No.

Directorate General of Small and Medium Industry
Ministry of Industry
Republic of Indonesia

THE COOPERATION FOR STRENGTHENING CLUSTERS (SENTRA) OF SMALL AND MEDIUM INDUSTRIES IN THE REPUBLIC OF INDONESIA

FINAL REPORT
(Summary)

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Japan International Cooperation Agency

UNICO International Corporation
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Abbreviations

Abbreviation	Bahasa Indonesia	English
AP3MA	Asosiasi Petani, Produsen, dan Pelaku Agribisnis Minyak Atsiri Jawa Barat	Association of Farmers, producers, and actors Agribisns West Java Essential Oil
APINDO	Asosiasi Pengusaha Indonesia	Indonesia Employer Association
BALITRO	Balai Penelitian Tanaman Obat dan Aromatik	Research Institute for Medicinal and Aromatic Crops
BAPPEDA	Badan Perencanaan Pembangunan Daerah	Regional Development Planning Board
BAPPENAS	Badan Perencanaan dan Pembangunan Nasional	National Development Planning Agency
BARISTAND	Balai Riset dan Standarisasi	Research and Standardization Institution
BBIA	Balai Besar Industri Agro	Agro Industry Research Institute
BDI	Balai Diklat Industri	Industrial Training Institute
BDS		Business Development Service
BI	Bank Indonesia	Bank Indonesia
BKPMD	Badan Koordinasi Penanaman Modal Daerah	Regional Coordination Board for Investment
BKP4K	Badan Ketahanan Pangan Dan Penyuluhan Pertanian Perikanan Dan Kehutanan	Extension Office for Agriculture, Forestry and Fisheries
BMT	Baitul Maal wat Tamwil	
BPPT	Balai Pengkajian dan Penerapan Teknologi	Agency for the Assessment and Application of Technology
BPT	Badan Pelayanan Teknis	Technology Service Institute
BPR	Bank Perkreditan Rakyat	Bank Perkreditan Rakyat
BPS	Badan Pusat Statistik	Statistic Bureau
BRI	Bank Rakyat Indonesia	Bank Rakyat Indonesia
CSR		Corporate Social Responsibility
DAI	Dewan Atsiri Indonesia	Indonesian Essential Oil Council
DAC		Development Assistance Committee
CD-SMEs		Center for Development of SMEs
DEKRANASDA	Dewan Kerajinan Nasional Daerah	National Craft Regional Committee
DGIKM	Direktorat Jenderal Industri Kecil dan Menengah	Directorate General of Small and Medium Industries
Dinas	Dinas	Regional Government Office
DPE	Dewan Pengembangan Ekonomi	Economic DevelopmentCommittee
DPDS	Dewan Pengembangan Daya Saing	Committee for Regional Competitiveness Development
EO		Extension Officer
FEDEP	Forum for Economic Development and Employment Promotion	Forum for Economic Development and Employment Promotion

Abbreviation	Bahasa Indonesia	English
FGD		Focus Group Discussion
FPESD	Forum Pengembangan Ekonomi dan Sumber Daya	Economic Development and Resource Forum
FRK	Forum Rembug Klaster	Cluster Forum
GAP		Good Agricultural Practice
GDP		Gross Domestic Product
GMP		Good Manufacturing Practice
GTZ		German Technical Cooperation/Deutsch Gesellschaft für Technische Zusammenarbeit
ICT		Information and Communication Technology
IKM	Industri Kecil dan Menengah	Small and Medium sized Industry
IKOPIN	Institut Manajemen Koperasi Indonesia	Indonesia Cooperative Management Institute
IMS-GT		Indonesia, Malaysia, and Singapore - Growth Triangle
IMT-GT		Indonesia, Malaysia, and Thailand - Growth Triangle
IPB	Institut Pertanian Bogor	Bogor Agricultural University
ISEO		International Seminar for Essential Oil
ISO		International Organization for Standardization
ITB	Institut Teknologi Bandung	Bandung Institute of Technology
JETRO		Japan External Trade Organization
JICA		Japan International Cooperation Agency
KADIN	Kamar Dagang dan Industri	Chamber of Commerce and Industry
KADINDA	Kamar Dagang dan Industri Daerah	Regional Chamber of Commerce and Industry
KPIN	Kebijakan Pembangunan Industri Nasional	National Industrial Development Policy
KUB	Kelompok Usaha Bersama	Joint Business Group
KUR	Kredit Usaha Rakyat	People’s Business Credit
KUT	Kredit Usaha Tani	Agro Business Credit
LIPI	Lembaga Ilmu Pengetahuan Indonesia	The Indonesian Institute of Sciences
LPG		LiquefiedPetroleum Gas
MFI		Microfinance Institution
MIDC(BBLM)	Balai Besar Pengembangan Industri Logam dan Mesin	MetalIndustriesDevelopmentCenter
MOI	Departmen Perindustrian	Ministry of Industry
MOIT	Departmen Perindustrian dan Perdagangan	Ministry of Industry and Trade

Abbreviation	Bahasa Indonesia	English
MoU		Memorandum of Understanding
NAFED(BPEN)	Badan Pengembangan Ekspor Nasional	National Agency for Export Development
NGO		Non Governmental Organization
OVOP		One Village One Product
P2WKSS	Peningkatan Peranan Wanita menuju Keluarga Sehat dan Sejahtera	Empowerment of Women for Healthy Good Welfare Households
P3UKM	Pusat Pengembangan Pendampingan Usaha Kecil dan Menengah	Centre for Development of BDS Providers for SME
PA		Pachouli Alcohol
PP		Pilot Project
PDCA		Plan Do Check Action
PDM		Project Design Matrix
PKDL	Persatuan Kepala Desa dan Lurah	District Head and Village Head
PIKM	Pemgenbangan Industri Kecil dan Menengah	Small and Medium sized Industry Development
PUPUK	Perkumpulan Untuk Peningkatan Usaha Kecil	The Association for Advancement of Small Business
QCD		Quality, Cost, Delivery
RDC		ResourceDevelopmentCenter
RGDP		Regional Gross Domestic Product
RPJM	Rencana Pembangunan Jangka Menengah	National Medium-Term Development Plan
SC		Supply Chain
SETDA	Sekretariat Daerah	Regional Secretary
SME		Small and Medium sized Enterprises
SMIK	Sekolah Menengah Industri Kerajinan	High School for Handy Craft Industry
SMK	Sekolah Menengah Kejuruan	Vocational High School
SMOCSME	Kementerian Koperasi dan UKM	The Office of State Minister for Cooperative and SME
SOP		Standard Operating Procedures
SWOT		Strength, Weakness, Opportunity and Threat
TOT		Training of Trainers
TQM/TQC		Total Quality Management/Total Quality Control
UKM	Usaha Kecil dan Menengah	
UNDIP	Universitas Diponegoro	DiponegoroUniversity
UNPAD	Universitas Padjadjaran	Padjadjaran University
UNWIM	Universitas Winaya Mukti	Winaya Mukti University
UPL	Unit Pendampingan Langsung	Direct Assistance Unit

Abbreviation	Bahasa Indonesia	English
UPTD/UPT	Unit Pelayanan Teknis Daerah	Regional Common Service Facilities
WG		Working Group
5S		SEIRI, SEITON, SEISO, SEIKETSU, SHITSUKE(Japanese)

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Chapter 1 Objective, Background and Outline of the Cooperation

1.1 Background of the Cooperation

The Indonesian government formulated "National Industry Development Policy" in 2005 for the purpose of promoting effective response to the rapidly developing globalism in order to ensure sustainable growth of the country's industry. It aims, among other things, to establish and upgrade the value chain by means of a cluster-driven industrial development approach.(See Box 1 for the cluster's definition.)

In particular, "National Industry Development Policy" designates 32 industries as priority industries, which are composed of 10 key development industries, 6 related industries supporting the key development industries, 6 SME-related industries, 2 future core industries, and 8 industries in other category.

With respect to the priority cluster promotion, the Indonesian government expects that the cluster approach will help achieve the following goals: (1) the strengthening and deepening of the industrial structure; (2) the building of the investment-inducing environment; (3) promotion of industrialization and structural reforms and strengthening; (4) encouragement of SMEs to fulfill its role (in the national economy); and (5) expansion of industrial development and improvement of industrial technology.

1.2 Objective of the Project and Expected Results

The Project has the following objectives:

(1) To make proposals and recommendations regarding desirable organizations and systems of the central and local governments to implement cluster development programs using local resources in an effective manner, as well as specific measures and actions to be taken by the government sector; and
(2) To plan and implement a model project designed to promote clusters leveraging local potential and comparative advantage, and to develop a draft guideline for implementation of cluster development, on the basis of the "2008 Presidential Decision No.28 concerning National Industry Development Policy."

The Project is expected to produce the following results:

(1) The current state of ME/SME cluster development and related issues are clearly identified.
(2) Capacity of the counterpart organization in relation to the analysis of issues and implementation and management of programs is improved through the implementation of various survey activities and pilot projects.
(3) Based on pilot projects and their results, action plans covering cluster development activities using local resources by the central and local governments - including a proposed guideline for development and management of monitoring and implementation systems at the central and local government levels -are formulated.

Box 1 Relationship between Cluster and "Sentra" in the Project

In "National Industry Development Policy", cluster industry is defined as to be mutually interrelated industries among key industries, supporting industries, and with these related industries. In addition, under the "2008 Presidential Decision No.28," the industrial cluster is defined as a"core industry that is regionally or globally concentrated to increase efficiency, create collective resources, promote innovation, and achieve competitive advantage, having dynamic linkage or social interaction with related industries, supporting industries, support service, economic infrastructure, and/or related organizations.

On the other hand, small concentration of industries is widely referred to as "Sentra." In practice, the term is frequently used to mean the cluster.

It is implied that geographical concentration is a requirement for the cluster in the initial stage.

The MOI and Dinas Disperindag call an industrial concentration equipped with a system to drive the reinforcement of a value chain under concerted efforts by organized networks of industry, government, and academia as a "cluster" or an "areas that has developed to a cluster." On the other hand, small concentrations of industries – estimated to be around 10,000 throughout the country – are called as "Sentra." The formal definition of "Sentra" is "a geographical concentration of more than 15 companies in similar industries within the 5km radius. However, this definition is not necessarily applied strictly, and a geographical concentration of less than 15 companies is called "Sentra," so far as they are considered to be located in a limited area.

Thus, for the purpose of this study, Sentra is considered as a cluster in the initial stage. (See Annex 1 for a general outline of Sentra.)

Finally, in Indonesia, the word "cluster" is sometimes used to mean a sector. For instance, National Industry Development Policy used the phrase "ten priority clusters" that obviously refer to sectors. To avoid confusion, it is expressed as "ten priority industries" in this report.

1.3 Scope of the Activity

The scope of the activity is summarized according to the stage, as shown in Fig 1.3-1.

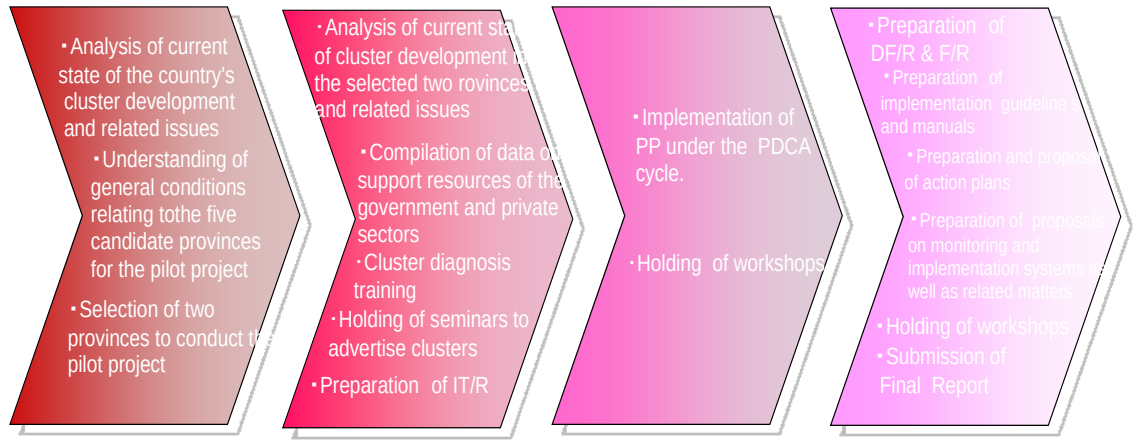


Fig 1.3-1 Summary of Activities by Stage

1.4 General Outline of the Cooperation Flow

General outlines and results of the key activities in each stage, as shown in 1.3, are described below.

1.4.1 Stage 1

1.4.1.1 Analysis of current state of the country's cluster development and related issues

The current state of cluster development policy and cluster activity in Indonesia was studied, as outlined below.

(1) Cluster development policy

Major national policies relating to cluster development are National Industry Development Policy, Local Industry Core Competence Road Map, and the 2008 Presidential Decision No. 28 concerning National Industry Development Policy. Notably, the presidential decision sets forth a guideline for future direction of Indonesia's industrial sector in the context of globalization and the current state of world economy relevant to the country's industry. In particular, it touches on the current state of cluster development and related issues, including its desirable direction.

(2) Current state of clusters

As DG-IKM has already conducted an official survey of clusters by hiring private consultants, the survey report has been used for the purpose of the study. In addition, a general outline of small-scale clusters (Sentra) in the country, prepared on the baisis of the cluster survey report, is presented in Annex-1.

1.4.1.2 Understanding of general conditions relating to the five candidate provinces for the pilot project

Field survey was conducted for the five candidate provinces for the pilot project, which had been selected by DG-IKM and related parties. Table 1.4-1 lists the provinces and areas visited by the JICA study team. A general outline of the provinces and areas is discussed in Chapter 4.

Table 1.4-1 Candidate pilot project sites and Sentra visited

Province	Provincial Capital	Sites visited (Major products)
West Sumatra	Padang	Bukittinggi City (Embroidery) Tanadatar City（Woven Fabric）
Central Java	Semarang	Magelang City（Tofu, Cassava Snacks）
East Java	Surabaya	Lumajang Prefecture (Silver Smith）
South Kalimantan	Banjarmasin	Banjar Prefecture（Diamond cutting and Accessories） Martapura City (Handicraft）
West Java	Bandung	Sumedang Prefecture（Essential Oil） Tasikmalaya Prefecture (Handicraft and Embroidery)

1.4.1.3 Selection of two provinces to conduct the pilot project

Based on the results of the field survey of the five provinces, the JICA study team conducted assessment of the cluster environment and SWOT analysis and prepared a short list consisting of two candidate provinces, West Sumatra and West Java. Then, discussion

was held by the JICA study team, the MOI's staff members who were assigned to the field survey of the five provinces, and the steering committee, and West Java and West Sumatra were selected for implementation of the pilot project.

In Stage 1, the JICA study team reviewed the implementation status of proposals made in the development study "The Study on Strengthening Capacity of SME Clusters in Indonesia" that was conducted by JICA between 2001 and 2004("the previous cluster study).

1.4.2 Stage2

1.4.2.1 Current state of promotion of the target clusters and related issues

To understand the current state of promotion of the target clusters, the JICA study team conducted interview surveys of companies and related organizations, including key support organizations. Resource data relating to support by the government and private sectors are presented in Chapter 4.

1.4.2.2 Cluster diagnosis training

Cluster diagnosis training programs were conducted in West Sumatra and West Java. Their outline and results are presented in Chapter 5.

1.4.3 Stage 3 (Implementation of the Pilot Project)

The pilot project was conducted, by using the PDCA approach, in Bukittinggi city, West Sumatra, and in Sumedang Regency, West Java.

1.4.3.1 Embroidery cluster in Bukittinggi, West Sumatra

The pilot project to promote the embroidery cluster in Bukittinggi was initiated under the overall goal that "embroidery products made in Bukittinggi become reliable and competitive in the world market. In particular, the project was created and implemented by focusing on specific actions in the following four areas, including the reinforcement of the embroidery cluster organization.

1) Establishment of the embroidery cluster forum and the municipal/local economic development forum
2) Design training for product development meeting the market needs
3) 5S guidance training
4) Preparation of pamphlets for marketing-oriented embroidery companies

1.4.3.2 Nilam oil (essence oil) cluster in Sumedan, West Java

Under the pilot project, to achieve the overall goal "related operators in the nilam cluster in Sumedan can make competitive products," actions were undertaken to cover the cluster's networking and the preparation of standard operating procedures (cultivation) for quality and price stabilization, and the training for refining techniques.

1.4.4 Stage 4

1.4.4.1 Preparation of the draft final report

The results of the activities conducted in Stages 1 through 3, including issues relating to cluster development and lesson learned, were compiled as the draft final report, which was then submitted with guidelines and manuals.

1.4.4.2 Workshop

In November2010, a workshop was held in Jakarta to present the draft final report and the guideline, especially proposals and recommendations to the counterpart.

1.4.4.3 Preparation and submission of the final report

Based on comments from the counterpart at the workshop, the draft final report was refined and submitted upon JICA’s approval.

Chapter 2 Industrial Promotion Policy and Cluster Development in Indonesia

2.1 Industrial Promotion Policy

2.1.1 Industrial Promotion at the Central Government Level and Cluster Development Policy

Major policies and laws associated with cluster development at the central government level are National Industry Development Policy formulated by the MOI in 2005, the 2007 Local Industry Core Competence Road Map, and the 2008 Presidential Decision No.28 concerning National Industry Development Policy.

2.1.1.1 National Industry Development Policy

National Industry Development Policy has been set forth according to the policy direction shown in "Chapter 18 Improvement of Competitiveness of the Manufacturing Industry" of National Mid-term Development Plan 2004 – 2009 (2005 Presidential Decision No.7). The policy sets forth intensive development of priority industries selected for future promotion in order to realize the country's national industry development vision "toaim to develop the country to a newly industrialized nation in 2020."The priority industries are selected in consideration of international competitiveness and growth potentialityand consist of the following sectors: (1) agro industry; (2) transportation equipment industry; (3) information technology, telecommunications equipment, ICT industries; (4) basic manufacturing industry; and (5) selected SMEs. In particular, industries in (1) through (3) are designated as highest priority industries to be promoted toward 2025.

Table 2.1-1 shows priority industries under National Industry Development Policy, which designates the following industries to become core industries in 2005 – 2009: the food and beverage industryincluding the processing of six types of food; the marine product processing industry; the textile and garment industry; the footwear industry; the palm oil industry; the wood product industry; the rubber and rubber product industry; the pulp and paper making industry; the petrochemical industry; and the electrical equipment industry.Then, the policy lists six subsectors (iron and steel, machinery, farming machinery, cement, household appliance, and ceramics) as supporting industries for the core industries.

While the above industries vary in size from large to small, the SME sector is also selected as a priority industry. In particular, three subsectors which SMEs account for significant fractions (handicraft and artistic products, jewelry and ornaments, and jewelry pots and ceramics) and three subsectors which hire many workers and manufacture products in large volumes (confectionary, natural salt, and essential oil) have been designated as the specific SME group and added to priority industries.

Furthermore, four industries relating to transportation (automobiles, shipbuilding, aircraft, and railway) and the ICT industry are designated as future priority industries. In total there are 32 priority industries.

Table 2.1-1Priority Industries under National Industry Development Policy

		No.	Industrial Scale			Future Potential Industries
			Small, Medium and Large Size	Small and medium industries		Future industries
Priority Industries (2004--2025)	I..Core Industries	1	Food & beverage • Cacao & chocolate processing • Tobacco processing • Fruit processing • Coffee • Palm processing • Sugar processing	• Snacks • Salt		A.Agro-industry ✔
		2	Marine products			✔
		3	Textiles/garments			
		4	Footwear			
		5	Palm oil processing			✔
		6	Wood products (including bamboo)			✔
		7	Rubber processing			✔
		8	Pulp & paper-making			
		9	Petrochemical			
		10	Electronics/Electric appliances			
	II.Supporting and Related Industries	11	Steel-milling	17	Perfumed oil	B.Transportation equipment ・Automobile ・Ship-building ・Aircraft ・Railways C. ICT
		12	Machinery and equipment (plant, construction & mining)	18	Handicraft products and works of art	
		13	Agricultural equipment	19	Jewelry and decorations	
		14	Cement	20	Decorative pots and pottery	
		15	Electric appliances			
		16	Ceramics			

Note: ✔means that the sector is part of agro-industry.
Source: MOI, The 2005 National Industrial Development Policy.

Designation of priority industries under "National Industry Development Policy" is important, as the MOI gives priority to these priority industries in budget allocation using the top down approach.

2.1.1.2 Local Industry Core Competence Road Map

The Local Industry Core Competence Road Map has been developed from the standpoint of reinforcing the country's local industry development system. As a result of implementation of decentralization policies pursuant to the Local Administration Law of 2004, local governments are authorized to develop their regions on the basis of their potential or comparative advantage of local industries. It is recognized, however, that ample results have not been produced due to the lack of resources to execute development programs. Thus, in order to implement industrial development in an efficient and effective manner, the central government and local governments (province, regency and city) need to align their directions of industrial promotion.

Although the road map does not use the word "cluster," it adopts a methodology relating to local industry development which is not significantly different from that adopted in National Industry Development Policy. It differs from National Industry Development Policy in that it mentions support for the road map by related organizations, that it emphasizes cooperation among provinces and regencies/cities, and that it envisages the maximization of the effectiveness of SME promotion by using the one village one product (OVOP) approach.

Finally, the major feature of the Local Industry Core Competence Road Map is found in that it allows local governments (in particular, regencies/cities) to select priority products, rather than the central government. The approach is taken to encourage provinces and regencies/cities to

aim to accomplish economic sufficiency by developing local resources, including intangible assets such as traditional techniques and skills, with view to improving local competitiveness.

2.1.1.3 2008 Presidential Decision No.28 concerning National Industry Development Policy

The presidential decision has been issued as a guideline for national industry promotion and as the authority to implement policy support.

It covers more or less the same items as those relating to the development of priority industries indicated in National Industry Development Policy of 2005 and those set forth in the Local Industry Core Competence Road Map. It differs from the other two policies in that it has added "specific creative industries and its supporting industry" to the five priority industries, totaling six categories (the basic manufacturing sector, the agro industry, the transportation equipment industry, the electronics and ITC industries, the specific creative industry, and the specific SME sector). In addition, 32 priority industries have been selected from a total of 365 industries belonging to the above 6 priority categories according to 15 supply conditions and 8 demand conditions.They are same as those selected in National Industry Development Policy as priority industries.

The presidential decision states that these priority industries account for a combined total of 78% of national production and 83% of total exports, thus constitute a principal component of the country's manufacturing sector. Also, it sets forth medium- and long-term actions to be taken for each of the priority industries. The 32 priority industries are promoted under the MOI-led top down approach

Two important featuresare pointed out in the2008 Presidential Decision No.28 concerning National Industry. First of all, the central government can provide benefits for national priority industries as well as priority industries pursuant to the Local Industry Core Competence Road Map. Secondly, a technical team can be organized by representatives of relevant government agencies and other organizations for the purpose of verifying, developing and evaluating development roadmaps for priority industries to be promoted under the bottom up approach. Furthermore, the system to require the technical team to consult with all stakeholders is similar to the cluster development forum, which will be discussed later. Benefits to be provided are indicated by industry and in themedium and long terms. Note that the presidential decision follows the same direction set in National Industry Development Policy but covers more specific details. For instance, equivalent part of "the improvement of companies' productivity and quality" stated as a medium-term action for the essence oil industry in National Industry Development Policy is "the improvement of productivity, efficiency, and quality by applying Good Manufacturing Practice (GMP)"in the presidential decision.

