

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

DEPARTMENT OF INDUSTRIAL PROMOTION

MINISTRY OF INDUSTRY

THE KINGDOM OF THAILAND

THE STUDY  
ON  
DEVELOPMENT OF CONSULTING SERVICES  
TO PROMOTE SME CLUSTER  
AND REGIONAL DEVELOPMENT  
IN  
THE KINGDOM OF THAILAND

**(SUMMARY)**

OCTOBER 2005

UNICO INTERNATIONAL CORPORATION  
INTERNATIONAL DEVELOPMENT CENTER OF JAPAN

TOKYO, JAPAN

ED

JR

05-097

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

DEPARTMENT OF INDUSTRIAL PROMOTION

MINISTRY OF INDUSTRY

THE KINGDOM OF THAILAND

THE STUDY  
ON  
DEVELOPMENT OF CONSULTING SERVICES  
TO PROMOTE SME CLUSTER  
AND REGIONAL DEVELOPMENT  
IN  
THE KINGDOM OF THAILAND

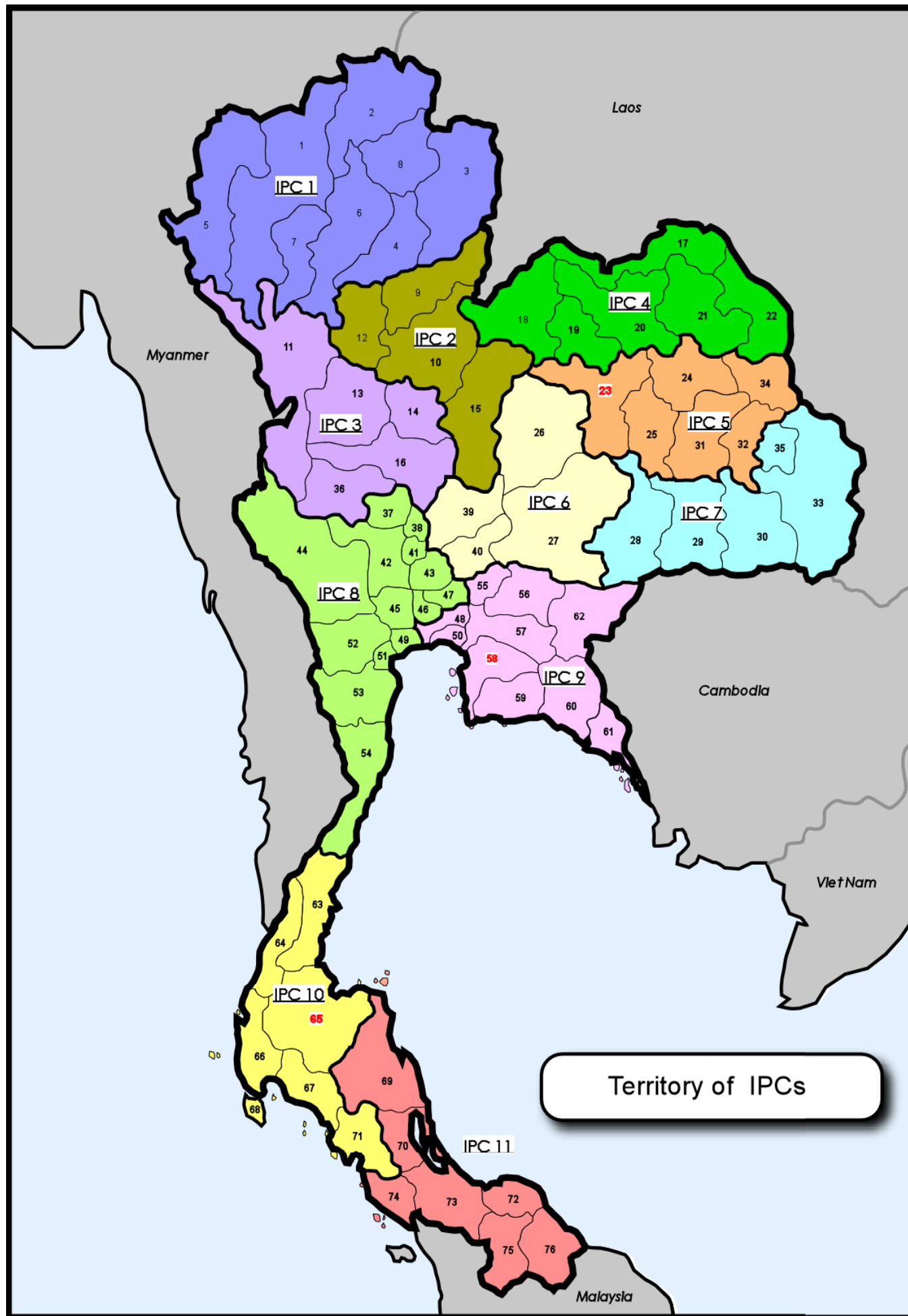
**(SUMMARY)**

OCTOBER 2005

UNICO INTERNATIONAL CORPORATION  
INTERNATIONAL DEVELOPMENT CENTER OF JAPAN

TOKYO, JAPAN

## Eleven Industrial Promotion Centers (IPCs)



### IPC 1 (7 provinces)

- |                 |        |
|-----------------|--------|
| 1. Chiang Mai   | チェンマイ  |
| 2. Chiang Rai   | チェンライ  |
| 3. Nan          | ナン     |
| 4. Phrae        | プレー    |
| 5. Mae Hong Son | メーホンソン |
| 6. Lampang      | ランパーン  |
| 7. Lamphun      | ランブーン  |
| 8. Phayao       | パヤオ    |

### IPC 2 (4 provinces)

- |                 |         |
|-----------------|---------|
| 9. Uttaradit    | ウタラディット |
| 10. Phitsanulok | ピサヌロク   |
| 12. Sukhothai   | スコタイ    |
| 15. Phetchabun  | ペチャブーン  |

### IPC 3 (5 provinces)

- |                    |            |
|--------------------|------------|
| 11. Tak            | ターク        |
| 13. Kamphaeng Phet | カンเพーンเป็ด |
| 14. Phichit        | พิชิต      |
| 16. Nakhon Sawan   | นาコン Sawan |
| 36. Uthai Thani    | อุทัยธานี  |

### IPC 4 (6 provinces)

- |                     |             |
|---------------------|-------------|
| 17. Nong Khai       | نونคาย      |
| 18. Loei            | ลูเอี       |
| 19. Nong Bua Lamphu | نونบัวลันพู |
| 20. Udon Thani      | อุดันธานี   |
| 21. Sakon Nakhon    | สะคอนนาคอน  |
| 22. Nakhon Phanom   | นาคอนพนอม   |

### IPC 5 (6 provinces)

- |                   |              |
|-------------------|--------------|
| 23. Khon Kaen     | ขอนแก่น      |
| 24. Kalasin       | กาสิน        |
| 25. Maha Sarakham | มาหาระสาคราม |
| 31. Roi Et        | รอยเอ็ด      |
| 32. Yasothon      | ยาสอน        |
| 34. Mukdahan      | มุกดาหาน     |

### IPC 6 (4 provinces)

- |                       |              |
|-----------------------|--------------|
| 26. Chaiyaphum        | ชัยยาบม      |
| 27. Nakhon Ratchasima | นาคอนราชสิมา |
| 39. Lopburi           | ลอปบุรี      |
| 40. Saraburi          | สารบุรี      |

### IPC 7 (5 provinces)

- |                      |              |
|----------------------|--------------|
| 28. Buri Ram         | บุรีราม      |
| 29. Surin            | สุริน        |
| 30. Si Sa Ket        | ชีสะเกต      |
| 33. Ubon Ratchathani | อุบอนราชธานี |
| 35. Amnat Charoen    | อมนัตชาโรน   |

### IPC 8 (14 provinces)

- |                         |                  |
|-------------------------|------------------|
| 37. Chainat             | ชัยนาท           |
| 38. Sing Buri           | สิงบุรี          |
| 41. Ang Thong           | อ่างทอง          |
| 42. Suphanburi          | สุพรรณบุรี       |
| 43. Ayutthaya           | อยุธยา           |
| 44. Kanchanaburi        | กาญจนบุรี        |
| 45. Nakhon Pathom       | นาคอนปทุม        |
| 46. Nonthaburi          | นนทบุรี          |
| 47. Pathum Thani        | ปทุมธานี         |
| 49. Samut Sakhon        | สมุทรสาคอน       |
| 51. Samut Songkhram     | สมุทรสงคราม      |
| 52. Ratchaburi          | ราชบุรี          |
| 53. Petchaburi          | เพชรบุรี         |
| 54. Prachuap Khiri Khan | ปราชุมอัปคีริกาน |

### IPC 9 (10 provinces)

- |                                      |                            |
|--------------------------------------|----------------------------|
| 48. Phra Nakhon (Krung Thep=Bangkok) | ปรานาคอน (กรุงทเพ=Bangkok) |
| 50. Samut Prakan                     | สมุทรปราکان                |
| 55. Nakhon Nayok                     | นาคอนนาโยค                 |
| 56. Phrachin Buri                    | ปราชินบุรี                 |
| 57. Chachoengsao                     | ฉะเชนสาอ                   |
| 58. Chon Buri                        | ชลบุรี                     |
| 59. Rayong                           | ราชอง                      |
| 60. Chanthaburi                      | ฉันทบุรี                   |
| 61. Trat                             | ตราท                       |
| 62. Sa Kaeo                          | สะเกอ                      |

### IPC 10 (7 provinces)

- |                 |          |
|-----------------|----------|
| 63. Chumphon    | ชุมบอน   |
| 64. Ranong      | รานอน    |
| 65. Surat Thani | สุราธานี |
| 66. Phangnga    | พังงา    |
| 67. Krabi       | กระบิ    |
| 68. Phuket      | พูเก็ต   |
| 71. Trang       | ตราน     |

### IPC 11 (7 provinces)

- |                         |                |
|-------------------------|----------------|
| 69. Nakhon Si Thammarat | นาคอนสิตามาราท |
| 70. Patthalung          | พัทลูน         |
| 72. Pattani             | ปัตตานิ        |
| 73. Songkhla            | สงขลา          |
| 74. Satun               | สาทูน          |
| 75. Yala                | ยะลา           |
| 76. Narathiwat          | นาราตีวาท      |

LIST OF ABBREVIATION (略語表)

Abbreviation	English	Japanese
A/P	Action Plan	アクションプラン(活動計画、実施計画)
ADB	Asian Development Bank	アジア開発銀行
APCB	Auto-parts Chon Buri	チョンブリ自動車部品クラスター (CAMCの前身)
APEC	Asia-Pacific Economic Cooperation	アジア太平洋経済協力会議
ASEAN	Association of South East Asian Nations	アセアン、東南アジア諸国連合
ATSME	Association for the Promotion of Thai Small and Medium Entrepreneurs	タイ中小企業振興協会
BAAC	Bank for Agriculture and Agriculture cooperatives	農業および農業協同組合銀行
BCHID	Bureau of Cottage and Handicraft Industries Development	家内手工業振興部、工業省
BDS	Business Development Services	ビジネス開発サービス、中小企業の経営資源強化支援
BEED	Bureau of Entrepreneur and Enterprise Development, MOI	起業家および企業開発部、工業省
BISD	Bureau of Industrial Sectors Development, MOI	産業部門開発部、工業省
BOI	Board of Investment, MOI	投資委員会、工業省
BSID	Bureau of Supporting Industries Development, MOI	サポーティングインダストリー開発部、工業省
BU	Burapa University	ブラバ大学
CAMC	Chon Buri Auto- and Machinery-parts Cluster	チョンブリ自動車/機械部品クラスター
CC	Chamber of Commerce	商工会議所
CDA	Cluster Development Agent	クラスター開発エージェント
CEFE	Competency-based Economy Through Formation of Enterprise	企業形成による能力主義経済
CEO	Chief Executive Officer	最高経営責任者(タイでは県知事もCEOと呼ぶことがある)
CF	Consultancy Fund	コンサルタント基金
COC	Chain of Custody (Certification)	経路管理(認証)
CRISD	Chonburi Regional Institute for Skill Development	チョンブリ地域職業訓練校
CSCD	Study on Development of Consulting Services to Promote SME Cluster and Regional Development in the Kingdom of Thailand	中小企業クラスターおよび中小企業開発に資するコンサルティング・サービスの開発
DAC	Development Assistance Committee	開発援助委員会
DBD	Department of Business Development, MOC	事業開発局、商務省
DEP	Department of Export Promotion, MOC	輸出振興局、商務省
DIP	Department of Industrial Promotion, MOI	工業振興局、工業省

Abbreviation	English	Japanese
DIW	Department of Industrial Works, MOI	産業工場局、工業省
DOVE	Department of Vocational Education, MLSW	職業訓練局、労働福祉省
DSD	Department of Skill Development, MLSW	技能開発局、労働福祉省
EEI	Electrical and Electronics Institute	電気電子インスティテュート
E-TEC	Eastern College of Technology	東部技術短期大学
FSC	Forest Stewardship Council	森林管理協議会
FTI	The Federation of Thai Industries	タイ工業連合
GDP	Gross Domestic Product	国内総生産
GPP	Gross Provincial Product	県総生産
GRP	Gross Regional Product	地域総生産
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (German Agency for Technical Coporation)	ドイツ技術協力公社
ICEC	Khon Kaen Industrial and Community Education College	コンケン産業・社会教育短大
IFCT	the Industrial Finance Corporation of Thailand	タイ産業金融公社
IPC	Industrial Promotion Center	産業振興センター
IRP	Industrial Restructuring Plan	産業構造調整計画
ISMED	Institute for Small and Medium Enterprises Development	中小企業開発インスティテュート
ITB	Invigorating Thai Business	タイ国企業活性化プロジェクト
JBIC	Japan Bank for International Cooperation	国際協力銀行
JICA	Japan International Cooperation Agency	独立行政法人国際協力機構
JSAE	Japanese Society of Automotive Engineers	日本自動車技術者協会
KTB	Krung Thai Bank	クルンタイ銀行
MEs	Micro Enterprises	零細企業
M/P	Master Plan	総合計画
MLSW	Ministry of Labor and Social Welfare	労働社会福祉省
MOAC	Ministry of Agriculture and Cooperatives	農業・農業協同組合省

Abbreviation	English	Japanese
MOC	Ministry of Commerce	商務省
MOE	Ministry of Education	教育省
MOF	Ministry of Finance	財務省
MOI	Ministry of Industry	工業省
MOIT	Ministry of Interior	内務省
MOSTE	Ministry of Science, Technology and Environment	科学技術環境省
MOU	Memorandum of Understanding	覚書
NCC	National Committee on Competitive Advantage	国家競争力向上委員会
NEC	New Entrepreneur Creation Program	起業家創成プログラム
NESDB	National Economic and Social Development Board	国家経済社会開発庁
NGO	Non-governmental Organization	非政府組織
NOAC	National OTOP Administrative Committee	全国OTOP監理委員会
NPO	Nonprofit Organization	非営利組織
NSTDA	National Science and Technology Development Agency	国家科学技術開発庁
OEM	Original Equipment Manufacturing	純正部品製造、相手先商標製品製造
OIE	Office of Industrial Economics, MOI	産業経済局、工業省
OJT	On-the-JOB Training	実地訓練
ORRAF	Office of the Rubber Replanting AID Fund	ゴムの木植え替え支援基金事務所
OSMEP	Office of SME Promotion	中小企業振興オフィス
OTOP	One Tambon One Product	一村一品
PAO	Provincial Agricultural Office, MOAC	県農業局、農業・農業協同組合省
PCM	Project Cycle management	プロジェクトサイクルマネジメント
PCO	Provincial Commerce Office, MOC	県商業事務所、商務省
PDM	Project Design Matrix	プロジェクトデザインマトリクス
PGO	Provincial Governor's Office	県知事事務所
PIO	Provincial Industrial Office, MOI	県産業事務所、工業省
PP	Pilot Project	パイロットプロジェクト
PSCD	Provincial Center for Skill Development, MLSW	県技能開発センター、労働福祉省

