master plan and action plan for cluster promotion)
- 5) Evaluating model projects (action plans) to be executed

(2) Roles of the Secretariat of the Program Central Committee

- 1) Handling general affairs relating to the Program and the Central Committee
- 2) Carrying out publicity/PR activities for the Program
- 3) Preparing the format of "written applications"
- 4) Maintaining communications and making adjustments with the District Committees
- 5) Publicizing results of the Program

(3) Committee Chairman, Competent Ministry and Secretariat (MOI/DIP)

The Ministry of Industry shall be primarily responsible for execution of the Program, Director General of the DIP shall serve as the chairman of the Program Central Committee and the Department of Industry Promotion (DIP) shall serve as the Secretariat.

(4) Members of the Program Central Committee for the Cluster Activation Program

Organizations marked by ○ below are assigned as action organizations for cluster activation and those marked by ◯ are supporting organizations in Minutes of Understanding exchanged NESDB and relating organizations on 1 June 2004 (See 6.5 A (2) at the end of this Chapter). Others marked by ● are additional organizations proposed by the JICA mission.

<Ministries/board>

○ National Economic and Social Development Board (NESDB)

NESDB involves itself in planning of policies and working system for industry cluster promotion program.

○ Department of Industrial Promotion (DIP) under MOI

DIP is the key organization of the cluster promotion program being assigned to the secretariat of the program.

● Ministry of Commerce (MOC)

MOC develops markets for industrial products of industry clusters and helps promote exports of those products.

Department of Business Development (DBD)

Department of Export Promotion (DEP)

● Ministry of Interior (MOIT)

MOIT supports in organization of industry clusters at provincial level and promotes communications with local community people through provincial governor's offices and their local agencies.

Provincial Administration Bureau

Provincial Municipality Promotion Bureau

● Ministry of Labor and Social Welfare (MLSW)

MOL supports human resources development, training, etc. for industry cluster promotion, especially Skill Development Bureau (SDB).

● Ministry of Agriculture and Cooperatives (MOAC)

MOAC helps reinforce raw materials supply, etc. for industry clusters which use agricultural products as raw materials.

△ Ministry of Science, Technology and Environment (MOSTE)

MOST supports the Program in aspects of R&D and innovation.

△ Ministry of Education (MOE)

MOE supports clusters in view of production and manpower development

△ Budget Office

The Budget Office coordinates existing budgeting programs and the cluster activation program and executes budget allocation to the program.

○ National Science and Technology Development Agency (NSTDA)

NSTDA works for the program in enterprise diagnosis and guidance of technologies.

<Related organizations and bodies>

● SME Development Bank (SMEDB)

○ Thai Military Bank (TMB Bank)

- Small Industrial Credit Guarantee Corporation (SICGC)
- Office of SMEs Promotion (OSMEP)
- Institute for Small and Medium Enterprises (ISMED)
- The Federation of Thai Industry (FTI)
- Thai Chamber of Commerce (TCC)
- Association of Thai SMEs (ATSME)
- Technical Promotion Association (Thailand-Japan) (TPA)
- Kenan Institute of Asia
- Relevant institutes under the control of the Ministry of Industry shall be made to participate as required by specific types of industry.

### 6.4.3 Local Organizations

Each local organization involved in the Program for the Industrial Cluster Promotion shall be based on the Regional Committees organized at provincial level. In view of theory of the cluster approach, administrative territory such like provinces, districts, municipalities does not make sense in clustering because the territory of a cluster must be determined by a concentrated area of a core industry. On the other hand, however, it has been recognized through execution of pilot projects that a province or a governor office is the most appropriate entity for regional networking for clustering. Therefore, the JICA mission recommends, in practical way of thinking, that Regional Committee be organized at the province level.

Memberships of the Regional Committee tend to vary by type of the core industry of the cluster and environmental situation of the province and cluster itself. Among others, the most important factor for success is capability and enthusiasm of the top management person instead of names of organizations nominated to the Committee. Since the following just indicate a framework of the Regional Committee, each province may flexibly arrange it.

#### (1) Roles of the Regional Committee

- 1) Carrying out publicity activity to encourage participation in the Program and discovering industry clusters

- 2) Promoting the grouping of enterprises and implementing the primary examinations of applications for participation in the Program
- 3) Approving master plans and action plans for industry cluster development
- 4) Examining model project implementation plans submitted to the Regional Committee
- 5) Reinforcing/expanding the organization of the Regional Committee itself and building a BDS network

(2) Roles of the Regional Committee Secretariat

- 1) Handling general affairs relating to the Program and the Regional Committee
- 2) Organizing the Regional Committee and holding committee meetings
- 3) Accepting/notifying acceptance of "written applications" of project undertaking bodies and providing them with guidance/advice in preparation of written applications
- 4) Handling general affairs relating to cluster diagnosis
- 5) Maintaining communications and making adjustments with the Central Committee for the Program (includes affairs relating to grants-in-aid)
- 6) Monitoring the progress of model projects and evaluating the results of those projects.

(3) Relationship between Regional Committee chairman and Regional Committee Secretariat

It is to be desired that the chairman of the Regional Committee should be the governor of the appropriate province. Generally speaking, the organization from which the Regional Committee chairman is nominated serves as the Secretariat. However, since in this report the Program is assumed to be chaired by Director General of DIP of the Ministry of Industry, in the Central Committee it is proposed that each IPC should serve as secretariat of the appropriate Regional Committee. As already mentioned, Regional Committees must not necessarily be installed in all the 76 provinces at one time. Namely, they may be installed as specific activity is decided and an application is submitted. It is one of bottom-up methods on basis of real market demand. As a matter of fact, the experience in execution of the present pilot projects showed that the individual provincial offices were different in the degree of interest in cluster promotion according to local characteristics, characteristics of the selected industry, provincial industry promotion policy, etc.

(4) Members of the Provincial Committee

<Government organs>

Provincial Governor’s Office (PGO) ... Chairman (provincial governor)

Provincial Industry Office (PIO)

Regional Office of Board of Investment (BOI)

Provincial Commercial Office (PCO)

Regional Export Promotion Center of Ministry of Commerce/Department of Export Promotion  
(MOC/DEP)

Regional Institute for Skill Development (RISD) of Ministry of Labor and Welfare (MLSW)

Provincial Agricultural Office (PAO)

Industrial Promotion Center (IPC) of Ministry of Industry ... Secretariat

<Related organs/bodies>

Branch offices of government-managed financial institutions (SMEDB, IFCT, SICGC)