2.1.2 Cluster Development Policy at Local Government Level

2.1.2.1 The Decentralization Process in Indonesia and Its Major Characteristics

The ongoing decentralization process in the country started in 1999. In January 2001, two basic local autonomy laws were enacted, i.e., the 1999 Law No.22 on local administration and the 1999 Law No.25 on central and local finance allocation, to establish a framework for the decentralized local administration system. In practice, however, the local administration law was unclear about detailed enactment rulesconcerning the boundary of power and authority between the central government, provinces, regencies and cities, causing various conflicts. To correct the situation, the local administration law and the central and local balanced budget law were enacted in 2004.

2.1.2.2 Impacts of Decentralization on SME Promotion

To examine the changes in local administration in the field of SME promotion, the administration systems relating to SME promotion before and after the start of the decentralization process in 2001 are compared in Fig.2.1-1.

As seen in the figure, two local organizations of the MOI (previously the Ministry of Trade and Industry)– Kanwil Perindag and Kandep Perindag – were disbanded after the start of decentralization. They were respectively integrated into provincial Dinas Disperindag (under the provincial government) and regency/city Dinas (under the regency/city government), with their staff members being transferred to the respective organizations. Accordingly, their payrolls were transferred from the central to the local governments.

In addition, the MOI was previously authorized to give direction to provincial Dinas Disperindag, but after the start of the decentralization process, the direction is relayed through the provisional governor and the provincial government, as shown in Fig.2.1-1.

To drive both the top down and bottom up approaches, directorate generals of the MOI make significant budget allocation to local governments. For instance, DG-IKM allocated approximately 20.1% of its total budget to provincial Dinas Disperindag in 2008 and 23.8% in 2009. Likewise, it earmarked 21.4% and 20.4% to regency/cityDinas Disperindag respectively[1].

2.1.2.3 Cluster Development in Central Java

Central Java is the province that has early started cluster development in the country and has more than ten years of history. In fact, it is the only province that carries out organizational cluster development activities by involving provinces and regencies. The JICA study team examined the province's cluster development system/mechanism and examples. (See Annex 2 for detail.)

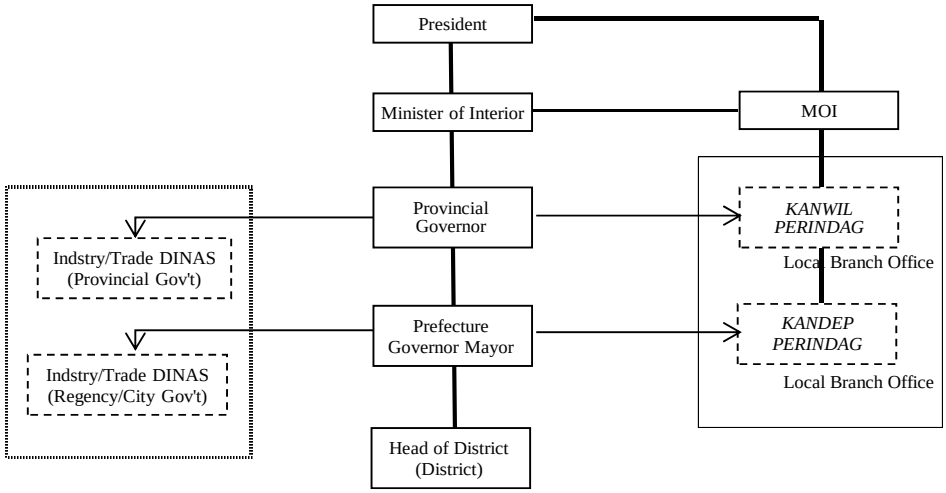
The provincial government establishes the following local economic development strategies: to focus on cluster development; to assess the results of government programs; to improve initiatives of SMEs; and to guide clusters for self-driven development. Its activities are supported by the Economic Development Resource Forum (FPESD) at the provincial level and the Economic Development Employment Forum (FEDEP) at the regency level. According to FPESD, clusters that have won confidence of related industrieshave emerged due to the following key success factors:

- The formation of the forumshas helped promote the building of social capital (resources and relationship)
- The improvement of technology and management expertise of cluster-related persons
- The strengthening of the cluster organizations, and the emergence of the participatory, bottom-up planning process.

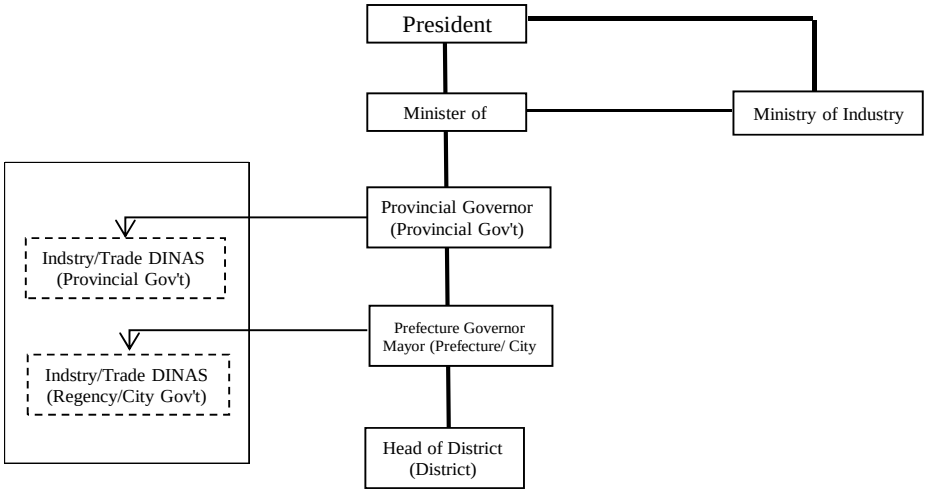
Fig.2.1-1 shows local implementing agencies in relation to SME promotion before and after the 2001 decentralization.

[1] Each year, over 20% of its operating budget of DG-IKM are distributed to local governments as subsidy to support implementation of the top down and bottom up approaches. In reality, however, it is mostly appropriated to payrolls of Dinas Disperindag staff, resulting in insufficient amount of funds available to implementation of cluster development programs.

(Old) Before 2001



(New) After 2001



Source: JICA study team

Fig.2.1-1Local implementing agencies in relation to SME promotion before/after the 2001 decentralization

2.2 Cluster Development and MOI's Role

2.2.1 MOI's Activities Relating to Cluster Development

The MOI is primarily responsible for cluster development in Indonesia.[2] The ministry is led by Minister, Secretariat General, and Inspector General, under which there are four directorates general, i.e., Directorate General of Metal, Machinery, Textile, and Multifarious Industries, Directorate General of Agriculture and Chemical Based Industries, Directorate General of Small and Medium Scale Industries, and Directorate General of Transportation Equipment and Telemetric Industries except Special Assistants and Agency for Research and Development of Industry. Among them, Directorate General of Small and Medium Scale Industries assumes a central role in cluster development.

Notably, each directorate is generallymandated to work with cluster development by formulating, implementing and/or operating basic strategies set forth in National Industry Development Policy, and it does not have its own strategic guideline. Furthermore, there is no uniform cluster development approach that is mandated for all sectors and industries.

2.2.1.1 MOI's Training of Cluster Development Facilitators

Cluster facilitator training by the MOI is conducted since 2007, under the course name "Training of Trainer for Industrial Cluster." Its primary purpose is to train cluster facilitators and provide knowledge on cluster diagnosis, especially"knowledge to evaluate possibility to develop a specific industrial concentration into a cluster" and cluster theory by Michael E. Porter.

According to BDI's information, topics in the lecture course "Introduction to Industrial Cluster" conducted in the first half of 2008 included cluster diagnosis, but it was theory-oriented, suggesting the MOI's intent to train personnel capable of policy implementation, rather than field facilitation.

On the other hand, the training course "Industrial Cluster Facilitator" conducted in the second half of 2008 aimed to train facilitators capable of providing advice in a specific business area, while emphasizing theoretical aspects.

From the standpoint of cluster initiative, BDI's training should focus more on methods to promote participation of companies in cluster activities and to ensure the continuity under private initiative.

2.2.2 Cluster Development Approach and One Village One Product (OVOP)

While the presidential decision on national industry development policy lists OVOP as one of the basic bottom up approaches, there is no unified opinion on its method. Table 2.2-1 shows the OVOP approach outline.

In fact, actual methods adopted for sector development vary with regions. However, there is no specific rule established, as to which local conditions should be suitable for the cluster development approach or OVOP. Generally speaking, it can be said that the cluster development approach is applicable to priority industries designated in National Industry

[2] The then Ministry of Cooperative and SMEs(currently the State Ministry for Cooperatives and Small Medium Enterprises) used to be responsible for cluster development until 2005 too. The ministry continues to implement measures contributing to cluster development, such as promotion of cooperative formation, management assistance, preparation and distribution of brochures for SMEs, and support for trademark designing and registration. However, it does them by themselves, without cooperation with the MOI.

Development Policy and OVOP to the conditions set forth in the Minister of Industry Decision No.78.

2.3 Key Issues Relating to the Cluster Development Approach

Key issues relating to the cluster developmentapproach, as from Indonesia's industrial policy, are summarized as follows.

(1) Lack of MOI's official cluster development guideline

Although the MOI is responsible for cluster development in the country, it has not established its official cluster development policy and guideline, including the fostering of facilitators. Also, there is no unified cluster development methodology shareable among different organizations within the ministry. The MOI's three directorates general other than DG IKM divide their responsibilities according to sectors, they presumably implement cluster development programs on an extension of the traditional sector development approach.

(2) Need for modification of facilitator training policy and curriculum

As part of cluster development policy, the MOI supports facilitator training undertaken by BDI. BDI's facilitator training curriculum places a primary emphasis on lectures covering theories, cluster development laws and public support systems. However, it does not teach specific techniques required for day-to-day cluster development activities, such as raising motivation of cluster companies, which constitutes the starting point for cluster development. It is important to refine the government's (MOI) facilitator training policy, followed by the development of the training curriculum that incorporates more practical aspects.

(3) Lack of collaboration among related ministries and agencies

While the MOI's overall policy recognizes importance of cluster development, the current cluster development system is restrained by organizational boundaries in relation to its implementation, lacking cooperation and coordination in multifold ways; among ministries, among governments (both central-local and local-local), and among sections. Bureaucracy causes the lack of efficiency in the overall cluster developmentprocess.

(4) Need for sufficient budget allocation to cluster development

Again, although cluster development is recognized as national policy priority, budget allocation from the central government to local governments follows the traditional practice based on sector development, as seen in the policy implementation system. As the program implementation budget earmarked for DG IKM is fairly limited and is by no means sufficient for the accomplishment of its policy objectives, it cannot meet the needs of many clusters that should be promoted by the top down approach.

Chapter 3 Review on the Implementation Status of Proposals in the Previous Cluster Study

Between 2001 and 2004, JICA carried out the "The Study on Strengthening Capacity of SME Clusters in Indonesia" ("the previous cluster study"). It primarily focused on dissemination of the industrial promotion model using the cluster approach and overall facilitation for implementation of the cluster development process. In this chapter, the current status of proposals made under the previous cluster study in 2004 is reviewed, in terms of their implementation status, while taking into account the complementary relationship between the previous and present studies, and lessons learned from the implementation process arepresented.

3.1 Outline of the Previous Cluster Study

3.1.1 Objective and General Outline

3.1.1.1 Background and objective of the previous cluster study

At the time of the study, the Indonesian government implemented a variety of programs to support cluster development since the early 1970s, including the promotion of cooperatives, the provision of joint use facilities, related training, public service, and financial support, but most clusters remained to be a concentration of small enterprises that operated separately without any organizational efforts. In this recognition, the previous cluster study was carried out for the primary purpose of implementing the pilot project to strengthen the capacity of target clusters and of making policy recommendations for creation of thriving clusters in the country, including a master plan and action programs.

3.1.1.2 Study framework and pilot project

The previous cluster study covered SME clusters throughout the country, which were classified into the following three groups. It started with baseline surveys of ten sample clusters and one cluster was selected from each of the three cluster groups. Then the pilot project was conducted in the selected three clusters for one year.

- Metalworking/machine parts cluster: Metalworking and machine parts (Sidoarjo)
- Export-oriented cluster: Wooden furniture (Serenan-Klaten)
- Local industry type cluster: Roof tiles (Kebumen)

The pilot project was designed to test various techniques useful for improvement of cluster capacities and to make policy recommendations on the basis of lessons learned from the project.

3.1.1.3 Lessons learned from the pilot project

From the pilot projectconducted as part of the previous cluster study, the following three lessons were obtained.

(1) Importance of entrepreneurship

Here, entrepreneurship is defined as the enthusiasm of a person to develop and grow his business. At the inception of the pilot project, efforts were made to have many cluster companies involved in the project. It was discovered, however, that only companies that had the desire to improve participated in the project and were thus able to effectively use opportunity provided by the project. From this experience, it is learned that the enthusiasm to develop business seeds is a major factor for leveraging opportunity.

(2) Importance of social capital

Social capital is defined as mutual confidence that is developed among cluster members. It has been discovered that its strength is a key factor for reinforcing the four elements of the

diamond model[3]. In other words, it has been conformed that creation of social capital among cluster shareholders leads to effective implementation of cluster activity.

(3) Importance of the cluster facilitator

The cluster facilitator needs to motivate, empower and lead companies in the cluster to cooperate each other and discover areas to be strengthened. It has been found that the cluster facilitator plays an important role in ensuring the effective and efficient functioning of the working group organized by representatives of cluster stakeholders.

3.1.2 Action Programs Proposed

Based on lessons learned from the one-year pilot project conducted in the three clusters and the results of surveys relating to cluster development policyduring the previous cluster survey period, 12 action programs were proposed (see Table 3.1-1). These programs are classified into two types, i.e., programs intended to help strengthen cluster capabilities, and those designed for the strengthening of the SME sector as a whole. The latter type was conceived in recognition that the improvement of individual companies is indispensable in the strengthening of the cluster function.

Table 3.1-1 Action programs for strengthening capacity of SME clusters

CLUSTER STRENGTHENING	WHY	WHO*	WHAT
1 PROVINCIAL CLUSTER FORUM FORMATION	Needs an institutional arrangement to facilitate the linkages in region	BAPENAS, **BAPPEDA**, Provincial Dinas, Regency Dinas Disperindag andDinkop, SMEs, NGOs, Universities	1) Formation of provincialforum 2) Identification of potentialcluster
2 LOCAL CLUSTER FORUM FORMATION	Needs an institutional arrangement to facilitate the linkages in clusters	Provincial Forum (BAPPEDA), Regency Gov., **Regency Dinas Disperindag and Dinkop**, SMEs, NGO, Universities, Cluster facilitator, CD-SMEs	1) Formation of local forum(at Kabpaten and cluster) 2) Capacity building of localforum
3 CAPACITYBUILDING OF CLUSTER FACILITATOR	To manage cluster promotion programs and to facilitate clustering process	**MOCSME**, Provincial and Regency Dinas Disperindag and Dinkop, BDS,Extension workers, LPM	1) Development of modeltraining curriculum 2) Training of the candidatefor cluster facilitator
4 ENHANCING SOCIAL CAPITAL IN CLUSTER	To enhance trust relationship among SME clusters	**Provincial and Local Forums,** MOCSME, cluster facilitators and SMEs	1) Information seminar 2) Regular meeting 3) Joint actions
5 ENHANCING ENTREPRENEURSHIP INCLUSTER	To increase SME's motivation	**Provincial and Local Forums,** MOCSME	1) Study tour to moreadvanced cluster 2) Exhibition holding 3) Matching with buyers

[3] The diamond model is based on the concept that four sources of competitive advantage – corporate strategy and competitive environment, demand conditions, factor (input resource) conditions, and related industries and support industries – form the foundation of the cluster. M.E.Porter, "On Competition" [1998] Harvard Business School

CLUSTER AND SME STRENGTHENING	WHY	WHO*	WHAT
6 MANUFACTURERS' DIRECTORY	Required for baseline study for implementing any programs	Provincial and regency BOS, **Regency Dinas Disperindag and Dinkop**	Processing Economic Censusdata (year 2006) in detail tomake manufacturers' directory at Regency level
7 OPEN INFORMATION SYSTEM	To provide an equal opportunity for SMEs to join in a program	**Regency Dinas Disperindag and Dinkop**	1) Regular promotion ofinformation in TV,newspaper, notice board 2) Information seminar 3) CD-SMEs
8 CAPACITYBUILDING OF CENTRE FOR DEVELOPMENT OF SMES	To complement lack of information for SMEs andClusters	**MOCSME, CD-SMEs**, KADIN, BRI, PT.Telekom	1) Training the staff in Managementcoordinationand dissemination) 2) SME advisory service 3) KKMB service 4)Establishing revenue model
9 BDS AS FINANCIAL INTERMEDIARY	To increase the accessibility to the finance	BI,**BRI**, IBI (Institute of Banking Indonesia), BDS	1) Review of current KKMBprogram 2) Training BDS 3) Establish certification
10 MACHINERY RENOVATION PROGRAM	To provide alternative opportunity of machinery upgrading or replacement	MOIT(IDKM), Ministry of Finance, **Venture Capital**	1) Selecting the models 2) Order in response to the purchasing request 3) Profit sharing
11 TECHNICAL DRAWING LESSON IN SMU	To increase basic skill for technology	Ministry of National Education, **Regency Dinas Disperindag,**SMU	Adding technical drawing lesson optional to 2004 curriculum
12 SHORT TERM TRAINING COURSES	To open up training opportunities for SMEs	**MOIT (IDKM)**, LPM (University), R&D institutes, BPT, Extension workers	1) Transfer resource savingtechnology and cleanerproduction for SMEs 2) Establish model courses

Note: Organizations underlined/bold lettered) are expected to play the central role in respective programs.
Source: Final Report on "The Study on Strengthening Capacity of SME Clusters in Indonesia" (2004)

3.2 Outline and Results of Review Study on the Previous Cluster Study

The review study was started with interview surveys of DGSME of the Ministry of Industry that was the counterpart organization under the previous cluster study (previously the Ministry of Trade and Industry: MOIT) as well as the State Ministry of Cooperative and Small and Medium Enterprise (SMOCSME), in order to assess the central government's activities and results.

Then, questionnaire survey was conducted for West Sumatra, Central Java, West Java, East Java, and South Kalimantan where sample clusters were selected under the previous cluster study () in order to confirm the implementation status of action programs proposed as a result of the previous cluster study (see Appendix 1 for the questionnaire used for the survey). The questionnaire consisted of the following questions for each of the 12 action programs

- Whether or not the organization has been implementing the program
- Why it did not implement the program
- Whether and to what extent activity results have led to cluster development

These questions were designed to ascertain major obstacles for local governments when they fulfill the leadership role in the cluster development process, as well as key factors for impeding their cluster development activities from producing results.

Finally an additional questionnaire survey was conducted for companies and facilitators who participated in the pilot project conducted in Central Java (Klaten and Kebumen Regencies) in

order to obtain detailed information on specific cases. The questions were asked to collect information relating to the cluster's activities and results by focusing on the following items. The survey was primarily designed to understand each cluster's activities and results.

- The status of visions and strategies formulated for the pilot project
- The status of the cluster working group system formed under the pilot project
- The results obtained at the end of the pilot project
- The progress of cluster activities from the end of the pilot project to the present

3.2.1 Results of the Review Study

3.2.1.1 Implementation status of action programs by the central government

During the previous cluster studyperiod, the SMOCSME implemented short-term programs such as training. During the interview surveyfor the SMOCSME, it statedthat it would make efforts to deploy more intensive support for clusters with development potentiality and to create best practices, suggesting enthusiasm about cluster development. In reality, however, it did not play an active role in implementing any of the action programs proposed under the previous cluster study. In particular, the SMOCSME was expected to take leadership in the action program for capacity building of cluster facilitators, but an official facilitator training program was held only once in 2005 by using a local training scheme and under JICA's support. Similarly, another program for which the SMOCSME serves as the leading agency – capacity building of SME promotion centers – is not implemented.

3.2.1.2 Implementation status of the action programs proposed under the previous cluster study (field survey of five provinces)

For the purpose of the review study, questionnaire survey was conducted for a total of 13 Dinas establishments in the five provinces, including Dinas Disperindag and Dinas Koperindag. 11 responses were received

Table 3.2-1 summarizes responses in the eleven questionnaires.(4 provinces and 7 regencies) Note that they are classified between provinces and regions/cities.

Table 3.2-1 Questionnaire survey in five provinces (summary of responses)

Action Programs	Implement	Failed to get the outputs, despite of efforts	Not implement	Reasons for not implement (multiple responses、number of response in ()
CLUSTER STRENGTHENING				
1. Provincial Cluster Forum Formation	P4 R6	P2 R1	P0 R1	R: Difficulty in budget allocation (1)
2. Local Cluster Forum Formation	P3 R6	P1 R3	P1 R1	P: Difficulty in budget allocation (1)
3. Capacity Buildingof Cluster Facilitator	P3 R6	P1 R4	P1 R1	P: Difficulty in budget allocation (1) R: Difficulty in budget allocation (1)
4. Enhancing Social Capitalin Cluster	P3 R6	P1 R4	P1 R2	P: Difficulty in budget allocation (1) R: Difficulty in budget allocation (2) Cannot find good leader(1) Cannot find actor to cooperate(1)
5. Enhancing Entrepreneurshipin Clusters	P3 R5	P1 R3	P1 R2	P: Difficulty in budget allocation (1) R: Difficulty in budget allocation (2) Too time consuming (1) Cannot find the facilitator (1)

CLUSTER AND SMESTRENGTHENING				
6. Manufacturers'Directory	P3 R4	P0 R2	P1 R2	P: Difficulty in budget allocation (1) R: Difficulty in budget allocation (2)
7. Open Information System	P3 R4	P0 R3	P1 R3	P: Difficulty in budget allocation (1) R: Difficulty in budget allocation (2) No cooperation from stakeholders(2) No info about these programs (1)
8. Capacity Buildingof Centerfor Developmentof SMEs	P3 R3	P0 R2	P1 R4	P: Do not know these programs (1) R: Difficulty in budget allocation(3) Too time consuming(1)
9. BDS as Financial Intermediary	P3 R3	P0 R3	P1 R4	P: Do not know these programs (1) R: Difficulty in budget allocation (4) Banks did not agree(3) Too much time consuming(2)
10. MachineryRenovation Program	P4 R4	P0 R1	P0 R3	R:Difficulty in budget allocation (2) It is not target for the program(1)
11. Technical Drawing Lessonin SMU	P1 R1	P0 R0	P2 R6	P: Difficulty in budget allocation (1) No cooperation form stakeholders (1) R: Difficulty in budget allocation (4) Too time consuming(2) No cooperation from stakeholders (1)
12. Short Term Training Courses	P4 R6	P0 R2	P0 R1	R:Difficulty in budget allocation (1)
Summary	Enforced		No change	
Outputs of practicing the action plan	P3 R5		P1	

Note: P = Province, R=Regency.
Source: JICA study team.
Note: The action program is called "Feasibility Study on the Renewal Scheme using Second-hand Machinery and Equipment" in Table 3.1-1.The questionnaire asked about the possibility to implement the program to renew second-hand equipment and materials, in consideration of the fact that suchfeasibility study does not seem likely to be conducted at a city/regency level.