Abbreviation	English	Japanese
REM	Replacement Equipment Manufacturing	修理用製品製造
RISD	Regional Institute for Skill Development	地域職業訓練校
Sala Mai Thai	Thai Silk Exhibition Hall	タイシルク展示ホール
SDB	Skill Development Bureau, MLSW	技能開発部、労働福祉省
SICGC	Small Industry Credit Guarantee Corporation	中小企業信用保証公社
SISD 11	Surat Thani Institute for Skill Development Region 11	スラタニ職業訓練校(第11地区)
SMEDB	Small and Medium Enterprise Development Bank of Thailand	タイ中小企業開発銀行
SMEs	Small and Medium-sized Enterprises	中小企業
SSIP	Small-Scale Industry Promotion Project	小規模産業振興プロジェクト
SWOT	Strength, Weakness, Opportunity and Threat	強み、弱み、機会、脅威
TAI	Thai Automotive Institute	タイ自動車
TAPMA	Thai Auto-Parts Manufacturers Association	タイ自動車部品製造者協会
TCC	Thai Chamber of Commerce	タイ商工会議所
TF	Training Fund	訓練基金
TGI	Thai-German Institute	タイドイツ・インスティテュート
TMB	Thai Military Bank	タイ軍人銀行 (TMB Bank)
TPA	Technological Promotion Association (Thai-Japan)	技術振興協会(日泰)
TPA	Thai Parawood Association	タイパラウッド協会
TPM	Total Production Maintenance	トータル・プロダクション・マネージメント、 全員参加の生産保全
TSAE	Thai Society of Automotive Engineers	タイ自動車技術者協会
UNIDO	UN Industrial Development Organization	国連工業開発機構
USAID	US Agency for International Development	米国国際開発庁
WB	World Bank	世界銀行
WBS	Work Breakdown Structure	ワーク・ブレイクダウン・ストラクチャー、 業務分解階層表

## CONTENTS

	<u>Pages</u>
<b>Chapter 1 Introduction</b>	
1.1 Background of the Project.....	S-1
1.2 Objective of the Project.....	S-1
1.3 Results Expected .....	S-2
1.4 Members of Thai Party.....	S-2
1.5 Scope of the Project.....	S-3
1.6 Reports Submitted as Deliverables .....	S-3
1.7 Project Area.....	S-4
1.8 Study Schedule and the members of JICA Mission .....	S-4
<b>Chapter 2 Present Status of Cluster Development in Thailand (As of May 2004)</b>	
2.1 DIP of MOI.....	S2-1
2.2 NESDB (National Economic and Social Development Board) .....	S2-3
2.3 Former IFCT (the Industrial Finance Corporation of Thailand) -- Current TMB Bank .....	S2-4
2.4 FTI (the Federation of Thai Industries).....	S2-5
2.5 Cluster Activation under NCC (National Committee on Competitive Advantage) .....	S2-6
<b>Chapter 3 Selection of Three Model Clusters</b>	
3.1 Candidate Clusters Identified by DIP .....	S3-1
3.2 Methodology of Model Clusters Selection .....	S3-2
3.3 Circumstances and Conclusion of Model Cluster Selection .....	S3-5
<b>Chapter 4 Model Cluster Master Plans and Action Plans</b>	
4.1 Process of Making Model Cluster Promotional Plans.....	S4-1
4.2 Khon Kaen Textile Industry Cluster .....	S4-4
4.3 Chon Buri Auto-Parts Industry Cluster .....	S4-12
4.4 Surat Thani Parawood Industry Cluster.....	S4-20



## **Chapter 5 Selection and Implementation of Pilot Projects**

5.1	Criteria for Pilot Project Selection.....	S5-1
5.2	Selection of Pilot Projects.....	S5-3
5.3	Outline of the Pilot Projects and Output .....	S5-4

## **Chapter 6 Plan for Nationwide Evolvement of Cluster Promotion**

6.1	Characteristics of “Industry Cluster Approach” .....	S5-1
6.2	Significance of Nationwide Evolvement of Cluster Promotion and Problems Involved in Cluster Promotion in Thailand .....	S5-6
6.3	Basic Framework for Industry Cluster Promotion in Thailand (Proposal).....	S5-8
6.4	Plans for Execution of “Program for Nationwide Evolvement of Industry Cluster Promotion” .....	S5-10
6.5	Use of Consultants for Cluster Development .....	S5-18

## Chapter 1 Introduction

## Chapter 1 Introduction

### 1.1 Background of the Project

This project was originally designed by the Thai government for application to the Japanese government to find ways to train and use Thai consultants effectively for the purpose of diagnosis in the field of industrial accumulation or industrial cluster. Utilization of SME consultants or Shindanshi trained under assistance of Japanese government was one of items to be studied. On the other hand, the interest of the Thai government gradually moved to the SME cluster development itself in addition to development of consulting services for it, considering movements of “Cluster Approach” inside and outside the country. Under such circumstances, the Thai government finally decided to request the Japanese government for technical assistance to be provided by Japan International Cooperation Agency (JICA). In response, the Japanese government decided to send a JICA mission as a policy assistance project and the project was started in February 2004.

Thus, the content of the project was finally emphasized on development of a cluster reinvigoration method and implementation of the pilot project, in which development of consulting service was studied as a tool for cluster development. Note that DIP refers to the project by an acronym “CSCD” on the basis of the formal project name, “the Study on Development of Consulting Services to Promote SME Cluster and Regional Development in the Kingdom of Thailand.

### 1.2 Objective of the Project

- (1) To select three model clusters and formulate a master plan and an action plan for development of each industrial cluster;
- (2) To select a pilot project from projects proposed in each action plan, formulate its implementation plan, and carry it out; and
- (3) To propose a method for nationwide deployment of SME promotion measures under the industrial cluster approach, on the basis of the results of the activities in (1) and (2).

### 1.3 Results Expected

- (1) DIP masters the methodology and techniques relating to the cluster approach and becomes capable of promoting industrial cluster development by itself (including technology transfer to SME consultants, relating to the method for formulating the master plan and the action plan).
- (2) In the three model clusters, industrial cluster development activities led by SMEs become activated and pilot projects are implemented in a sustainable and expandable way.
- (3) Related organizations agree on a unified definition and interpretation of the “cluster” that now takes diverse forms, which allows DIP to set forth a unified policy and strategic direction for industrial cluster development programs.

### 1.4 Members of Thai Party

The counterpart of Thai side for CSCD is Department of Industrial Promotion (DIP) of Ministry of Industry (MOI). Bureau of Entrepreneur and Enterprise Development (BEED) takes responsibility for managing CSCD in the head quarters of DIP. DIP divides the nation into 11 territories and locates an Industrial Promotion Center (IPC) in a territory. IPCs in the three model clusters practically worked as a regional counterpart during implementation of the pilot projects.

Members of Steering Committee and Working Group were also assigned as follows:

- COUNTERPART:

BEED/DIP/MOI

- STEERING COMMITTEE:

- |                           |             |          |             |
|---------------------------|-------------|----------|-------------|
| 1) DIP, MOI (Secretariat) | 2) OIE, MOI | 3) OSMEP | 4) DEP, MOC |
| 5) DBD, MOC               | 6) SMEDB    | 7) TPA   | 8) IFCT     |
| 9) NESDB                  | 10) FTI     | 11) TCC  | 12) ATSME   |
| 13) TAI                   |             |          |             |

- WORKING GROUP:

- |                            |              |                  |
|----------------------------|--------------|------------------|
| 1) BEED, DIP (Secretariat) | 2) BSID, DIP | 3) BISD, DIP     |
| 4) IPCs, DIP               | 5) SMEDB     | 6) TPA           |
| 7) FTI                     | 8) TCC       | 9) BDS Providers |

## 1.5 Scope of the Project

Phase 1: Selection of the model clusters, formulation of the master plans, and finalization of pilot projects and their contents

- (1) To select three model clusters out of 11 candidates proposed by five IPCs;
- (2) To conduct diagnosis on the three model clusters and formulate a master plan and an action plan for development of each cluster; and
- (3) To select one project from those proposed in each action plan as a pilot project for each of the three model clusters.

Phase 2: Implementation of the pilot projects and evaluation upon their completion

- (1) To formulate a detailed implementation plan for a pilot project in each of the three cluster areas;
- (2) To implement the pilot projects under collaboration with local governments, industries and academics concerned; and
- (3) To conduct terminal evaluation on the pilot projects upon completion of the JICA mission's support.

Phase 3: Formulation and announcement of an implementation plan for nationwide deployment of cluster development

- (1) To propose a unified definition of the cluster, and its development organization and budget for nationwide deployment; and
- (2) To present the above to related parties in order to promote a wider understanding of cluster development.

## 1.6 Reports Submitted as Deliverables

The JICA mission has submitted the following reports throughout the project period.

February 2004:	Inception Report
March 2004:	Progress Report (I)
August 2004:	Interim Report
March 2005:	Progress Report (II)
July 2005:	Draft Final Report
October 2005:	Final Report
October 2005:	Pilot Project Report

In addition to the above reports that are mandated under the scope of study, the following two reports were submitted as deliverables of the pilot projects.

- May 2005: Study on loss reduction in the parawood sawing process (Surat Thani)
- May 2005: The training manual for coordinators in product development (Khon Kaen textile)

## 1.7 Project Area

DIP places an Industrial Promotion center (IPC) each in eleven DIP regions over the country. (See the map at the beginning of this report.) The first field survey conducted in Phase 1 covered five IPC areas, namely IPC1, IPC5, IPC8, IPC9, and IPC10. Then, from the second field survey in Phase 1 to activities in Phase II, three IPC areas (IPC5, IPC9 and IPC10) were selected as the model customers to form the project area, as follows.

- IPC5: Textile industry in Khon Kaen
- IPC9: Automobile and machinery parts industry in Chon Buri
- IPC10: Parawood processing industry in Surat Thani

In Phase III, nationwide deployment of the cluster development plan was proposed to cover the entire country.

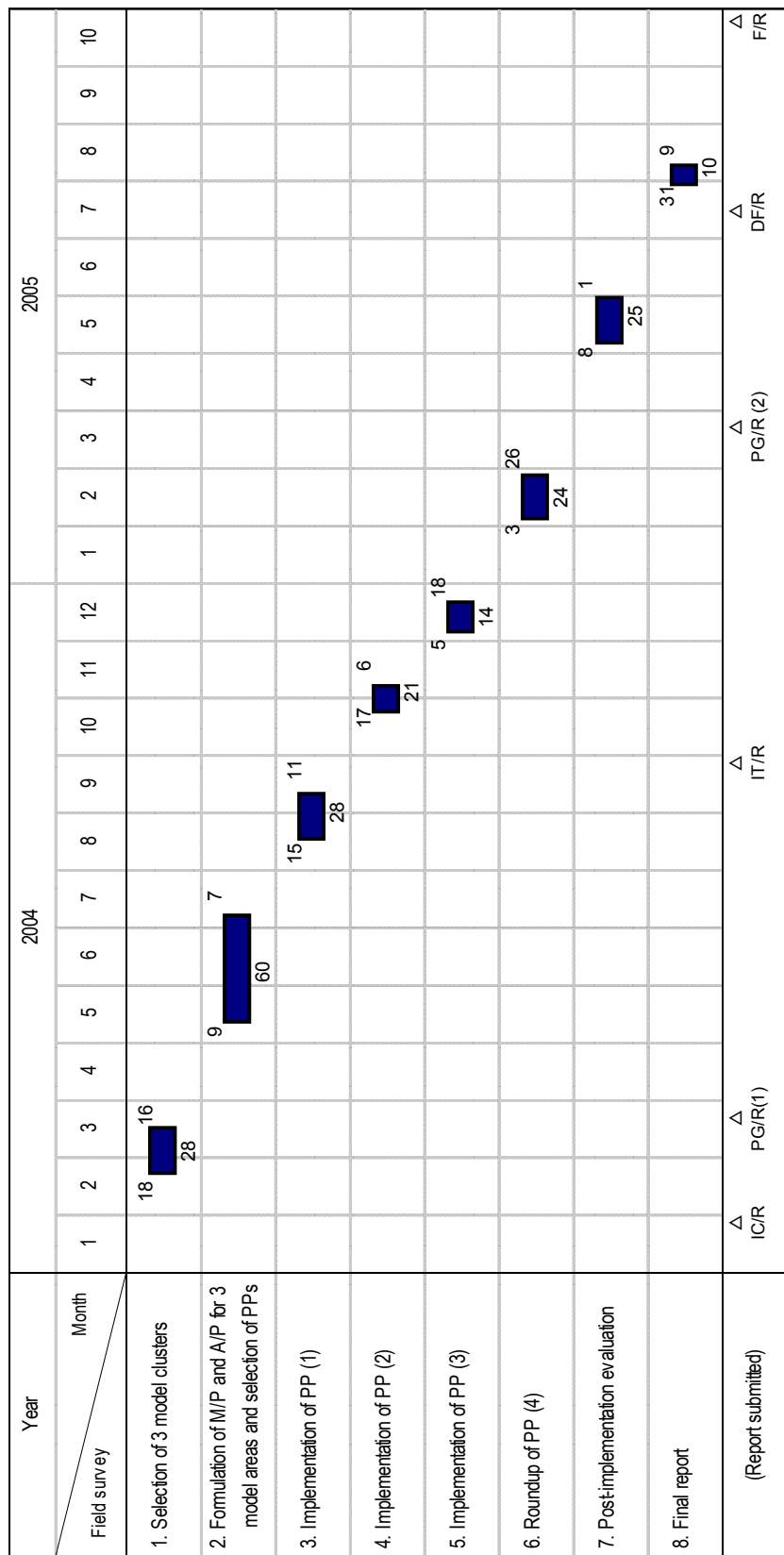
## 1.8 Study Schedule and the members of JICA Mission

Figure 1-1 shows the entire time frame allocated for the study that contained eight-time field surveys in Thailand. The study took a total of 22 months from submission of the inception report to that of the final report.

The members of JICA mission are listed as follows. The mission made field surveys eight times.

- 1) Shozo INAKAZU Team Leader
- 2) Kazunori Horiguchi (Sub-team Leader) Policy and System
- 3) Yukihiro TERADA Regional Economic Development (Participated in first and second field surveys only)
- 4) Satoru ARAI Consulting Service System 1 (Second and third field surveys only)
- 5) Yuzo ARAI Consulting Service System 2 (Second half of the study; also in charge of Consulting Service System 1)

- |     |                  |   |
|-----|------------------|---|
| 6)  | Hiroshi HASEGAWA | Business Development Services (First and second field surveys only)           |
| 7)  | Tamon NAGAI      | Human Resources Development (First through seventh field surveys)             |
| 8)  | Kunio OTSUKA     | Cluster Analysis-1 (Second half of the study; also served as sub-team leader) |
| 9)  | Takeshi ODAWARA  | Cluster Analysis-2 (First through seventh field surveys)                      |
| 10) | Susumu OKATA     | Cluster Analysis-3 (First field survey only)                                  |
| 11) | Fumio SHIMIZU    | Cluster Analysis-3 (Second through seventh field surveys)                     |
| 12) | Minoru KOMAZAKI  | Project Coordinator (First field survey only)                                 |
| 13) | Mari WATANABE    | Project Coordinator (Second, seventh and eighth field surveys)                |



(Remarks) PP: Pilot Project  
 IC/R: Inception Report  
 MP: Master Plan  
 PG/R: Progress Report  
 IT/R: Interim Report  
 AP: Action Plan  
 IT/R: Interim Report  
 DFR: Draft/Final Report  
 F/R: Final Report

Figure 1-1 CSCD Project and Field Survey Schedule



Chapter 2 Present Status of Cluster Development in Thailand  
(As of May 2004)

## **Chapter 2 Present Status of Cluster Development in Thailand (As of May 2004)**

In Thailand, several kinds of the programs intended for cluster development are planned or actually implemented. The definition of "cluster" is so varied that each organization has its own understanding and interpretation. At this stage, it seems that, in many cases, cluster development means to strengthen cooperation among SMEs in the same industries or regions. A lot of organizations have been trying to develop their concrete activities for cluster development. This chapter introduces important agencies and organizations involved with cluster development. It should be noted that this chapter was mostly prepared using data and information available as of May 2004.