Universities, institutes of technology, research laboratories

FTI branches

TCC branches

ATSME branches

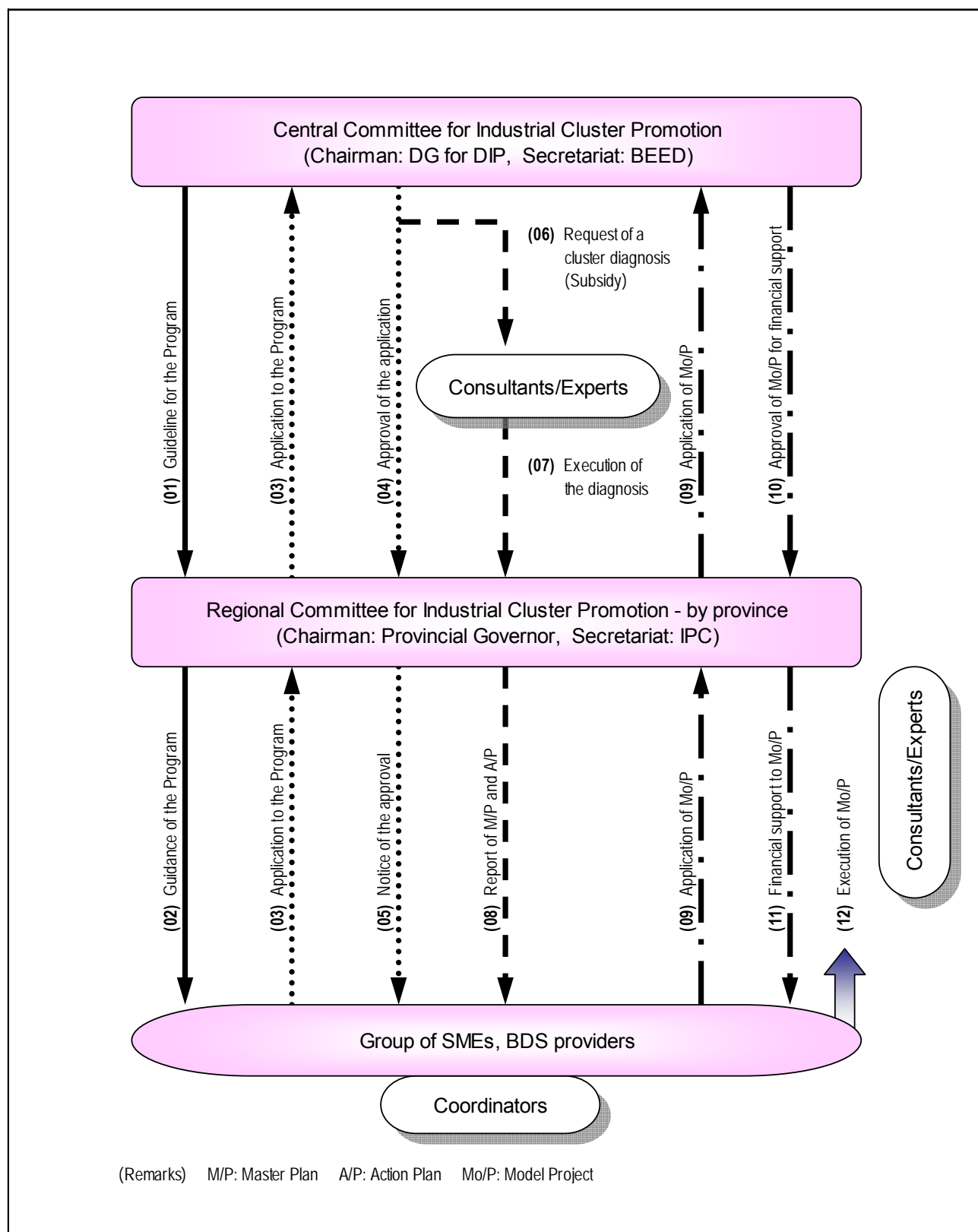
Branches of various industrial institutes, research laboratories situated in the appropriate region, etc.

#### **6.4.4 Method and Procedure for Executing Industry Cluster Promotion Program**

Here we shall propose the method and procedure for executing the Program as illustrated in Figure 6.4-2.

The work flow shown begins with the application for participation in the Program submitted by a group of companies—the actors of an industry cluster—or a BDS provider. Next, the cluster is diagnosed by an outside consultant. Based on the results of the diagnosis, a master plan and an action plan for promotion of the cluster are formulated. Then, a model project (this corresponds to a pilot project in this report) is selected. When the applicant carries out the model project, the entire process is completed. For diagnosis of the cluster and execution of the model project, technical and financial backup of the government is available.

We shall explain the procedure in the sequence of work numbers given in Figure 6.4-2. This procedure, which is based on the procedure used in the present study, incorporates the roles of the central and local organizations proposed in the preceding section.



**Figure 6.4-2 Industry Cluster Promotion Procedure**



- (01) The Central Committee shall set requirements of projects which can be subjects of the Industry Cluster Promotion Program, show application formats, procedures and other necessary matters in the form of guidelines and notify them to each Regional Committee.
- (02) In accordance with the guidelines, each Regional Committee shall stage publicity activity through seminars, etc. In addition, it shall provide guidance in preparing written applications. Every written application shall contain the following items.

- 
- 1) Name of the cluster undertaking the project, address and telephone number of the representative of the cluster, etc.
  - 2) Name, address, telephone number, etc. of the core enterprise of the cluster
  - 3) Names, addresses, telephone numbers, etc. of the member enterprises of the cluster
  - 4) Present conditions of the cluster
    - a. Location and area
    - b. Degree of concentration of enterprises
    - c. Characteristics
  - 5) Outline of businesses of organizations in which the cluster is involved (business enterprise, BDS provider)
    - a. Type and form of business
    - b. Main products and production scale (on quantity and amount basis)
    - c. Production facilities
    - d. Method of procurement of raw materials
    - e. Markets/outlets
    - f. Labor force
  - 6) Purpose of participating in the Program
  - 7) Vision (draft) and model project (plan) for cluster promotion
- 

- (03) The cluster undertaking the project (SME group, business association, BDS provider, combination of them, etc.) shall prepare a "written application" and submit it to the Central Committee via the Secretariat of the appropriate Regional Committee.
- (04) The Central Committee shall review the written application in accordance with criteria established separately and approve it as long as the contents thereof meet the requirements for participation in the Program.

- (05) The Central Committee's approval for the planned project is notified to the cluster undertaking the project via the Secretariat of the appropriate Regional Committee.
- (06) At the same time that the Central Committee approves the written application, it shall ask an outside consultant to diagnose the cluster. The cost of the cluster diagnosis shall be covered by a subsidy from the cluster promotion fund of the government.
- (07) With the help of the Regional Committee and its Secretariat, the consultant shall diagnose the cluster while maintaining a close cooperative relationship with the cluster undertaking the project. The diagnosis shall be carried out in four weeks by a team consisting of two Thai business consultants and one expert in the appropriate industry.
- (08) The consultant shall submit a diagnosis report to the Central Committee, the Regional Committee and the cluster undertaking the project. The Central Committee shall review the contents of the diagnosis report and then accept the report officially. This report includes a master plan and an action plan for promotion of the cluster.
- (09) The cluster undertaking the project shall select a model project from among the projects embraced in the action plan and prepare a plan for execution of the model project and a budget account. Then, the cluster shall present the content of the model project to the Regional Committee and obtain approval for it.
- (10) The model project plan approved by the Regional Committee shall be submitted to the Central Committee to obtain its approval for budget appropriation, etc.
- (11) For the approved model project, a subsidy not exceeding 2 million baht from a special budget shall be granted to the cluster via the Regional Committee Secretariat.
- (12) The cluster undertaking the project shall carry out the model project.

[Remarks]

- i. The Program proposed above is based on the premise that any cluster undertaking some cluster promotion project (model project, etc.) needs support of the government, etc. If the cluster does not require government support, etc., it may carry out cluster promotion for itself without participating in the program.
- ii. The cluster undertaking the project shall be allowed to apply for the model project support even without receiving the cluster diagnosis. It should be noted, however, that in this case the cluster is required to submit a more detailed plan for execution of the model project. The cluster shall also be allowed not to execute the model project after receiving the cluster diagnosis.