3.2.1.3 Ex-post evaluation in provinces where the pilot project was implemented

In the two provinces where the pilot project was undertaken, the JICA study team obtained 12 organizations, consisting of the following:

- Private enterprises, facilitators and regional Dinas Disperindag in Serenan, Klaten Regency (9 in total)
- Private enterprises and regional Dinas Disperindag in Kebumen Regency (3 in total)

Although the sample size is relatively small, the survey results suggest that clusters in Serenan, Klaten grow significantly, whereas those in Kebumen Regency do not. In particular, responses from the organizations in Klaten suggest that progress is still made toward a specific vision or goal in the form of joint efforts. On the other hand, responses obtained from Kebumen are characterized by negative tone. The responses obtained from the two regencies are summarized and analyzed below to determine the difference between clusters making progress and those that are stagnating (see Table 3.2-2).

Table 3.2-2 Results of post survey for the pilot projects

(1) Vision and Strategies		Klaten Responses: 9	Kebumen Responses: 3
(1)-1	Accomplish the vision made during the previous cluster study?	Accomplish/Almost accomplish (3) Not yet accomplish(5)	Not yet accomplished (3)
(1)-2	Made any efforts on strategies?	Yes (4) No	No(2)
(1)-3	What has been done?	Support from BDS, forming and maintaining of the organization (3), continuation of the project, construct the partnership.	Training
(1)-4	Reason for nothing done	Lack of motivation, lack of coordination(2), lack of human resources, lack of finance, lack of communication	Low interest, abstention of facilitator, weak financial access, abstence of BDS provider
(2) Working Group formed during the previous cluster study			
(2)-1	Did it continue working after the pilot project?	Continue. (8) Did not continue.	Did not continue(2)
(2)-2	What kind of activity has been done if it continued?	Various training activities, cooperatives(2), purchasing raw materials (2), Finding buyers, participating in fairs, making proposals.	None
(2)-3	Reason for continuation	High motivation (2), teamwork of WG (2), unity, existence of the cooperative, communication in the cluster, periodical report	None
(2)-4	The most important purpose of the WG	Making a cooperation program(7)	None
(2)-5	Reason for discontinuing	Non	Lack of support from local governments Lack of sharing the mission
(3)After the completion of the pilot project until now			
(3)-1	Activity operated	Solicit others to join the cluster activities (7), Make regulation of the WG (3), Make cooperation program (4), Make quality standard for export (2)	Solicit others to join cluster activities, Make regulations of the WG Make cooperation program
(3)-2	Any change after the previous cluster study	- Number of WG member increase (5) -Increase number of cluster activity participants - Increase sub-sector to participate in cluster activity - BDS providers - Form the cooperative - Increase the product quality - Share the cluster project profit	Getting worse
(4) Issues and problems of the cluster		- Human resource development of WG - Improve market survey and access (4) - Improve product quality (3) - Problem in price and cost (3) - Problem in delivery time (2)	-Lack of R&D budget from local government - Facility donation from JICA - Weak relationship with external institutions - Lack of raw materials - Work force problem

Note: Number in ( ) is number of the same response
Source: JICA study team.

3.3 Issues Identified from the Review Process

From the reviewing of the implementation status of the proposals made in the previous cluster study, the following issues are identified.

(1) Difficulty in securing the cluster development budget at local government

While cluster development plans are established, a sufficient program budget is not secured at the regency/city level. Also, it should be pointed out that budget application and related

efforts take considerable time. Although the charging forBDS is considered, it is difficult to put it into practice.

(2) Difficulty in distinguishing Sentradevelopment from cluster development at the field personnel level

Generally speaking, local government personnel appear to carry out cluster (company support) activities without fully understanding the advantage of the industrial cluster. This seemingly come, in part, from the fact that many activities to support the producing area have been conducted with the absence of understanding about the difference between the traditional Sentra development approach (adopted since 30 years ago) and the relatively recent cluster development approach. Thus, it is important to disseminate knowledge on the cluster approach to shareholders at the initial development stage.

(3) Absence of leaders capable of promoting collaboration among cluster shareholders

From comparison of ex-post evaluation results on Klaten and Kebumen, it is confirmed that the activity level of the working group affects the cluster's activity significantly. In particular, it became apparent that key success factors for cluster activities are the strengthening of motivation, sustainable growth of teamwork and the enhancement of an internal communication system in the working group, together with presence of leaders who drive such activities. Apparently, the cluster in Klaten is in a positive spiral process in which leaders are able to identify and share issues with shareholders and then conceive and make efforts to address them properly.

As for the cluster in Kebumen, in contrast, it can be said that it does not understand the concept of the cluster approach and fails to share its mission, suggesting that its members are not able to overcome obstacles in the cluster embryo stage.

Chapter 4 Results of Field Survey in Two Target Provinces

4.1 Selection of Provinces for Pilot Projects

4.1.1 Selection method and criteria

The JICA study team carried out pilot projects in two selected provinces to obtain information on implementation and operation of cluster development programs and to analyze related issues of cluster developmentin Indonesia. Prior to the start of field survey, the MOI has proposed the following five provinces together with specific clustersfor candidate project sites.

West Sumatra:

Candidate Cluster: Embroidery cluster in Bukittinggi City

Central Java:

Candidate Cluster: Tofu and cassava snackclusters in Magelang City and Regency

Ease Java:

Candidate Cluster: Silver accessory cluster in Lumajang Regency

South Kalimantan:

Candidate Cluster: Handicraft cluster in Taping Regency

West Java:

Candidate Cluster: Essential oil cluster in Sumedang Regency

The selection process is summarized below, with the actual process flow for selection of the two provinces being shown in Fig. 4.1-1. TheJICA study team visited the five candidate provincesto survey their conditions. A general outline of the surveys of the cluster-related environment in the five provinces is discussed in 4.1.2 and 4.1.3.

After selecting the two candidate sites,the JICA study team explained the basis for selectionto the MOI.Upon approval by all the committee members, West Sumatra and West Java were finally selected as formal project sites.

In selecting the candidate provinces, the JICAstudy team attached more importance to whether a relevant cluster possessed factors necessary for cluster growth, namely whether stakeholders and related parties (individuals) are keen on cluster development activities, as well as availability of raw materials peculiar to the respective area. During the field survey, candidate provinces were asked to name 1-2 clusters which they had strong interest in developing, and data items obtained from the provinces were compared.Note that items to evaluate growth potential are the ones that are included the listproposed by Michael E. Porter in his cluster theory but that are obtainable within a limitedperiod of time. Finally, the JICA study team addedto the criteria the availability of BDS providers, which is a keyfactor forpilot projects, motivation of stakeholders, and the level of leadership of the local government staff.

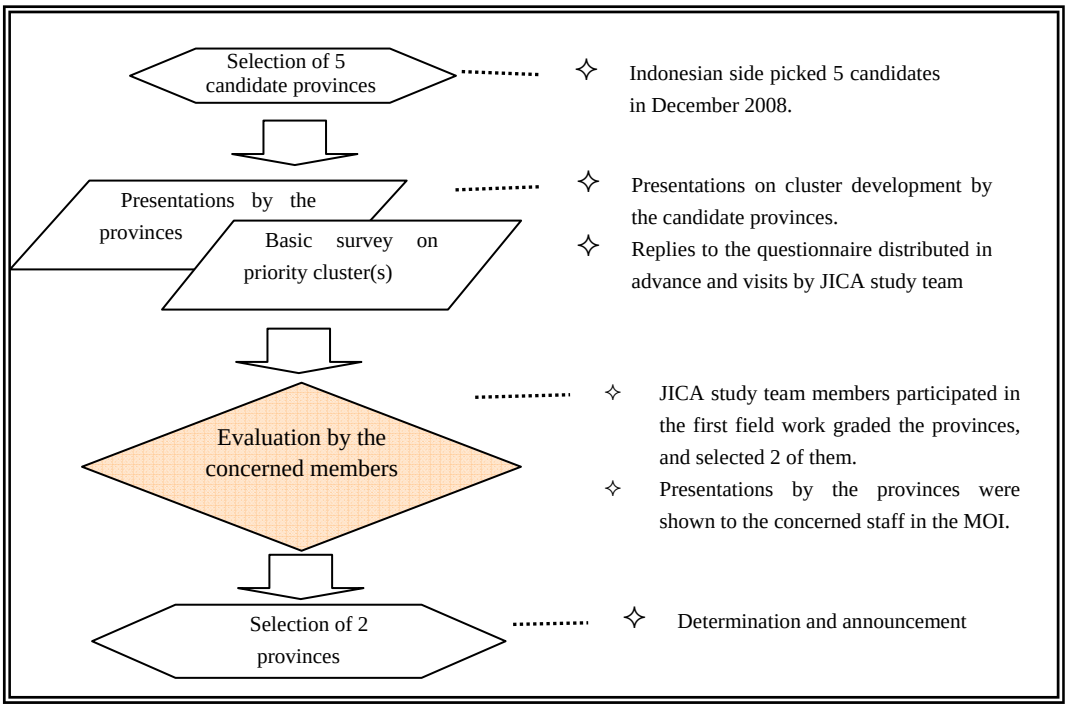


Fig. 4.1-1 Flow of selection of 2 provinces for pilot projects

4.1.2 Overview of the five candidate clusters

This section describes the overview of the 5 candidate clusters.

4.1.2.1 Industry and clusters in West Sumatra

(1) Clusters in West Sumatra

The study "SMESentra Location Mapping" (hereafter described as "the MOI cluster study"), which was conducted by a local consultant (SUCOFINDO)under the commissioning by the MOI in 2007, lists 39 clusters located in West Sumatra.[4] It confirms the existence of 1,111 enterprises, which means that an average of 28 enterprises is in a cluster (Table 4.1-1). According to the MOI cluster study, many of them belong to the foodsector. As these enterprises, they are dominated bymicroenterprises. Compared to those in the other candidate provinces, the number of employees and the production value per cluster arerelatively small.

[4] The MOI cluster studydoes not cover all the clusters in West Sumatra, although it provides useful data relating to general size distribution of clusters and industry types representing major Sentras. Unfortunately, it has been found that the embroidery cluster in Bukittinggi is notcovered by the study, from the analysis of relevant statistical data on the number of enterprises and workforce. Also, according to the study, there are only 39 clusters in West Sumatra, which accounts for around 1.7% of the country's GDP and is said to have 120 – 180 clusters (estimated 7,000 – 10,000 clusters in the entire country).

Table 4.1-1 Clusters in West Sumatra

Sector	Number of clusters	Number of enterprises (unit)	Number of employees (person)	Investment (Rp.000)	Production value (Rp.000)
Food (tofu, sugar, coffee, crackers, etc.)	28	818	1,837	5,703,771	25,705,248
Metal processing (steel processing)	1	6	21	25,500	108,000
Handicraft (embroidery, fabrics, rattan, leather, etc.)	10	287	730	6,921,074	10,871,117
Total	39	1,111	2,588	12,650,345	36,684,365

Source:MOI Cluster Study

(2) Condition of the candidate cluster

The Embroidery cluster, selected by the MOI,is seen in and around the city of Bukittinggi. In the city, about 250 enterprises are doing embroidery related businessand hire more than 1,500 workers in total. The embroidery in the region, which is distinguished from those produced in the other areas in Indonesia, is known as Kerancang.[5] It is produced only in and around Bukittinggi. It is primarily used in women's religious clothes, and the designsare traditional.

4.1.2.2 Industry and clusters in Central Java

(1) Clusters in Central Java

The MOI cluster study lists 142 clusters located in Central Java. Table 4.1-2 shows the overview. About 40% of the 5,989 enterprises identified are engaged in food-related business. An average cluster is composed of 42 enterprises, each hiring 4.9 employees on average with an annual production value of Rp. 270 million. It should be noted that an average annual production value of handicraft enterprises is larger, around Rp. 900 million. Table 4.1-2 shows the current status of clusters in Central Java.

Table 4.1-2 Clusters in Central Java

Sector	Number of clusters	Number of enterprises (unit)	Number of employees(person)	Investment (Rp.000)	Production value (Rp.000)
Food (tofu, tempeh, dried fish, crackers, etc.)	77	2.319	10,787	21,777,439	282,740,430
Apparel (sewn products, batik, shoes, etc.)	8	487	3,681	4,920,500	44,108,975
Construction materials (bricks, roof tiles, etc.)	8	682	2,585	12,911,950	39,434,650
Metal Processing (furniture, parts, precious metals, etc.)	38	1.551	9,357	38,424,977	370,381,406
Handicraft (fabrics, rattan and bamboo products, shadow puppets, etc.)	11	950	2,797	2,182,860	851,732,430
Total	142	5,989	29,207	80,217,726	1,588,398,004

Source:MOI Cluster Study

(2) Conditions of candidate clusters

The MOI proposed two candidate clusters, the cassava snack cluster and the tofu cluster.

In the cassava snack cluster, around 200 enterprises produce slondok and puyur, which are sold in supermarkets in neighborhood as well as large cities in Java. Some are sold as souvenirsat railroad stations and stores.

[5] Kerancang, made using sewing machines together with scissors or soldering irons, looks like lace motifs. Clothes with Kerancang are local specialty products.

Except cutting and milling,most of the production processe is manually done. Labor supply is abundant because the simpleproduction methods do not require skilled labor. Most workers have limited knowledge of sanitary management which is necessary for food processing.On the other hand, most enterprises lack knowledge on hygienic management, which is indispensable in the food processing industry, which proposes a serious problem.

Although cassava is extensively produced in an area in and near the cluster, the production volume is not large enough to meet demandso that some producers purchase tapioca (processed cassava) from other areas. Hired by the local government, Magelang Tidar University has served as facilitators of the cluster.

37 enterprises belong to the tofu cluster. They sell to the neighboring cities such as Magelang, Yogyakarta and Semarang. 5 companies produce tofu chips. Their main problem is soy bean price fluctuation due to unstable international market conditions

4.1.2.3 Industry and clusters in East Java

(1) Clusters in East Java

The MOI cluster study lists 184 clusters. which are composed of 7,266 enterprises.. Table 4.1-3 shows the overview. 106 of them are related to the foodindustry, accounting for around 60% of the total. An average cluster is composed of 39 business units, each hiring 5workerson average with production value ofRp. 260 million. On average, enterprises in metal processing ranks first in the production value as well as the number of employees, over Rp. 1 billion and 12.7 employees respectively.

Table 4.1-3Clusters in East Java

Sector	Number of clusters	Number of enterprises (unit)	Number of employees(person)	Investment (Rp.000)	Production value (Rp.000)
Food (tofu, tempeh, dry fish, etc.)	106	4,518	17,447	5,853,832	490,966,312
Garment (garments, batik, shoes, embroidery, etc.)	18	501	2,597	2,430,730	122,595,163
Construction materials(bricks, roof tiles, etc.)	5	944	6,652	7,122,000	101,642,870
Metal processing (iron work, silver, etc.)	6	89	1,130	2,830,815	91,838,400
Handicraft (fabrics, rattan, precious stones, etc.)	49	1,174	8,439	3,812,941	1,074,712,830
Total	184	7,226	36,238	22,050,318	1,881,755,575

Source: MOI Cluster Study

(2) Conditions of the candidate cluster

Among several accessory(using gold, silver, jewelry) clusters in the province, the MOI has selected the silver accessory cluster in Lumajang. In the cluster, there are about 100 home industries hiring a total of 1,000 workers. 80% of products isexport-bound, sold to the U.S., Australia, the EU, and Middle East. Also, foreign tourists visiting Bali and other areas are good customers. The cluster makes a variety of products such as rings, necklaces, and earrings.While most motifs of silver products produced in Bali Jogjakarta, and other major places of silver accessory production, are traditional, those in Lumajang have contemporary tastes. Many exporters are in Bali, which also serves as an accessory market targeting tourists.

Accessoriesin the cluster are mostly made by hand work except for blow torches and polishing machines. Since customers specify designs, the cluster has not developed own design capability.

4.1.2.4 Industry and clusters in South Kalimantan

(1) Clusters in South Kalimantan

As shown in Table 4.1-4, the MOI cluster study lists 17 clusters in the province, totaling 258 enterprises. Each cluster has an average of 15establishments. Compared withthe other candidate provinces, handicraft clusters hold a relatively large share, while food-related clusters are fewer in number.The average number of worker per business unit is 12 and the average production value is Rp. 40 million. An average production value per business is larger than that in West Sumatra, but per worker production value of Rp. 3 million is well below that in West Sumatra, Rp. 14 million.

Table 4.1-4Clusters in South Kalimantan

Sector	Number of clusters	Number of enterprises (unit)	Number of employees(person)	Investment (Rp.000)	Production value (Rp.000)
Food (sugar, dry fish, rice crackers, etc.)	3	96	238	203.740	1.345.750
Metal processing (ring fabrication, etc.)	1	10	15	23.000	371.520
Handicraft (embroidery, fabrics, rattan, etc.)	13	152	2,863	5,867,578	8,497,674
Total	17	258	3,116	6,904,318	10,214,944

Source: MOI Cluster Study

(2) Condition of the candidate cluster

The candidate cluster, located in Taping Regency, produces handicrafts made of rattan purun, and janggan, such as bags, baskets, hats, fans and mats. About 100 home industries are situated along a river and are engaged in handicraft production. These products are sold not only as household items in the markets in Banjarmasin and Martapura but also as souvenirs in Bali.

4.1.2.5 Industry and clusters in West Java

(1) Clusters in West Java

Table 4.1-5 showsgeneral profiles of clusters in West Java. The MOI cluster study lists 125 clusters, containing 14,374 enterprises. An average cluster is composed of 115 establishments, the densest among the five provinces. With the production value of Rp. 420 million, an average enterprise hires 8 workers. These clusters hire the largest number of workers among them. Garment clusters are relatively small in number, but each cluster is highly concentrated with nearly 200 companies. On the other hand, clusters specialized in construction materials are larger, with 653 enterprises per cluster.

Table 4.1-5 Clusters in West Java

Sector	Number of clusters	Number of enterprises (unit)	Number of employees(person)	Investment (Rp.000)	Production value (Rp.000)
Food (tofu, dry fish, rice crackers, etc.)	64	3,402	15,580	16,748,299	1,169,154,360
Garment (garments, batik, shoes, etc.)	9	1,785	17,710	48,470,075	2,212,447,490
Construction materials (bricks, roof tiles, etc.)	8	5,226	51,516	24,522,480	338,274,900
Metal processing (furniture, parts, precious metal, etc.)	30	786	3,882	8,279,885	249,097,667
Handicraft (fabrics, rattan, bamboo, puppets, etc.)	14	3,175	25,515	6,253,530	2,090,404,728
Total	125	14,374	114,203	104,274,269	6,059,379,145

Source:MOI Cluster Study

(2) Condition of the candidate cluster

The MOI proposed a cluster in Sumedang producing nilam oil (known as patchouli oil), a kind of essential oil. It is used for making soaps, cosmetics, perfume and foods by being added as a fixative or stabilizer.

4.1.2.6 SWOT analysis of the candidate provinces

Based on the interviews with companies, local governments, and other concerned people in the candidate provinces, the JICA study team conducted SWOT analysisof the five candidate provinces. They may not be accurate due to the time constraint relating to information gathering. Keeping this in mind, the JICA study team used the results as an important basis of making final selection for two provinces.

4.1.3 Evaluation of cluster growth factors of the five provinces

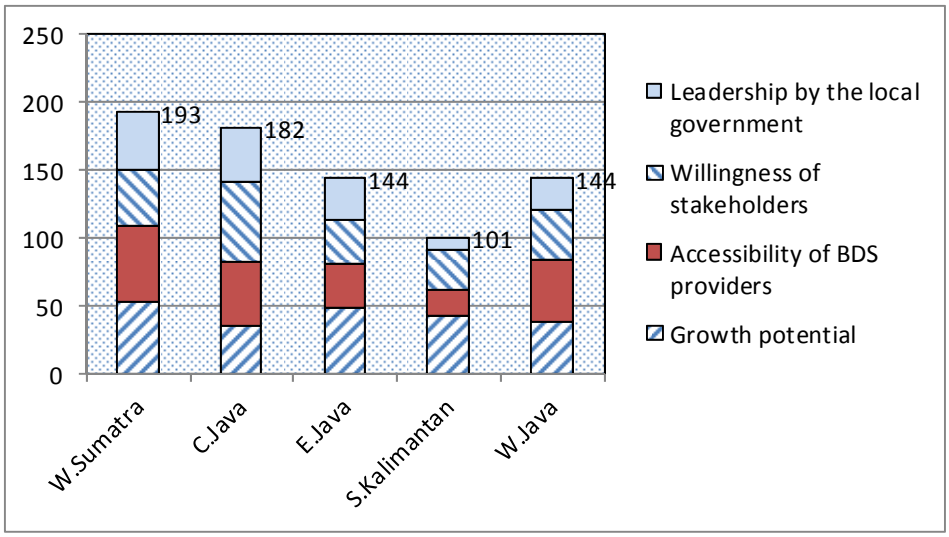
Cluster growth factors of the candidate provinces have been evaluated by the JICA study team members on the basis of an evaluation sheet prepared by the study team and by applying the following four criteria.

- Growth potentiality of the cluster
- Access to BDS
- Willingness of stakeholders
- Leadership of local governments

In order to ensure evaluation on a unified basis, the JICA study team members evaluated them on an individual basis, and then discussed the items on which they disagreed over assessment to develop common understanding.

4.1.3.1 Reasons for selecting provinces as pilot project sites

The evaluation results are summarized in Fig.4.1-2.



Source:JICA study team

Fig.4.1-2 Evaluation of the five candidate provinces

As seen in Fig.4.1-2, West Sumatrareceived the highest average score, followed by Central Java. East Java and West Java got the same score, and that of South Kalimantan was the lowest. Figure 4.1-2 shows the results in stacked bar chart.

While West Sumatra scored high in growth potential and accessibility to BDS, Central Java got the best points in leadership of local governments.

While quantitative evaluation ranked West Sumatra first, followed by Central Java, East Java, and West Java, West Sumatra and West Java have been selected as pilot project sites by taking into account the qualitative aspects that are described below. Upon consent of the steering committee, the two provinces have been formally selected for the pilot project.