### **2.1 DIP of MOI**

#### **2.1.1 BSID**

BSID (Bureau of Supporting Industries Development) is a bureau of DIP (the Department of Industrial Promotion). BSID has been acting as a core agency in developing the manufacturing capability of domestic supporting industries and in promoting subcontracting businesses from large enterprises to SMEs.

BSID has been implementing the development program on 4 clusters since May 2003. These four clusters are two for food processing, one for automotive parts, and one for textile. Those 4 clusters are selected from among more than 20 candidates by the three criteria of priority in industrial policy, impact on the national economy, and growth potential.

The following shows the number of participating enterprises by a matrix of industries and IPC regions.

	Food (snack, etc.)	Food (sweets)	Auto-parts	Textile
IPC 1	1	0	0	0
IPC 2	0	1	1	0
IPC 3	1	0	0	0
IPC 6	2	0	0	21
IPC 8	20	9	5	0
IPC 9	17	7	23	0
BKK	42	50	24	0
Total	83	67	53	21

Note: 1. The above data are based on the materials obtained from BSID in February, 2004.  
2. IPC 9 does not include BKK (the Phra Nakhon Province).

A total of 224 enterprises have participated in the BSID program. Among these 224 enterprises, 116 enterprises are located in BKK (Phra Nakhon), accounting for 52% of the total. The two food processing clusters have higher ratios of location in BKK, while in the automotive parts cluster most of the enterprises are located in the IPC 9 region including BKK. By contrast, in the textile cluster, all 21 enterprises are located in the Chaiyaphum Province in the IPC 6 region.

The implementation of this program is entrusted to Cluster Development Agency (CDAs). CDAs are positioned mainly as BDS facilitators in this program. The CDA for food processing clusters are Kingmongkut University. And the CDA for the textile cluster is Chulalongkhon University. The automotive parts cluster has designated TPA as its CDA. The commission contracts are made each fiscal year. Each of CDAs is obliged to submit an activity report to BSID every year.

DIP was assigned as "the key person" in implementation of Cluster Activation Program by Memorandum of Understanding (MOU) of 10 June 2004 in a framework of National Committee on Competitive Advantage (NCC). BEED of DIP that is the counterpart of the JKA mission will play a key role for cluster activation from now on. Budget for the cluster activation will be allocated through BEED to BSID that is party working for a cluster activation program under DIP.

### 2.1.2 Assistance of GTZ (Deutsche Gesellschaft fur Technische Zusammenarbeit) for DIP

GTZ is a German government agency in charge of its ODA programs.

GTZ and DIP implemented the SSIPP (Small-Scale Industry Promotion Project) in 1997 to 2000 (Phase 1) and 2001 to 2003 (Phase 2) targeting Bangkok, Chiang Mai, and Nakhon Ratchasima. The total budget was DM 726 million (US\$416 million).

The SSIPP aims to establish and develop the supplying system of BDS with a view to fostering small-scale enterprises in the regions. The target industries are food processing, textiles, construction materials, metal processing, ceramics, sundries, woodwork, etc. In its second phase, this project implemented pilot projects in the northern region (Chiang Mai) and the northeastern region (Nakhon Ratchasima) for two years. These pilot projects emphasized the supply of client-oriented BDS and the support to women entrepreneurs.

Major activities throughout the first phase and the second phase include:

1) Construction and strengthening of the BDS network

The BDS network in each region covers the governor's office, IPC(including the BOI branch), the branch of MOC, the branches of TCC, FTI, SIFC, and banks, as well as unions, universities and colleges, research institutes in the region.

2) Implementation of the small-scale entrepreneurship training courses based on the CEFE (Competency-based Economies through Formation of Enterprises) concept of GTZ

They were planned and carried out jointly with ISMED. Half of the participants were women.

3) Information services and advice

IPCs and the branch offices of MOC offered such services and advice in cooperation with the branch offices of TCC, FTI, banks, etc.

4) Capacity building of IPCs

GTZ experts gave the IPC staffs OJT in organizational capacity building.

## **2.2 NESDB (National Economic and Social Development Board)**

NESDB is the government agency in charge of formulating the national economic and social development programs.

At present NESDB is making a handbook on clusters. The role of CDA (Cluster Development Agency) is emphasized in this handbook. NESDB is also making a nationwide cluster map with support from IFCT.

It is expected to complete in September 2005. NESDB plans to hold workshops on this cluster mapping in the 4 regions of north, northeast, south, and central.

With regard to cluster development, NESDB used to be positioned as the government agency in charge. But nowadays the government has adopted the policy that all government agencies (including DIP) should be jointly and severally responsible for cluster development. There are no sections in charge of cluster development. NESDB was assigned to the secretariat of National Committee on Competitive Advantage (NCC) (presided by Mr. Thaksin, prime minister) and the core organization at a policy level for the cluster activation program under NCC.

### **2.3 Former IFCT (the Industrial Finance Corporation of Thailand) --- Current TMB Bank**

IFCT was established in 1959 aiming to promote the country's economic and social development. IFCT's main activities were to assist in the establishment, expansion and modernization of industrial enterprises in the private sector, and to encourage and bring about the participation of internal/external private capital in such private industrial enterprises. It should be noted that Thai Military Bank, a commercial bank, integrated IFCT and DBS Thai Danu Bank (DTDB) dated 1 September 2004 and changed the English name to TMB Bank from 9 May 2005.

IFCT has been financing the ceramic cluster project in Lampang. This program is a model project by UNIDO aiming to promote cluster development. It is a three-year development program which will finish in this fiscal year. The total amount of financing is Bt. 15 million. Initially, IFCT financed up to 70% of the necessary funds. Local SMEs and unions have been actively involved in this project. IFCT evaluates that entrepreneurship for cluster development has been fostered through the implementation of the project. IFCT has been assisting NESDB in making a nationwide cluster map. IFCT has also involved itself in the Shindan projects. The above description was written in May 2004. The JICA mission does not have information whether TMB Bank will continue those activities as a commercial bank as of May 2005.

## 2.4 FTI (the Federation of Thai Industries)

FTI was established in 1967 and has since acted as the core liaison for developing good relationships between the various clubs of industrialists together with other entrepreneurs and consumers. FTI has also coordinated activities between the government and private sectors at home and abroad.

At present FTI is formulating a master plan for cluster development in line with the guide line of Thaksin Administration of developing priority 9 industries. In October 2003, FTI formed an internal organization composed of the 9 clusters as follows

- 1) Food
- 2) Automotive parts
- 3) Fashion
- 4) Air conditioners and other electrical equipment
- 5) Construction materials
- 6) Petroleum products
- 7) Metal products
- 8) Paper & printing
- 9) Supporting industries (including woodwork & furniture, handicraft, ceramics, and target products by the OTOP project)

FTI has found that the development of industrial clusters needs the three factors of funding (in general), packaging (especially for food clusters and handicraft clusters), and marketing (especially for automotive parts clusters). The Thaksin government has worked out the economic cooperation strategy (ECS) to strengthen the economic linkages with Myanmar, Vietnam, and Laos. FTI has recognized the significance of cluster development in due consideration of this national strategy.

FTI has some 6,000 member enterprises, 80% of which are SMEs. FTI has set up a branch office in each of the central, north, northeast, east, and south regions. In the recent years FTI has been laying more stress on developing the capabilities of those branch offices.

## **2.5 Cluster Activation under NCC (National Committee on Competitive Advantage)**

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.

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

(2) Action organizations

- MOI/DIP
- NSTDA
- FTI
- TCC
- IFCT (Now integrated to TMB Bank)
- Kenan Institute of Asia

(3) Supporting organizations

- Budget Office
- MOE
- MOST

## Chapter 3 Selection of Three Model Clusters



## Chapter 3 Selection of Three Model Clusters

As mentioned earlier, DIP (Department of Industrial Promotion) of MOI is operating 11 Industrial Promotion Centers (IPCs) over the country dividing the country into 11 regions for the regional industrial development. Prior to JICA mission's 1<sup>st</sup> field survey to Thailand, DIP identified five IPC areas together with priority sub-sectors of the manufacturing sector. From the five IPC areas, members of the JICA mission and a working group comprised of BEED officers selected three model clusters for the Project, at the 1<sup>st</sup> field survey.

### 3.1 Candidate Clusters Identified by DIP

DIP inquired of her all 11 IPCs whether or not the IPC has interest to apply to the Project as a candidate of model clusters in the IPC region. Seven IPCs showed interest in participating in the Project and submitted DIP the applications, i.e. IPCs 1, 3, 4, 5, 8, 9 and 10.

DIP and the JICA mission agreed to select three model clusters from the following 11 candidate clusters of five IPCs through pre-diagnosis of candidate clusters.

**Table 3-1 Eleven (11) Candidate Clusters from Five(5) IPCs**

IPC	Industrial sub-sector	Province
IPC 1	1. Food processing 2. Textile (Cotton)	Chiang Mai Chiang Mai
IPC 5	3. Textile (Silk) 4. Garments	Khon Kaen Khon Kaen
IPC 8	5. Rice mill 6. Electrics and Electronic Parts	Suphan Buri Pathum Thani
IPC 9	7. Automobile Parts/Components 8. Automobile Parts/Components 9. Rubber Products	Chachoengsao Chon Buri Rayong
IPC 10	10. Palm Oil 11. Woodworking/Furniture of Parawood	Surat Thani Surat Thani

(Note) IPC: Industrial Promotion Center under DIP, MOI

### 3.2 Methodology of Model Clusters Selection

In the course of the pre-diagnosis, the JICA mission evaluated 11-candidates jointly with Thai side in view of appropriateness as model clusters for the project, using a scoring sheet attached as Table 3-2, and gave Thai side technical transfers. Table 3-3 shows the results of scores in a full mark of 100 multiplying figures of the Table 3-3 in a full mark of 20 by 5. These scores will be used as a reference for comparison of candidate clusters.

The item of “A. Core industry” in Table 3-2 intends to give priority to highly accumulated clusters and to high potential clusters in competitiveness. Nevertheless, since the measure of “A.1 Accumulation” may vary country by country, it should be carefully examined accordingly so as to meet situation of the country. The second item of “B. Growth Potential of the Cluster” intends to simply evaluate four factors of Prof. Michael E. Porter’s diamond. The third item of “C. Availability of the BDS providers” is designed to give higher points to higher availability of BDS providers in the area. The last item of “D. Interest and Volition of the Area’s Related People” also is an important factor which was proved in the pilot projects in this CSCD project.

As recognized from the above, the CSCD project employed a basic idea that higher potential cluster shall be activated by giving priority in view of the cost/ benefit efficiency in SME promotion of the country.

**Table 3-2 Check Sheet for Preliminary Diagnosis of Cluster Candidates**

(5Level Evaluations, 2 point and 4 point is in middle point of 1, 3, 5)

IPC No. ( )	Province Name / No.	( )	Place Name	
Core Industrial Sector		Evaluator		Date (Y, M, D)

Evaluation Items		Evaluation Points and Methods	Point	Average
A. Core Industry	A1: Accumulation	1) No. of Company ( ), 2) Area ( ) 100km <sup>2</sup> , 3) Accumulation 1)÷2) ( )  		
	A2: Competitive Level	Do core subsectors hold competitiveness which is suitable for the cluster development and promotion? Family Industry level: (1) Competitive at Domestic Market (Thailand): (3) Competitive at Oversea and Export Markets: (5)		
Using each of the 3 evaluation items, evaluate current "condition of the area" by 5 level evaluation, and then find the average and write down on the right columns. If informations are unavailable or unknown, delete evaluation items and then average it. This area is in the best condition as described in the descriptions: (5) This area is in the average condition: (3) This area is not in the good condition: (1) Not Existing at all: (0)				
B. Growth Potential of the Cluster	B1: Condition of the Element (Resources Input)	1) Major Raw Materials can be procured in the region. 2) High skilled labors can be employed easily (Availability). 3) Logistical infrastructures (road and others) are well prepared.		
	B2: Related Industries, Supporting Industries	1) Local supplier's ability is high. 2) There are gathering between core companies and supporting companies. 3) There are cooperative work experiences among core companies, universities, and local governments.		
	B3: Demand Condition	1) Local customers always require high level products. 2) Name of this area is famous for a producer of such products. 3) There are opening of trade fairs at the area before.		
	B4: Company Strategy, and Competitive Environment	1) There are stiff competitions among the companies of the same industry. 2) Investing environment is excellent for new comers. 3) Informations on technology, market, etc. can be easily sourced in the area.		
C. Availability of the BDS Providers	If there are following BDS Providers already existing in the area, give 1 point for 1 BDS provider. Evaluate it only by "Existing" or "Not Existing".			
	C1: Agencies, Institutes, etc.	1) SME Promotion Government Organization 2) Chamber of Commerce and Industry 3) Same Industries' Association or Union 4) Cooperative Organization 5) Business or Trade mediation organization		
	C2: Human Resources Dev., Consulting, etc.	1) Manager/Owner Training 2) Engineer/Technician Training 3) Skilled Labor Training 4) Entrepreneur Support 5) Business/Technical Consulting		
	C3: Technical Support, etc.	1) University (Institute of Technology, or Engineering Dep.) 2) Technical High School 3) Research Institute 4) Technology Center 5) Repair and Maintenance Businesses (Shops)		
	C4: Administration Services, etc.	1) Information Services 2) Accounting Services 3) Logistics Services (Transport Services) 4) Product Design Services 5) Market Research		
D. Interest and Volition of the Area's Related People	This is for the simplifying the evaluation of candidate cluster. Evaluate concerned interviewed personnel's interest to Cluster Development, and possibility of supporting positively for the execution of the project. Almost all are interested in this project and can expect full support for the execution of Pilot Project: (5) There seems some of them are puzzled, but execution of the project at the area may not to be any problem.: (3) Seems all of them are cold and/or indifferent. Some difficulty can be anticipated for executing project at this area.: (1) (Concerned Personnel) Local Government, IPC Staff, Private Organization, University/Research Institute, Industrial Leading Companies, etc.			
Total Point (20 point Max)				

**Table 3-3 Results of Pre-Diagnosis for Eleven (11) Candidate Cluster  
 (Full mark of Total = 100)**

IPC	Industrial sub-sector	Province	A. Accumul.	B. Condition	C. BDS	D. Climate	Total (A-D)
IPC 1	1. Food processing	Chiang Mai	19.6	20.6	17.5	16.7	<b>74.3</b>
	2. Textile (Cotton)	Chiang Mai	22.5	20.2	17.5	15.0	<b>75.2</b>
IPC 5	3. Textile (Silk)	Khon Kaen	20.8	17.7	19.0	20.8	<b>78.3</b>
	4. Garments	Khon Kaen	9.6	12.4	18.8	20.8	<b>61.6</b>
IPC 8	5. Rice mill	Suphan Buri	16.3	17.8	12.9	22.5	<b>69.5</b>
	6. Electrics/Electronic Parts	Pathum Thani	22.5	15.1	13.8	17.5	<b>68.9</b>
IPC 9	7. Automobile Parts	Chachoengsao	18.0	18.6	18.4	16.3	<b>71.2</b>
	8. Automobile Parts	Chon Buri	20.6	20.0	20.5	20.4	<b>81.4</b>
	9. Rubber Products	Rayong	12.5	15.1	17.5	12.5	<b>57.6</b>
IPC 10	10. Palm Oil	Surat Thani	10.4	14.1	12.9	21.7	<b>59.1</b>
	11. Parawood-working	Surat Thani	21.3	16.6	15.0	22.5	<b>75.3</b>

**A. Accuml.** – Accumulation of same- trade enterprises in a certain area (25 points).

**B. Condition** – Conditions for competitiveness (25 points)

**C. BDS** – Availability of Business Development Services (25 points)

**D. Climate** – Understandings of “cluster” and sense of participation to cluster development in the region (25 points).