- iii. The same industry cluster shall be allowed to receive model project support any number of times as long as it completes the current model project.

#### **6.4.5 Program Execution Period and Schedule**

##### **(1) Execution period**

The period of execution of the Program shall be three years. The Study Team estimated that there were now some 120 large and small clusters in Thailand. In the Program, cluster diagnosis is implemented as applied for by any cluster and a master plan and an action plan are formulated for the cluster on the basis of the diagnosis results. Then, in accordance with the action plan, a group of SMEs, associations, BDS providers, etc. independently or jointly act as the cluster to plan and execute the model project selected from among the projects embraced in the action plan.

Since the Program is based on requests from clusters which positively undertake cluster promotion, such as groups of SMEs, associations, etc., clusters which are not very eager to develop for themselves shall be excluded from the Program. Suppose, for example, that some 100 of the existing clusters apply for participation in the Program in three years. Then, 33 cluster promotion projects would be approved annually. This translates into three cluster promotion projects per IPC each year on average (33 divided by the number of IPCs, or 11).

##### **(2) Execution schedule (on fiscal year basis, from October to September of next year)**

October - December:	Holding of program presentation meetings and workshops in each province (Central Committee and Regional Committee).
October - January:	Preparation of written applications (clusters undertaking cluster promotion); acceptance of written applications (Regional Committee).
February:	Review of written applications (Central Committee); selection of projects to be executed (Central Committee); selection of consultants.
March:	Notification of selection results to clusters having submitted applications (Regional Committee); preparations for cluster diagnosis (Regional Committee).
April:	Implementation of cluster diagnosis (consultants).
May:	Preparation of diagnosis reports (consultants).

#### 6.4 Plans for Execution of "Program for Nationwide Evolvment of Industry Cluster Promotion"

June:	Review and approval for diagnosis reports (master and action plans) (Regional Committee); planning and application for model projects (clusters undertaking cluster promotion).
July:	Approval for model projects (Central Committee).
July - September:	Start of model projects (clusters undertaking cluster promotion); model projects (Regional Committee).

The Central and Regional Committees shall hold a regular meeting every month to report/confirm the status of progress of the Program, summarize/evaluate the results, coordinate support operations, and so on.

##### **6.4.6 Budget for Execution of the Program**

Most of the existing industry clusters in the world were spontaneously formed to increase their competitiveness. It is, therefore, desirable that the promotion of any industry cluster should be carried out by self-supporting efforts of the persons forming the cluster. However, were it not for the initiative of the Thai government and JICA Study Team, none of the three model clusters discussed in the present study would have started any development activity. In order to increase the speed and efficiency of cluster promotion and produce tangible results of SME promotion, it is considered necessary to provide technical and financial backup to clusters throughout the country. Any industry cluster that has received cluster diagnosis and carried out a model project once should be able to build a powerful cluster network by its self-supporting efforts.

Concerning the financial backup for model projects, whether it should be covered by government subsidies or by loans from a fund (e.g., the OTOP fund) will be a controversial issue. Unlike OTOP, the Cluster Promotion Program will not enable the clusters to immediately increase revenues even when they carry out model projects. Rather, the Program will be such that it increases the effect of accumulation over a certain period of time. From this standpoint, the JICA mission hereby estimated budget assuming that the Thai government provides subsidies for the Program.

(1) Type of budget

As in the case of OTOP, ITB, NEC, CEO, etc., the Program shall be based on specific agenda, and a special budget covering three years shall be prepared.

The budget shall be decided on a year-by-year basis. Namely, based on the actual amounts spent in the first year, the budget for the second year shall be distributed to the Central Committee and Regional Committees. The same shall apply to the third year.

(2) Estimation of budget scale

The major budget items shall be divided into the following four classes.

- 1) Expenditure on program presentations and workshops
- 2) Cost of cluster diagnoses
- 3) Subsidies for model projects to be executed
- 4) Other expenses

1) Expenditure on program presentations and workshops

Program presentations and workshops shall be implemented in the 76 provinces.

The presentation meeting shall be held once in each province, except for Bangkok Province, in which the meeting shall be held once in each of four areas into which the Province is divided.

The meeting shall be held as a one-day seminar, with the explanation and Qs & As about the Program in the morning session and a workshop for the preparation of a written application in the afternoon session.

The number of participants per meeting is assumed to be 50 (member organs/bodies of Regional Committee: 10, SMEs, associations, etc.: 30, BDS providers: 10).

The expense per participant is estimated to be 200 baht.

The total annual expense is estimated to be 200 (baht) x 50 (persons) x 79 (places) = 790,000 baht.

The total expense for the three years comes to 2,370,000 baht.

2) Cost of cluster diagnoses

The number of times a cluster diagnosis is implemented in a year is assumed to be 33.

For each cluster diagnosis, a total of three persons—two Cluster Shindanshi and one expert in the appropriate industry—shall be employed.

The period of cluster diagnosis shall be 4 weeks (20 working days).

The compensation for each Cluster Shindanshi and each industry expert shall be 4,000 baht/day.

The total annual cost is estimated to be 4,000 (baht) x 3 (persons) x 20 (days) x 33 (clusters) = 7,920,000 baht. The total cost for the three years comes to 23,760,000 baht.

3) Subsidies for model projects to be executed

For each cluster undertaking the project, 50% of the fund required to execute the model project shall be subsidized; provided, however, that the amount of subsidy shall not exceed 2,000,000 baht.

Grounds: According to a hearing survey, the annual budgets for activities of the existing clusters in Thailand range from 3,000,000 to 5,000,000 baht (4,000,000 baht on average). One-half of the average shall be subsidized and the remaining half shall be covered by the cluster's own fund or loans from the special financing system for cluster promotion (newly established) of government-managed financial institutions.

The total annual amount of subsidies is estimated to be 2,000,000 (baht) x 33 (clusters) = 66,000,000 baht. The total amount for the three years comes to 198,000,000 baht.

4) Other expenses

a. Cost items added to the "expenditure on program presentations and workshop"

- Cost of preparing and sending letters of invitation to participants
- Cost of follow-up for applications (communications)
- Business trip expenses of government staff
- Fees for use of meeting rooms (when meetings are held in Bangkok Province), etc.

b. Cost item added to the "cost of cluster diagnoses"

- Traveling expenses, hotel expenses, etc. of business consultants and industry experts

c. Cost item added to the "subsidies for model projects to be executed"

- Remittance charges

d. Other expenses

- Expenditure on monthly meetings of the Central and Regional Committees
- Correspondence expenses
- Documentation expenses
- Traveling expenses, etc.

#### 6.4 Plans for Execution of “Program for Nationwide Evolvment of Industry Cluster Promotion”

As “other expenses,” 15% of the total amount of the above cost items 1), 2) and 3) shall be reserved.