4.2 Current Status and Problems of the Clustersin the Selected Provinces

4.2.1 Current status of the embroidery cluster in Bukittinggi, West Sumatra

4.2.1.1 Structure of the embroidery industry

(1) Embroidery industry in Indonesia

According to the Report on Embroidery Cluster development 2008, which was prepared by the DGIKM, the embroidery industry of Indonesia is dominated by SMEs and microenterprises. There was 20,502 embroidery enterprises in 2006 and 21,770 in 2007.These enterprises are dispersed over as many as 13 provinces and special region or city, including Ache, North Sumatra, West Sumatra, South Sumatra, Special Capital City District of Jakarta, West Java, Central Java, Special Region of Yogyakarta, East Java, Bali, North Sulawesi, Gorontalo, and Maluku.

(2) Embroidery industry in Bukittinggi

The current status of the embroidery industry in Bukittinggi iscompiled on the basis of the "Industrial Statistics of Small and Medium Enterprises 2008" by Dinas Koperindag, and the "Report on Embroidery Cluster Development 2008" by the DGIKM.

The city of Bukittinggi is located at the center of the WestSumatraProvince.The city has an area of 25,239km^2, and its population was 104,278 in 2007.Main industries of the city include tourism and textiles (especially embroidery and garment manufacturing).According to an interview survey with the Culture and Tourism Dinas in Bukittinggi, the city depends on the tourism industry for about 43% of its income.In 2008, the embroidery and garment industries

represented about 48.6% of the total employment by SMEs in the city, while in the same year both industries together generated some 52.3% of the total sales of SMEs in Bukittinggi. Companies in these industries are mainly concentrated in three areas, totaling 108.

Bukittinggi is a center of the embroidery industry in Indonesia;in 2008, there were 249 enterprises in the industry.Although there is a one-year time lag, the figure was equivalent to 1.1% of the total number of embroidery enterprises in Indonesia in 2007 (See Table 4.2-4).

Labor statistics indicate that, in 2008, there were a total of 1,549 people workingin the embroidery enterprises in Bukittinggi, and this figure corresponds to 2% of the country's total employment in the embroidery industry in 2007.The number of employees in the embroidery companies in Bukittinggi ranged between one and 51, with the average being 6.2.Table 4.2-1 shows the distribution of the number of the embroidery companies in Bukittinggi in 2008 by size; 134 enterprises, or 53.8% of them,hired 5-19 employees[6]; 105 (42.2%)1-4 workers[7]; 10 enterprises(4%)20-99 employees[8].

(3) Structure of the embroidery cluster in Bukittinggi

The embroidery cluster in Bukittinggi is one of the two Indonesian embroidery clusters that the DGIKM has selected as those with the highest potential for future growth.The main players are embroidery product manufacturers including companies, individual-based groups, subcontractors, raw material suppliers, distributors, wholesalers and retail markets. They are not necessarily specialized in embroidery manufacturing and some are engaged inmultiple undertakings (for instance, production and distribution, production and raw material supply, production as an individual-based group while undertaking subcontracts from a production company, and so forth).In addition to the major players, the following companies and organizations also constitute the cluster: garment manufacturers, sewing machine distributors and repair shops, physical distribution companies, importers and exporters, financial institutions and financial assistance organizations, BDS providers and government agencies.

Between large and small enterprises in the cluster, there are generally contract manufacturing relationships. Enterprises havingtheir own outlets or distribution channels outsource embroidery especially whenthey face the annual demand in excess of their production capacities.In this case, they usually provide designs, yarn and fabric to the subcontractors.Irrespective of being busy or slack, however, largeembroidery enterprises have regular subcontracting relationships with micro-sizedones.Embroidery products in the cluster are mainly for middle-class consumers,and value chains to them have developed.Constrained by their skills, design capacity and the quality of raw materials, they have yet to meet the needs of high-end markets, in comparison to medium markets

1) Procurement of raw materials

Judging from the interview surveys that the JICA study team has conducted for embroidery companies and stakeholders in the cluster, many of the embroidery manufacturers procure raw materials such as yarn and fabric from retailers in the Simpang Aur market located in the city.Inthe questionnaire survey at the FGD,11out of 12 respondents answer that they procure raw materials in West Sumatra Province, some of which buy what are hard to get in the province from elsewhere (such as Jakarta).Imported raw materials, especially cotton cloth and Rubiya, mostly come from China, India, Japan and Taiwan.Some produce embroidered clothes to orderespecially from overseas customers who supply raw materials

[6] Small enterprises by the definition of the Badan Pusat Statistik or BPS-Statistics Indonesia.

[7] Microenterprises by the definition of BPS-Statistics Indonesia

[8] Medium-scale enterprises by the definition of BPS-Statistics Indonesia

and design.No respondentanswers that he procures raw materialsdirectly from raw material producers.

Almost all raw materials are available in the cluster.However, there is no material that is considered as local specialty, so that the cluster does not enjoy a strongcomparative advantage in terms price or quality, which serves as the cluster's driving force.On the other hand, the cluster's ability to procure a wide range of raw materials with ease constitutes its strength.

2) Production

Someembroidery manufacturers have in-house production capacity as well asoutside companies that perform contract manufacturing, which somties form their own production group. The mode of payment for workers varies among companies; some companies pay monthly and others pay according to piece rates. As judged from the interviews with some companies, the monthly salary per worker ranges between Rp. 400,000and Rp. 1 million.When a company receives a bulk order beyond its production capacity, it asks for help to other companies.In such a case, it shares the profits with the fellows.This profit sharing practice is especially found amongthose belonging to the cooperatives.In the meantime, Similar production groups are formed by persons who have completed a Kerancangembroidery training program that Dinas Koperindag provides for low-income households..The group is called Kelompok Usaha Bersam (KUB). Currently, 30 KUBs with a total of some600 members are in Bukittinggi.[9]Note that KUB is a group of individuals who are members of the cluster.

In terms of product design, some companies create their own designs, while others imitate designs made by other companies or those found in the fashion media, or use outside designers. According to design experts outside the cluster, embroidery designs in Bukittinggi are limited to motifs, mostly floral, and cluster companies seem to be content with making embroidered sheets and do not look for higher value added products such as dresses.

3) Distribution

There are the following distribution channels for embroidery products in Bukittinggi.

- At outlets which embroidery companies own
- Directly delivered to retail shops both in Indonesia and overseas
- Via wholesalers
- Via exporters
- Sold directly to individual customers both in Indonesia and overseas

Note that, according to the interview surveys with companiesand the Markets Dinas which is responsible for the markets in the city, many embroidery productstraded in the Atas market and Simpang Aur market come from the Agam Regencyor Java region, adjacent to Bukittinggi City, rather than manufacturers in the city.

In the embroidery cluster, market development is largely dependent upon individual companies' self-efforts.The JICA study team did not confirm the existence of collective strategies to sell themselves as a cluster.Participation in exhibitions is usually led by individual companies, not by the cluster as a whole.The Dinas Koperindag has developed a catalog to introduce cluster companies.However, the basis of the qualification to be

[9] According to a facilitator of the embroidery cluster in Bukittinggi, halfof them were ex-trainees of the Keranchang training program.

listedwasunclear, and most of the cluster companies did not know about the catalog.Clearly, they have not attained a cluster dynamism that would enable them to exploit the markets.

4.2.1.2 Cluster development framework

(1) Priority status for cluster development

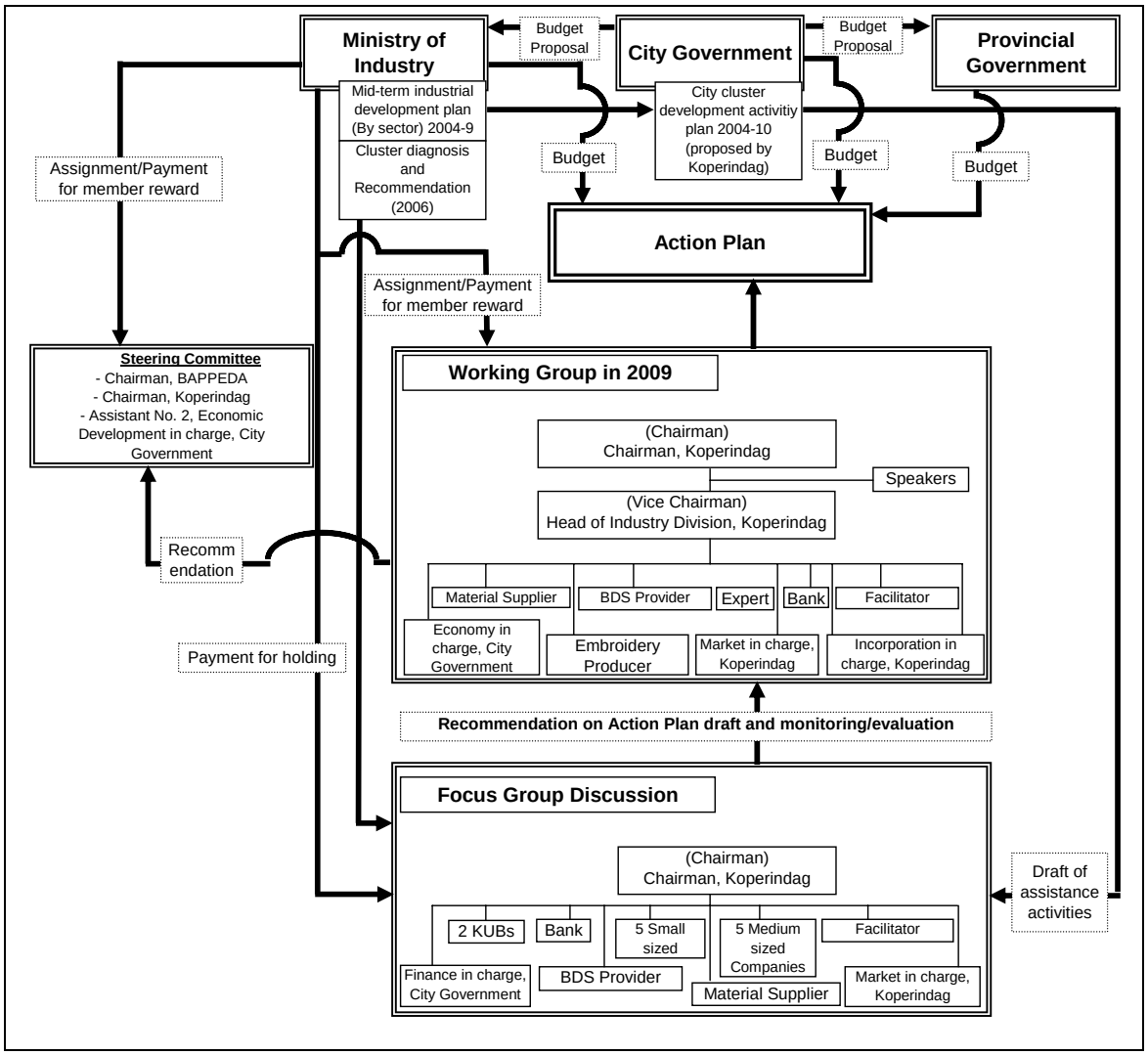
In 2006, the DGIKM conducted cluster diagnoses in the following fourareas where embroidery enterprises were concentrated.

1) Tasikmalaya City, West Java Province
2) Bukittinggi City, West Sumatra Province
3) Special Region of Yogyakarta
4) Gorontalo Province

At the end of November 2007, the embroidery cluster in Bukittinggi was formally designated as a development target cluster by theMOI.At the same time, an action plan for its development was formulated through participatory workshops attended by the stakeholders.

(2) Cluster development organizations

Figure 4.2-2 illustrates a cluster support organization in Bukittinggi. The cluster holds theFocus Group Discussion (FGD) four times annually, which is composed of 30 stakeholdersand chaired by the head of the Dinas Koperindag.Members includestaff of the city government, representatives of embroidery companies, raw material suppliers, BDS providers, and banks. There is also theWorking Group (hereafter referred to as “WG”),which is responsible for formulation and implementation of action plans. All WGmembers are appointed by the MOI and receive compensation. The chairman and the vice-chairmanalso serve as the FGD’s chairman and vice-chairman, respectively.. Other members includeBDS providers and banks.



Source: JICA study team

Fig.4.2-1 Cluster support framework of the embroidery industry in Bukittinggi

1) Steering committee

The committee draws up policiesin response to cluster-related problems, proposals and recommendations made by WG members and facilitators, as discussed below.

2) Working Group and facilitators

The WG is the government-private sector collaborative platform for action plan implementation.

3) Other government institutions

The MOI, the provincial government (mainly through the Dinas Koperindag), and the government of Bukittinggi City undertake programs to supportthe implementation of the action plan for the embroidery cluster.

Although it is not part of the action plan, the Tourism and Culture Dinasof the city governmenthas providedayearly training program on sales service forembroidery retailers located in tourist spots of the city. Around 30 participants receive training each time.

The Markets Dinasof the cityhas administrative jurisdiction over the markets in the city including the two leading markets for embroidery transaction, namely Simpang Aur and Atas.In addition, the city Labor and Welfare Dinascarries out support activities, such as training programs on business startup and technology implementation.

(3) Action plan

As mentioned in (1) of this section, in November 2007, the cluster formulated an action plan for development of the embroidery cluster(See Table 4.2-7 for the action plan and its results.).Concurrently, the workshop also laid down the following vision and missions for cluster development.

Vision

"Make embroidery products in Bukittinggi competitive and reliable in the world markets"

Missions

- Improvement of the quality of human resources in the embroidery industry.
- Improvement ofthe access to the embroidery market, and expansion of it.
- Improvement of the quality of embroidery products.
- Strengthening of business networks of embroidery enterprises.

4.2.1.3 Business development service (BDS) providers

Table 4.2-1 shows a list of the BDS providers accessible to the embroidery cluster in Bukittinggi, which has been compiled on the basis of the cluster's members and related companies as well as the Dinas Koperindag.General profiles of major providers are presented in (1) through (5) below. (The addresses and contacts of the major BDS providers are listed in Appendix 2.)

Table 4.2-1 List of BDS providers

Category	HRD/Business Management Support	Production Management Technologies	Marketing	Access to Finance
Government	MOI, MOT, and other central government agencies (1) Dinas Koperindag (including Business Clinic) Culture and Tourism Dinas Labor and Welfare Dinas Provincial Dinas Koperindag (2)UPTD BDI (in Padang)	MOI and other central government agencies (1) Dinas Koperindag (including Business Clinic) Labor and Welfare Dinas (2)UPTD BDI (in Bukittinggi) SHINDANSHI/ Extension Officer	(1) Dinas Koperindag (including Business Clinic) Culture and Tourism Dinas Provincial Dinas Koperindag	MOI (1) Dinas Koperindag (including Business Clinic) State Owned Enterprises
University	UniversityNegeri Padang SMIK (in Agam Regency) Negeri 2 SMK HajiAgusSalimUniversity of Economics	University Negeri Padang SMIK (in Agam Regency)		

Category	HRD/Business Management Support	Production Management Technologies	Marketing	Access to Finance
Private	(3)BDS Tri Arga (4)DEKRANASDA KADINDA (in Bukittinggi)	(3)BDS Tri Arga (4)DEKRANASDA	(3)BDS Tri Arga (4)DEKRANASDA KADINDA (in Bukkittinggi)	(3)BDS Tri Arga (5)Lumbuang Puska (embroidery companies' cooperatives)

Note: Numbers in parentheses in the table refer to the profile of the respective organizations presented below.
Source: JICA study team.

(1) Business clinic in Dinas Koperindag

The Business Clinic in Bukittinggi offers consultation and facilitation services to local SMEsin Bukittinggi.The clinic's service is provided by staff members of the Dinas Koperindag, including SHINDANSHI and Extension Officers.Its operating cost is funded by the municipal budget and service is provided with free of charge.The clinic's consultation service covers a variety of fields ranging from business development (including incubation), to market exploration, accounting, packaging, asset and patent registrations, and entrepreneurship motivation enhancement.The clinic also provides mediation service between SMEs and banks, calls for exhibitions, and provides information about machines and equipment, and so forth.

(2) Regional common service facilities (UPTD: Unit Pelaksana Teknis Daerah)

The UPTD is local public institutions providing training and consultation. The UPTD in Bukittinggi, established in 2008,mainly targets embroidery SMEs.It is under jurisdiction of the Dinas Koperindag,four seconded staff of which serves as the chairperson, the secretary general andinstructors.

(3) BDS Tri Arga

The BDS Tri Arga is a foundation established in 2000 in Bukittinggi.Threestaffs (chairman, secretary, and accountant in charge) are in the office, and 11 external consultants are registered.These consultants include employers and employees of SMEs, university instructors, and other experts of various fields.

(4) National committee for craftwork (Bukittinggi) (DEKRANASDA: Dewan Karajinan Nasional Daerah)

DEKRANASDA is a nation-level promotion committee for craftworksestablished in 1981 andmaintainsa regional lodge in each province, regency and city.Six ministries, namely the Ministry of Trade, the Ministry of Industry, the then Ministry of Cooperatives and SMEs, the Ministry of Culture and Tourism, the Ministry of National Education, and the Ministry of Home Affairs, jointly determined to establish the committee, but it has operated as a private organization.

(5) Lumbuang Puska

The "Lumbuang Puska" is a cooperative of embroidery related companies in Bukittinggi.Established in 1985, it was incorporated as a cooperative in 1987.As of the end of May 2009, there were 168 member companies, about 60%of which were embroidery product manufacturers.The only activity that the cooperative currently undertakes is to provide member companies with two kinds of low-interest loans.

4.2.2 Current stateof thenilam cluster in Sumedang, West Java

4.2.2.1 Structure of the nilam oil industry

(1) Essential oils and nilam oil industry in Indonesia

Indonesia is rich in raw material for the essential oil andis one of the notable exporting items. According to the National Agency for Export Development (NAFED), the volume of essential oil exports in 2008 was 4,355 tons and the value of exports reached US$147 million. The trend of production volume of essential oils generally continues to be flat.However, the value of exports shows an annualized rate of 33% increase compared with that of 2004(about US$ 47 million). The essential oil industry has been designated as a priority industry cluster by the Presidential Regulation No. 28 2008.

Nilam oil (or patchouli oil), which is a targeted commodity of the pilot project, is one of the most outstanding essential oilsproduced in Indonesia.

Nilam is cultivated relatively easily and it takes only six months for the first harvest, whichmakes it easier for farmers to expand or beginnilam production when the nilam oil price rises.On the other hand, once the price plunges,farmers reduce production and shift to other crops.

(2) Overview of the essential oil industry in West Java

West Java growsnearly 30 varieties of plants from which essential oils are extracted, including all the five essential oilsDAI prioritizesas promising and promoting items:vetiver, nilam, clove, nutmeg and citronella. In particular, Garut of West Java is the only placein the countrywhere vetiver is cultivated.

(3) Current situation of nilam oil production in West Java

According to the provincial Agriculture Dinas, nilam is cultivatedin 11 regencies and cities in West Java. Poor soil quality and insufficient sunlightdue to the growing environment (in the forest or under preserved trees)are considered to have an adverse effect on quality of nilam oil in West Java.In particular,the oil from Sumedang Regency has been concerned over the low PA content, compared with that from Ache and North Sumatra, because Sumedang is a forested area and farmers have only a few years' experience in nilam cultivation. Thanks to technical support from local collectors and the government, however, the PA content in the nilam oil from Sumedang reachedan average of 28-32% in recent years, and the reputation of Sumedang as a nilam oil production area is improving.In response, some buyers in Sumatra have opened agent officesin West Java.

(4) Structure of nilam leaves and nilam oil industry in Sumedang Regency

1) Overview of production

Nilam is cultivated in 12 districts, which are grouped to four clusters in Sumedang.

2) Nilam producer groups

Ten producer (farmer) groupswere organized in 2009.The ninth group, Koperasi Kelompok Tani, is formed as a cooperative having the corporation status, whichis therefore authorized to lend money to its members..

3) Nilam distillers

In 2009, there were nine distillers in the regency, but some of them are no longer in operation due to the breakdown of their equipment or severe market price fluctuation.

(5) Structure of the nilam industry in Sumedang

1) Supply chain

Nilam oil distillers gather nilam leaves to distil (primary distillation) from farmer groups or individual farmers. Collectors in and around the regency gather the oil and sellit to exporters after accumulating a certain volume. Either collectors or exporters re-refine the oilwhich is largely shippedto foreign cosmetic companiesvia fragrance companies.

Nilam oil produced in the regency is supplied by a group of farmers and distillers or a single farmer or distiller.

2) Bargaining power of buyers

In the essential oil industry, major collectors including exporting agents are in a dominant position in the market. There are roughly two types of collectors by size; small collectors operating in and/or adjacentregencies, and large collectors (or agents) covering several provinces or even are nationwide in their scope of activity. According to DAI,they distinguish between agents and collectors based on their transaction volume; agents trade tons of essential oils and collectors deal with quantities less thanone ton. Agents sometimes act as exportersas well. By maintaining a position to adjust supply to the market, they have the ability to control the purchase price from distillers.

The nilam cluster in Sumedangdeals with major collectors or agents stationed in Jakarta, Bandung, Bogor and Yogyakarta as well as smaller local ones. While the groups compare purchase prices presented by multiple collectors or agents, large-scale onesusually offer higher prices thanlocal ones. As a result, they mostly accumulate the oil to sell to a large collector. Some collectors give advice to farmers in relation to cultivationand distillation.

In addition to collectors' strong bargaining power, farmers and refiners are highly affected by the violent price fluctuations, price stability is a major issue. In Sumedan, farmers and refiners are increasingly organizing themselves in the form of cooperative or joining a related trade association, suggesting that they are seeking ways to build a partnership that promotes price stability and bargaining power.

3) Organization of the nilam industry in Sumedang

Formation of groups or cooperatives has just started.However, it is not easy for a group to ensure stable supply of nilam leaves, because members may be tempted to sell to outside distillers or collectors for a higher price even if their bylaws prohibit it.To make the group or cooperative workeffectively, members must reach an agreement to act upon the understanding of benefits to be brought by collective activities as a group, ewhile making the members committed to thegroup's activity. Alliance of these groups is likely to benefit them, but the geographic dispersion of nilam farmers makes it difficult for them to strengthen the relationship among the groups.

4.2.2.2 Cluster Development Framework

Table 4.2-16 lists stakeholders that can be considered as supportingorganizations.

Table 4.2-16 Supporting institutions and BDS

	Human Resources and/or Management	Production Techniques	Marketing	Financial Access
Government	MOI, MOT, MOA, and other central government agencies Provincial and regency Dinas Disperindag Provincial and regency SME Cooperative Dinas BALITRO BBIA BaliKB Badan Penyuluhan Pertanian	MOI, MOA and other central government agencies Provincial and regency Dinas Disperindag BPPT LIPI BBLM MIDC BALITRO BBIA BaliKB	BKPMD BPEN	Regency SME Cooperative Dinas P3UKM Bank Jabar and Banten BRI Bank Bukopin PKDL
University	IPB UNISBA	ITB IPB UNPAD UNWIM	IKOPIN	
Private	KADIN DAI AP3MA Nilam Cooperative in Sumedang PUPUK(NGO) Bina Mitra Usaha (BDS) Performa Optima (BDS)	DAI AP3MA Nilam Cooperative in Sumedang Bengkel Mutiara(Workshop)	DAI AP3MA Nilam Cooperative in Sumedang Exporters Association of Essential Oils Bina Mitra Usaha (BDS) Performa Optima (BDS)	BMT (MFI coforming to Sharia) BPR MFIs Performa Optima (BDS)

Source:JICA study team.