**Total (A-D)** – (A+B+C+D)

### 3.3 Circumstances and Conclusion of Model Cluster Selection

#### 3.3.1 Selection of one cluster for one IPC

##### IPC-1

###### **Food processing - Chiang Mai**

###### **Textile (Cotton) - Chiang Mai**

The sub-sector of the food processing visited in Chiang Mai is mainly engaged in processing local agriculture products for export by large-scale enterprises. Networking with other sectors is not so expected from this type of businesses. It is similar to production on commission for big foreign importers. There seem little requirements for Business Development Services as far as six enterprises visited. More information is necessary for evaluation of domestic-market-oriented SMEs of food processing in Chiang Mai which the working group could not visit at time of 1<sup>st</sup> field survey period.

The sub-sector of textile (Cotton) had high accumulation of SMEs in the region having advantage in availability of raw materials in this area. Both sub-sectors were evaluated as almost same level of appropriateness. However, the sub-sector of **Textile (Cotton) in Chiang Mai** is selected because of a slightly high score.

##### IPC-5

###### **Textile (Silk) - Khon Kaen**

###### **Garments - Khon Kaen**

The textile (Silk) has source of raw materials in adjoining province Phetchabun and some from imports for weft yarns (vertical yarns), and Khon Kaen's local raw materials for warp yarns (horizontal yarns) (However, for expensive and high-grade silk product, even warp (horizontal) yarns are from Phetchabun and from imports). Chonnabot District in The Khon Kaen is well-known silk producing area. With proper way of development, there will be growth potentials for marketing of silk products and possibility of higher achievements in the regional development.

The sub-sector of garments in the region has less accumulation of the same-trade enterprises for cluster development. In addition, the garments industry in the region has less Industrial extent and linkage with other sectors because their operations are similar to processing on commission of big companies in Bangkok area. The local government of Khon Kaen has keen interests in development of the silk-based industry. Thus, the sub-sector of **Textile (Silk) in Khon Kaen** is concluded to be more appropriate for model cluster than garments.

#### **IPC-8**

##### **Rice mill - Suphan Buri**

##### **Electrics & Electronic parts - Pathum Thani**

The sub-sector of rice mills has high accumulation when those mills having less than 50 employees and less than 50 HP of energy consumption are included in the number of enterprises. Persons related to rice mills in the region has a clear interest in clustering themselves: that is export promotion of milled rice using cooperative activities. The sub-sector, however, has less extent to and linkage with other sectors, and is much close to agriculture or agro-industry sector rather than industry or manufacturing sector. That will be a weakness in selecting model clusters, which focuses the manufacturing sector.

As for the sub-sector of electrics & electronic in the region, the score of accumulation ratio marked highest among all. The accumulation, however, is mainly caused by foreign investment in some Industrial estates in the region. It will be hard for clustering Thai capital enterprises widely scattered in the region. Thus, **Rice mill in Suphan Buri** represents IPC-8.

#### **IPC-9**

##### **Automobile parts - Chon Buri**

##### **Automobile parts - Chachoengsao**

##### **Rubber products - Rayong**

The sub-sector of rubber products has lowest points among three sub-sectors above mainly because of less accumulation of the same-trade enterprises in the region though the sub-sector has strength in easy access to raw materials and for avoiding stiff raw material purchasing competitions. In comparison of

two regions for automobile parts, Chon Buri seems to be more appropriate than Chachoengsao as a model cluster in the CSCD project because of advantages in access to various automobile assemblers, accumulation of the same-trade enterprises and easy access to Business Development Services. Thus, the cluster of **Automobile parts in Chon Buri** represents IPC-9.

### **IPC-10**

#### **Palm oil - Surat Thani**

#### **Parawood woodworking - Surat Thani**

Palm oil enterprises do a squeezing process in the region and then the raw oil is sent to Bangkok area for refining and subsequent processes companies (large retail companies). Therefore, industrial extent and linkage from the sub-sector of oil palm is not expected for the time being in the region. The sub-sector of parawood working has strength in easy acquisition of raw materials in the region as same as that of palm oil. In addition, a certain accumulation of same-trade enterprises is recognized in the region and growth potentials are marked high as relatively young industry. Thus, **Parawood woodworking in Surat Thani** is regarded more appropriate as an SME Industrial cluster.

### **3.3.2 Conclusion**

Since two candidates were chosen from the sub-sector of textile, a higher score of Textile (Silk) in Khon Kaen is to be selected. And the lowest score among the rest three candidates is removed, that is Rice mill in Suphan Buri. As the result, both parties agreed to select the following three clusters as model clusters for the CSCD project.

- 1) **IPC-5: Textile (Silk) - Khon Kaen**
- 2) **IPC-9: Automobile parts - Chon Buri**
- 3) **IPC-10: Parawood working- Surat Thani**

## Chapter 4 Model Cluster Master Plans and Action Plans



## Chapter 4 Model Cluster Master Plans and Action Plans

### 4.1 Process of Making Model Cluster Promotional Plans

This section refers to establishing master plans and action plans for promoting the three model clusters:

- (1) Khon Kaen silk textile industries (IPC5)
- (2) Chon Buri automotive parts industries (IPC9)
- (3) Surat Thani Parawood industries (IPC10)

The following policies have been established to ensure continuation of the cluster promotional activities after the completion of the projects in the three areas:

- (1) Technical transfer of cluster diagnostic and promotion planning techniques to the Thai consultants for medium and small businesses
- (2) Making promotional plans with as many local cluster representatives as possible

It was also decided that the plans would be made according to the following schedule:

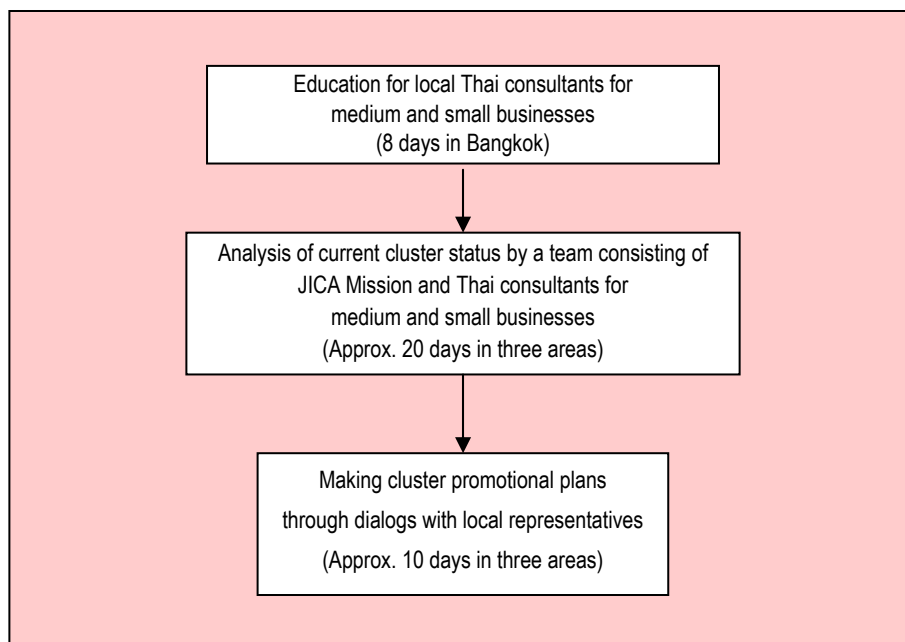


Figure 4.1-1 Flow Chart of Planning of Cluster Promotion Aiming at Sustainability

#### 4.1.1 Use of Local Thai Consultants for Medium and Small Businesses

Thailand has a training program for medium and small business consultants (called “Shindanshi” in Japanese) modeled after the Medium and Small Enterprise Management Consultant System in Japan. The training program in Thailand is a full-time educational course, lasting approximately 10 months, after which the successful trainees would become medium and small business management consultants. A total of 335 trainees (called “Assistant Shindanshi”) have successfully completed the course during the last four curriculum periods. Some of them are already operating as independent consultants. JICA Mission decided to select a certain number of assistant consultants and transfer necessary business management techniques to them so that they will play a central role in the future.

Toward that goal, the 8-day training program was conducted by the JICA experts acting as lecturers. Upon completion of the program, the trainees were assigned to one of the model clusters in three areas for OJT of cluster management consultation (diagnosis) for a month with the JICA experts. The participants in the 2004 program consisted of 19 Shindanshi, 2 to 3 persons each from IPC5, IPC9 and IPC10, and some from DIP.

#### 4.1.2 Method of Industrial Cluster Diagnosis

A group of consultants, consisting of 2 to 3 JICA experts and 6 to 7 Shindanshi that had completed the training program, was assigned to each of the three model clusters. The local IPC directors and staff members provided full support as the local counterpart. Each cluster team (working group) consisted of the following members.

**Table 4.1-1 Assignment of Working Group**

	(Unit: persons)		
	<u>Khon Kaen</u>	<u>Chon Buri</u>	<u>Surat Thani</u>
JICA Mission Expert	3	2	2
Thai Shindanshi	6	7	6

Management consultation (diagnosis) of the three model clusters started immediately upon completion of the Shindanshi training.

### **4.1.3 Method of Current Status Survey**

Current status surveys were conducted in three different styles, as shown below, to identify the current situations of the model clusters.

(1) Questionnaire surveys with the relevant enterprises that form the specific cluster

A questionnaire survey (direct interview) was conducted by a local research company at 50 companies per cluster. The Working Group visited several medium and small companies chosen from among the 50 companies based on the result of the questionnaire survey.

(2) BDS interview surveys

A survey team in each area conducted a direct interview survey with the BDS in that area.

(3) Interview surveys with Thai government offices

Interview surveys were conducted with the central government offices in Bangkok regarding industrial cluster promotion and with local government offices in the model cluster areas regarding industrial cluster promotion at the local level.

### **4.1.4 Method of Cooperation with the Local People**

Industrial cluster promotion should ideally be developed by the local people, including enterprises belonging to the same trades, related industries, BDS, and government offices including local governments. From this point of view, maximum efforts were made by the Working Group (JICA Mission, Shindanshi, and IPC) to organize a system of cooperation with the local people toward the project.

To be more precise, the Working Group held three workshops during the month of cluster diagnosis. More details can be found in the following clause 4.2 onward.

(1) Initial workshop

The project (CSCD) briefing to the local representatives and requests for their cooperation

(2) PCM workshop

Problem analysis of the specific industrial cluster in the presence of the local representatives. Basic discussion for making master plans for promoting the specific clusters.

(3) Final workshop

Announcement of the master plans (framework) for promoting the specific clusters to the local representatives to acquire their consensus. Proposing the pilot projects and requesting their cooperation.

## 4.2 Khon Kaen Textile Industry Cluster

### 4.2.1 Characteristics of the Target Cluster and SWOT analysis

#### 4.2.1.1 Characteristics of the Target Cluster in Khon Kaen

Craft Item	Silk Textile
Province	Khon Kaen
No. of Tambon	8 Tambons
No. of Village	80 Villages
No. of population (Persons)	41,387 (Persons)
No. of workers in textile industry (Percentage)	2,502 (6.05%)*
No. of engagement in the silk textile industry	
1. SME	12
2. Production Group	38 Groups
3. Workshop	5
4. Skilled persons	1,021 persons (41% of the person who engage in production)
Average Income per one (semi-skilled)	3,650 Baht per month
Average Income per one (Skilled)	5,830 Baht per month

\* Data from Amphur Chonnabot Community development. The total number of employees in SMEs and production group are those registered at OTOP.

In Thailand, including Khon Kaen, silk textile production is a traditional industry and is carried out by SMEs and production groups. The latter employs women of farms, who work in a local production group-organized like a cooperative- to earn supplemental income during the agricultural off-season. In addition, workshops are characterized as the third type of producer positioned between the other twos.

The workshop is operated as a permanent production base for high-value added products by using traditional techniques that have been modified to meet the present needs.

#### 4.2.1.2 SWOT analysis

Table 4.2-1 presents SWOT analysis , assessing the business environment surrounding silk textile in the province.

**Table 4.2-1 SWOT Analysis Silk Textile Cluster in Khon Kaen**

	<u>PRODUCTION</u>	<u>MARKET</u>	<u>MANAGEMENT &amp; FINANCIAL</u>	<u>PRODUCTS</u>
<b><u>S</u>-STRENGTH</b>	<ol style="list-style-type: none"> <li>1. Production cost is competitive.</li> <li>2. Easy to recruit weavers.</li> </ol>			<ol style="list-style-type: none"> <li>1. Mud Mee silk is the hand made fabric, requiring high skill.</li> </ol>
<b><u>W</u>-WEAKNESS</b>	<ol style="list-style-type: none"> <li>1. Unstable quality of products in color, density, etc.</li> <li>2. Old technology with low efficiency is used.</li> <li>3. Producers mainly use chemical dye which is not environment-friendly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Less marketing activities, waiting for customers to come to the manufactures.</li> <li>2. Lack of persons doing marketing effectively</li> <li>3. Market is not aware of the value of Mud Mee.</li> </ol>		<ol style="list-style-type: none"> <li>1. Lack of persons who can do good designs</li> <li>2. Designs do not meet the customer needs</li> <li>3. Usage of the products is limited because of unchanged fabric size and texture.</li> </ol>
<b><u>O</u>-OPPORTUNITY</b>	<ol style="list-style-type: none"> <li>1. There are a lot of support projects from the Government such as training in the region.</li> </ol>	<ol style="list-style-type: none"> <li>1. There are a lot of support projects from the Government such as OTOP.</li> </ol>	<ol style="list-style-type: none"> <li>1. The free trade zone will become effective in 2005.</li> </ol>	<ol style="list-style-type: none"> <li>1. Image of silk are luxury and elegant.</li> <li>2. Campaign to use Thai fabric by the Government.</li> </ol>
<b><u>T</u>-THREAT</b>	<ol style="list-style-type: none"> <li>1. Acquiring silk yarn is unstable in both quality and quantity in the region.</li> </ol>	<ol style="list-style-type: none"> <li>1. Competitors such as China and Vietnam are entering into the silk textile market.</li> <li>2. The regular users of silk are limited.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of information about supporting organizations.</li> <li>2. The free trade zone will become effective in 2005.</li> </ol>	<ol style="list-style-type: none"> <li>1. Market wants the product which is friendly to environment</li> <li>2. There are many types of fabric that customers can select instead of silk.</li> </ol>

## **4.2.2 Master Plan and Master Plan for Cluster Development for Silk Textile Production in Khon Kaen**

### **4.2.2.1 Vision, Mission and Strategies**

At the PCM workshop, participants agreed on the following points.

#### (1) Target group for industrial cluster development the traditional

Producers of silk textile and products (small articles) using the traditional “Mad Mee” production technique.

They should include the following three types of producers, which have different styles of production.

- SMEs that are engaged in organized production and/or sales operations
- Individual producers (female farmers) who belong to a production group and weave silk textile on the farm’s backyard during the off-season
- Workshops that are operated in the form of private enterprise but are specialized in high quality, expensive products

#### (2) Core problems and direct causes

The PCM workshop agreed on the following problem as a core problem facing the target group in the province:

#### **”A declining trend in silk product sales”**

Direct causes for the core problem were identified as follows.

- Marketing activities are lacking
- Chonnabot is not well branded
- Quality of products is not enough to sell in competitive markets
- The products are not new, attractive nor unique
- Price competitiveness is low in the market
- Consumers face difficulty to maintain silk products

#### (3) Vision, mission and strategies

Through the above discussions, a basic framework for the industrial cluster and its development was established under the agreement of related parties, as follows.

Vision: Catch-up Global

(Explanation) The industry, overly relying on and confidence in its traditional production technique, fails to keep abreast of the domestic and international market needs. The vision is to catch up with the global market trend.

Mission: Good selling of Silk Textile

(Explanation) As the core problem is a decline in sales of silk textile made in the province, the mission focuses on the improvement of sales and marketing methods to reverse the trend.

To accomplish the mission so established, the following five strategies were established on the basis of discussion at the PCM workshop and input of the study team.