##### 5) Scale of total budget

**Table 6.4-1 Indicative Budget Estimate**

Cost item	One-year total (in thousands of baht)	Three-year total (in thousands of baht)
1) Expenditure on program presentations and workshops	790	2,370
2) Cost of cluster diagnoses	7,920	23,760
3) Subsidies for model projects to be executed	66,000	198,000
4) Other expenses	11,200	33,600
Total	85,910	257,730

## 6.5 Use of Consultants for Cluster Development

In 6.4.4, standard steps for industrial cluster development are proposed, which include activities that require participation of consultants and related professionals. This section clarifies the functions of consultants required for industrial cluster development and proposes the methods for using and training industrial cluster consultants in order to deploy the cluster development program nationwide.

### 6.5.1 Preface

In Thailand, the training of management consultants has a relatively short history of 5-6 years and the area of specialization is skewed to corporate diagnosis for SMEs. Furthermore, there are two different systems competing in the same field of SME diagnosis, namely SME Shindan and APEC. As there is a difference in level of training between the two systems, i.e., APEC is easier to complete than the Shindan system in terms of training period, it is important to ensure quality of SME consultants in the future. As for availability of SME consultants at present, 482 persons have completed the SME Shindan-shi course (9 months) and 452 consultants or advisors under ISMED's business plan development consultant training program (40 days). The number of persons who have completed the APEC program is not known.

This CSCD project used Thai SME shindan-shi (SME consultants) who were trained under the Shindan project for industrial cluster diagnosis. By combination of an 8-day lecture course and a one-month OJT program, they were engaged in formulation of a master plan for cluster development and an action plan. A total of 19 Thai SME shindan-shi were assigned to activities in three model clusters. As a result, it was found that, while the Thai shindan-shi who had experience in corporate diagnosis had potential capability to handle the cluster diagnosis service, they would need more training to perform diagnosis on industrial areas and specialized producing centers.

### 6.5.2 Functional Requirements for Cluster Development-Related Consultants

Based on a number of lessons learned through the implementation of the CSCD project, "Method and Procedure for Executing Industry Cluster Promotion Program" is proposed in 6.4.4. While it is desirable that industrial cluster development is implemented voluntarily under private initiative, support by the government is required for a certain period of time bearing whole or part of the consultation cost. Activities and functions that require professional support can be arranged in a chronological order for the



following 13 activities. An approximate duration is indicated in parenthesis, which actually varies between clusters. Generally, support will require 15-16 months for each cluster.

- (1) Application for the industrial cluster development and promotion program (one month)
  - a. Preparation of an application form
- (2) Preparation of a master plan (M/P) and an action plan (A/P) for each cluster (1-2 months)
  - b. Analysis of the core industry in the respective cluster
  - c. The moderator for the participatory PCM workshop
  - d. Collection of industrial information and statistical and SWOT analysis
  - e. Formulation of M/P and A/P
  - f. Selection of a model project and formulation of an implementation plan (PDM)
  - g. Report preparation and presentation at seminars
  - h. Application for an operational budget for a model project
- (3) Implementation of a model project
  - i. Team building
  - j. Support in each professional field (technology, design, marketing, etc.)
  - k. Reinforcement of the cluster organization and the BDS network
- (4) Monitoring evaluation (1 month)
  - l. Evaluation on DAC five items
  - m. Preparation of and presentation on the evaluation report

### 6.5.3 Three Types of Consultants for the Cluster Development

The above 13 functions are classified into the following three categories according to the type of service and expertise required to perform each function.

#### (1) Coordinator

The coordinator is expected to stay in the cluster development area and provide various coordinating functions and establish a network linking different players in the cluster development process, from the

organization of the industrial cluster to the monitoring and evaluation stage. He should preferably be a founder of the industrial cluster and a local resident, while being familiar with the core industry for which the cluster is to be developed. The CSCD project hired coordinators for Khon Kaen and Chon Buri. Specific functions to be performed by the coordinator are listed as follows.

- a. Preparation of an application form
- g. Report preparation and presentation at the seminar
- i. Team building
- k. Reinforcement of the cluster organization and the BDS network

## (2) Cluster Shindan-shi (Cluster diagnosis consultant)

The Cluster Shindan-shi is primarily responsible for formulation of a development plan including a master plan and an action plan for a particular cluster with which he is working. Under the CSCD project, 19 Thai SME Shindan-shi have received training for cluster diagnosis (lecture and OJT), but they have still weakness in serving as the Cluster Shindan-shi on their own because they need to improve skills in some areas.

In particular, some types of consultants that are active in the country including SME Shindan-shi should be trained to provide the cluster diagnosis service. The Cluster Shindan-shi is expected to perform a very broad range of functions listed below.

- c. The moderator for the participatory PCM workshop
- d. Collection of industrial information and statistical and SWOT analysis
- e. Formulation of M/P and A/P
- f. Selection of a model project and formulation of an implementation plan (PDM)
- g. Report preparation and presentation at seminars
- l. Evaluation on DAC five items
- m. Preparation of and presentation on the evaluation report

## (3) Expert in specific area

Experts are hired on an as-needed basis. In the stage of development of M/P and A/P, for example, experts in the field of the core industry are hired for analyzing the tendency of the industry including market and promotion technology. Also, experts on different fields are required for implementation of a

model project, including production technology, business management, marketing, and design. They can be found and hired from databases registering consultants and other specialists or through trade associations. Experts are expected to provide the following services.

- b. Analysis of the core industry in the respective cluster
- j. Support in each professional field (technology, design, marketing, etc.)

### **(Reference) CDA defined by UNIDO**

The Cluster Development Agent (CDA) defined by UNIDO for the cluster development is expected to perform all the following functions. In practice, more than two CDAs will work for a single cluster and perform their tasks on a shared basis. In this report, the CDA is viewed as three categories of professionals who perform distinctively different functions, namely Cluster Shindan-shi, Coordinator, and Expert.

#### **A. Who is a Cluster Development Agent (CDA)**

A CDA is a person who conceptualizes the overall developmental strategy for a cluster and initiates implementation. He is also the liaison between the various cluster players and the target cluster.

#### **B. What are the specific activities to be performed by a Cluster Development Agent?**

##### **1. Diagnostic Study**

The trained Cluster Development Agent (CDA) will undertake a comprehensive diagnostic study of the proposed cluster and prepare an exhaustive report detailing the following areas extensively:

- a. National scenario of the identified sector
- b. History of the sector in the State and the significance as a geographical concentration for the industry.
- c. Analysis of the current business operations in the locality.
- d. Assessment of the cluster potential.
- e. Organizational requirements.
- f. Recommendations and strategy for the future.
- g. Organization /structures required for carrying out the implementation program.
- h. Requirements in terms of interventions in technology, finance, training, marketing, etc.

The diagnostic study will, thus, outline the interventions required by Industries Department for the Cluster Development program.

##### **2. Identifying cluster players.**

These may include units/enterprises providing the backward & forward linkages, dealers and exporters etc. besides technical and financial institutions, associations, welfare bodies, governmental organizations, statutory agencies etc. The trained Cluster Development Agent (CDA) will be responsible for identifying all the cluster players and graphing their linkages. The dynamics among the cluster players shall also be comprehensively mapped.

**3. Trust Building & awareness programs**

The trained Cluster Development Agent (CDA) will be the prime mover in the trust building process. The process of trust building starts with the diagnostic study and the Cluster Development Agent (CDA) will arrange sufficient number of interactions within the cluster members and with other cluster players. Awareness programs, training sessions and visits to existing clusters within the State will also be arranged by the Cluster Development Agent (CDA) to aid the process of trust building.