The following sections discuss the current state of these stakeholders,

(1) Government

The central government has provided essential oil clusterswith equipment-related support and technical assistance in the form of training and seminar.For instance, various ministries, including the MOI, SMOCSME, Ministry of Trade, and Ministry of Agriculture, provide distillersin recent years.Most recently, the DGIKM gave a distiller to the leader of the Mandiri Cooperative in December 2009.

At the provincial level, Industry and Trade Dinas (hereafter referred to as “Dinas Disperindag”) launched cluster development programs for five industries in 2006, but they do not include the essential oil industry; it serves just as the intermediary for the equipment grant by the central government, such as the MOI and the MOT.

(2) Associations

1) DAI (Indonesian essential oil council)

DAI was founded in 2007 by the public and private stakeholders of the essential oil industry in Indonesia. Itworks together withthe MOI, MOA, MOT and other related local government organizations to promote the Indonesian essential oil industry.

2) AP3MA Jabar (Association of farmers, producers and businessman for essential oils in West Java)

Although the provincial government hasbeing providing support for the essential oil industry, it has still to produce tangible outcome.This is attributed mainly to the continued use of the traditional cultivationdistillation techniques by farmers and distillers as well astheir poor marketing and negotiation skills.

To overcome these issues, AP3MA was established in 2008 under facilitationbythe provincial Dinas Disperindag. It is an association organized by individualfarmers, distillers and groups of farmers and major distillers in West Java.

(3) Universities and research organizations

IPB (Bogor Agricultural University) and ITB (Bandung Institute of Technology) provide support for the essential oil industry. In particular, IPB hires experts in essential oil who are founding members of DAIand actsas an information center of agricultural expertiseas well as a facilitatorto support essential oil clusters throughout the country.

BALITRO (Research Institute for Spice and Medicinal Crops), located in Bogor of West Java, conducts research and study covering a whole process of essential oil production, from seedlings, cultivation, harvesting and post-harvest practices. Also, it conducts nilam development programsin five provinces, in collaboration of the MOI, the Ministry of Agriculture and DAI, ,including technical assistance on cultivation and seedlings.

In surrounding areas of Sumedang, the agricultural department of UNPAD provides technical support to nilam farmers and makes efforts to disseminate its research achievements through LPPM (Institute for Research and Community Services).

(4) NGO

Founded in 1979 and formally registered in 1988, PUPUK (The Association for Advancement of Small Business) is an NGO that works toward local cluster development by setting the overall goal of promoting regional prosperity and the rise of incomelevel. Itcarries count cluster development projects nationwide and has a regional activity base in Bandung.Major activities aim to strengthenregional competitiveness,to reinforce business linkages among private sectors and supportingorganizations, and to provide efficiency improvement programs/services. It conducts a project to support anilam clusterin East Kalimantan, which has been used as a good reference for the pilot project.

4.3 Problems Revealed in the In-depth Survey at the Pilot Project Provinces

In the detail survey conducted inthe two provincesof West Sumatra and West Java, the JICA study teamhas indeitified specific issues and challenges relating to cluster developmentdevelopment. These issues, as shown below, seem to be commonly present in the result of the country.

(1) Underdeveloped cluster development framework

The Dinas Disperindag in Sumedang has not launched cluster development activity due to the lack of knowledge on development techniques, althoughit pays attention to the CULTIVA project conducted in its neighboring regency, Kuningan. Accordingly, it has not supported the cluster’s founding their representative organization, which is a first step in cluster development.

On the other hand, the Bukittinggi City has started cluster development, although under the government initiative. The WG, the upper organization of the cluster, was led by the

government and did not function as a platform for cooperation between the public and private sectors.

More specifically, only one person represents embroidery companies in the WG.

(2) Absence of leaders or facilitators to foster cooperative mindset

Bukittinggi City formed the WG and FGD without motivating the private sector to participate in the cluster developmentprocess. As the representatives of embroidery companiesdid not have the ability to feed back theresults of cluster development activities toother companies, promotion activities targeted a limited number of companies and collaborative attitude did not grow. Also, no one could disseminate the expected results and benefits of cluster development. In general, cluster leaders or facilitators are expected to play this role. Absence of these people seems to explain low levels of collaborative attitude.

(3) Absence of cross-sectional coordination in the public sector

Cluster development activities by the government aredivided according to sectors and several Dinas provide support for the same cluster without coordination.There is duplication of support programs in some cases. For example, the regency Dinas Disperindag in Sumedang collected information on the nilam distillers in the regency, but it did not recognize the recent situation relatingto nilam cultivation which is under jurisdiction of the regency Agricultural/forestry Dinas.

(4) Disjunction of support measures by administrative units

In Bukittinggi, the city government insists that it should only support those in the city although the embroidery cluster extends to the neighboring regency, Agam. It has no information about the embroidery companies which is in the cluster but outside the city. Or even if it has, no attention is paid. However, a lot of subcontractors and a technical school hiring a design expert are in Agam. In this case, the provincial government needs to get involved to coordinateefforts so that their cluster development activity can reach the whole area of the embroidery cluster.

(5) Slow progress in specialization

Division of labor among cluster companies has not progressed, resulting in relative high production costs. Many of them are more concerned about troubles caused by collaboration withother companies as well as information leaks than the improvement of work efficiency and productivityas a result of collaboration. This is partly because they do not fully recognize the benefits of collaboration, but also because they are mostly small operations and are accustomed to work practice in which a single worker takes care of all production activities.In Bukittinggi, some companies state that they cannot meet demand or expand their business due to short supply of sewing machine operators.On the other hand, others argue that they cannot increasetheir operation rate or expand their business due to the small size of order from customers. By specializing in embroidery sewing, their operation rate will likely rise and their embroidering skills can be upgraded. Then, the former can receive more orders. In case the more companies opt to collaborate, the productivity of the cluster improves.

(6) Poor quality management

Quality management of the cluster companies, both embroidery and nilam oil, is insufficient. This is due to their low quality awareness and thus holds true for both one-off products as well as a sort of mass produced goods.

In Bukittinggi, none of the companies visited by the JICA study teamhas quality inspection standards or manuals, making it difficult for them to meet high quality demand in the export markets. While the sharing of inspection equipmentis possible, most companies do not show interest. Some companies have introduced production management techniques such as 5S, but could not continueusing them due to the lack of sufficient follow-upsupport, leading to inefficiency and low quality.

(7) Poor informationgathering capacity and reluctance to information sharing

Public support for information gathering is insufficient, which is thus left toefforts of individualcompanies. As a result, they seldom grasp the trends and demands of the market. As pointed out above, theylack a sense of belonging to their respective clusters, which discourage information sharing. Announcement by the public sector on their support does not seem to reach potential beneficiaries. In the embroidery cluster in Bukittinggi, companies do not use information obtained from their value chain systems for market exploration purposes. They try to develop new markets individually and they seldom share their information obtained from their customers. Their ability to collect information on the internet is fairly limited.

(8) Absence of awareness to launch an effective branding strategy

Clusters have failed to make effective use of their reputation for a major producing area. Developing a common logo can strengthen their reputation and boost sales, but no such activity is undertaken due to the absence of a cluster network. In Bukittinggi, the city government has made a brochure to sell Kerancang by introducing embroidery companies and their products. However, the brochure is not known widely by embroidery companies and is thus not used as an effective promotional tool.

Chapter 5 Training in Cluster Analysis for Purposes of Pilot Project Formation

5.1 Cluster Analysis Training

5.1.1 Background and Main Features of the Training

As part of this Cooperationa pilot project utilizing the PDCA cycle was implemented in West Sumatra and West Java provinces; in preparation for this a Cluster Diagnosis Training Program was implemented on behalf of related persons in both provinces, for the purpose of strengthening their motivation for cluster promotion, and transferring to them knowledge about cluster promotion. This section reports on the implementation of the Cluster Diagnosis Training Program and its results.

The purpose of the program was to equip related persons from both provinces with the capacity to properly ascertain the state of development of clusters and the surrounding environments supporting such development, so that these persons would be able to work at planning, implementing, evaluating, and revising pilot projects from the standpoint of an insider to these processes. It was anticipated that by carrying out this preliminary effort both that the derivation of the recommendations and guidelines from the Cooperation would be more effective, and that in these two provinces cluster promotion activities, subsequent to completion of the pilot projects, could be undertaken without outside help.

The program began with presentation of the general aspects of cluster analysis followed by classroom work for providing an understanding of the nature of major matters contributing to cluster development. This comprised the first stage.

The second stage involved Cooperation visits to companies in the regions where cluster products are made, as hands-on training in cluster analysis. On the occasion of this training program, time was not available for a detailed study of the approach to cluster promotion and support by related organizations (compensated for by obtaining information from a leader of the Dinas Koperindag), because emphasis in training in diagnosis was placed on study at the companies visited.

In the third stage participants did a SWOT analysis of the cluster region by way of summarizing the program, and on that basis prepared long lists for action on behalf of cluster promotion.

5.1.2 Training Participants and the Curriculum

5.1.2.1 Training Participants

Government workers assigned to cluster promotion were given priority in selecting participants for the training program. Included among those given preference in selecting participants were SHINDANSHI, Extension Officers, facilitators and members of cluster promotion working groups from Bukittinggi City in West Sumatra and SumedangRegency in West Java, where pilot projects were to be implemented.

In addition, training program participants who were not from the regions where the pilot projects were to be implemented were SHINDANSHI, BDS providers from colleges and research centers (Balai Besar), employees of Regional Common Service Facilities(UPTD), and consultants. These persons were invited in anticipation of their using in their work the techniques of cluster analysis acquired through the program.

5.1.2.2 Training Schedule

The schedule of training was as shown below in Table 5.1-1.

Table 5.1-1 Training Schedule

West Sumatra Province		
Year/Month/Day	Content	Venue
2009/5/13	Lecture, 1st day	Padang City
2009/5/14	Lecture 2nd day	Padang City
2009/5/25	Practice 1st day	Bukittinggi City
2009/5/27	Practice 2nd day	Bukittinggi City
2009/5/28	Wrap-up of practice	Padang City
WestJavaProvince		
Year/Month/Day	Content	Venue
2009/5/19	Lecture, 1st day	Bandung City
2009/5/20	Lecture 2nd day	Bandung City
2009/6/1	Practice 1st day	Sumedang Regency
2009/6/3	Practice 2nd day	Sumedang Regency
2009/6/4	Wrap-up of practice	Sumedang Regency

Source: JICA study team.

5.1.2.3 Training Curriculum

The following Table 5.1-2 shows the training curriculum. Also, Table 5.1-3 shows the companies visited for training.

Table 5.1-2 TrainingCurriculum

Stage 1

Day &time	Title	Content
1st day 1st sess-ion	1. Definition and concept of cluster approach Relation to industrial policy	What is a cluster? Cluster is a geographical concentration of industry, but it has to be a cross-industry group that develops a supply chain linkage and/or one-product-one-village product as well. To form a cluster, organic coupling among core companies, supporting industries, technical support institutes such as universities, and advisors, (here, the SHINDANSHIwho serve as comprehensive assistance and Extension Officers) are required. Important factors for cluster growth are discussed in the lecture.
2nd sess-ion	2. Geographical concentration of industry and promotion policy	Experience and practices in networking among cross-industry group coordinated by the Organization for Small and Medium Enterprises and Regional Innovation, Japan (SMRJ) is explained. Examples of development of a new product by joint activity among a few companies and, facilitation activity by regional coordinator is explained.
3rd session	3. BDS (Business Development Service) network	West Sumatra Province: Presentation on BDS by Ms.Yetti of Dinas Koperindag West Java Province : Discussion among all the participants, which concerns (1) BDS providers who help clusters right now and their support systems, (2) BDS providers who can help clusters , (3) Current problems on BDS assistance,and (4) BDS providers necessary for growth of the target cluster. .
4th session	4 SWOT analysis method	SWOT analysis method is reviewed. Note: SHINDANSHI had learnt it in the training course, but their understanding was insufficient; Sometimes there was difficultyin their dealing with Strength and Weakness. It was new for some Extension Officers

2nd day 1st session	5. Key point of cluster development West Sumatra Province: Mr. Juunaidi of West Sumatra Province Disperindag West Java Province: instruction by Ms.Friad (Facilitator of shoe cluster) of Bandung Islam University.	Clustering activity done by the government of Indonesia for nurturing geographic concentration of industry is reviewed.
2nd session	6. Outline of cluster diagnosis 7. Mutual relations and cluster formation	Items to be identified and methodology when conducting cluster diagnosis are presented. Theconcepts on joint working are explained. When people start new business activity as part of clusteringactivity, it is necessary to commercialize a product so that benefits of making and selling it are higher than obtained in the past. In it, companies with different ways of business and culture work together. Then, they need to clarify the rolesof participants, the sharing of profit, delivery, price, and quality standards and make it amemorandum of agreement signed by them.
3rd Sess-ion	8. Preparation of diagnosis questionnaire	Practice is done by group activity. Each group will prepare its own questionnaire that reflects the assumed character of its target cluster.
4th sess-ion	9. Method to grasps industry trend 10.Feature of a production and point to diagnose	Elements of analysis in the survey of cluster structure such as cluster association, and dispersion of cluster companies is explained. 1. 10 external conditions such as (1) regional character, (2) background and history of the target cluster, (3) regional economy, etc. are summarized 2. Explanation of the relation between raw materials and products, leadership of the core company, issues on industry-public-academic alliance and necessity of assistance from public services is given.

Stage 2

Prac-ticeday 2	11. Hearings during visits tocluster companies, facilitators etc.	West Sumatra Province: three companies or organizations/day/group on two days (total 16 companies). Factories visited as shown below (all participants will visit the 1st company) West Java Province: two companies or organizations/day/group (total 16 companies). Factories visited as shown below (all participants will visit the 1st company)
Day 5	12. Summary of the hearing survey	Report on hearings at firms and institutes Analyze industry trend (apply 10 items) Summarize outline of cluster after site survey with due discussion with SHINDANSHI
		Do SWOT analysis
		Summarize problems of each company and organization visited. Develop cluster development goal, identifying constraints and the BDS provider that is needed.
		Identify constraints of company and organization Draft action plan. (Following the setting-up of the draft plan, practical measures to evaluate project progress, issue resolving method and methodology to evaluate output are discussed.)

Source: JICA study team.

5.1.3 Training Results in West Sumatra

5.1.3.1 Evaluation by Participants Regarding the Locational Environment of the Cluster

Training participants were divided into three groups and in each group several persons who were SHINDANSHI or Dinas Koperindagstaff who work at cluster promotion in Bukittinggi City were included. They were told to provide information on the cluster environments to the members of their groups.

The tables below summarizing evaluations are provided in four segments. The first deals with indispensable factors for network development, including demand conditions, input resources conditions, the situation regarding related industry and supporting industry, company strategy and conditions of the environments for competition. The purpose was to perform an evaluation as a preparation for detailed analysis of the cluster, and to enable participants to obtain a general understanding of the cluster. Segments (2) to (4) present detailed judgments as to whether there are advantageous conditions for the location of industry.

Following completion of discussions with cluster-related persons, evaluation results were made known to each group. Although there were some items for which a considerable difference was evident between the groups, inquiries found that many of the differenceswere due to differences in understanding the standards or basis for analyses.

Table 5.1-3summarizes the evaluation result of the first segment.

Table 5.1-3 Result of Cluster Environment Assessment (1)

Indispensable factors for network development		Score		ClassificationCriteria
Base 1	Geographic distance	5	✓	within 2.5 km radius and within 30 minutes of traveling
		4		within 2.5 km radius and within 1 hour of traveling
		3		within 2.5 km radius and within 2 hours of traveling
		2		within 5 km radius and within 2 hours of traveling
		1		Within 5 km radius and over 2 hours of traveling
Base 2	Number of core companies	5	✓	More than 200 companies
		4		Over 100, within 200 companies
		3		Over 50, within 100 companies
		2		Over 15, within 50 companies
		1		Within 15 companies
Base 3	Subsector/ market	5		There is a big market domestic and overseas and growing industry with high possibility for innovation
		4	✓	Moderately growing industry having a stable local market
		3		Industry with stable local market and having possibility to exploit oversea demand through aggressive marketing
		2		Industry with stable local market but without potential to expand overseas
		1		Stagnant, conventional industry with limited regional market
Base 4	Existence of comparative advantage raw materials	5		High quality and cheap raw materials can be obtained regionally
		4		High quality and cheap raw materials can be obtained regionally but only seasonally and in limited quantity
		3		High quality raw materials are available regionally and freely
		2	✓	Cheap raw materials are available regionally and freely
		1		Cheap raw materials are available regionally and freely but only seasonally and in limited quantity
Base 5	Local particular resources	5	✓	Special, traditional resources are available abundantly and is well known locally and overseas
		4		Special, traditional resources are available abundantly and is well known locally
		3		Special, traditional resources are available abundantly and is relatively well known locally
		2		Special resources are relatively available
		1		Special resources are not available locally

Base 6	R&D institutes	5		There are more than 5 R&D institutes within one hour of traveling and industry-public-academy alliance has been formed in the past
		4		There are more than 2 R&D institutes within 1 hour of traveling. And, industry-public-academy alliance is eagerly done.
		3		There are universities, institutes and/or technical high school within 1 hour of traveling. Industry-Public-Academic joint effort has started discussion.
		2	✓	There are UPT and a technical high school within 1 hour of traveling. Industry-Public-Academic joint effort has just started in low technology field.
		1		There are UPT and a technical high school within 1 hour of traveling. Industry-Public-Academic joint working has not started yet.
Base 7	Network promotion agents	5		There is a facilitator assigned by Disperindag and clustering activity is aggressively done. A project supported by the national government is being conducted and committee meetings have been held regularly. A network among the facilitator, BDS providers and cluster members has developed. Cluster development is assured by the regulation and promotion measure has been devised. Tangible outcomes are observed.
		4	✓	There is a facilitator assigned by Disperindag and clustering activity is aggressively done. A project supported by the national government is being conducted and committee meetings have been held regularly. A network among the facilitator, BDS providers and cluster members has developed. Cluster development measures have just started.
		3		Cluster section has been established within Disperindag for facilitation work. Discussion on cluster development project between cluster members and Dinas facilitator has started.
		2		Cluster section has been established within Disperindag for facilitation work. Identification of cluster through SWOT analysis and enumeration of BDS started.
		1		There is no official facilitation activity at all. Staff in Disperindag has just started activity to organize a cluster network.
Base 8	Core company	5		A large local enterprise with high technology exists and it leads other cluster companies. Based on the leadership of the company, all the stakeholders can share information mutually. There is government support, cluster activities and network integration.
		4		There is a middle ranked company recognized as a leader in the region. The company also volunteers to promote regional development.
		3	✓	The enterprise that operates a long time at one site has a will to take leadership at the region.
		2		There are many strong companies at the site but no definite leader has been selected.
		1		There is no leader company at site.

Note: Geographic range here is based on conditions involving small-scale industrial agglomerations in Indonesia.
Source: Compiled by the JICA study team, June 2009.

Regarding the components of network formation, scores for Base 1 and Base 2 which are indicators of the degree of geographic concentration of industry as a cluster were high (many participants awarded a score of 5).

Further, evaluations were high for the indigenous technology and skills of the region.

While there is awareness that the embroidery cluster in Bukittinggi Citypossesses designs and skills specific to the region, as represented by Kerancang embroidery and has a stable market, the view was also expressed that its market at present was narrowly confined to products for use in religious, ceremonial and local ethnic clothing, and what was needed was development of designs for new markets. Consideringthe number of embroiderers who have highly developed skills at making Kerancangto be insufficient,some gave the opinion that in order for the region to retain its fame as a center of embroidery it was necessary to embark on a continuing effort to train skilled workers. According to a trading company that specializes in selling embroidery and lace, however, Kerancang is not really unique; itsembroidery designs could be achieved by other methods too.

Further, evaluations of raw materials and research centers were low.It is possible to purchase raw materials, of both domestic and foreign origins at two places within Bukittinggi City (three, if a smaller market is included). These materials, however, are relatively cheap and not of high

quality. Moreover, for these materials it is a seller's market, and at times when demand for embroidered goods is high (e.g., Ramadan), the prices of raw materials are raised, and sellers are reluctant to give quantity discounts. These are the factor believed to be behind the low evaluation.

R&D conditions also got a low evaluation; there are no institutions doing research on new designs or motifs that could be used to develop new markets, such efforts being left entirely up to the individual companies.

5.1.3.2 Results of SWOT Analysis

Table 5.1-4 below shows the results of SWOT analysis.

Analysis results from the three groups were generally as had been expected, that is, no unique element was in their analysis. Analysis of cluster conditions by Group 2 was relatively good.

Points deserving special notice made in the analysis by Group 2 were that the official regulations for cluster promotion in Bukittinggi City were in order, that there was urgent need of introducing IT, and that establishment of an embroidery promotion center was proposed.

Table 5.1-4 SWOT Analysis on the Embroidery Cluster in Bukittinggi in the Cluster Diagnosis Training Program

(2) SWOT analysis by Group 2

Date: May 28, 2009

Internal Factor / External Factor	Strengths (S)	Weaknesses (W)
	1. Distance among SMEs is small 2. There are many (about 200) embroidery companies 3. Raw materials are richly available 4. Industry is traditionally developed and well known in/outside the country 5. The companies employ skillful workers	1. Product designs are not protected by patents 2. Experts are not available nearby 3. IT is not utilized for design development, production technologies and sales activities 4. Companies are suffering from financial shortage
Opportunities (O) 1. Embroidery markets are expanding in/outside the country 2. Laws and regulations for cluster development are well developed 3. West Sumatra is located inside the IMT-GT (Indonesia, Malaysia, and Thailand – Growth Triangle) 4. Events like expositions and exhibitions are held in West Sumatra and the countries close to it. 5. Bukittinggi is a tourist spot for domestic and foreign travelers.	S-O strategies 1. Establish the cluster representing organization 2. Develop designs 3. Make inroads in the markets other than Malaysia	W-O strategies 1. Establish the training center in the cluster 2. Support patent application for designs 3. Conduct training programs for IT utilization 4. Support information provision and access to finance

Threats (T)	S-T strategies	W-T strategies
1. Products with low prices are coming into the markets from other regions of the country as well as the foreign countries 2. There is the world-wide financial crisis 3. There are companies in/outside the country that have high technologies	1. Establish the cluster representing organization 2. Set up the sales promotion agency 3. Promote introduction of product control systems (like 5S, QC, TQM)	1. Establish the cluster representing organization 2. Strengthen cooperation with concerned parties (like universities, government agencies, companies and banks)

Source: Participants in the cluster diagnosis training program (Group 2)

5.1.4 Training Results in West Java

5.1.4.1 Evaluation of Participants Regarding the Locational Environment of the Cluster

A SHINDANSHI was assigned to eachtraining group and attention was paid so that there would not be duplicate representation of any organization in a given group.