Strategy 1: Development of good marketing ability

Strategy 2: Assurance of high quality products constantly

Strategy 3: Development of design and new products

Strategy 4: Changing of producers consciousness toward their future

Strategy 5: Laying the foundation of cluster development

#### **4.2.2.2 Overall Image of the Master Plan**

To successfully implement the above strategies and accomplish the goals, concrete actions are essential. The master plan defines such actions as projects. Fig. 4.2-1 lists projects that are designed and proposed by the study team on the basis of discussion at the PCM workshop. The figure represents an overall image of the master plan.

#### **4.2.2.3 Action Plans for Implementation of the Master Plan**

Fig. 4.2-1 shows 12 projects that are proposed to accomplish the goals of the five strategies. A outline of the projects is presented in Table 4.2-2. In addition, candidate BSD providers are listed.

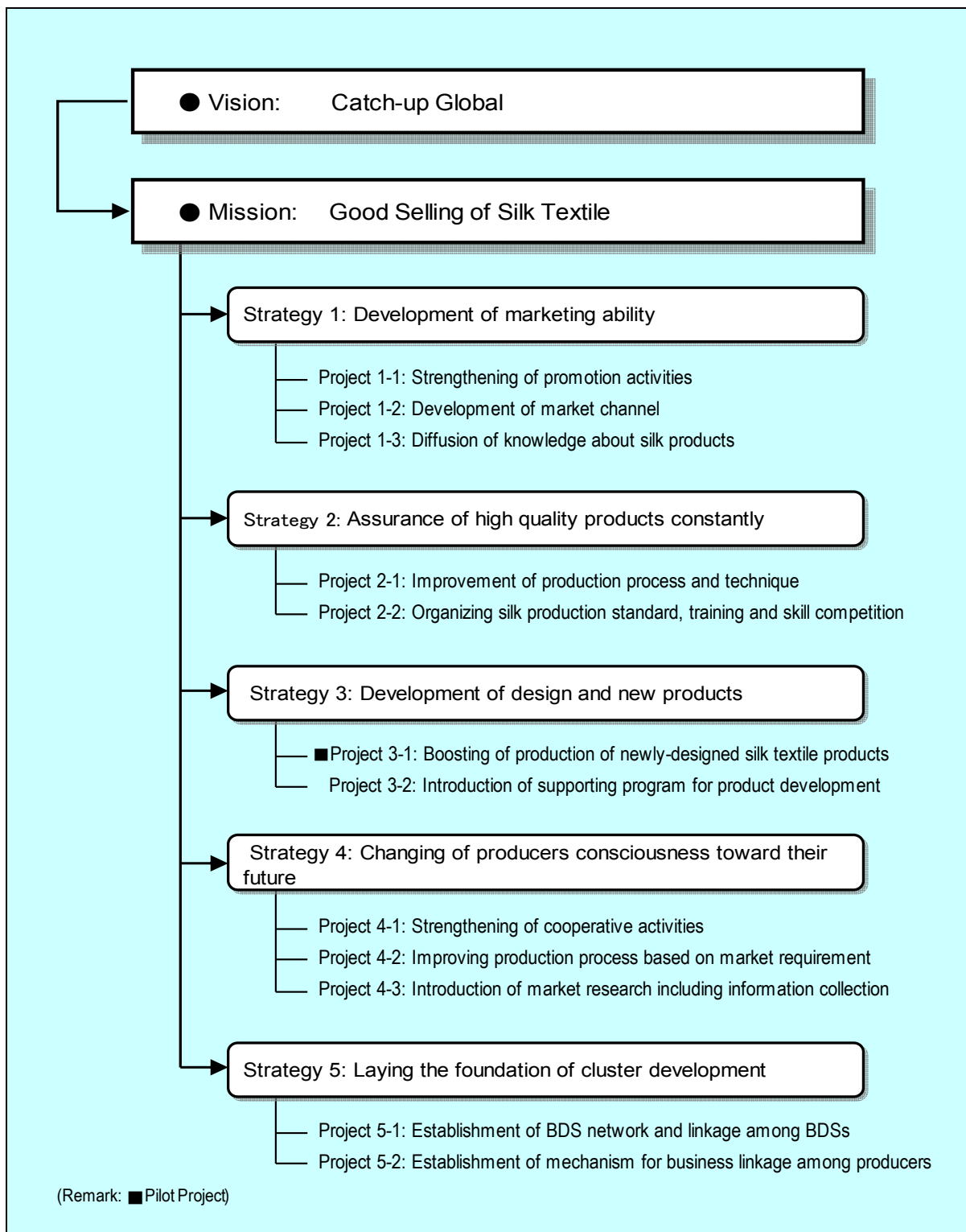


Figure 4.2-1 Framework of Master Plan for Silk Textile Cluster in Khon Kaen



**Table 4.2-2 (1/3) Brief Description of Proposed Projects**

**Project 1-1 Strengthening of promotion activities**

<b>Strategy:</b> Development of marketing ability
<b>Purpose:</b> The KK silk industry obtains strong edge in cluster promotion activities.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Brand of KK silk products prevails.</li> <li>2. Catalogues and leaflets of KK silk products are well prepared for marketing.</li> <li>3. A website of the KK silk industrial cluster is developed.</li> <li>4. Producers and manufacturers of silk products in KK continuously join OTOP</li> <li>5. A detailed marketing research is once done, being followed by continuous making-up of information.</li> </ol>
<b>BDS provider:</b> IPC5, Sala Mai Thai, Community Development, Tourism Authority KK Office

**Project 1-2 Development of market channel**

<b>Strategy:</b> Development of marketing ability
<b>Purpose:</b> Marketing channels of the KK silk products have been developed.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Producers and manufacturers of silk products in KK are supported to join silk exhibitions.</li> <li>2. Information about domestic and international buyers is gathered and filed for easy use.</li> <li>3. The KK silk industry establishes channel to make road show all over Thailand.</li> <li>4. The silk industry is combined with tourism industry promotion in KK.</li> </ol>
<b>BDS provider:</b> PC5, Community Development, Tourism Authority KK office

**Project 1-3 Diffusion of knowledge about silk products**

<b>Strategy:</b> Development of marketing ability
<b>Purpose:</b> The cluster provides users with easy maintenance silk products.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. The cluster publishes a guidebook for easy and economic maintenance of silk products.</li> <li>2. New technology to care silk textiles has been researched.</li> <li>3. Finishing technology with easy care of silk textile has been researched and developed.</li> </ol>
<b>BDS provider:</b> Textile Development Institutions

**Project 2-1 Improvement of production process and technique**

<b>Strategy:</b> Assurance of high quality products constantly
<b>Purpose:</b> Production process and technique has been improved coping with changing markets.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Washing and natural dyeing processes have been introduced.</li> <li>2. The coloring is improved to meet the need of changing markets</li> <li>3. Appropriate machinery and equipment for weaving are introduced</li> </ol>
<b>BDS provider:</b> IPC5

**Table 4.2-2 (2/3) Brief Description of Proposed Projects**

**Project 2-2: Organizing silk production standard, training and skill competition**

<b>Strategy:</b> Assurance of high quality products constantly
<b>Purpose:</b> Production standards, training course and skill competition are well organized.
<b>Outputs and activities</b> 1. Production method is standardized by verifying best practice. 2. Training course of production skills has been established. 3. Competition of producers is opened for studying the winner's technique
<b>BDS provider:</b> IPC 5, Sala Mai Thai, Khon Kaen Industrial and Community Education College

**Project 3-1: Boosting of production of newly-designed silk textile products**

<b>Strategy:</b> Development of design and new products
<b>Purpose:</b> Production of newly-designed silk-textile products is boosted.
<b>Outputs and activities</b> 1. Coordinators for product development are trained. 2. Newly designed products based on Mud Mee production techniques are developed for new markets. 3. Exhibitions are held for the newly designed products.
<b>BDS provider:</b> Sala Mai Thai and related organizations including IPC5

**Project 3-2: Introduction of supporting program for the product development**

<b>Strategy:</b> Development of design and new products
<b>Purpose:</b> Supporting program for the new product development is introduced
<b>Outputs and activities</b> 1. Training courses are designed; pattern, coloring, processing, product design, etc. 2. Text books are prepared and trainers are trained by experts. 3. Education fund for young designers, etc is set up.
<b>BDS provider:</b> Provincial Government, IPC5, Khon Kaen Industrial and Community Education College

**Project 4-1 Strengthening of cooperative activities**

<b>Strategy:</b> Changing of producers consciousness toward their future
<b>Purpose:</b> Cooperative activities increase in the cluster
<b>Outputs and activities</b> 1. Cooperative selling system (Software and hardware) is introduced. 2. Cooperative purchasing system is strengthened.
<b>BDS provider:</b> IPC 5, Department of Community Development, Sala Mai Thai

**Table 4.2-2 (3/3) Brief Description of Proposed Projects**

**Project 4-2 Improving production process base on market requirement**

<b>Strategy:</b> Changing of producers consciousness toward their future
<b>Purpose:</b> Production process has been improved based on market requirement
<b>Outputs and activities</b> 1. Producers are stimulated to use natural dye as market requirements. 2. Training course of natural dying technology is established.
<b>BDS provider:</b> IPC 5, Department of Community Development, Khon Kaen Technical and Community Education College

**Project 4-3 Introduction of market research including information collection**

<b>Strategy:</b> Changing way of thinking of producers toward their future
<b>Purpose:</b> Market research and information center activities have been introduced
<b>Outputs and activities</b> 1. A working group for market research is organized 2. A comprehensive market research is done by the working group/ 3. Results are open to public and the collected data are available in an information center.
<b>BDS provider:</b> Sala Mai Thai, IPC5

**Project 5-1: Establishment of BDS Network and Linkage among BDS**

<b>Strategy:</b> Laying the foundation of cluster development
<b>Purpose:</b> BDS is networked for the KK silk industry cluster.
<b>Outputs and activities</b> 1. Network and linkage system are planned for inter-BDS and between BDS and users 2. Regular meeting is organized for the cluster development and BDS development. 3. Functions and activities of each BDS are defined. 4. BDS providers work under a guidance of a BDS facilitator with a plan of the government.
<b>BDS provider:</b> IPC 5, IPO, PCC, KFCT, IFCT, Sala Mai Thai, Khon Kaen University, etc.

**Project 5-2: Establishment of Mechanism for Business Linkage among Producers**

<b>Strategy:</b> Laying the foundation of cluster development
<b>Purpose:</b> Business linkage activities become more aggressive among producers.
<b>Outputs and activities</b> 1. Business linkages system is activated by cooperation between producers and BDS providers. 2. Regular meeting is organized for creation of cooperative production work and division of labor. 3. The business relationship among producers is strengthened by forum, seminars, etc.
<b>BDS provider:</b> BDS Providers including IPC 5

### **4.3 Chon Buri Auto-Parts Industry Cluster**

#### **4.3.1 Characteristics of the Target Cluster and SWOT Analysis**

##### **4.3.1.1 Characteristics of the Target Cluster in Chon Buri**

The general environment surrounding the automotive industry in Chon Buri is summarized as follows.

- Chon Buri is roughly located in the middle of the area where automakers are concentrated. Endowed with a well-developed industrial infrastructure, such as transportation, industrial land, electricity, and communication, the province provides good locational advantages for automotive parts suppliers.
- In the province, large industrial estates are developed to attract a large number of automotive parts suppliers, most of which are foreign-affiliated companies.
- While the Thai government is shifting its industrial policy from protectionism (for local suppliers) to free competition with an aim to develop the industry into a major automotive production center in the ASEAN region, Japanese and U.S. automakers make strategic moves to promote Thailand as an export base for assembled cars. These trends exert an increasing pressure on parts suppliers to improve international competitiveness, including product quality.
- As seen in Toyota's establishment of automotive parts export centers in Vietnam and India, there are moves to integrate parts production bases, including the consolidation of factories in order to establish scales of economy within the ASEAN region.

Given the present business environment, local SMEs that make automotive parts in the province are characterized as follows.

- Unlike foreign suppliers, local SME suppliers are scattered outside the industrial estates and thus have a weak linkage to foreign companies operating in the industrial estates.
- Foreign suppliers that operate in the industrial estates can be both customers and competitors for local SME suppliers.
- As local suppliers have survived through the economic crisis in 1997, they maintain a relatively sound management base, including the customer base, human resources, and production technology.
- Most of SMEs in automotive industries are now increasing sales amount in accordance with the recovery of automobile production from the economic crisis.

- There is no information infrastructure to disseminate industry information, including technology and management, such as local activity of the TSAE and a local version of Automotive News.
- There is the lack of collaboration among SMEs, which have to make individual efforts to improve the management base.
- In particular, many SMEs feel limitation in their efforts in the areas of human resource development, market development, and technology upgrading, and they strongly expect BSD providers to provide more support.

#### 4.3.1.2 SWOT Analysis

Table 4.3-1 shows SWOT analysis assessing the business environment surrounding auto-parts industry in the province.

**Table 4.3-1 SWOT Analysis of the Auto-Parts Industry in Chon Buri**

<p><b><u>S-STRENGTH</u></b></p> <ol style="list-style-type: none"> <li>1. Location surrounded by, and transportation access to, automobile assemblers and auto parts manufacturers.</li> <li>2. Good financial position under growing sales.</li> <li>3. Regular contact and service by IPC9 and ATSME to SMEs in the province</li> </ol>	<p><b><u>W-WEAKNESS</u></b></p> <ol style="list-style-type: none"> <li>1. Development of market, human resource, and technology.</li> <li>2. Cooperative group activities by SMEs and BDSs.</li> <li>3. Information service infrastructure for automobile engineers and executives.</li> </ol>
<p><b><u>O-OPPORTUNITY</u></b></p> <ol style="list-style-type: none"> <li>1. Clear government policy to promote Thai automobile industry to the center of Asian automobile industry.</li> <li>2. Increasing motor vehicle production volume.</li> </ol>	<p><b><u>T-THREAT</u></b></p> <ol style="list-style-type: none"> <li>1. Free trade policy which leads to tough competition and more foreign investment at industrial estates in Chon Buri.</li> <li>2. Increasing demand for quality improvement of products for export.</li> </ol>

## 4.3.2 Master Plan and Action Plan for Cluster Development for Auto-parts Industry in Chon Buri

### 4.3.2.1 Vision, Mission and Strategies

At the PCM workshop, participants agreed on the following points.

(1) Target group for industrial cluster development the traditional

Local SMEs that produce automotive parts in Chon Buri

Thai auto-parts SMEs in Chon Buri (APCB)

(2) Core problems and direct causes

The PCM workshop agreed on the following problem as a core problem facing the target group in the province:

#### **“The lack of adaptability to the changes in the automotive industry”**

Direct causes for the core problem were identified as follows.

- While the market grows steadily, improvement of productivity does not keep pace.
- Quality improvement does not progress much to meet increasingly strict customer requirements.
- Efforts to improve the management base are limited to individual enterprises, and collaboration among local SMEs is insufficient.
- BDS providers fail to provide adequate service for individual enterprises as well as groups of enterprises.

(3) Vision, mission and strategies

Through the above discussions, a basic framework for the industrial cluster and its development was established under the agreement of related parties, as follows.

Vision: Irreplaceable Player at Thai Auto Parts Industry

(Explanation) To develop local SME suppliers to an integral part of the Thai automotive industry by differentiating themselves from a growing number of foreign suppliers who operate in

the large industrial estates within the province, as well as parts manufacturers that are historically concentrated in Bangkok/Samut Prakan.

Mission: Catch-Up with Changes in Thai Automotive Industry

(Explanation) To enable local SMEs to be adaptive to the changes in the Thai automotive industry that is in the process of developing to a major production center in the ASEAN region.

To accomplish the mission so established, the following four strategies were established on the basis of discussion at the PCM workshop and input of the study team.