**4. Identification of the major problems**

The Cluster Development Agent (CDA) will list all the problems faced by the cluster as part of the diagnostic study and identify the major ones that are an impediment to the successful development of the cluster. These may be in the form of inadequate infrastructure, poor market linkages, lack of working capital, technology etc. Another part of this exercise would be a detailed market analysis of the proposed cluster aimed at estimating the market potential and viability of the cluster initiative. The impact of each of these major problems on the functioning of the cluster, along with recommendations for remedying the situation and the interventions required shall be analyzed in detail and reported.

**5. Formulating a “Vision”**

The Cluster Development Agent (CDA) will formulate a “Vision” for the cluster, in association with the Cluster members, that articulates the long-term objectives of the cluster.

**6. Preparing an implementation strategy**

The Cluster Development Agent (CDA) will detail an implementation strategy aimed at creating and guiding the various enterprise networks and service providers of the cluster towards a growth path with the involvement of relevant support institutions. The Major Activities that are required during the period of intervention shall be identified and elaborated.

**7. Establishment of the cluster**

This will mark the culmination of the Study phase and will be characterized by increased levels of interventions by the cluster players themselves. Setting up of common sourcing of raw material supplies, common facilities service centers, mutual credit guarantee, common brand creation, common testing facilities, increased interaction among the cluster players and utilization of better technologies are some of the components envisaged under this phase.

This Cluster Development Agent (CDA) will be responsible for creation of a Common Corporate Entity leading to the formation of a Consortium to undertake the above-mentioned activities. The Cluster Development Agent (CDA) will also identify the crucial interventions needed in these areas and prepare a comprehensive project report for approaching funding agencies, both national and international, in this regard.

**6.5.4 Cluster Shindan-shi Training Program****(1) Number of Cluster Shindan-shi to be trained**

The project assumes that 33 clusters will be diagnosed in a year dividing into two phases. The entire diagnosis process for a cluster takes three months, consisting of one month for preparation, one month for

implementation of field work and one month for report making. Within the one-year activity span (budget period), it is assumed that the first six-months diagnose a half of 33 applications and the latter six months do the rest. In other words, a Cluster Shindan-shi is changed in two cluster diagnosis per year. Thus, the number of Cluster Shindan-shi required for the nation-wide cluster promotion program is estimated as follows:

$$33 \text{ clusters} / 2 \text{ phases} = 17 \text{ clusters}$$

$$17 \text{ clusters} \times 3 \text{ shindan-shi} = 51$$

The JICA mission trained 19 SME Shindan-shi for Cluster Shindan-shi as part of the CSCD project. They are capable of performing field survey (data collection, etc.) but most of them have not yet reached the advanced skill level required for formulating a master plan and an action plan. It is therefore proposed to provide additional training for the 19 consultants and new Cluster Shindan-shi training for around 40 with some allowance to SME Shindan-shi and others.

## (2) Training curriculum

As the CSCD project was limited in period of implementation, a lecture course was conducted for eight days only and an OJT course was held in each cluster for one month. As a result, the lecture course was not enough in terms of period of time, in particular failing to transfer the skill required for the moderator in the participatory PCM for development of the master plan. Under this project, it is therefore proposed to extend the lecture course to approximately one calendar month (20 working days), as shown in Table 6.5-1. In addition, the OJT course will be extended to 1.5 calendar months (30 working days), as shown in Table 6.5-2. Note that the master plan and the action plan to be made in the OJT course can be used for the respective cluster as it is.

The Cluster Shindan-shi will serve as the moderator for PCM and perform PCM monitoring and evaluation, in addition to the cluster diagnosis. The JICA mission believes that this will help the Cluster Shindan-shi to elaborate the content of the cluster development plans (M/P and A/P). For this reason, it is proposed to incorporate PCM moderator training courses (beginner and advanced levels) into the Cluster Shindan-shi training program.

**Table 6.5-1 Cluster Shindan-shi Training Curriculum (Lecture Course) Curriculum**

Day	Curriculum	
	Morning	Afternoon
1st day	1. Orientation - Opening address - General outline of the training curriculum - General briefing on implementation of cluster shindan	2. General outline of the cluster shindan technique (used by the JICA study team during the CSCD project) - General flow of the cluster shindan process - Required coverage and items (current state of industry and region, etc.)
2nd day	3. SME promotion by the cluster development technique - Definition, concept, similar approach and technique, etc. - BDS organization, theory and practice	4. Origin of industrial cluster, historical background, and its reinvigoration - Reasons for SMEs forming the cluster - Reinvigoration of the cluster
3rd day	5. Industrial cluster shindan technique (1) - Important elements of cluster shindan	6. Industrial cluster shindan technique (2) - Cluster shindan system and process
4th day	7. Industrial cluster shindan technique (3) - Items to be analyzed and analytical approach and view	8. Industrial cluster shindan technique (4) - Shindan study for cluster development - Cooperation with private companies and organizations in the cluster area
5th day	9. Activities under the CSCD project (for reference) - General flow in the CSCD project (selection, cluster shindan, pilot project activity, evaluation)	10. Other cluster activities in and outside Thailand - Cluster activities in Thailand (around 3 cases) - Cluster activities outside Thailand (around 3 cases)
6th day	11. PCM planing course (1) (issue analysis)	12. PCM planing course (2)
7th day	13. PCM planing course (3)	14. PCM planing course (4)
8th day	15. PCM planing course (5)	16. PCM planing course (6)
9th day	17. PCM planing course (7)	18. PCM planing course (8)
10th day	19. PCM local application course (1)	20. PCM local application course (2)
11th day	21. PCM local application course (3)	22. PCM local application course (4)
12th day	23. PCM local application course (5)	24. PCM local application course (6)
13th day	25. PCM monitoring/evaluation course (1)	26. PCM monitoring/evaluation course (2)
14th day	27. PCM monitoring/evaluation course (3)	28. PCM monitoring/evaluation course (4)
15th day	29. PCM monitoring/evaluation course (5)	30. PCM monitoring/evaluation course (6)
16th day	31. PCM monitoring/evaluation course (7)	32. PCM monitoring/evaluation course (8)
17th day	33. Method for preparation of the regional development plan document (M/P, A/P) (cluster shindan report) (1) - Content of the cluster shindan report	34. Method for preparation of the regional development plan document (M/P, A/P) (cluster shindan report) (2) - Study schedule for preparation of the cluster shindan report
18th day	35. Preparation for team-based local cluster shindan (1) - Organization of a team for each cluster area - Group discussion by each team	36. Preparation for team-based local cluster shindan (2) - Preliminary study on the current state of the area/industry for shindan - Research and study on literature and Web information on the area and industry
19th day	37. Preparation for team-based local cluster shindan (3) - Preparation of questionnaires for individual companies - Preparation of questionnaires for BDS, organizations and universities - Preparation of questionnaires for government organizations - Key points in field survey	38. Preparation for team-based local cluster shindan (4) - Definition of responsibility and work of each member in field work - Establishment of a local activity schedule - Selection of organizations to be visited with appointments
20th day	39. Orientation (DIP) for cluster shindan training (OJT) - List of related organizations and support organizations - Collaborative companies in the model cluster, and working group - Government's support staff - Logistics and accommodation	40. Preparation for cluster shindan training (OJT) by each group - Group discussion by each team - Final adjustment for each preparation work

(Note) "1st day – 30th day" mean working days exclusive of holidays.