Table 5.1-5 summarizes the preparatory evaluation of each group. Where there were differences in the evaluation, the score closest to the average were used to represent the overall result of the relevant item. In particular, they disagreed over evaluations of material endowments providing a comparative advantage, but this is thought to reflect differences in knowledge about the clusters concerned.

Table 5.1-5 Result of Cluster Environment Assessment (1)

Indispensable Factors for Network Developmen		Score		ClassificationCriteria
Base 1	Geographic distance	5		within 2.5 km radius and within 30 minutes of traveling
		4		within 2.5 km radius and within 1 hour of traveling
		3		within 2.5 km radius and within 2 hours of traveling
		2		within 5 km radius and within 2 hours of traveling
		1	✓	Within 5 km radius and over 2 hours of traveling
Base 2	Number of core companies	5		More than 200 companies
		4		Over 100, within 200 companies
		3		Over 50, within 100 companies
		2		Over 15, within 50 companies
		1	✓	Within 15 companies
Base 3	Subsector/ market	5		Growing industry with high potential for innovation, having big domestic and overseas markets
		4		Moderately growing industry with stable local and/or foreign markets
		3	✓	Industry with stable local markets and having potential to exploit oversea demand through aggressive marketing
		2		Industry with stable local markets but with little or no potential to exploit overseas markets
		1		Stagnant or traditional industry whose marketability is limited even in the home market
Base 4	Existence of compara-tive advantage raw materials	5		High quality and cheap raw materials can be obtained regionally
		4		High quality and cheap raw materials can be obtained regionally but only seasonally and in a limited quantity
		3	✓	High quality raw materials are available regionally and freely
		2		Cheap raw materials are available regionally and freely
		1		Cheap raw materials are available regionally and freely but only seasonally and in limited quantity

Base 5	Local particular resources	5		Special, traditional resources are available abundantly and are well known locally and overseas
		4		Special, traditional resources are available abundantly and are well known locally
		3		Special, traditionalresources are available abundantly and are relatively well known locally
		2	✓	Special resources are relatively available
		1		Special resources are not available locally
Base 6	R & D Institutes	5		There are more than 5 R&D institutes within one hour of traveling and there are well-known cases of industry-public-academy alliance.
		4		There are more than 2 R&D institutes within 1 hour of traveling. Industries are active in industry-public-academy alliance.
		3	✓	There are universities, institutes and/or technical high schools within 1 hour of traveling. Some Industry-Public-Academic joint efforts are observed.
		2		There are UPT and atechnical high school within 1 hour of traveling. Industry-Public-Academic joint efforts have just started in a low technology field.
		1		There are UPT and a technical high school within 1 hour of traveling. Industry-Public-Academic joint working has not started yet.
Base 7	Network promotion agents	5		There is a facilitator assigned by the Disperindag and clustering activity is aggressively done. A project supported by the national government is being conducted and committee meetings have been held regularly. A network among the facilitator, BDS providers and cluster members has developed. Cluster development is assured by the regulation and promotion measures have been devised. Tangible outcomes are confirmed.
		4		There is a facilitator assigned by the Disperindag and clustering activity is aggressively done. A project supported by the national government is being conducted and committee meetings have been held regularly. A network among the facilitator, BDS providers and cluster members has developed. Cluster development activities have just started.
		3		Cluster promotion section has been established in the Disperindag for facilitation work. Discussion on a cluster development project between cluster members and Dinas facilitators has started.
		2	✓	Cluster promotion section has been established in the Disperindag for facilitation work. Identification of cluster situation (through SWOT analysis) and available BDS has started.
		1		There is no official facilitation activity at all. Staff in Disperindag has just started activity to organize a cluster network.
Base 8	Core company	5		A large local enterprise with high technology exists and it leads other cluster companies. Based on the leadership of the company, all the stakeholders can share information mutually. There is government support, cluster activities and network integration.
		4		There is a middle ranked company recognized as a leader in the region. The company also volunteers to promote regional development.
		3	✓	The enterprise that operates a long time at one site has a will to take leadership at the region.
		2		There are many strong companies at the site but no definite leader has been selected.
		1		There is no leader company at site.

Note: Geographic range here is based on conditions involving small-scale industrial agglomerations in Indonesia.
Source: Compiled by the JICA study team, June 2009.

Evaluation of the factors related to network formation was low, overall. It is thought that the situation of networks not being formed imparted influence to evaluations by training participants. Relatively favorable evaluations were made for the superiority of raw materials and existence of research institutes. All groups, however, gave low scores for geographic concentration and number of core companies.

5.1.4.2 Results of SWOT Analysis

After evaluation of the environment of the cluster, each of the three groups of trainees undertook SWOT analysis. Some group is not able to provide appropriate evaluation due to the limited working hours and lack of special knowledge on nilam business. It is necessary to reevaluate the quality of BDS after setting-up of the goal of the cluster development.

Evaluations by each group of the cluster's business environmentsare shown in Table 5.1-6.

Table 5.1-6 SWOT Analysis on the Nilam Cluster in Sumedang in the Cluster Diagnosis Training Program

(1) SWOT analysis by Group 1

Internal Factor / External Factor	Strength (S) :	Weakness (W):
	1. Abundant nilam as raw material. 2. Potential cultivation area for nilam production 3. Suitable climate for nilam production 4. Easy to cultivate nilam. 5. Strong support from the government sector (Indap, Hutbun, Perhutani, university associations, public research institutes and other related organizations) 6. Highly skilled farmers and distillers 7. Usage of appropriate technology 8. Well−developed infrastructure 9. Easy access to information 10. Nilam is a priority agricultural product in Sumedang 11. Operations of banks and financial institutions	1. Low quality of raw material 2. Unstable quality of nilam oil (Oil with average 30% or more PA and light color is required) 3. No standard of nilam oil production causes unstable quality 4. Lack of technical assistance to farmers and distillers 5. No partnership between farmers and distillers 6. Lack of knowledge of nilam oil in farmers 7. Lack of instructors in nilam oil industry
Opportunity (O) : 1. Availability of potential area for nilam cultivation 2. Possibility to market expansion as development of perfume, cosmetics, soaps, medicines and pesticide industries 3. High export demand 4. Regional income may be increased 5. Possibility to improve prosperity of nilam farmers 6. Possibility to increase job opportunities	S-O 1. Expand nilam cultivation area 2. Improve the nilam oil quality and quantity 3. Upgrade the skills of existing human resources to cope with nilam oil production 4. Procure fertilizers from agents and providers 5. Make cooperation with R&D institutes and universities	W-O 1. Improve production technology to meet the quality standard 2. Form the nilam oil cluster 3. Procure nilam oil distillation facilities 4. Set up a UPT for nilam oil
Threat (T) : 1. Consumer trends toward higher quality nilam oil 2. Difficult to obtain raw materials when the price is low 3. Nilam farmers outside of Sumedang will increase 4. No standard oil price 5. Unemployment in nilam farmers will increase 6. Strong business networks have not been set up	S-T 1. Improve production quality according to the standard 2. Make cooperation with related organizations	W-T 1. Execute cluster training 2. Disseminate nilam cultivation and improvement of marketing ability

Source: Participants in the cluster diagnosis training program (Group 1)

5.2 Pilot Project Formation

On the basis of assessment results on the cluster environment, as obtained through the Cluster Diagnosis Training Program, persons from both West Sumatra and West Java provinces participated in the planning of pilot projects to be carried out as part of this Cooperation, for the Bukittinggi embroidery cluster in West Sumatra and the nilam cluster in West Java.

The processes of formation of the pilot project at each cluster were as follows.

- First, on the basis of information collected and SWOT analysis related to the environments of thecluster (business environments, government policy, facilitators and other support organizations, use of BDS providers, etc.), a draft plan of actions was prepared as best could be done by all training participants, each of which builds on "strengths" and "opportunities" or overcomes "weaknesses" and "threats."

- Next, the contents of the action plan were used to make groupings for compilation of a long list that reflected higher-level objectives.

- Each action proposed in the long list was screened for possibility of achieving the objective in a short time, or need to assign it as a medium- or long-term activity owing to the need for extensive preparation. Having done that, after consultation with cluster-related persons (local government officials, cluster companies, financial institutions and others), a short list of short-term actions was drawn up.

- On the basis of the short list, the pilot project were planned, including therein activities deemed suitable for the present Cooperation. In spite of the above processes, the length of pilot project would be too short for some listed actions to be carried out fully; these activities were split into thosedone in the pilot project and those presumed to be performed by cluster-related persons at a later time.

Regarding the Bukittinggi embroidery cluster, because there already existed a "vision" for the cluster and an action plan, the pilot project was planned taking them into account.As they did not existin the nilam cluster in Sumedang, the planning included preparation of a long-term "vision" as well.

5.2.1 Pilot Project for Strengthening the Competitiveness of the Bukittinggi Embroidery Cluster

5.2.1.1 Formation of the Pilot Project

On the basis of the long list shown above, activities that could be carried out as the pilot project were identified (making the short list). Participating in preparation of the short list were some of the trainees who had worked on the long list, and persons from Dinas Koperindag of the city, as well as persons related to the embroidery cluster (producers, sellers, banks, raw material suppliers, government officials concerned with economic affairs, and market development personnel from Dinas Koperindag).

A FGD meeting was held by the Ministry of Industry several days prior to the work of deciding on the short list, in which the progress of their original action plan was presented by area of emphasis and correction of the course of actions was discussed. Discussions during the FGD meeting were referred to in the identification of the pilot project.

It was decided on the basis of the foregoing that the pilot project for Bukittinggi City in West Sumatra would be as follows.

1) Forming an Embroidery Cluster Forum and a Local Economy Development Forum: By way of promotion of the cluster, the organizational aspect of the cluster is to be strengthened at the initiative of private enterprises, so that there can be development of private company ownership.

2) Implementation of design training with the objective of facilitating development of products that match the requirements of markets: Implementation of instructor training and basic design training.

3) Training in the 5S approach: To be done as OJT.

4) Compilation and preparation of marketing oriented presentation materials for embroidery companies: brochures, database improvement.

5.2.2 Pilot Project for Strengthening the Competitiveness of the Sumedang Nilam Cluster

After the cluster diagnosis training was completed, the stakeholders gathered to establish priority actions. The meeting was intended to let stakeholders, particularly the refiners and farmers determine how to proceed, and complete preparations for the required activities. From the government sector, provincial and regency Dinas Disperindag and regency agricultural/forestry Dinas attended. Some of the trainees also took part. The representative traineespresented the deliverables of the training (SWOT analysis results and long list), and then those inattendanceexchanged ideas of ideal cluster conditions to be achieved by 2025.The following are the ideas that were presented.

[Ideas for formation of a Vision for 2025]

(1) The cluster will have developed products using local nilam which domestic consumers use.

(2) The nilam oil refined in the cluster will have met the international PA standard.

(3) Sumedang will have become a “nilam city” (that is, it will have been publicly recognized as a top-quality essential oil production area in Indonesia).

(4) Sumedang will have become a business center for essential oil.

(5) The welfare of nilam farmers will have improved.

(6) The cluster will have had the top-ranked cultivation technology in Indonesia.

(7) Nilam production will have become a main job, not a side job like now.

(8) The cluster will have had a nilam-related information system and database.

(9) The cluster will have produced a sufficient amount of nilam oil enough to be a center of the global essential oil business.

(10) The cluster will have been an advanced base of the global essential oil business.

(11) Sumedang will have become a center of nilam study.

(12) Nilam production will have become a driving force of the development of other industries.

Among these ideas, (9) and (10) were selected as the goals which the stakeholders in the Sumedang nilam industry could share. Putting them together, they determined the vision up to the year 2025 as follows.

[Vision for 2025]

- Sumedang of West Java Province would be the most superior nilam oil industry/business center of the world.

Next, referring to the long list, they determined the priority actions to be implemented for the coming three years, which were shown in the box below.

Priority actions to be implemented for the coming three years (2009-2011)

1. Actions to stabilize the nilam price
2. Improvement of the quality and increase of the quantity of nilam cultivated.
    a. Implementing training innilam cultivation and business management
    b. Using superior nilam seedlings, and preparinga cultivation SOP.
    c. Increasing the growing area.
3. Standardization of the nilam oil quality
    a. Developing a SOP for cultivation and distillation.

They included the action 1, one to stabilize nilam oil price, after active discussions,reflecting their strong concern with it, though it was originally not on the long list. If in the future the price is low and unstable as it is, the farmers may have to stop cultivating nilam. However, there were also comments that fixing the price was difficult and that such attempts in the past had failed. Therefore, they eventually agreed to undertake a fact-finding survey instead of taking some concrete actions for the stabilization.

Note that action details or the project implementation system (role assignments) were not determined at that time; the JICA study team wanted stakeholders to raise the levels of their awareness of involvement and willingness to participateandthus let them decide what to do. Also, it seemed to be better to improve relationships between related parties through preparation and implementation of the pilot project,because relationships of trust have not been formed among the stakeholders.

[Pilot Project Implementation]

In order to make progress toward realization of the pilot project, a workshop was held with participation by the Sumedang Dinas Koperindag, BAPPEDA, nilam farmers, distillers, dealers and others. At this workshop, it was agreed to organize a cluster first to carry out the priority actions as shown above. Moreover, concerning standardization of nilam oil quality, it was agreed that drafting of guidelines and training for both cultivation and distillation techniques were required. As a result, agreement was reached that the following three actions would be implemented as the pilot project:(1) formation and strengthening of a Nilam Cluster Committee, (2) preparation and dissemination of a SOP for nilam cultivation, and (3)training on nilam oil distillation.

Chapter 6 Outline and Results of Pilot Projects

Two pilot projects were carried out in an embroidery cluster in the Bukittinggi City, West Sumatra and in a nilam cluster in the Sumedang Regency, West Java, for about six and half months, from the late July of 2009 to the mid-February of 2010.This chapter presentsthe summaries and evaluation results of the pilot projectsthat were implemented under the present study.

6.1 Pilot Project for Development of Embroidery Cluster in BukittinggiCity, West Sumatra

Table 6.1-1 presents the summary of four actionsplanned for the pilot project. Each has its own purpose, while sharing an overall goal which is same as the existing vision of the embroidery cluster in Bukittinggi(“Embroidery products made in Bukittinggi becomes a competitive and reliable product in the world market.). Actions 1, 2 and 3 were designed to be completed within the pilot project period, whereas the action 4 was planned to be concluded by the end of the next fiscal year by the self-driven efforts of the Dinas Koperindag in Bukittinggi. Note that achieving all the four purposes does not necessarily warrant the accomplishment of the overall goal. As discussed in Chapter 5, the stakeholders chose these actions based on the long list of actions for development of the embroidery cluster in Bukittinggi (or attainment of the cluster vision), by taking into account the following factors.

- Priorities of cluster companies
- Properness as the pilot project components.

Hence, the achievement of the overall goal will require other actions as well.

Table 6.1-1 Summary of actions

Action 1 **"Establishment of Embroidery Cluster Forum and Local Economic Development Forum"**	**Action 2** **"Design Training Program for Product Development in Consonance with Market Needs"**	**Action 3** **"Training of Trainers on 5S Techniques"**	**Action 4** **"Creation of Marketing-oriented Company Catalog"**
Overall Goal (Vision of embroidery cluster in Bukittinggi) * Embroidery products produced in Bukittinggi will become more competitive and reputable in the world markets			
Purpose			
* Organizations in charge of development of embroidery cluster in Bukittinggi will incorporate more private participation and industrial comprehensiveness	* The number of embroidery companies with capability to develop designs in consonance with the market needs will increase in Bukittinggi	* Teaching capability of SME trainers in the Dinas Koperindag for 5S techniques will be enhanced	* A catalog for embroidery companies in Bukittinggi will be more exhaustive to encompass information that is necessary for buyers in 2010, compared to the current version.
Output			
1. Establishment of an embroidery cluster forum and a local economic development forum will be agreed upon by the cluster stakeholders.	1. Curricula for the training programs will be developed	1. A curriculum for the training program will be developed	1. Points of improvement in the current embroidery company catalog in Bukittinggi will be comprehended.
2. Taskforces for establishment of both the forums will be set up.	2. A training of design trainers will be conducted for designers in/around Bukittinggi to improve their capability to apply and diversify their skills in design development	2. Model enterprises will be selected.	2. A sample will be developed as a draft template for development of a new embroidery company catalog in Bukittinggi in both Indonesian and English.
3. Both the forums will be established.	3. Embroidery companies will obtain skills and knowledge about design development in consonance with market needs through the advanced training program.	3. A training of SME trainers for 5S techniques will be implemented.	3. The Dinas Koperindag will agree that it will develop the new embroidery company catalog based upon the template developed in Output 2 as a part of its activities in the fiscal year of 2010.
4. Practical knowledge of members of both the forums about the forum system will be increased.	4. A base curriculum for the future design training program for embroidery companies in Bukittinggi will be developed.		

Activities			
1-1. Hold a workshop with the cluster stakeholders for socialization of forum establishment. 1-2. Ask participants (including high-rank officials of the city government) in the workshop for permission to establish both the forums. 2-1. Conduct mapping exercise to analyze stakeholders in the embroidery cluster and local economic development through workshops and individual interview surveys with the stakeholders. 2-2. Hold a workshop with the stakeholders identified in Activity 2-1. to set up taskforces to establish both the forums. 3-1. Establish an article of association for each forum, including organization structure, objectives, rules, regulations, etc 3-2. Hold a workshop with the stakeholders to officially announce establishment of both the forums. 4-1. Conduct a study tour with members of both the forums to Central Java where forum system is well developed.	1-1. Review curricula for the design training programs that have been done in the past. 1-2. Review contents of the design training programs in the past through interview surveys with design trainers 1-3 Understand problems and points to improve about the design training program through interview surveys with participants in the training program in the past. 1-4. Understand level of consistency between the market needs and embroidery product design/level of designers' skill in Bukittinggi. 1-5 Set standard qualification for participation in the training program. 2-1 Select design TOT participants among designers in Bukittinggi and neighboring cities. 2-2 Implement a study tour to Jakarta for qualified trainees. 3-1. Select participants in the training of design trainers from the designers stationed in/around Bukittinggi 3-2 Conduct the training of design trainers in BukittinggiCity. 4-1. Sort out good lessons found at the training. 4-2 Improve the training curriculum developed in Output 1.	1-1. Review experiences of 5S application in embroidery SMEs in Bukittinggi in the past that had been studied by the second field survey. 1-2. Review training experiences of the Dinas Koperindag and other government agencies in regards to application of 5S techniques and other production control methods to SMEs that had been studied by the second field survey. 2-1. Hold a seminar with embroidery SMEs to explain this action. 2-2 Recruit model enterprises in which the trainees will receive OJT on 5S technique guidance. 2-3. Select the model enterprises. 3-1. Select the trainees from the employees of the Dinas Koperindag. 3-2. Impart a lecture on 5S techniques to the selected trainees. 3-3. JICA study team extends OJT in the model enterprises on 5S technique guidance to the selected trainees.	1-1. Review contents and purposes of the current embroidery company catalog. 1-2. Buyers and textile companies evaluate contents of the current embroidery company catalog. 2-1. Select about three embroidery companies for sample making. 2-2. Create a sample template for development of the new embroidery company catalog based upon points of improvement comprehended in Output 1. 2-3. Translate the sample template into English. 3-1. JICA study team draws up recommendations about future improvement and how-to-use of the sample template developed in Output 2. 3-2. The Dinas Koperindag receives the sample template as its template for the future development of the embroidery company catalog. 3-3. The Dinas Koperindag and the JICA study team discuss how the new embroidery company catalog should be utilized based upon the recommendations made in Activity 3-1.

Source: JICA study team

6.1.1 Outline of the priority actions

6.1.1.1 Action 1: Establishment of the embroidery cluster forum and the local economic development forum

(1) Objective

The objective of this action is to make the existing organizations for embroidery cluster development in Bukittinggi more private-oriented and more industrially comprehensive by establishing an embroidery cluster forum and a public-private sector dialogue forum participated in by various stakeholders of the city's economic development. As stated in Chapter 4, the Working Group,which had been organized with assistance of the Ministry of Industry, has existed for the development of the embroidery cluster in Bukittinggi. Under the action, the Working Group is used as the basis of establishing a more comprehensive support system, namely a local economic development forum which addresses development issues relating to not only the embroidery cluster but also other potential clusters in Bukittinggi. At the same time, it also is expected to help establish a private-owned embroidery cluster forum to inform problems and needs of embroidery companies to public assistance providers in a more consolidated manner.

1) Output 1:"Establishment of an embroidery cluster forum and a local economic development forum will be agreed by the cluster stakeholders."
2) Output 2:"Taskforces for establishment of both the forums will startup."
3) Output 3: "Both forumswill be established."
4) Output 4: "Practical knowledge of members of both forums will beaugmented."

6.1.1.2 Action 2: Design training program for product development in consonance with market needs

(1) Objective

The objective of this action is to increase the number of companies in the embroidery cluster in Bukittinggi that possess capability to develop the design in consonance with market needs. Also, it is intended to improve skills of design trainers available in/around Bukittinggi.Furthermore, by establishing a new curriculum of design training for embroidery companies, an attempt will be made to develop a framework in which embroidery companies could receive appropriate training in the future.

1) Output 1: “Acurriculum for the training program will be developed.”
2) Output 2: “Training of design trainers will be conducted for designers in and around Bukittinggi to improve their capability to apply their skills in designpractice”.
3) Output 3: “Embroidery companies will obtain skills and knowledge about design development in consonance with market needs through the advanced training program.”
4) Output 4: “A basic curriculum for the future design training program for embroidery companies in Bukittinggi will be developed.”

6.1.1.3 Action 3: Training of trainers on 5S techniques

(1) Objective

The objective of this action is to enhance teaching capability of SME trainers in the Dinas Koperindag (Extension Officer, SHINDANSHI, and staff of the industry division) in relation to 5S techniques so that embroidery SMEs in Bukittinggi can receive effective guidance on 5S techniques on a sustainable basis.[10] Japanese licensed SHINDANSHI took part in the training as an instructor.

1) Output 1: “A curriculum for the training program will be developed.”
2) Output 2: “Model enterprises will be selected.”
3) Output 3: “Training of SME trainers for 5S techniques will be implemented.”

6.1.1.4 Creation of marketing-oriented company catalog

(1) Objective

The objective of this action is to refine the embroidery company catalog produced by the Dinas Koperindag in order to include information is demanded by and relevant to buyers, thereby improving the cluster’s ability to advertise and make itself known widely in the market, while allowing it to learn demand conditions of various markets, which then would encourage the embroidery companies to improve their products for more competitiveness and better reputation.

[10] Both production control training of 5S method and TQC method were provided ad hoc by the provincial government and the city government.

1) Output 1: “Areas of improvement in the current embroidery company catalog in Bukittinggi will beidentified.”
2) Output 2: “A sample catalog with new design and content will be developed as a draft template for development of a new embroidery company catalog in Bukittinggi in both Indonesian and English.”
3) Output 3: “The Dinas Koperindag will agree that it will develop the new embroidery company catalog based upon the template developed in Output 2, as a part of its activities in the fiscal year of 2010.”