- Strategy 1: Improving productivity in growing market
- Strategy 2: Improving quality for customer satisfaction
- Strategy 3: Strengthening group activities for cooperation
- Strategy 4: Strengthening capacity of BDS providers

#### **4.3.2.2 Overall Image of the Master Plan**

To successfully implement the above strategies and accomplish the goals, concrete actions are essential. The master plan defines such actions as projects. Fig. 4.3-1 lists projects that are designed and proposed by the study team on the basis of discussion at the PCM workshop. The figure represents an overall image of the master plan.

#### **4.3.2.3 Action Plans for Implementation of the Master Plan**

Fig. 4.3-1 shows 9 projects that are proposed to accomplish the goals of the five strategies. A general outline of the projects is presented in Table 4.3-2. In addition, candidate BSD providers are listed.

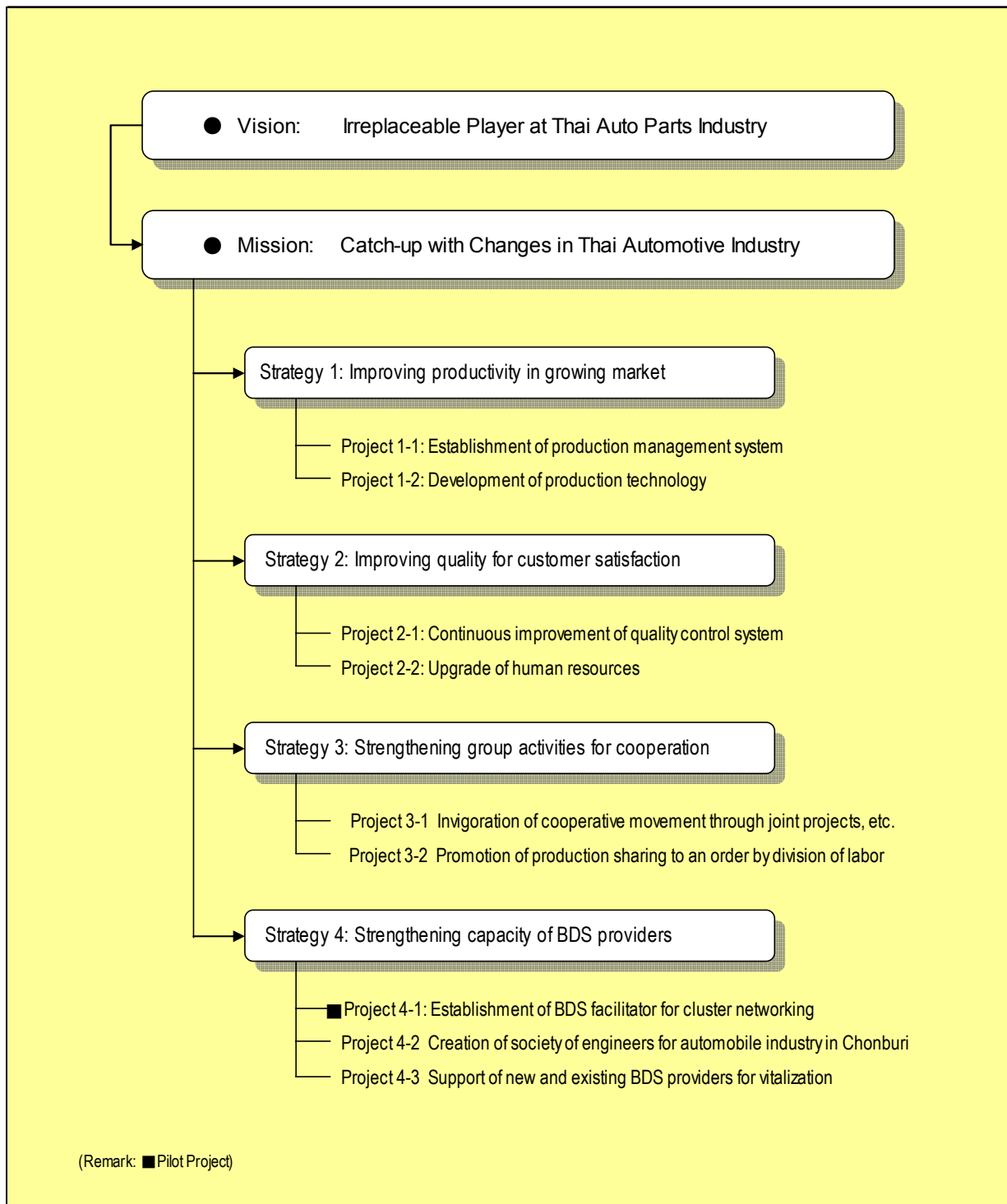


Figure 4.3-1 Framework of Master Plan for Auto Parts Cluster in Chon Buri



**Table 4.3-2 (1/3) Brief Description of Proposed Projects**

**Project 1-1: Establishment of production management system**

<b>Strategy</b> : Improving productivity in growing market
<b>Purpose</b> : Production management system is established
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Automobile market trend information service is strengthened by TAI, to such level as the Daily Automotive News Japan or the Weekly Automotive News U.S.A &amp; Europe. (“Automotive News ASEAN”)</li> <li>2. Market trend information released by TAI is utilized by SMEs in Chon Buri for their long-term production capacity &amp; investment planning.</li> <li>3. Basic process control charts and procedures are introduced to SMEs as a part of middle &amp; short-term production management system.</li> <li>4. Waste of over-production, delivery-delay/shortage or idle-machine/worker is decreasing year by year at SMEs in Chon Buri.</li> </ol>
<b>BDS provider</b> : TAI

**Project 1-2: Development of production technology**

<b>Strategy</b> : Improving productivity in growing market
<b>Purpose</b> : Production technology is developed.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Latest production technology know-how is acquired by SMEs from experts, factory tour and machine makers.</li> <li>2. Production equipment including jigs &amp; tools at SMEs in Chon Buri reach the standard level of Thai auto-part industry.</li> <li>3. Operators of SMEs participate in the training and skill certificate tests for automobile technicians.</li> <li>4. Operators at SMEs in Chon Buri have standard skill to handle and maintain production equipments.</li> </ol>
<b>BDS provider</b> : TAI

**Project 2-1: Continuous improvement of quality control system**

<b>Strategy</b> : Improving quality for customer satisfaction
<b>Purpose</b> : Quality system of APCB continuously improves.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Customer’s requirement about quality management standard is surveyed by SMEs in Chon Buri.</li> <li>2. Project team to get the required quality management standard is formed at the SMEs.</li> <li>3. Quality management standard such as ISO/QS is obtained by the SMEs.</li> <li>4. Criteria of the customers’ annual supplier evaluation system is surveyed by SMEs in Chon Buri.</li> <li>5. Major factor of the minus score at the last evaluation is analyzed by SMEs.</li> <li>6. Quality score of the customers’ supplier evaluation sheet for SMEs in Chon Buri are improved year by year.</li> </ol>
<b>BDS provider</b> : TAI

**Table 4.3-2 (2/3) Brief Description of Proposed Projects**

**Project 2-2: Upgrade of human resources**

<b>Strategy</b> : Improving quality for customer satisfaction
<b>Purpose</b> : Human resources of Thai Auto-parts SMEs in Chon Buri (APCB) are upgraded.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Engineers of APCB join the Society of Automotive Engineers Thailand (TSAE), Society of Automotive Engineers Japan (JSAE) or Society of Automotive Engineers International (SAE).</li> <li>2. Engineers of APCB get latest and practical automotive engineering information released by TSAE, JSAE or SAE.</li> <li>3. Engineers of APCB participate in engineering exhibition and convention held by JSAE or SAE.</li> </ol>
<b>BDS provider</b> : TSAE

**Project 3-1: Invigoration of cooperative movement through joint projects, etc.**

<b>Strategy</b> : Strengthening group activities for cooperation
<b>Purpose</b> : Cooperative movement is invigorated through joint projects, etc.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. A BDS facilitator is established with an active leader as a core institute for the networking, i.e. IPC 9.</li> <li>2. IPC 9 networks private companies and BDS providers</li> <li>3. IPC 9 and the network plan and do joint projects including continuation of the pilot project.</li> <li>4. The joint projects are implemented under monitoring of the BDS facilitator.</li> </ol>
<b>BDS provider</b> : IPC9

**Project 3-2: Promotion of production sharing to an order by division of labor**

<b>Strategy</b> : Strengthening group activities for cooperation
<b>Purpose</b> : A business form of production sharing to receive orders is promoted
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Groups are encouragingly organized, which receive orders of hybrid products, i.e. auto-parts and components.</li> <li>2. An E-commerce or E-shopping system is established for cooperatively receiving orders.</li> <li>3. Hybrid products which a company cannot make by itself are produced by the production sharing.</li> </ol>
<b>BDS provider</b> : IPC9

**Table 4.3-2 (3/3) Brief Description of Proposed Projects**

**Project 4-1: Establishment of BDS facilitator for cluster networking**

<b>Strategy :</b> Strengthening capacity of BDS providers
<b>Purpose :</b> IPC9 is functioning as facilitator in APCB.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Organization for cluster promotion of APCB is structured in IPC9 and the region.</li> <li>2. IPC 9 is equipped with capability as facilitator for APCB.</li> <li>3. Training courses are held for successors of APCB 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. Business relation between Japanese enterprises and APCB is strengthened.</li> </ol>
<b>BDS provider:</b> IPC 9

**Project 4-2: Creation of society of engineers for automobile industry in Chon Buri**

<b>Strategy :</b> Strengthening capacity of BDS providers
<b>Purpose :</b> Engineers for automobile industry in Chon Buri are networked.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. Branch of TAI and TSAE (Thai Society of Automobile Engineers) is established in Chon Buri.</li> <li>2. The established Chon Buri branch of TSAE has close relation and cooperation with JSAE (Japan Society of Automobile Engineers) in exchange of engineering information.</li> <li>3. Factory tour, engineering workshop, basic level automotive engineering lecture and other networking opportunities are provided by the branch of TSAE for SMEs and universities in Chon Buri.</li> <li>4. A journal of automobile engineering is published by engineers in Chon Buri and for all engineers in the country.</li> </ol>
<b>BDS provider:</b> IPC9, TAI, TSAE

**Project 4-3: Support of new and existing BDS providers for vitalization**

<b>Strategy :</b> Strengthening capacity of BDS providers
<b>Purpose :</b> New coming BDS providers are supported and the existing are vitalized.
<b>Outputs and activities</b> <ol style="list-style-type: none"> <li>1. BDS providers are mapped by category of functions they can serve as well as vacancy.</li> <li>2. BDS facilitator guides providers to create new goods for serving APCB.</li> <li>3. IPC 9 facilitates BDS providers and they communicate each other for better services.</li> <li>4. A committee is formulated to assist self-financing of BDS providers.</li> </ol>
<b>BDS provider:</b> IPC9 involving all BDS providers in Chon Buri

## 4.4 Surat Thani Parawood Industry Cluster

### 4.4.1 Characteristics of the Target Cluster and SWOT analysis

#### 4.4.1.1 Characteristics of the Target Cluster in Surat Thani

Craft Item	Parawood Processing Manufactures
Province	Surat Thani
No. of Amphur/Sub-amphur	19
No. of Tambon	131 Tambons
No. of Village	1,054 Villages
No. of population (Persons)	468,340 (Persons)
No. of engagement in the Parawood Woodworking	
1. SME	94
Average population income (as of year 2001)	4,962 Baht per month

\* Data from Surat Thani Administration Office as of 21/1/2004.

Parawood processing manufactures in Surat Thani province can be classified into 4 categories, as listed below: 4 categories are saw mills which cut logs to lumbers, specific purpose parawood product producers which produce particle boards and flooring...etc, furniture and woodwork producers, and other parawood used product producers. To make Surat Thani's parawood industry cluster development plan, those producers' categories and differences need to be understood. The characteristics of each category are as follows.

(1) Saw mill:

- Processing parawood logs to cut to be lumbers (i.e. wood sheets and/or square poles).
- Also including chemical dipping and heating for drying.
- Around 500,000 Baht to 160 million Baht and working capital is 50,000 Baht to 20 million Baht as sawn timber can be done in household to large-scale business.

(2) Specific purpose parawood product producers:

- Producing semi-product such as particle board, and plywood, etc.
- Mostly registered companies and there are management systems in the companies.
- Around 10 million Baht to 600 million Baht in investment size.

(3) Furniture and finished goods producers:

- Either only furniture manufacturing companies or integrated production from log purchasing to furniture at spare parts.
- Mostly more than 100 million Baht.
- Some small-size furniture manufacturers exist, but the number is not so many.

(4) Other parawood used products producers:

- Processing manufacturer that utilizes to other type of products such as charcoal, pallet, container, etc.
- Not more than 1 million Baht, and mostly, it is household businesses.

#### 4.4.1.2 SWOT analysis

Table 4.4-1 presents its results, assessing the business environment surrounding parawood industry in the province.

### 4.4.2 Master Plan and Action Plan for Cluster Development for Parawood Production in Surat Thani

#### 4.4.2.1 Vision, Mission and Strategies

At the PCM workshop, participants agreed on the following points.

(1) Target group for industrial cluster

Direct Target Group

Surat Thani Province's Parawood processing entrepreneurs

Each product processing industries have different characteristic; however, following 4 processing industry categories are considered in this considerations.

Upper stream industry, parawood saw mill which cut and dry lumbers.

- Specific purpose parawood product manufactures which make semi-products such as particle board, and flooring...etc.

Table 4.4-1 SWOT Analysis Parawood Cluster in Surat Thani

	<b>FACTOR CONDITION</b>	<b>MARKET (DEMAND CONDITION)</b>	<b>FIRM STRATEGY STRUCTURE RIVALRY</b>	<b>RELATED &amp; SUPPORTING INDUSTRY</b>	<b>OTHER CONDITIONS</b>
<b>S-STRENGTH</b>	<ol style="list-style-type: none"> <li>World wide requirement of woods and its substitution (i.e. parawood) are available in the region.</li> <li>Easy reach of raw material.</li> <li>Surat Thani is the centre of transportation in the southern region: i.e. railroad junctions, deep sea port and highway systems.</li> </ol>		<ol style="list-style-type: none"> <li>Innovative and challenging entrepreneurs, and new comers (establishers) exist in the region. The condition of the regional development is most likely suitable.</li> <li>Potential relating industries exist; furniture, parts and wooden products.</li> </ol>	<ol style="list-style-type: none"> <li>R&amp;D institutes for parawood for better use of the material (usefulness), exists in the near-by region.</li> </ol>	<ol style="list-style-type: none"> <li>Overall southern geographic region is suitable for planting parawood.</li> </ol>
<b>W-WEAKNESS</b>	<ol style="list-style-type: none"> <li>Up-trend of parawood price will cause higher cost.</li> <li>Insufficiency of skilled labors for industrial development.</li> </ol>		<ol style="list-style-type: none"> <li>Currently, there are high production losses.</li> <li>Currently there are no industrial cluster activities (i.e. BDS, networking, and gatherings). (Lack of activities to solicit the clustering).</li> <li>Current technology used in the region is simple.</li> </ol>	<ol style="list-style-type: none"> <li>While office and workshop spaces, tools &amp; equipments, and personnel (skill trainer and counselors...etc.) are already available as BDSs in the region, there are only a few BDSs users (or customers).</li> <li>Communications among BDS providers are insufficient: it is causing weak bonding. Thus the industrial and regional development is weakened.</li> <li>Currently, there are high machinery maintenance costs for parawood manufacturer factories, but there are no BDS services for the maintenances.</li> </ol>	<ol style="list-style-type: none"> <li>Only 16.67% work force are in the industries.</li> <li>None educational programs directly for parawood industry.</li> <li>Less number of interested students for parawood industry.</li> <li>Electricity in the region is not stable and frequently the electricity is "Down" and or "Off" conditions.</li> <li>Low bargaining power for the sawmills.</li> <li>Advanced payment for parawood log is the must causing high working capital.</li> <li>Parawood timber users are given 3-6 month payment term.</li> </ol>
<b>O-OPPORTUNITY</b>	<ol style="list-style-type: none"> <li>Greatest raw material supplies in the country. Approx. 2.2 million Rai (2002) in area</li> <li>Governmental support to re-plant parawood trees to replace the cut parawood trees due to the aging.</li> <li>Deep sea port provides more transport options to ship abroad.</li> </ol>	<ol style="list-style-type: none"> <li>World wide demand for nature-friendly and ecology-product in increasing.</li> <li>High export demand for parawood timber; to China, U.S.A. and Japan...etc.</li> <li>Decreasing plantation areas in many countries gives Thailand more export chance.</li> <li>Deep sea port provides more transport options to ship abroad.</li> <li>Forestry "Shut-Down" policy in some countries.</li> <li>FSC certification affects long term marketing.</li> </ol>	<ol style="list-style-type: none"> <li>Furniture export growth rate is 15% during 2004-2006.</li> </ol>	<ol style="list-style-type: none"> <li>More support to down-stream side of parawood industries are on the way, due to the current adjustment on BDS policies, by government.</li> </ol>	
<b>T-THREAT</b>	<ol style="list-style-type: none"> <li>Lack of systematic planning and development for this industry.</li> <li>Governmental policy and provincial strategic plans do not support the industry directly.</li> <li>Rubber price subsidized by government is affecting the industry.</li> <li>Parawood timber export to abroad is affecting domestic industry in terms of resources' cost and volume.</li> <li>Supportive policy for plantation in the Northern and North-eastern region by government and palm plantation expansion in the region affecting the overall parawood plantation area in Surat Thani.</li> </ol>		<ol style="list-style-type: none"> <li>China, Vietnam and some Asian countries are importing parawood timbers from Thailand to produce value-added products. They are also re-exporting the products to compete with Thai products.</li> </ol>	<ol style="list-style-type: none"> <li>BDS's information is not pertinent in term of timing. Also, it is causing non-related reference when it's used.</li> </ol>	<ol style="list-style-type: none"> <li>Mostly, small-size plantation in general.</li> <li>Raining season affects quality of parawood and parawood logs transportation (damage parawood logs)</li> </ol>

- Producer of furniture and woodwork product, the finished consumer goods.(Furniture manufacturer)
- Other parawood used product producers which produce charcoals, pallets, and wood box for shipping...etc.