**Table 6.5-1 Cluster Shindan Training Schedule (OJT in the local cluster)**

	Activities	Details
1st day 2nd day 3rd day 4th day 5th day	Current status study/initial workshop	<ul style="list-style-type: none"> <li>● Meeting with local organizations (IPC), preparation for office</li> <li>● Field tour on the current state of the target cluster</li> <li>● Collection of local economy and industry-related data</li> <li>● Finalization of the questionnaire, preparation for the initial workshop</li> <li>● <u>Initial workshop</u></li> </ul>
6th day 7th day 8th day 9th day 10th day	Interview survey	<ul style="list-style-type: none"> <li>● Interview survey (1)</li> <li>● Interview survey (2)</li> <li>● Interview survey (3)</li> <li>● Interview survey (4)</li> <li>● Interview survey (5)</li> </ul>
11th day 12th day 13th day 14th day 15th day	PCM workshop (issue analysis, vision, mission, project) Moderator training and preparation for the workshop	<ul style="list-style-type: none"> <li>● PCM workshop (issue analysis)</li> <li>● <u>PCM workshop (issue analysis)</u></li> <li>● <u>PCM workshop (M/P, PDM, vision, mission)</u></li> <li>● Examination of projects and programs</li> <li>● Development of projects and programs in detail</li> </ul>
16th day 17th day 18th day 19th day 20th day	Selection of model projects, Preparation of PDM	<ul style="list-style-type: none"> <li>● SWOT analysis</li> <li>● Formulation of the action plan and preparation for the workshop</li> <li>● <u>The workshop to select model projects</u></li> <li>● Preparation of PDM for selected model projects, supplemental interview survey (1)</li> <li>● Supplemental interview survey (2)</li> </ul>
21th day 22th day 23th day 24th day 25th day	Preparation of the report	<ul style="list-style-type: none"> <li>● Preparation of the cluster shindan report (M/P and A/P for regional development plan) (1)</li> <li>● Preparation of the cluster shindan report (M/P and A/P for regional development plan) (2)</li> <li>● Preparation of the cluster shindan report (M/P and A/P for regional development plan) (3)</li> <li>● Preparation of the cluster shindan report (M/P and A/P for regional development plan) (4)</li> <li>● Preparation of the cluster shindan report (M/P and A/P for regional development plan) (5)</li> </ul>
26th day 27th day 28th day 29th day 30th day	Preparation of the report, Presentation meeting	<ul style="list-style-type: none"> <li>● Preparation of the cluster shindan report (M/P and A/P for regional development plan) (6)</li> <li>● Preparation of the cluster shindan report (M/P and A/P for regional development plan) (7)</li> <li>● Preparation of the cluster shindan report (M/P and A/P for regional development plan) (8)</li> <li>● Preparation for the workshop (report, rehearsal for presentation)</li> <li>● <u>The final workshop</u> (presentation on the results)</li> </ul>

(Note) "1st day – 30th day" mean working days exclusive of holidays.

## 6.6 Attachment to Chapter 6

### A. Cluster Activation under NCC (National Committee on Competitive Advantage)

#### (1) Establishment of NCC and cluster activation

NCC was created by Command from the Prime Minister Office No. 139/2545 on 20 May 2002. The objective was to build the national competitive ability including the strength of production and service sectors which will lead to the stable and long run development. Members were gathered from whatever it will be a government sector, a private sector and a resident sector.

1) President	Prime Minister
2) Vice President	Deputy Prime Minister and Minister of Ministry of Finance
3) Committee	President of NESDB
4) Committee	President of TCC
5) Committee	President of FTI
6) Committee	President of Thai Bank Association
7-9) Committee	Three Experts
10) Committee	Secretary of NESDB

According to Minute of Meeting (MOM) of NCC dated 1 March 2004 (No1/2574), cluster development was taken up, in Agenda 3, 3.1, as one of important issues for competitive advantage of Thailand. It is mentioned in the MOM that a cluster manual should be prepared to cover cluster concept, cluster assessment by analysis study of the developing evolution in Thailand and foreign countries in order to rank the potential and strength level of clusters in Thailand. The MOM nominated NESDB to be responsible for planning policy and working system and Ministry of Industry to be involved in the program as the key person for cluster activation. FTI was assigned to plan for cluster network development of selected 9 clusters and the Government would help to activate the work for getting realistic result.

#### (2) Organizational structure of cluster activation

The above MOM was followed by structuring of an organization for cluster activation in Memorandum of Understanding (MOU) to build up coordinating network and activate cluster development (Cluster Activation) dated 10 June 2004. The MOU defined functions of organizations involved in the Cluster



Activation. It is summarized below. It is noted that the MOU was formed out as an agreement between NESDB and other organizations.

1) Central organization at policy level

- NESDB
  - a) Plan overall policy and work system for developing clusters.
  - b) Build correct understanding and knowledge of concept and advantage of clusters.
  - c) Be the core leader in coordinating action and supporting organizations
  - d) Follow up and evaluate the progress of cluster development.

2) Action organizations

- MOI/DIP
  - a) Be the key organization for cluster activation including forming alliance groups of entrepreneurs.
  - b) Build system to promote and support clusters including providing Cluster Development Agent (CDA).
  - c) Promote and activate clusters including development planning and pilot projects.
- NSTDA
  - a) Support enterprises in clusters about science and technology by four centers as knowledge-providing institutes.
  - b) Provide a guide map of technology development (Technology Roadmap).
  - c) Support enterprises in clusters by technological company-diagnosis.
- FTI
  - a) Cooperate in setting up of promotion policy and plan in view of competitiveness of clusters.
  - b) Cooperate in promoting linkages and support in sharing resources in clusters.
  - c) Be the data-base center relating to cluster networking and development.
  - d) Be the core leader in grouping entrepreneurs and finding leaderships of clusters.
  - e) Coordinate in setting up cluster development plans for selected 9 industries.
  - f) Others
- TCC
  - a) Coordinate for linking and grouping related businesses for cluster development planning.

- b) Promote clusters to have procedures and tools of supporting each other or mutual cooperation.
  - c) Cooperate with training and educational institutes in Thailand for cluster activation.
  - d) Cooperate in diffusing the correct knowledge of a cluster concept to related members.
- IFCT (Now integrated to TMB Bank)
    - a) Cooperate in studying the way to increase competitiveness in the industrial sector.
    - b) Cooperate in surveying cluster level (Cluster mapping) for practical cluster development.
    - c) Cooperate in diffusing the correct knowledge for developing and activating clusters.
  - Kenan Institute of Asia
    - a) Cooperate in building knowledge and developing projects for clusters and interested persons.
    - b) Cooperate in developing curriculum for trainers of any organizations (CDA training).
- 3) Supporting organizations
- Budget Office
    - a) Coordinate and support in setting up the cluster developing strategy being consistent with the budget system.
    - b) Support in budgeting for the cluster development being consistent with national economic condition and government policy.
    - c) Participate in following up evaluation of the cluster developing strategy.
  - MOE
    - a) Support in setting up the policy, plan and strategy for production and manpower.
    - b) Support in setting up the action plan of the production and manpower at ministry level.
    - c) Support education in promoting and pushing the production and manpower.
  - MOST
    - a) Set up the policy and plan to develop clusters by the technology roadmap project.
    - b) Support the cluster development for the research and development and innovation.
    - c) Build the coordinating network of cluster network relating to science and technology.