6.1.2 Evaluation on the pilot project

During the fifth field survey, the JICA study team conducted terminal evaluation all the actionsbut action 4, for which mid-term evaluation was conducted. The purpose and method of evaluation is as follows.

(1) Purpose: To summarize the results of each action using the five evaluation criteria and in accordance with the PDCA cycle, which was adopted as facilitator, and to examine the results and future prospects for each action and obtainslessons for cluster development.
(2) Period: From January 18, 2010 to February 17, 2010, during the fifth field survey
(3) Method of the evaluation: Simplified analysis based on the DAC five evaluation criteria
(4) Method of data gathering: Questionnaire and interview surveys with stakeholdersrelating to each action

The following sections present the results with respect to each criterion.

6.1.2.1 Action 1: Establishment of the embroidery cluster forum and the local economic development forum

Table 6.1-2 summarizes questionsset for evaluation on this actionand evaluation results. In addition, the JICA study team interviewed the Dinas Koperindag and the RDC facilitators for the evaluation purpose.

Table 6.1-2 Evaluation questionnaire and evaluation results (Action 1)

Criteria		Evaluation Questions	Evaluation Results
Rele-vance	1	Necessity: Did the action deal with significant problem(s) that the embroidery cluster in Bukittinggi is facing?	(Result) Yes (Verification 1) The action was selected through SWOT analysis and a long list of actions for development of the target cluster in the second field survey (Verification 2) Short-listing of the actions through a participatory workshop in the second field survey
	2	Priority: Are the purposes of the action in line with the cluster development policies and regional industry development policies in Indonesia and Bukittinggi?	(Result) Yes (Verification) The embroidery industry is one of the priority industries in Indonesia for which the cluster approach is applied for development. The embroidery cluster in Bukittinggi has been designated by the Ministry of Industry as the priority embroidery cluster for development.
	3	Relevance as means: Will the action contribute sufficiently to achievement of the cluster vision?	(Result) Partly (Verification 1) The same as "Verification 1" in "Relevance 1" in this table. Also refer to the 2nd paragraph in Section 6.1. (Verification 2) Analysis by Dinas Koperindag: "It is a very necessary action to achieve the cluster vision."
	4	Relevance as means: Were the taskforce members for establishment of both the forums selected fairly and properly?	(Result 1) They were done so fairly and properly (Verification 1) Analysis by JICA study team: The members were selected by consensus based upon the stakeholder analysis in the workshop (Verification 2) Analysis by RDC assistants: "They were done so fairly and properly." (Verification 3) Analysis by Dinas Koperindag: "They were done so fairly and properly."
	5	To what degree was cluster development organizations involved in project planning?	(Result) Involved to a great degree (Verification) Analysis by JICA study team: The action was to establish the cluster development organizations. The current working group for development of the cluster was involved in planning and implementation of the action.

Effective-ness	1	Did the organizations in charge of development of embroidery cluster in Bukittinggi come to incorporate more private participation and industrial comprehensiveness?	(Result) Expected to do in the near future (Verification 1) An embroidery cluster forum was officially established, but a local economic development forum was not. (Verification 2) In questionnaire surveys with taskforce members of both the forums, 6 out of 8 respondents answered that they did. (Verification 3) Analysis by Dinas Koperindag: "They will do so in the near future."
	2	Was the output sufficient to achieve the project purpose? Was there any other necessary output? Was there any output that is not contributing to achieving the project purpose?	(Result) Not sufficient (Verification 1) Analysis by RDC assistants: "Enough, but more private participation could have been achieved." (Verification 2) In questionnaire surveys with taskforce members of both the forums, there were answers in the output that "Participation from private companies other than the taskforce members will be secured" was necessary."
	3	To what degree was achievement of project purpose shared in the whole cluster?	(Result) Widely shared (Verification) Analysis by JICA study team and Dinas Koperindag: "This action has been implemented by a series of workshops attended by many cluster stakeholders.
	4	What are the promoting and inhibiting factors for the achievement of the project purpose?	(Result) (Promoting Factor) "Everyone recognizes the forums are for everyone." (Verification) Analysis by Dinas Koperindag
Efficiency	1	Was the output achieved?	(Result) Achieved except output 3. (Verification) Draft Decision paper for forming the forum, Selection of task force members for forming the forum
	2	Were the training period and ability of RDC assistants appropriate to achieve the output?	(Result) Not appropriate in many senses (Verification 1) Analysis by JICA study team: Lack of knowledge about the target cluster, low trusting relationship with the cluster stakeholders, difficulty in operational coordination due to geographical distance. (Verification 2) In questionnaire surveys with taskforce members of both the forums, 6 out of 8 responded that they were "appropriate." (Verification 3) Analysis of Dinas Koperindag: "Their ability was appropriate, but training period was too short."
	3	Has the same or very similar project been done in the past or is planned to be implemented?	(Result 1) Analysis of JICA study team: Efficiency was found in familiarizing the cluster stakeholders with concepts of forum, as there have been similar organizations to forum in Bukittinggi.
Impact	1	Will the organizations in charge of the development of embroidery cluster in Bukittinggi which incorporate more private participation and industrial comprehensiveness contribute to achievement of the cluster vision?	(Result) Yes (Verification 1) The same as "Verification 1" in "Relevance 1" in this table. (Verification 2) Analysis by Dinas Koperindag: "It will surely contribute to achievement of the cluster vision." (Verification 3) In questionnaire surveys with taskforce members of both the forums, 6 out of 8 respondents answered that they would contribute to achievement of the cluster vision."
	2	Does this action produce beneficiaries in the cluster other than participants in it? Or is there any plan to produce so?	(Result) Analysis by JICA study team: The action will benefit the whole cluster, as it was designed to strengthen the organizations for development of the whole cluster.
Sustain-ability	1	Will the city government continue to support both the forums after completion of the action?	(Result) Expected to do (Verification) Interview survey with Dinas Koperindag
	2	Will the embroidery cluster forum continue its activities after completion of the action?	(Result) Expected to do (Verification) In questionnaire survey with taskforce members of the embroidery cluster forum, all the respondents answered that they would continue.
	3	Will the local economic development forum continue its activities after completion of the action?	(Result) Expected to do (Verification) In questionnaire survey with taskforce members of the local economic development forum, all the respondents answered that they would continue.
	4	What are promoting and inhibiting factors for the embroidery cluster forum to continue its activities on a sustainable basis in the future?	(Promoting factor)Mutural communication, sense of solidarity, continous support from the gorvernment (Inhibiting factor)Move of members, lack in experience, low motivation
	5	What are promoting and inhibiting factors for the local economic development forum to continue its activities on a sustainable basis in the future?	Same as above.

Source: JICA study team

6.1.2.2 Action 2: Design training program for product development in consonance with market needs

Table 6.1-3 summarizes questions set for evaluation of this action and evaluation results.In addition, the JICA study team interviewed the Dinas Koperindag, the participants in the training of design trainers, and design experts (trainer of the training programs in this action) for the evaluation purpose.

Table 6.1-3 Evaluation questionnaire and evaluation results (Action 2)

Criteria		Evaluation Questions	Evaluation Results
Relevance	1	Necessity: Did the action deal with significant problem(s) that the embroidery cluster in Bukittinggi is facing?	(Result) Yes (Verification 1) The action was selected through SWOT analysis and a long list of actions for development of the target cluster in the second field survey (Verification 2) Short-listing of the actions through a participatory workshop in the second field survey
	2	Priority: Are the purposes of the action in line with the cluster development policies and regional industry development policies in Indonesia and Bukittinggi?	(Result) Yes (Verification) As stated in Chapter 4, the embroidery industry is one of the priority industries in Indonesia for which the cluster approach is applied for development. The embroidery cluster in Bukittinggi has been designated by the Ministry of Industry as the priority embroidery cluster for development.
	3	Relevance as means: Will the action contribute sufficiently to achievement of the cluster vision?	(Result) Partly (Verification 1) The same as "Verification 1" in "Relevance 1" in this table. (Verification 2) Analysis by Dinas Koperindag: "It is a very necessary action to achieve the cluster vision."
	4	Relevance as means: Were participants in the training of the design trainers and advanced training selected fairly and properly?	(Result) They were done so fairly and properly from the viewpoint of the relevance as means. (Verification 1) Analysis by JICA study team: Appropriate and fair selection method made by the Study team(Verification 2) Analysis by Dinas Koperindag: "Participants in the advanced training were selected fairly and properly, but those in the training of design trainers were not appropriate" (Note that no analysis on selection process was made by Dinas Koperindag).
	5	To what degree were cluster development organizations involved in project planning?	(Result) Involved fairly (Verification) Participants in the advanced training were ultimately selected by the taskforce of embroidery cluster forum.
Effectiveness	1	Did the number of embroidery companies with capability to develop designs in consonance with the market needs increase in Bukittinggi?	(Result) Yes (Verification 1) Analysis by design experts: "Capability to develop design in consonance with the market needs of 85% of participants in the advanced training was enhanced." (Verification 2) Analysis by all the participants in the training for design trainers: "Participants in the advanced training obtained or obtained very much capability to develop design in consonance with the market needs." (Verification 3) In questionnaire survey with participants in the advanced training, all the respondents answered that they obtained or obtained very much capability to develop design in consonance with the market needs."
	2	Was the output sufficient to achieve the project purpose? Was there any other necessary output? Was there any output that is not contributing to achieving the project purpose?	(Result) Evaluated as sufficient to a large degree, but design experts evaluated as not sufficient. (Verification 1) All the participants in both the training programs evaluated the project purpose as achieved. (Verification 2) Analysis by Dinas Koperindag: "It was sufficient." (Verification 3) Analysis by design experts: "There needed to be the output that "capability of participants in the advanced training will be enhanced for product imaging and branding."
	3	To what degree was achievement of project purpose shared in the whole cluster?	(Result 1)Widely shared (Verification 1) A lot of cluster stakeholders was participated in the closing seminar. (Verification 2) Analysis by Dinas Koperindag: "It was widely shared."
	4	What are the promoting and inhibiting factors for the achievement of the project purpose?	(Result) (Promoting Factor) High motivation of participants in the advanced training (Verification) Analysis by JICA study team: Almost every participant attended all the sessions. Participants were very active toward learning from the training.

Efficiency	1	Was the output achieved?	(Result) Yes (Verification) "Verification 1-3" in "Effectiveness 1" in this table.
	2	Were the training period and ability of design experts appropriate to achieve the output?	(Result) Appropriate (Verification 1) In questionnaire survey with participants in the advanced training, 86.7% of the respondents answered "Appropriate." (Verification 2) In interview survey with participants in the training of design trainers, 3 out of 4 responded that they were appropriate. The rest said that their training period was too short.
	3	Has the same or very similar project been done in the past or is planned to be implemented?	(Result) No (Verification 1) Analysis by Dinas Koperindag: "Our design training programs in the past have mostly been at the basic level, teaching how to make embroidery motifs. The systematic and holistic design training programs as conducted in this action was the first experiment for us." (Verification 2)This action designed the design training curriculum in consideration that it would not overlap targets of the design training programs by Dinas Koperindag.
Impact	1	Will the fact that the number of embroidery companies with capability to develop designs in consonance with the market needs increase in Bukittinggi contribute to achievement of the cluster vision?	(Result) Yes (Verification 1)The same as "Verification 1" in "Relevance 1" in this table. (Verification 2) In questionnaire survey with participants in the advanced training and interview survey with participants in the training of design trainers, 94.7% of respondents answered that it would contribute to achievement of the cluster vision. (Verification 3) Analysis by Dinas Koperindag: "It will surely contribute to achievement of the cluster vision."
	2	Does this action produce beneficiaries in the cluster other than participants in it? Or is there any plan to produce them?	(Result) Other companies (small sized companies in particular), buyers, etc (Verification) Analysis by JICA study team, Dinas Koperindag, and participants in the training of design trainers.
Sustain-ability	1	Will the city government continue design training programs based upon the outcome of this action?	(Result) Expected to do (Verification 1) Interview survey with Dinas Koperindag (Verification 2) Announcement by the mayor on willingness for the continuation at the closing seminar
	2	Will participants in the training of design trainers continue the activities as design trainers after completion of this action?	(Result) Expected to do (Verification) In interview survey with participants in the training of design trainers, all responded that they would continue.
	3	What are promoting and inhibiting factors for the design training programs based upon the outcome of this action to be continued and improved on a sustainable basis in the future?	(Promoting factor)Necessity of design training, support from Dinas (Inhibiting factor)Disregard for design, discontinued training
	4	What are promoting and inhibiting factors for the design training programs in which participants in the training of design trainers in this action act as trainers to be continued in the future?	(Promoting factor) Commitment from city government, high level of interest of SME (Inhibiting factor) budgetary restrictions

Source: JICA study team

6.1.2.3 Action 3: Training of trainers on 5S techniques

Table 6.1-4 summarizes the questions and results of the evaluation for this action.

Table6.1-4 Evaluation questionnaire and evaluation results (Action 3)

Criteria		Evaluation Questions	Evaluation Results
Relevance	1	Necessity: Did the action deal with significant problem(s) that the embroidery cluster in Bukittinggi is facing?	(Result) Yes, but little low. (Verification 1) The action was selected through SWOT analysis and a long list of actions for development of the target cluster in the second field survey (Verification 2) Short-listing of the actions through a participatory workshop in the second field survey
	2	Priority: Are the purposes of the action in line with the cluster development policies and regional industry development policies in Indonesia and Bukittinggi?	(Result) Yes (Verification) As stated in Chapter 4, embroidery industry is one of the priority industries in Indonesia for which the cluster approach is applied for development. The embroidery cluster in Bukittinggi has been designated by the Ministry of Industry as the priority embroidery cluster for development.
	3	Relevance as means: Will the action contribute sufficiently to achievement of the cluster vision?	(Result) Partly (Verification 1) The same as "Verification 1" in "Relevance 1" in this table. (Verification 2) Analysis by Dinas Koperindag: "It is a very necessary action to achieve the cluster vision."
	4	Relevance as means: Were participants in the training of the design trainers and advanced training selected fairly and properly?	(Result) They were done properly but were a little unfair from the viewpoint of the relevance as means. (Verification 1) Analysis by JICA study teamModel companies were selected from a small number of candidates (Verification 2) Analysis by Dinas Koperindag: "Participants in the advanced training were selected fairly and properly, but those in the training of design trainers were not appropriate" (Note that no analysis on selection process was made by Dinas Koperindag).
	5	To what degree was cluster development organizations involved in project planning?	(Result) Not involved (Verification) Training program was ultimately developed by JICA study team.
Effectiveness	1	Was the teaching capability of SME trainers in the Dinas Koperindag for 5S techniques promoted?	(Result) Yes (Verification 1) Analysis by JICA study team: Teaching capability of 7 SME trainers out of 10 in Dinas Koperindag for 5S techniques were promoted. (Verification 2) In questionnaire survey with model enterprises. 4 out of 7 responded enterprises answered “highly promoted” or “so far promoted”. (Verification 3) All the trainees evaluated themselves that their capability of 5S technique guidance “highly promoted” or “so far promoted”.
	2	Was the output sufficient to achieve the project purpose? Was there any other necessary output? Was there any output that is not contributing to achieving the project purpose?	(Result)Not sufficient. (Verification 1) Analysis by JICA study team: It was necessary to hold regular meetings for trainees. And, teaching materials and evaluation sheet were modified by trainees. (Verification 2) Analysis by Dinas Koperindag: "It was sufficient." (Verification 3) Analysis by design experts: "There needed to be the output that "capability of participants in the advanced training will be enhanced for product imaging and branding."
	3	To what degree was achievement of project purpose shared in the whole cluster?	(Result 1)Hardly known (Verification 1) Analysis by JICA study team: There was no PR activity. (Verification 2) Analysis by Dinas Koperindag: It was partly known by the model enterprises and those close to them.
	4	What are the promoting and inhibiting factors for the achievement of the project purpose?	(Result) (Inhibiting Factor) Low motivation of trainees, their lack of willingness to improve their own capability, and insufficiency in progress of management (Verification) Analysis by JICA study team expert.
Efficiency	1	Was the output achieved?	(Result) Yes (Verification) Selection of 8 model companies, Results of OJT
	2	Were the training period and ability of design experts appropriate to achieve the output?	(Result) Appropriate to some extent but some trainees are not satisfied (Verification 1) In questionnaire survey with trainees, 6 out of 9 respondents answered "Appropriate", but 2 respondents answered “not Appropriate”. (Verification 2) In questionnaire survey with model enterprises, 6 out of 7answered “Appropriate”. (Verification 3) Analysis by Dinas Koperindag: “It was appropriate”.
	3	Has the same or very similar project been done in the past or is planned to be implemented?	(Result) Yes. (There were training curriculums that were developed by the provincial government) (Verification 1)Opinions from trainees

Impact	1	Will the fact that the SME trainers in the Dinas Koperindag with enhancement of 5S guidance capability contribute to achievement of the cluster vision?	(Result) Yes (Verification 1)The same as "Verification 1" in "Relevance 1" in this table. (Verification 2) In questionnaire survey with trainees, 8 out of 9 answered that it would contribute to achievement of the cluster vision (Verification 3) Analysis by Dinas Koperindag: "It will contribute to achievement of the cluster vision."
	2	Does this action produce beneficiaries in the cluster other than participants in it? Or is there any plan to produce them?	(Result) Consumers, enterprises other than model enterprises, governmental entities, raw material suppliers, retailers, employees, etc. (Verification) Result of questionnaire with Dinas Koperindag and trainees.
Sustain-ability	1	Will the city government continue the guidance activities on 5S techniques for SMEs?	(Result) They have a plan to continue. (Verification 1) Interview survey with Dinas Koperindag. And, budgetary allocation in 2010 assured. (Verification 2) In questionnaire survey with trainees, 8 out of 9 answered that they will continue the guidance activity.
	2	What are promoting and inhibiting factors for the guidance activities on 5S techniques of this action to be continued in the future?	(Promoting factor) Commitment fo Dinas Koperindag, training for instructors (Inhibiting factor) Low level of motivation of instructors, lack in knowladge of instructors

Source: JICA study team

6.1.2.4 Creation of the Marketing-oriented Company Catalog

Table 6.1-5 summarizes evaluationquestions and results for this action.

Table6.1-5 Evaluation questionnaire and evaluation results (Action 4)

Criteria		Evaluation Questions	Evaluation Results
Relevance	1	Necessity: Did the action deal with significant problem(s) that the embroidery cluster in Bukittinggi is facing?	(Result) Yes (Verification 1) The action was selected through SWOT analysis and a long list of actions for development of the target cluster in the second field survey (Verification 2) Short-listing of the actions through a participatory workshop in the second field survey
	2	Priority: Are the purposes of the action in line with the cluster development policies and regional industry development policies in Indonesia and Bukittinggi?	(Result) Yes (Verification) As stated in Chapter 4, the embroidery industry is one of the priority industries in Indonesia for which the cluster approach is applied for development. The embroidery cluster in Bukittinggi has been designated by the Ministry of Industry as the priority embroidery cluster for development.
	3	Relevance as means: Will the action contribute sufficiently to achievement of the cluster vision?	(Result) Partly (Verification 1) The same as "Verification 1" in "Relevance 1" in this table. (Verification 2) Analysis by Dinas Koperindag: "It is a very necessary action to achieve the cluster vision."
	4	Relevance as means: Were companies in the sample template selected fairly and properly? Were they appropriate as companies for sample template development?	(Result 1) They were done so fairly and properly (Verification) Analysis by JICA study team and Dinas Koperindag: "No factitive bias was found as they were selected at random." (Result 2) They were proper for sample template development (Verification) Analysis by JICA study team: "They were in the current catalog, on which the sample template development was based."
	5	To what degree were cluster development organizations involved in project planning?	(Result) Involved fairly (Verification) Analysis by JICA study team: "The catalog is to introduce the cluster companies as a whole. Dinas Koperindag plans and implement development of the new catalog (2010 version) based upon the sample template submitted in this action.
Effective-ness	1	Will the catalog for embroidery companies in Bukittinggi be more exhaustive to encompass information necessary for buyers in 2010, compared to the current version?	(Result) Expected to be (Verification 1) Analysis by JICA study team: "The sample template has been developed to encompass necessary information for buyers based upon evaluation results from textile experts and an embroidery company in Japan." (Verification 2) Analysis by Dinas Koperindag: "We have already started to develop the new catalog in 2010 based on the sample template."
	2	Is the output sufficient to achieve the project purpose? Is there any other necessary output? Is there any output that is not contributing to achieving the project purpose?	(Result) Sufficient (Verification 1) Analysis by JICA study team (Verification 2) Analysis by Dinas Koperindag
	3	To what degree is the achievement of project purpose shared in the whole cluster?	(Result) Expected to be shared fairly (Verification) Analysis by JICA study team : Refer to the main body text

	4	What are the promoting and inhibiting factors for the achievement of the project purpose?	(Result 1) (Inhibiting Factor) Work for creating the new catalog is being done by only staff in the industrial division of Dinas Koperindag (lack of manpower) (Verification) Analysis by JICA study team and Dinas Koperindag
Efficiency	1	Was the output achieved?	(Result) Yes (Verification) Introductory catalogs of 41 companies made by Koperindag Dinas
	2	Were the training period and ability of JICA study team appropriate to achieve the output?	(Result) Appropriate (Verification) Analysis by Dinas Koperindag: Refer to the main body text
	3	Has the same or very similar project been done in the past or is planned to be implemented?	(Result) Yes, but the action was designed based upon experience of the past project. (Verification) Sample catalog in English
Impact	1	Will the catalog for embroidery companies in Bukittinggi which is more exhaustive to encompass information necessary for buyers in 2010, compared to the current version, contribute to achievement of the cluster vision?	(Result) Yes (Verification 1) The same as "Verification 1" in "Relevance 1" in this table (Verification 2) Analysis by Dinas Koperindag: "It will contribute to achievement of the cluster vision."
	2	Does this action produce beneficiaries in the cluster other than participants in it? Or is there any plan to produce them?	(Result) Consumers, buyers, and companies which will be introduced in the catalogs in the future. (Verification) Analysis by JICA study team and Dinas Koperindag.
Sustain-ability	1	Will the Dinas Koperindag continuously be improving the sample template submitted in this action?	(Result) Expecting to continue. (Verification) Interview survey with Dinas Koperindag
	2	What are promoting and inhibiting factors for Dinas Koperindag to be improving the sample template on a sustainable basis in the future?	(Promoting factor) Budget, needs for improvement of introductory materials (Inhibiting factor) Decrease of budget, decrease in necesityof introductory materials

Source: JICA study team

6.2 Pilot Project for Development of Nilam Cluster in Sumedang Regency, West Java

As seen inTable 6.2-1, three actions were planned underthe pilot project. Each action has its own project purpose, whilesharing the sameoverall goal with other actions.