#### Indirect Target Group

Indirect beneficiary are as follows.

- Parawood planters
- Domestic Buyers
- Relevant person in the industry

#### (2) Core problems and direct causes

The PCM workshop agreed on the following problem as a core problem facing the target group in the province:

#### **“Surat Thani province’s parawood industry is less competitive”**

Direct causes for the core problem were identified as follows.

- 1) Design Innovation Weakness.
- 2) BDS’s services do not respond target group needs.
- 3) High Operating Cost.
- 4) Lack of Industrial cluster development.
- 5) Low production efficiency.

#### (3) Vision, mission and strategies

Through the above discussions, a basic framework for the industrial cluster and its development was established under the agreement of related parties, as follows.

Vision: Innovating Surat Thani Parawood Cluster

(Explanation) Majority of industries are currently upper stream industry. This must be transferred to wide variety of industrial cluster which covers from upper stream industry to downstream industry.

Mission: Parawood Industry Group in Surat Thani has Higher Competitiveness

(Explanation) Develop value-added products in Surat Thani province to compete world wide consumer markets.

To accomplish the mission so established, the following four strategies were established on the basis of discussion at the PCM workshop and input of the study team.

- Strategy 1: Strengthening of innovating thrust
- Strategy 2: Development and promotion of clustering
- Strategy 3: Improvement of productivity
- Strategy 4: Upgrading of management efficiency

#### **4.4.2.2 Overall Structure of the Master Plan**

To successfully implement the above strategies and accomplish the goals, concrete actions are essential. The master plan defines such actions as projects. Fig. 4.4-1 lists projects that are designed and proposed by the study team on the basis of discussion at the PCM workshop. The figure represents an overall image of the master plan.

#### **4.4.2.3 Action Plans for Implementation of the Master Plan**

Fig. 4.4-1 shows 11 projects that are proposed to accomplish the goals of the four strategies. A general outline of the projects is presented in Table 4.4-2. In addition, candidate BSD providers are listed.



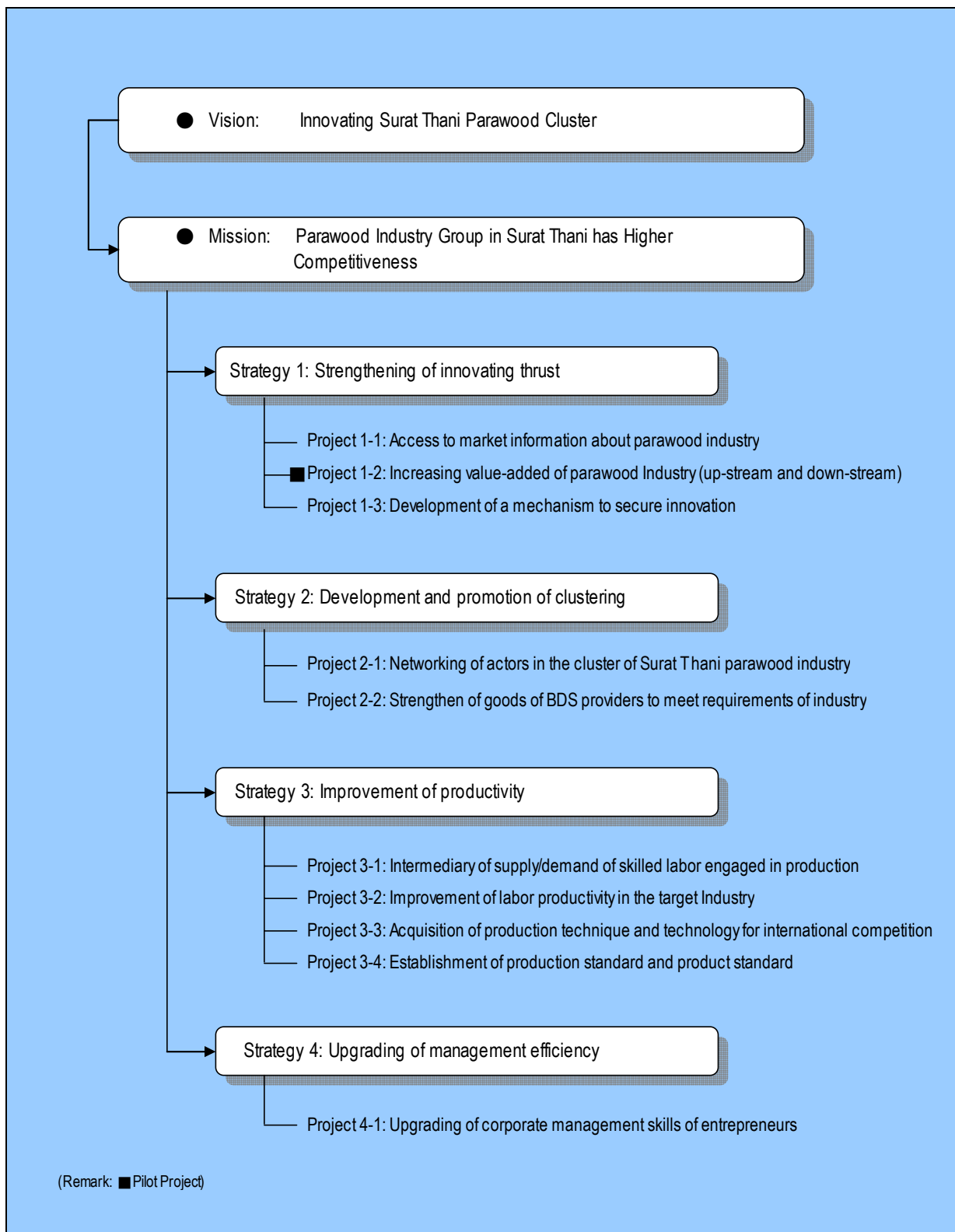


Figure 4.4-1 Framework of Master Plan for Parawood Cluster in Surat Thani

**Table 4.4-2 (1/3) Brief Description of Proposed Projects**

**Project 1-1: Access to market information about parawood industry**

<b>Strategy:</b> Strengthening of innovating thrust
<b>Purpose:</b> Market information of parawood Industry is gathered in a center and utilized.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. A center, Surat Thani Parawood Design Center (SPDC) to be newly established, gathers existing market information.</li> <li>2. Market study including FSC certification system is made for promotion of the parawood cluster in Surat Thani.</li> <li>3. The center is equipped with a web site of the above and serves people.</li> </ol>
<b>BDS provider:</b> Surat Thani Parawood Design Center (SPDC) to be newly established, IPC10

**Project 1-2: Increasing value-added of parawood Industry (up-stream and down-stream)**

<b>Strategy:</b> Strengthening of innovating thrust
<b>Purpose:</b> Value-added of the parawood Industry (including up-stream and down-stream) in Surat Thani.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. A coordination body, the Surat Thani Parawood Design Center, is set up.</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. Waste reduction and loss minimization measures including tools and manuals are prepared.</li> <li>4. Woodworking skill competition and furniture exhibition are held.</li> </ol>
<b>BDS provider:</b> IPC10, Walailak University, The Surat Thani Parawood Design Center to be newly established

**Project 1-3: Development of a mechanism to secure innovation**

<b>Strategy:</b> Strengthening of innovating thrust
<b>Purpose:</b> A mechanism to protect and use rights of ownership is built-up.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. People in the parawood industry in Surat Thani become aware of intellectual rights of ownership including, trademark, design and patent.</li> <li>2. The Surat Thani parawood industry positively acquires, uses and protects innovation including intellectual rights of ownership.</li> <li>3. The Design Center (SPDC) manages and sells common intellectual rights derived from the cluster's innovation movements and uses income as a resource of its self-financing operation.</li> </ol>
<b>BDS provider:</b> Design Center (SPDC), Ministry of Commerce

**Table 4.4-2 (2/3) Brief Description of Proposed Projects**

**Project 2-1: Networking of actors in the cluster of Surat Thani parawood industry**

<b>Strategy:</b> Development and promotion of clustering
<b>Purpose:</b> Actors of the parawood cluster are networked.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. A BDS facilitator is established with an active leader as a core institute for the networking, that is SPDC.</li> <li>2. SPDC networks actors by membership of private companies and BDS providers</li> <li>3. SPDC plans and does joint projects of members including continuation of the pilot project.</li> <li>4. BDS providers make own annual plan to serve other actors.</li> </ol>
<b>BDS provider:</b> IPC10 for initiating, SPDC for implementation

**Project 2-2: Strengthen of goods of BDS providers to meet requirements of industry**

<b>Strategy:</b> Development and promotion of clustering
<b>Purpose:</b> Goods of BDS providers to serve the target industry is strengthened.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. BDS providers are mapped by category of functions they can serve the target Industry.</li> <li>2. BDS facilitator and providers create new goods to serve enterprises in the target industry.</li> <li>3. Function of One Stop Service about information of BDS is provided.</li> <li>4. A committee is formulated to assist self-financing of BDS providers.</li> </ol>
<b>BDS provider:</b> IPC10, BDS facilitator (SPDC)

**Project 3-1: Intermediary of supply/demand of skilled labor engaged in production**

<b>Strategy:</b> Improvement of productivity
<b>Purpose:</b> Manpower is adequately allocated in the target industry by intermediary services
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. Information of both job hunters and job vacancies of enterprises are always kept in a database.</li> <li>2. A BDS provider intermediates between job hunters and employers</li> <li>3. Skilled labor requirements for the Surat Thani parawood industry are publicized to major cities of the country.</li> <li>4. Educational and training institutes are always informed about demand/supply gap in manpower.</li> </ol>
<b>BDS provider:</b> Branch office of Ministry of labor, Surat Thani Institute for Skill Development Region 11, SPDC

**Table 4.4-2 (3/3) Brief Description of Proposed Projects**

**Project 3-2: Improvement of labor productivity in the target Industry**

<b>Strategy:</b> Improvement of productivity
<b>Purpose:</b> Labor productivity in the parawood industry is improved by skill training.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. Skill standards of labor are prepared for theory and operation in processing including wood sawing, drying, forming and coloring</li> <li>2. Skill standards of labor are prepared for theory and operation in tooling including machinery operation and maintenance, and making and adjustment of tools and jigs.</li> <li>3. Labor are trained to satisfy the skill standards.</li> <li>4. Competency tests are conducted for certification.</li> </ol>
<b>BDS provider:</b> Ministry of Labor, Surat Thani Institute for Skill Development Region 11

**Project 3-3: Acquisition of production technique and technology for international competition**

<b>Strategy:</b> Improvement of productivity
<b>Purpose:</b> Production technologies to compete in international markets are acquired.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. Foreign buyers lecture international market needs and foreign engineers transfer technologies in Surat Thani.</li> <li>2. SPDC builds up closer relation with a foreign association(s) of the woodworking Industry.</li> <li>3. The cluster movement directs to cooperative R&amp;D works of productivity improvement.</li> </ol>
<b>BDS provider:</b> SPDC, DIP including IPC10

**Project 3-4: Establishment of production standard and product standard**

<b>Strategy:</b> Improvement of productivity
<b>Purpose:</b> Production and product standards are introduced to international markets.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. Production and product standards are set up after survey of foreign and international standards for woodworking Industry.</li> <li>2. Facilities are prepared for testing and inspection system in compliance with the standards</li> <li>3. Certification to have satisfied the standards is stamped on the parawood products.</li> </ol>
<b>BDS provider:</b> TISI, TPA, DIP

**Project 4-1: Upgrading of corporate management skills of entrepreneurs**

<b>Strategy:</b> Upgrading of management efficiency
<b>Purpose:</b> Corporate management skills of entrepreneurs are upgraded.
<b>Outputs and activities:</b> <ol style="list-style-type: none"> <li>1. Seminars and training course on management skills are held for entrepreneurs, management and young successors of owners.</li> <li>2. Study tours to well-managed firms are carried out to both domestic firms and abroad.</li> <li>3. Consultation system and network are strengthened for company diagnosis and guidance in terms of management skill upgrading.</li> <li>4. Manuals for self-diagnosis of own companies are prepared in order to measure their requirements of consultancy.</li> </ol>
<b>BDS provider:</b> OSMEP, DIP, Educational institutes

## Chapter 5 Selection and Implementation of Pilot Projects

## Chapter 5 Selection and Implementation of Pilot Projects

### 5.1 Criteria for Pilot Project Selection

For the three model clusters, the following numbers of projects were identified at a meeting with participation of local parties. In fact, these projects constitute basic elements of the master plan and the action plan for model cluster development. Each project was discussed and agreed by participants in May 2004.

- |   |             |
|---|-------------|
| (1) Khon Kaen silk textile cluster:             | 12 projects |
| (2) Chon Buri automotive/machine parts cluster: | 9 projects  |
| (3) Surat Thani parawood industry cluster:      | 10 projects |

It is recommended to select a high priority project as a pilot project for each cluster. The priority for pilot project selection was based on grading made by participants for the following four elements (also see Chapter 4) at the first seminar held in each model cluster, in August 2004.

- |            |  |
|------------|--|
| Element 1: | Urgency and necessity for project implementation   |
| Element 2: | Impact and effectiveness of project implementation |
| Element 3: | Feasibility and viability of the project           |
| Element 4: | Sustainability for the project                     |

Each element was graded on a scale of one to three points, with the full mark being 12 points. The grading results are summarized in Tables 5.1-1 (Khon Kaen), 5.1-2 (Chon Buri), and 5.1-3 (Surat Thani).