## **B. Organization of OTOP (One Tambon, One Product) Project**

### **(1) Background and purpose of OTOP project**

On February 26, 2001, Prime Minister Taksin announced the basic policies of his new administration. On that occasion, he called for establishment of "Village and Urban Revolution Fund" as one of high-priority policies. At the same time, he proposed the "One Village, One Product" (OTOP) project. According to the government's plan, a fund with a ceiling of one million baht is to be established in each of some 70,000 villages (tambons) throughout the country as a measure to activate the village economy, and each village is to use the fund to lend money to individuals and promote investment in the locality. The OTOP project is aimed to make the most effective use of the fund to create special products based on unique local products and techniques and help activate the local and national economies.

The purposes of the OTOP project and the rules for implementation of the project are as follows.

#### **1) Purposes**

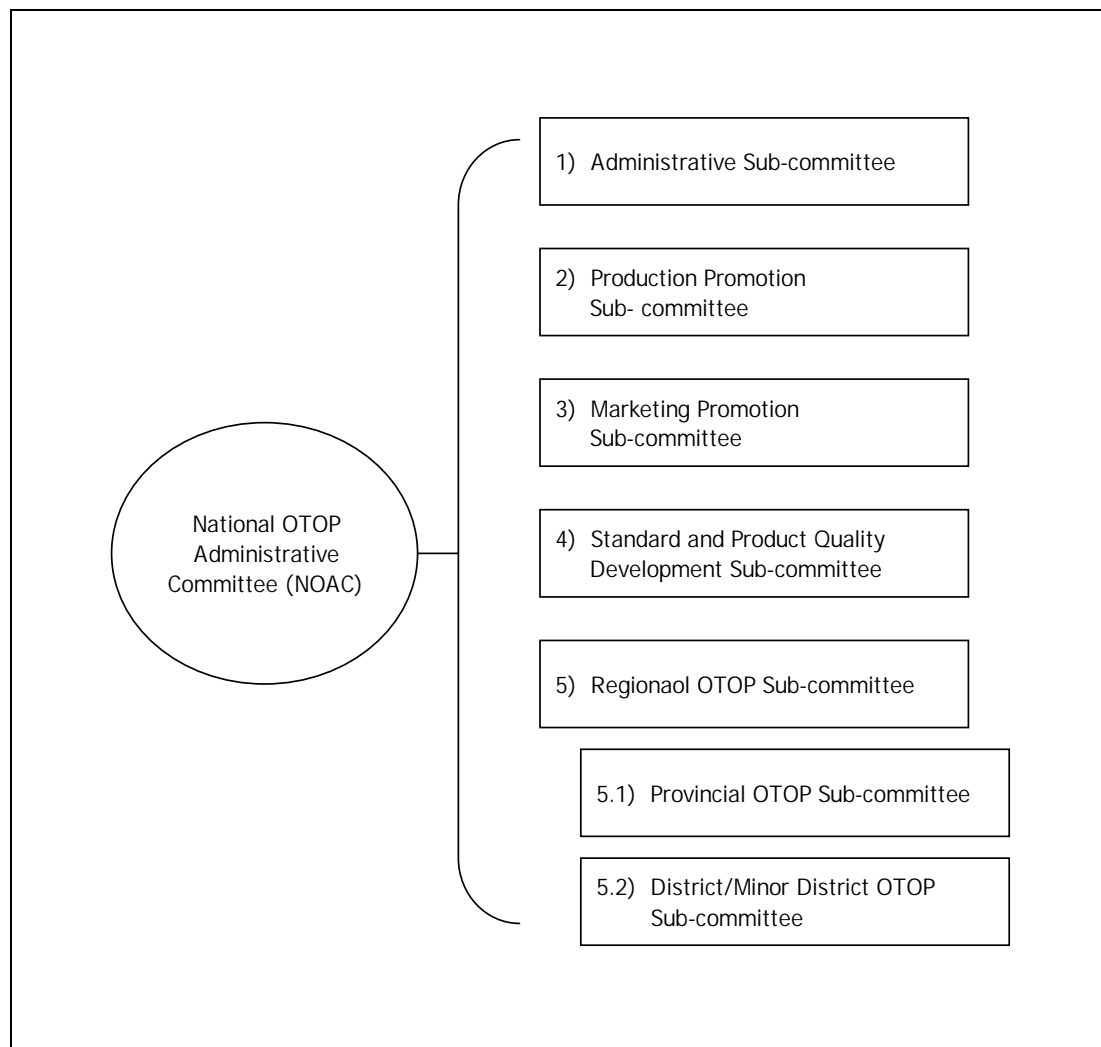
- a. To activate and diversify local economies
- b. To create employment opportunities in local areas
- c. To increase income and improve standard of living of local people
- d. To promote return (especially of young people) to their hometowns
- e. To encourage participation of local inhabitants in economic activities and improve their creativity and business mind.

#### **2) Five rules of project implementation**

- a. Making the most effective use of local resources, manpower, culture and history
- b. Supporting the self-help efforts of local people ("No subsidy" principle, that is, creating businesses/special products by self-help efforts or by use of the fund, not by government subsidies)
- c. Spreading market-oriented approach and value-added improvement approach
- d. Adopting environment-friendly, economics-conscious projects
- e. Adopting a step-by-step approach in which the first step is developing markets in the neighborhood and the final step is aiming at export/international markets.

## (2) Organization of OTOP operation

OTOP has a national committee and five sub-committees as shown in Figure 6.6-1. though it was initially organized by a national committee and nine sub-committees.



**Figure 6.6-1 Organizational Structure of SOTOP Operation**

## (3) Functions of committees for OTOP project

NOAC and four sub-committees of 1) to 4) in Figure 6.6-1 compose a central organization for OTOP and 5) including 5.1) and 5.2) formulate a regional organization.

#### 0) National OTOP Administrative Committee (NOAC)

In order to efficiently execute projects and budgets of the ministries and agencies concerned, this committee makes final decisions on policies, strategies and master plans submitted by the five subordinate committees. In addition, the committee establishes criteria for selection of OTOP and prepares an OTOP list. Furthermore, the committee provides advice to the Cabinet, distributes OTOP information to the publicity and improves/enacts related laws and regulations.

- Chairman: Prime Minister or Deputy Prime Minister assigned by the Prime Minister
- Committee members: Minister of Finance, Minister of Agriculture and Cooperatives, Minister of Commerce, Minister of Interior, Minister of Industry, Permanent Secretary of Ministry of Interior, Permanent Secretary of Ministry of Education, Director-General of the Public Relations Department, Director of Bureau of the Budget, Secretary-General of NESDB, Director-General of the Cooperative Promotion Department, Director-General of Department of Export Promotion, Director-General of Department of Development of Thai Traditional Medicine, Secretary-General of Food and Drug Administration, Director-General of Department of Industrial Promotion, Director of Thailand Institute of Scientific and Technological Research, Governor of TAT, senior experts (max.10 persons) appointed by the Prime Minister, Permanent Secretary of Office of the Permanent Secretary (Secretariat) and Director-General of the Community Development Department (Secretariat Assistant).

#### 1) Administrative Sub-committee

This committee implements policies, strategies and master plans approved by National OTOP Administrative Committee and coordinates with the ministries and agencies concerned in order to ensure efficient execution of projects and budgets. The committee develops a comprehensive database system and links information with public and private sectors and publicity. In addition, the committee gives publicity to the idea of the OTOP Project and coordinates technical / financial aids from foreign governments / organizations. Furthermore, it monitors and evaluates project execution and reports to National OTOP Administrative Committee.

- Chairman: Minister of Finance
- Vice-Chairman: Deputy Minister of Ministry of Interior, Chief Policy Advisor to Prime Minister, Deputy Minister of Commerce, Permanent Secretary of Office of the Permanent Secretary
- Committee members: Chairman of Production Promotion Sub-committee, Chairman of Marketing Promotion Sub-committee, Chairman of Standard and Product Quality Development Sub-committee,

Chairman of Regional OTOP Sub-committee, Permanent Secretary of Office of the Permanent Secretary for the Bangkok Metropolitan Administration, Director-General of the Community Development Department, Director-General of Department of Industrial Promotion, Director-General of the Cooperative Promotion Department, Director-General of Department of Export Promotion, Director of the Office of OTOP Coordination, senior experts (4 persons), Director-General of OSMEP (Secretariat) and Director of the Bureau of Planning and Special Affairs, Office of the Permanent Secretary (Secretariat Assistant).

## 2) Production Promotion Sub-committee

This committee implements policies, strategies and master plans approved by National OTOP Administrative Committee. In addition, the committee provides support for improvement of product design and quality by upgrading production processing and techniques to standard level. Furthermore, the committee provides support for improvement of raw materials and infrastructure, promotes using raw materials in country and tries to increase value added of products. It also monitors and evaluates project execution and reports to National OTOP Administrative Committee.

- Chairman: Permanent Secretary of Ministry Agriculture and Cooperatives
- Vice-Chairman: Deputy Permanent Secretary for Interior
- Committee members: Inspector-General of Office of the Permanent Secretary, President of Bank for Agriculture and Agricultural Cooperatives, President of SME Bank, Director-General of Government Savings Bank, Director-General of Department of Skill Development, Director-General of the Community Development Department, Director-General of Department of Industrial Promotion, Director-General of OSMEP, Director-General of Office of Tourism Department, Ministry of Tourism and Sports, Director of the Office of OTOP Coordination, Director-General of Cooperative Auditing Department, Director-General of Department of Agricultural Extension and Director-General of the Cooperative Promotion Department (Secretariat).

## 3) Marketing Promotion Sub-committee

This committee implements policies, strategies and master plans approved by National OTOP Administrative Committee and formulates the direction of joint efforts of government and people for entry into new markets. In addition, the committee studies the direction and plans of sales promotion and OTOP distribution center in domestic and foreign markets. The committee also tries to promote

intellectual property (IP) and IP capitalization for OTOP. Furthermore, it also monitors and evaluates project execution and reports to National OTOP Administrative Committee.

- Chairman: Permanent Secretary of Ministry of Commerce
- Vice-Chairman: Deputy Permanent Secretary for Ministry of Commerce
- Committee members: Deputy Permanent Secretary of Office of the Permanent Secretary, Director-General of Department of Business Development, Director-General of the Community Development Department, Director-General of Department of Industrial Promotion, TAT Governor, President of Thai Airways International Public Company Limited, Director-General of the Mass Communication Organization of Thailand, Director-General of OSMEP, Director of the Office of OTOP Coordination and Director-General of Department of Export Promotion (Secretariat).

#### 4) Standard and Product Quality Development Sub-committee

This committee implements policies, strategies and master plans approved by National OTOP Administrative Committee. In addition, the committee studies criteria/standards for product selection in order to select promising products. Moreover, the committee prepares plans and provides supports for product quality improvement (processing, packaging design, quality standards, intellectual property, etc.) It also monitors and evaluates project execution and reports to National OTOP Administrative Committee.

- Chairman: Permanent Secretary of Ministry of Industry
- Vice-Chairman: Deputy Permanent Secretary of Ministry of Science and Technology
- Committee members: Deputy Permanent Secretary of Office of the Permanent Secretary, Director-General of Community Development Department, Director-General of Department of Intellectual Property, Director-General of Department of Export Promotion, Director-General of the Excise Department, Secretary-General of Thai Industrial Standards Institute, Secretary-General of Food and Drug Administration, Executive Director of National Bureau of Agricultural Commodity and Food Standards, Governor of TISTR, Director-General of OSMEP, Director-General of Office of Tourism Department, Ministry of Tourism and Sports, Director of the Office of OTOP Coordination and Director-General of Department of Industrial Promotion (Secretariat)

#### 5) Regional OTOP Sub-committee

This committee implements policies, strategies and master plans approved by National OTOP Administrative Committee. It also monitors and evaluates project execution of Provincial OTOP Sub-committee and District/Minor District OTOP Sub-committee and reports to National OTOP Administrative Committee.

- Chairman: Permanent Secretary of Ministry of Interior
- Vice-Chairman: Deputy Permanent Secretary of Ministry of Agriculture and Cooperatives
- Committee members: Inspector-General of Office of the Permanent Secretary, Director-General of Department of Provincial Administration, Director-General of the Cooperative Promotion Department, Director-General of Department of Local Administration, Director-General of Department of Industrial Promotion, Vice-Chairman of Production Promotion Sub-committee, Vice-Chairman of Marketing Promotion Sub-committee, Vice-Chairman of Standard and Product Quality Development Sub-committee, Director of OSMEP, Director of the Office of OTOP Coordination and Director-General of the Community Development Department (Secretariat).

#### 5.1) Provincial OTOP Sub-committee

This committee carries out OTOP project enlightenment activities in the province and cooperates with the ministries and agencies concerned and private projects (includes budgets). In addition, the committee develops markets at the provincial level, decides priority of product development, selects promising provincial products, reports its activities to the National OTOP Administrative Committee and maintains relevant products information.

- Chairman: Provincial Governor
- Vice-Chairman: Vice Provincial Governor
- Committee members: Deputy Provincial Governor, Head of Provincial Office, Director of Provincial Agricultural and Cooperative Office, Director of Provincial Industrial Office, Director of Provincial Commerce Office, Director of Provincial Community Development Office (Secretariat) and representatives of Provincial Public Health Office, private sectors (max. 5 persons), senior experts (max. 5 persons), Provincial Community Development Office (Secretariat Assistant) and Provincial Office of Ministry of Interior (Secretariat Assistant).

#### 5.2) District / Minor District OTOP Sub-committee

This committee performs the same activities as does the Provincial Sub-committee.



- Chairman: Chief District Officer or Assistant District Chief Officer
- Vice-Chairman: Assistant District Chief Officer of Administrative and Development Division
- Committee members: Director of District Agriculture Office, Director of District Public Health Office, Chairman of Tambon Administrative Organization, Director of District / Minor District Development Office (Secretariat) and representatives of private sectors (max. 5 persons), senior experts (max. 5 persons), District / Minor District Development Office (Secretariat Assistant) and Assistant District Chief Office assigned by Chief District Officer (Secretariat Assistant).