**Table 5.1-1 Grading of the proposed projects – Khon Kaen**

Project Number	Project Name	Total points
Project 1-1	Strengthening of promotion activities	11.08
Project 1-2	Development of market channel	10.92
Project 1-3	Diffusion of knowledge about silk products	11.37
Project 2-1	Improvement of production process and technique	10.66
Project 2-2	Organizing silk production standard, training and skill competition	10.32
<b>Project 3-1</b>	<b>Boosting of production of newly-designed silk textile products</b>	<b>10.84</b>
Project 3-2	Introduction of supporting program for product development	10.63
Project 4-1	Strengthening of cooperative activities	10.32
Project 4-2	Improving production process based on market requirement	10.87
Project 4-3	Introduction of market research including information collection	10.26
Project 5-1	Establishment of BDS network and linkage among BDSs	10.00
Project 5-2	Establishment of mechanism for business linkage among producers	9.87

**Table 5.1-2 Grading of the proposed projects – Chon Buri**

Project Number	Project Name	Total points
Project 1-1	Establishment of production management system	10.1
Project 1-2	Development of production technology	9.9
Project 2-1	Continuous improvement of quality control system	9.8
Project 2-2	Upgrade of human resources	10.1
Project 3-1	Invigoration of cooperative movement through joint projects, etc.	8.9
Project 3-2	Promotion of production sharing to an order by division of labor	8.4
<b>Project 4-1</b>	<b>Establishment of BDS facilitator for cluster networking</b>	<b>10.2</b>
Project 4-2	Creation of society of engineers for automobile industry in Chonburi	8.7
Project 4-3	Support of new and existing BDS providers for vitalization	8.5

**Table 5.1-3 Grading of the proposed projects – Surat Thani**

Project Number	Project Name	Total points
Project 1-1	Access to market information about parawood industry	9.1
<b>Project 1-2</b>	<b>Increasing value-added of parawood Industry (up-stream and down-stream)</b>	<b>10.1</b>
Project 1-3	Development of a mechanism to secure innovation	7.6
Project 2-1	Networking of actors in the cluster of Surat Thani parawood industry	9.1
Project 2-2	Strengthen of goods of BDS providers to meet requirements of industry	8.1
Project 3-1	Intermediary of supply/demand of skilled labor engaged in production	9.0
Project 3-2	Improvement of labor productivity in the target Industry	9.9
Project 3-3	Acquisition of production technique and technology for international competition	8.6
Project 3-4	Establishment of production standard and product standard	9.8
Project 4-1	Upgrading of corporate management skills of entrepreneurs	8.8

## 5.2 Selection of Pilot Projects

Pilot projects were selected by taking into account both quantitative evaluation by participants (by means of grading) and qualitative evaluation by the JICA mission. As for Chon Buri and Surat Thani, projects that were given the highest grades from participants were selected as pilot projects, namely Projects 4-1 and 1-2, respectively. On the other hand, for Khon Kaen, Project 3-1 as selected is not the one with the highest grade. This needs some explanation.

The graders in Khon Kaen were primarily composed of female farmers, who worked as silk textile weavers, and they gave relatively high grades compared to other two model clusters. The graders of the Khon Kaen cluster gave 10 or higher points to 11 projects out of 12 projects, making them quantitatively qualified for pilot projects. Further analysis based on Table 5.1-1 indicates that three projects in “Strategy 1: Development of Marketing Capability” occupied the top three places. This appears to reflect what producers, i.e. female farmers, who represent the majority of graders, think about their products, that they are confident in making high quality products so long as market channels are available. In addition, Project 4.2, which received the fourth highest evaluation from participants, is associated with marketing.

Consequently, the JICA mission selected Project 3-1 as the pilot project for the Khon Kaen cluster. While the project ranked fifth in the quantitative evaluation, it was selected in consideration of the following qualitative factors.

- (1) While it is true that sales promotion is very important, priority should be placed on the build-up of a system to manufacture marketable and competitive products.
- (2) Sluggish sales of silk textile products made in Khon Kaen appear to be caused by old design, failing to meet the market needs, rather than the QCD requirements.
- (3) The pilot projects should preferably produce measurable results within time and budget limitations for CSCD. Also, they should be able to leverage Japanese experts and their capabilities, rather than those that can be easily implemented by Thai personnel alone.
- (4) The JICA mission judges that Project 3-1 satisfies more of the above requirements than other projects do. Also, the project received 10.84 points, which are not significantly lower than alternative projects with higher points.



### 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 market in Bangkok
- b) From December 10 to 12, 2004, another study tour for a competitor in Chiang Mai.

3) Preparation of the training manual to guide product development

The JICA expert prepared a training manual and distributed to participants in the second seminar in Khon Kaen of May 2005.

(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 Udon Thani 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 Udon Thani 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.

2) Study tour for silk textile producers

For the target group members who mainly participated in the Udon Thani 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 persons participated.

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.

(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 exhibited a part of prototypes for the exhibition.

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.

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.

### **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.

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.

### **5.3.1.4 (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 goal) 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

##### 2) Visits of SMEs and BDS providers by the JICA mission

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.



3) Mutual visits to organizations of cluster members

The cluster members, who joined the Kick-off and Team Building Workshop, made mutual group visits of cluster members for better understanding each other. Five enterprises, three university and colleges and one training school visited each other.

4) Formulation of APCB and CAMC

The beneficiary of the cluster promotion was mainly SMEs that manufacture auto parts in Con Buri. Therefore, the cluster name was decided as Auto Parts Chon Buri (APCB in short). 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).

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. It is considered that IPC9 recognized and regarded it as important that the unit work should be finished according to the project schedule.

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.

(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

- 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

(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. It is called "CAMC Library." Finally, the mini-library has about 800 books, 20 magazines, CD-ROM and Video tapes.

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.

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

(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. 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

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.

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 fork 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, namely Cluster Division in IPC9, CAMC Promotion Committee and Advisory Committee.

(2) Cluster Division within IPC9

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

(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.

(4) CAMC Promoting Committee

CAMC Promoting Committee has been organized to plan and manage activities of CAMC.

**5.3.2.4 (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) Log frame (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 5.3-3 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.

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.

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. Many prototype furniture were 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 with advice of the JICA mission. The JICA expert visited SISD11 several times for guidance of lecture and practice.

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. 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)

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

2) Reports of the loss reduction survey

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 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) 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 and Prison

2) 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”

3) Number of visitors to exhibition

The number of 436 questionnaire sheets were distributed to visitors at the main entrance for the exhibition. The number of visitors is estimated as around 800 persons including visitors who entered from another entrance. Japanese potential buyers, 17 persons of 12 companies, visited the exhibition and companies in Surat Thani giving strong impact to the cluster.

### 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. As mentioned before, any organization has not been established during the period of the pilot project.

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 vice 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 5.3-4 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. Thus, building of consensus is on-going towards organizing the cluster.

#### **5.3.3.4 (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 goal 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 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 elected. 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 Evolvement of Cluster Promotion

## Chapter 6 Plan for Nationwide Evolvement of Cluster Promotion

### 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.

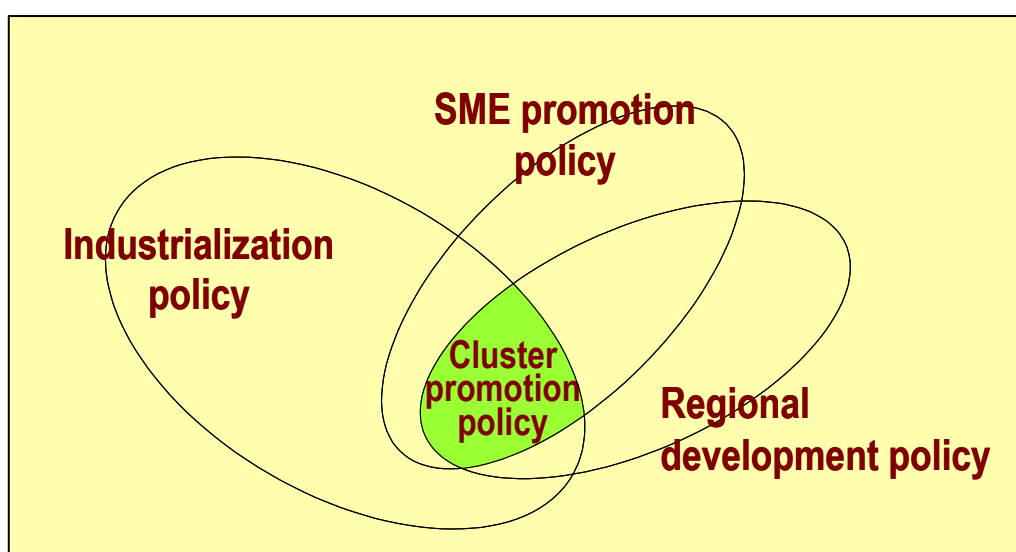
- 1) The cluster has easy access to raw materials and other resources.
- 2) A properly commercialized BDS (Business Development Service) is available.
- 3) The cluster has long been famous and has many customers.
- 4) The workers have high levels of skill.

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**

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, 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**

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)

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.

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

**Table 6.1-2 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.

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.

#### **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.



## **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. 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;

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.

### **6.2.2 Problems Involved in Cluster Promotion in Thailand**

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

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.

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.

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

- (1) The cluster activation shall be promoted through private initiative.
- (2) Cluster promotion shall be initiated by a voluntary application from the candidate clusters.
- (3) The government shall examine the application on the basis of the requirements of industry cluster.
- (4) The government shall help formulate each individual industry cluster promotion plan (technical support).
- (5) The government shall provide financial backup for the program (financial support).

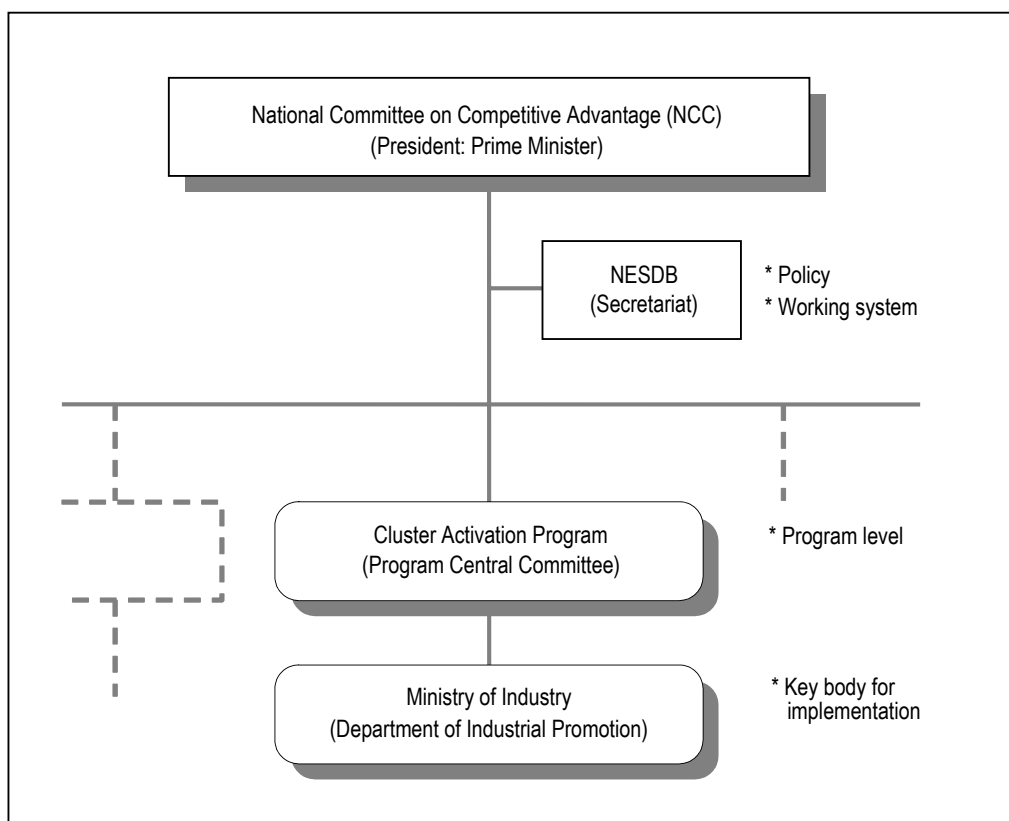
## **6.4 Plans for Execution of “Program for Nationwide Evolvement of Industry Cluster Promotion”**

### **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.

### **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.



**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.

### 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

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

- 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.

#### **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.

- (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.



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

- (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.
- (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.

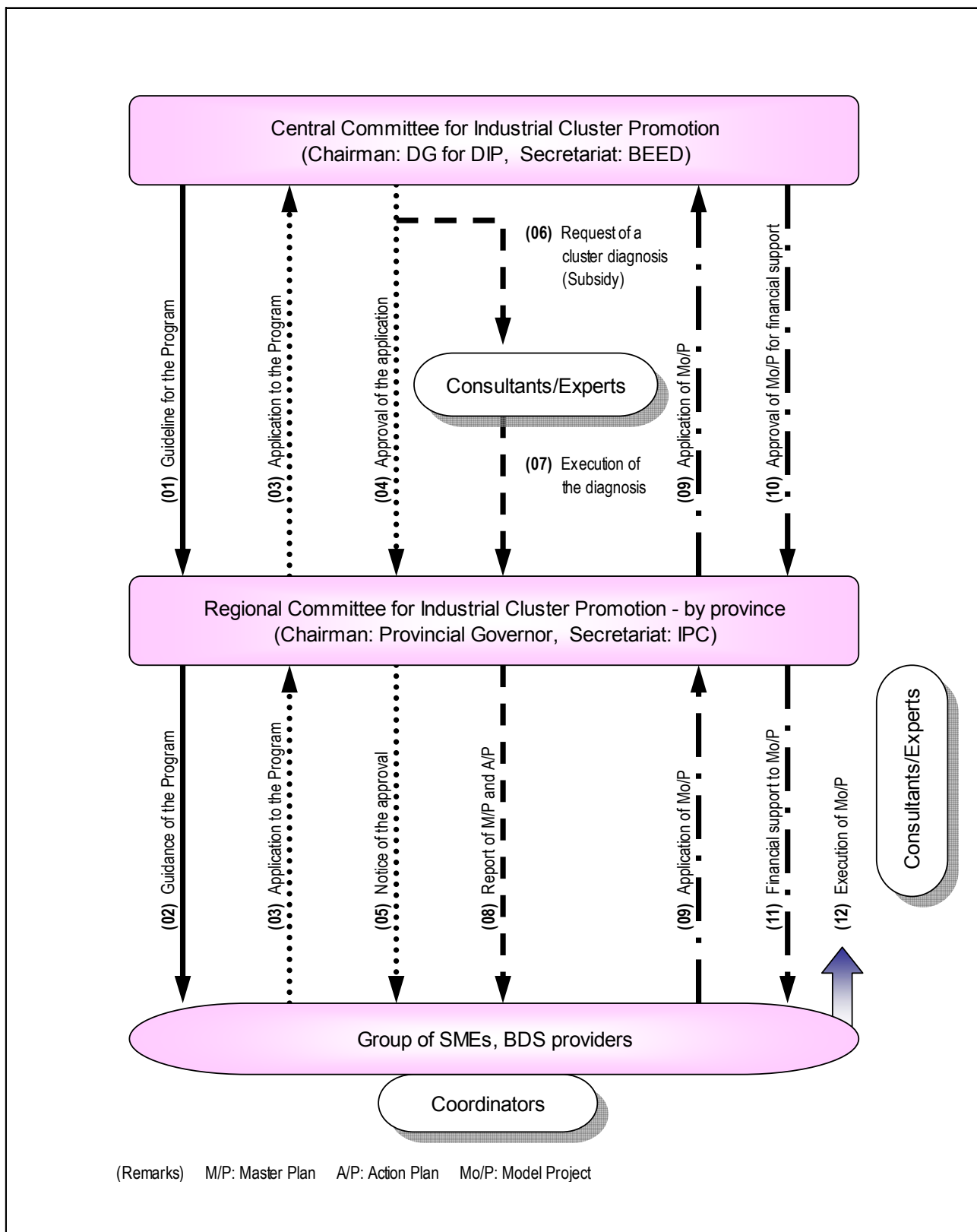


Figure 6.4-2 Industry Cluster Promotion Procedure

### **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).

### **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.

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

**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

### 6.5.1 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

### 6.5.2 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 shindan 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 production 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.

### 6.5.3 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). In addition, the OJT course will be extended to 1.5 calendar months (30 working days). 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 into the Cluster Shindan-shi training program.