Table6.2-1 Summary of actions

Action 1 **Formation and strengthening of nilam cluster committee**	**Action 2** **Development of the SOP (Standard Operation Procedure) for nilam cultivation**	**Action 3** **Training for distillation skill**
Overall Goal		
* SMEs which belong to the nilam cluster in Sumedang will improve their capabilities to produce competitive products in terms of price and quality.		
Project Purpose		
* The cluster committee for the nilam industry will be established in Sumedang as an organization which coordinates stakeholders and executes actions with planning and monitor itself	* Quality and quantity of both nilam leaves and oils produced in Sumedang will be improved	* Distillation technology of nilam oil in Sumedang will be upgraded
Outputs		
1. Stakeholders will understand the concept of nilam cluster development and build consensus among them to form a cluster organization	1. An SOP for nilam cultivation will be designed	1. Appropriate distillation technology will be transferred to sample distillers
2. A cluster committee for nilam industry will be established.	2. The SOP willbe disseminated among farmers and the SOP-based cultivation will be adopted	2. Guidelines for upgrading of distillation technology will be utilized among distillers in Sumedang
3. Related activities will be strengthened by good understanding of how to operate the committee by members.		
Activities		
1-1. Hold cluster initiation workshops	1-1 Investigate current cultivation method of nilam farmers	1-1. Investigate current condition of production devices and distillation method of nilam distillers
1-2. Stakeholders reach the consensus about promotion of nilam cluster	1-2 Draft the initial SOP by referring to related information and documents	1-2. Hold FGDs for technology transfer to distillers
2-1. The committee holds initiation workshops	1-3 Draft the specific SOP of cultivation for Sumedang in line with the results of investigation	1-3. Transfer technology to 3 distillers
2-2. Stipulate vision, purposes, activities, and role of committee members	1-4 Discuss the specific SOP for Sumedang at FGD	2-1. Identify common technological problems

3-1.	Committee members and officials of Sumedang regency learn cluster promotion from the study tour to Tegal regency of Central Java	1-5	Revise the specific SOP in line with discussions at FGD	2-2.	Draw up guideline for the upgrading of distillation technology
3-2.	Committee members learn cluster management from the study tour to Kutai Timur, East Kalimantan	2-1	Develop handbook of the specific SOP to accelerate farmer's understanding		
3-3.	With PUPUK's assistance, the committee plans, carries out and undertakes monitoring about the activity 1	2-2.	Provide training for farmers based on the SOP		
3-4.	Devise and continuously implement the marketing strategy in the committee				

Source:JICA study team

6.2.1 Results of actionimplementation

This section presents the objective and implementation results of each action summarized in the Table 6.2-1.

The majority of Indonesian clusters are at the embryonic stage where no network is formed for stakeholders, and the nilam cluster in Sumedangfits the pattern. Therefore, the pilot project attempted to build a network by mobilizing more stakeholders to be involved and fostering a sense of ownership and/or participation. In the pilot project, the JICA study team hired an experienced facilitator to nurture a trusting relationship among cluster stakeholders.

6.2.1.1 Action1: Formation and strengthening of the nilam cluster committee

(1) Objective

Previously, there had been no organization to promote the nilamcluster in the Sumedang Regency.While various governmental organizations provided their own assistance programsseparately, private farmers, distillers and associations failed to organize themselves or act collectively as a cluster. Under these circumstances, this action aimed to establish an organization which would play a pivotal role in promoting the nilamcluster. The organization envisaged in this action is a committee coordinating a wide variety of stakeholders, includingrelated governmental agencies, farmers, distillers, local collectors, universities and research institutes, as well as managing, namely planning, implementing, monitoring, and evaluating cluster development activities.

1) Output 1:"Stakeholders will understand the concept of nilam cluster development and build consensus among them to form a cluster organization."
2) Output 2: "A cluster committee for the nilam industry will be established."
3) Output 3: "Related activities will be strengthened by good understanding of how to operate the committee by members."

6.2.1.2 Action 2: Development of the SOP(Standard Operation Procedure) for nilam cultivation

(1) Objective

In the cluster initiation workshop and the workshop to start up the cluster committee, the participants share common perception that nilam oil produced in Sumedang does tno meet production (volume) and quality requirements demanded by the market. In Sumedang, farmers traditionally grew nilam in their own ways, which made their production outputfluctuate. This action aimed to improve quality and production yield of nilam leaves by standardizing cultivation techniques through the introduction of a SOP for nilam farms.

1) Output 1: “An SOP for nilam cultivation will be designed.”

2) Output 2: “The SOP willbe disseminated to farmers, who will become capable of cultivating nilam according to the SOP.”

6.2.1.3 Action 3: Training for distillation skill

(1) Objective

In the cluster initiation workshop, participants confirmed that improvement in not only cultivation but also distillation was necessary to improve quality and quantity of Sumedang-made nilam oil. There are nine distillers in Sumedang which use a variety of distillation facilities, and their yield rates and oil quality (PA content and color) are different from each other. As a result, PA content, color and the distillation rate vary among oils made by the distillers, preventing uniform quality from achieving for Sumedant nilam oil as a whole.In consideration of these factors, Action 3 aimed to upgrade their distillation skills to improve distillation ratesand achieve uniform PA content.

1) Output 1: “Appropriate distillation technology will be transferred to sample distillers.”

2) Output 2: “Aguideline for upgrading distillation technology will beadopted and utilized widely by distillers in Sumedang.”

6.2.2 Evaluation of the pilot project

In the fifth field survey, the JICA study team made evaluation on the pilot project. A general outline of the evaluation isshown below.

- Purpose: To summarize the results of each action using the five evaluation criteria and in accordance with the PDCA cycle; and to examine the results and future prospects for each action and derive lessons for cluster development.
- Period: From January 12, 2010 to February 11, 2010 (in the fifth field survey)
- Method of evaluation: Simplified analysis based on the DAC five evaluation criteria
- Method of data gathering: Questionnaire and interview surveys with the stakeholders.

6.2.2.1 Action 1: Formation and strengthening of the nilam cluster committee

Table 6.2-2 shows questions set for evaluation of this actionand evaluation results.

Table 6.2-2 Summary of evaluation items and results of action 1

Criteria		Evaluation Questions	Evaluation Results
Relevance	1	Did the action deal with the crucial issue of nilam oil industry in Sumedang?	[Result] Yes, it dealt with the crucial issue. [Verification 1] There was no organization for cluster promotion before start of the action 1 [Verification 2] The action was proposed at the cluster initiation workshop
	2	Was the action consistent with cluster / local economic development policies?	[Result] Highly consistent [Verification] Central government (MOI) has a cluster development program including the essential oil sector.Local government (Sumedang) has a policy (mid-term development plan) to promote agribusiness including the nilam industry
	3	Did the action contribute to achieving the overall goal?	[Result] Contributed [Verification 1] The cluster committee secured aggressive participation from both private and government sectors and they have been making active discussion [Verification 2] Questionnaire: Further participation by private stakeholders will be required
	4	Was the member of the committee selected appropriately and / or fairly?	[Result] Selected appropriately and fairly [Verification 1] Member of the committee were selected through the workshop in a participatory manner [Verification 2] Questionnaire: Selected appropriately and fairly (answered by government stakeholders)

	5	Were the cluster implementation institution / stakeholders involved in the action planning?	[Result] Stakeholders were involved in the action planning [Verification 1] Stakeholders have been involved in SWOT analysis and action planning [Verification 2] The committee designed the action in detail
Effective-ness	1	Was the cluster committee established as an organization which coordinates stakeholders and plan, executes, and evaluates actions?	[Result] Yes, the base for coordination of stakeholders and implementation body of actions wereestablished. [Verification 1] Committee members from both the private and government sectors have become able to act collaboratively. [Verification 2] Questionnaire: Yes
	2	Was the output of the action enough to achieve the project purpose?	[Result] Enough in limited period [Verification 1] Participants were motivated and enhanced their capacity to manage the committee [Verification 2] Questionnaire: Further participation by private stakeholders will be required
	3	Was the status of achievement ofproject purpose under this action disseminated to stakeholders of the nilam cluster?	[Result] Disseminated [Verification 1] Disseminated to the stakeholders through the committee meetings, debriefing sessionon implemented activities, and the evaluation seminar [Verification 2] Questionnaire: Disseminated / Relatively disseminated
	4	What are the promotional / obstructive factors to achieve the project purpose?	[Promotional factor] Importance of the cluster committee was understood by the private and government stakeholders. Network among stakeholders was developed. [Obstructive factor] Dissemination was made but did not reach the whole stakeholders
Efficiency	1	Was the output achieved?	[Result] Achieved [Verification] Based upon the agreement made at the cluster initiation workshop, the nilam cluster committee was established and it has been planning and implementing the activities since then.
	2	Were training period and capability of the expert (PUPUK) appropriate to achieve the output?	[Result] Appropriate [Verification 1] Commitment among the stakeholders related to the action 1 was promoted by PUPUK based on their extensive experiences with cluster development. PUPUK established a trusting relationship with the cluster stakeholders. [Verification 2] Questionnaire: PUPUK was appropriate as a facilitator
Impact	1	Was the action necessary to achieve the overall goal?	[Result] Necessary [Verification 1] Importance of organization to acquire cluster competitiveness was understood by the stakeholders [Verification 2] Questionnaire: Necessary
	2	Are the beneficiaries outside of the committee induced in the cluster?	[Result] Possibly induced [Verification 1] The recognition as a nilam cluster will be increased through aggressive marketing activities and identification of nilam production capacity by the committee and the benefits will then spread to others [Verification 2] Questionnaire: Induced (answered by the government stakeholder)
	3	What are the promotional / obstructive factors to achieve the overall goal by the committee?	[Promotional factor] Motivated human resources identified outside the committee and strong will to grow [Obstructive factor] Passive attitude of stakeholders outside the committee. Deterioration of environment.
Sustain-ability	1	Will the governments of Sumedang continue to support the committee after the pilot project?	[Result] Will possibly continue [Verification 1] Governments are members of the cluster committee. [Verification 2] Questionnaire: Will continue (answered by 5 out of 7 respondents)
	2	What are the promotional / obstructive factors to continue the actions by the committee?	[Promotional factor] Strong motivation for growth in the private sector [Obstructive factor] Less support from policies. Weak sense of unity among the committee members. Lack of operating fund of the committee. More time needed to enhance organizational capacity
	3	Is the cluster committee capable of continuing the action by themselves?	[Result] Capable [Verification 1] Questionnaire: Capable

Source: JICA Study Team

6.2.2.2 Action 2: Development of the SOP(Standard Operation Procedure) for nilam cultivation

Table 6.2-3 summarizes the questions and results of the evaluation for this action.

Table 6.2-3Summary of evaluation items and results of action 2

Criteria		Evaluation Questions	Evaluation Results
Relevance	1	Did the action deal with the crucial issue of nilam oil industry in Sumedang regency?	(Result) Yes it dealt with the crucial issue. (Verification 1) There had been no SOP for nilam cultivation before action 2 started. (Verification 2) Stakeholders proposed the action and its necessity by SWOT analysis at the cluster initiation workshop
	2	Was the action consistent with cluster / local economic development policies?	(Result) Highly consistent (Verification) Central government (MOI) has a cluster development program including the essential oil sector. Local government (Sumedang) has a policy (mid-term development plan) to promote agribusiness including nilam industry
	3	Did the action contribute to achieving the overall goal?	(Result)Will possibly contribute in the future (Verification 1) Depends on the dissemination and training through demo plots (Verification 2) Questionnaire: Adopt the SOP (answered by farmers)
	4	Were trained farmers selected appropriately and / or fairly?	(Result) Selected appropriately and fairly under some conditions (Verification) Planned action was changed to demo plots. Selection of farms for demo plots was made based on discussion between farmers and UNPAD.
	5	Were the cluster implementation institution / stakeholders involved in the action planning?	(Result) Stakeholders were involved in the action planning (Verification 1) The action was developed through the initiation workshops by stakeholders (Verification 2)The committee designed the action in detail
Effectiveness	1	Was nilam oil improved in quality and quantity by the action?	(Result) Further action is expected (unable to judge at this moment) (Verification 1) Questionnaire: Effective to improve nilam production (answered by 5 out of 7 farmers). Dishubun Sumedang pointed out insufficiency and the necessity of regular assistance to farmers.
	2	Was the status of achievement of the action disseminated to stakeholders?	(Result) Disseminated (Verification) Disseminated through the committee meetings, FGD, and the evaluation seminar
	3	What are the promotional / obstructive factors to improve nilam in quality and quantity in Sumedang?	(Promotional factor) Motivated farmers. Access to the expert (UNPAD) and related facilities. Preferableenvironment for planting (Obstructive factor) The SOP is not popular among farmers and thus it takes time to be disseminated. Enhancement of the organization is needed. Market of nilam is unstable. It is difficult to get fertilizer. There is lack of financial access.
Efficiency	1	Were training period and capability of the expert (UNPAD) appropriate to achieve the output?	(Result) Relatively Appropriate (Verification 1) Appropriate (answered by 5 out of 7 farmers and Dishubun) (Verification 2)The SOP was developed and planting in demo plot started.
	2	Were similar projects to the action already conducted / planned to be conducted in Sumedang?	[Result] Planned in the future [Verification 1] Questionnaire: Dishubun Sumedang is planning to apply it in the future
Impact	1	Was the action necessary to achieve the overall goal?	(Result) Necessary (Verification 1) Importance of improvement in quality and quantity of fresh nilam to acquire cluster competitiveness was understood by stakeholders (Verification 2) Questionnaire: Necessary
	2	Are the beneficiaries outside of the committee induced in the cluster?	(Result) Possibly induced (Verification 1) The SOP will be disseminated by the committee, universities and the government and thus benefits of the action are likely to spread to others. Verification 2) Questionnaire: Induced (answered by Dishubun and UNPAD)
	3	What are the promotional / obstructive factors to achieve the overall goal by the committee?	[Promotional factor] Better facilities and good weather [Obstructive factor] Lack of operating funds

Sustainability	1	Will the governments of Sumedang continue to support the committee after the pilot project?	(Result)Will possibly continue (Verification 1) Dishubun Sumedang is a member of the cluster committee and the steering committee (Verification 2) Questionnaire: Will continue (answered by Dishubun)
	2	What are the promotional / obstructive factors to continue the actions to improve nilam in quality and quantity in Sumedang?	(Promotional factor) Motivation for quality improvement by farmers is quite strong. Collaboration with UNPAD continues. Stakeholders participate in the action (Obstructive factor) There is lack of funds. Agricultural land is widely dispersed in Sumedang. There is large gap of basic knowledge among farmers
	3	Is the cluster committee capable to continue the activities to improve nilam in quality and quantity in Sumedang by themselves?	(Result) Capable (Verification 1) Importance of upgrading skill for nilam cultivation is a consensus of the committee (Verification 2) Questionnaire: Capable (answered by Dishubun and UNPAD)

Source: JICA Study Team

6.2.2.3 Action 3: Training for distillation skill

Table 6.2-4summarizes questions set for evaluation of the action and evaluation results.

Table 6.2-4Summary of evaluation items and results of action 3

Criteria		Evaluation Questions	Evaluation Results
Relevance	1	Did the action deal with the crucial issue of the nilam oil industry in Sumedang?	[Result] Yes, it dealt with the crucial issue. [Verification 1] Standardization of distillation skill had been required because of a wide gap of quality of produced oil among distillers before action 3 started. [Verification 2] Necessity of the action was confirmed by SWOT analysis, drafting of long list of the actions and the cluster initiation workshop.
	2	Was the action consistent with cluster / local economic development policies?	[Result] Highly consistent [Verification] Central government (MOI) has a cluster development program including the essential oil sector, local government (Sumedang) has a policy (mid-term development plan) to promote agribusiness including the nilam industry
	3	Did the action contribute to achieving the overall goal?	[Result] Possibly contribute in the future [Verification 1] Necessity of improvement in distillation technology is shred among the stakeholders outside/inside the cluster committee and each distiller is expected to obtain proper distillation technologies. [Verification 2] Questionnaire: Will contribute in the future (answered by Dinas Disperindag). Contribute (answered by the expert)
	4	Were the distillers selected appropriately and / or fairly?	[Result] Fairly but less appropriately [Verification 1] Selection was fairly made in a participatory way. But selection was made for the distillers to which technologies could not be transferred completely within the pilot project period due to difficulty in scheduling. [Verification 2] Questionnaire: Appropriately and fairly (answered by 4 out of 7 respondents)
	5	Were the cluster implementation institution / stakeholders involved to the action planning?	[Result] Stakeholders were involved in the action planning. [Verification 1] The action was developed through the initiation workshops by stakeholders [Verification 2] The committee designed the action in detail
Effectiveness	1	Was the distillation skill improved by the action?	[Result] Further action is expected (unable to judge at this moment) [Verification 1] Dissemination of guidelines will be continued because technology transfer was not able to be completed within the pilot period [Verification 2] Questionnaire: Will be achieved in the future (answered by Dinas Disperindag)
	2	Was the output of the action enough to improve distillation skills in Sumedang	[Result] Not enough [Verification 1] Expected output was not completed within the pilot project period and guidelines will be disseminated after the pilot project [Verification 2] Questionnaire: Not enough (answered by 4 out of 7 distillers and Dinas Disperindag)
	3	Was the status of achievement of action disseminated to stakeholders?	[Result] Disseminated [Verification] Disseminated through the committee meetings, FGD, and the evaluation seminar

	4	What are the promotional / obstructive factors to improve distillation skill in Sumedang?	[Promotional factor] Support from the government, abundant and experienced human resources [Obstructive factor] There is lack of TA for distillers. Design of distillation facilities is not appropriate. Market for nilam oil is unstable
Efficiency	1	Was the output achieved?	[Result] Not achieved [Verification] Level of technology transfer to the distillers was low. The contents of TA and guidelines are limited to general issues and immediate action to improve distillation skill was not proposed
	2	Were training period and capability of the expert (UNPAD) appropriate to achieve the output?	[Result] Not appropriate [Verification 1] The expert was not capable of conducting expected TA for distillers, and the contents of the guidelines were limited to general issues [Verification 2] Questionnaire: Appropriate (answered by 4 out of 7 distillers and 1 out of 2 Dinas Disperindag) and Not appropriate in research and basic knowledge
	3	Were similar projects to the action already conducted /planned to conduct in Sumedang?	[Result] Already conducted partly [Verification] Participants and the government indicated that the contents of TA was not new for them.
Impact	1	Was the action necessary to achieve the overall goal?	[Result] Necessary [Verification 1] Importance of improvement in quality and quantity of nilam oil to acquire cluster competitiveness was understood by the stakeholders [Verification 2] Questionnaire: Necessary
	2	Are the beneficiaries outside of the committee induced in the cluster?	[Result] Possibly induced [Verification 1] Nilam farmers would benefit from this action if sales of nilam oil is to increase as a result of improvement in distillation technologies of the distillers. [Verification 2] Questionnaire: Induced (answered by the expert and Dinas Disperindag) Beneficiaries would be local government
	3	What are the promotional / obstructive factors to achieve the overall goal?	[Promotional factor] BALITRO will extend its supportmeasures. [Obstructive factor] Distillers will not be able to access finance for repairing their distillation facilities.
Sustainability	1	Will the government of Sumedang continue to support the committee after the pilot project?	[Result] Will continue [Verification 1] Dinas Disperindag Sumedang is a member of the cluster committee and the steering committee and has been involved in the action aggressively [Verification 2] Questionnaire: Will continue (answered by Dinas Disperindag)
	2	What are the promotional / obstructive factors to continue the actions to improve distillation skills in Sumedang?	[Promotional factor] Continuous support from MOI and the local government is committed. Distillers become able to invest in facilities to improve quality of nilam oil. Motivation for improvement of quality by distillers is strong. [Obstructive factor] Government support is limited only in specific area. It is not easy to change distillation process due to lack of finance.
	3	Is the cluster committee capable of continuing the activities to improve distillation skills in Sumedang by themselves?	[Result] Capable [Verification 1] The committee and distillers in particular have strong motivation to continue the activities [Verification 2] Questionnaire: Capable (answered by 4 out of 7 distillers and Dinas Disperindag)

Source: JICA Study Team

Chapter 7 Cluster Development in Indonesia: Issues and Strategies

This chapter examines the issues related to development of clusters in Indonesia, as identified by field studies, and presents the desirable policy orientations for the central and local governments in their cluster development efforts. Then, a general framework for activities to be undertaken in the next step is presented in the form of strategies andaction programs..

7.1 Objectives and Issues of Cluster development

7.1.1 Expectations for and Roles of Cluster development in Industrial Policy

As seen in many other countries, the number of micro, small and medium companies in Indonesia accounts for more than 99% of the total. Clearly, they play an important role in the social and economic development process, and the development of a cluster made up of MEs, SMEs and sole proprietors can contribute to Indonesian economic developmentwith the following effects:

(1) Diversification of and the increase in the value added by local industries produces; job creation and alleviation of poverty; and improvement of a regional economic infrastructure.

(2) Region-led industrial development and development of local human resources, contributing to greater autonomy of each region

(3) Generation of societal synergies within each region by amassing resources in a single place and for a single purpose

(4) Invigoration and diversification of the entire industry sector through promotion of competition among clusters and regions.

7.1.2 Issues relating to Cluster Development

Key actors in the cluster development process are classified to the following three types: (1) central and local government organizations; (2) cluster support organizations; and (3) cluster member companies and cluster organizations.Then, priority issuesare identified for each actorgroup. In the process,particular attention was given to the following three points.

(1) Common issues identified through various studies.

(2) Issues imposing major impacts on the results of cluster development.

(3) Issues with high urgency in relation to policymaking.

On the basis of the above guideline, the following nine items were identified as priority issues relating to cluster development in Indonesia.

7.1.2.1 Issues Confronted by Central and Local Government Organizations

(1) Facilitation ofDevelopment and Disseminationof the Cluster Development Guideline

Government officers engaged in industrial development-related activities, whether central or local government, are familiar with the term ‘cluster development,’ but they have limited understanding of its details. They have little knowledge on cluster development procedures and required elements. Also, almost no government office has a cluster development guideline ora guidebook and similar reference materials.

(2) Building of an Efficient Cluster Development Organization that Acts Beyond Governmental and Administrative Boundaries

At present, t the central and local governments relating to industrial development are organized, staffed, and funded on a sector basis. As a result, there have been cases where several departments (Dinas) are engaged in development of the same cluster, resulting in duplication of efforts. On the other hand, ascluster development is carried out on a regency or city basis, , a cluster that spans more than one administrative area may be neglected in government support.. Primary examples of this problem are discussed in Chapter 4, (4) Disjunction of support measures by administrative units of clause 4.3.

7.1.2.2 Issues Relating to Cluster-Supporting Organizations

(1) Dissemination of the Concept of Cluster development, and the Development of Hands-On Facilitators

There are local governments that failed to make progress in cluster development efforts on the basis of recommendations made in the previous study. It was found that they have conducted business support activities without understanding the advantages of industrial clusters and the concept of cluster development. As seen in the discussion on the cluster development guideline, it is imperative, as the first step, to promote understanding and dissemination of the basic concept among stakeholders. In this connection, the facilitator is expected to play an important role as much as the development of the cluster development guideline by the government.

(2) Building Efficient Inter- and Intra-Cluster Networks, and Promotion of Cooperation

As a result of comparative analysis of clusters active in two regions, the study team has found the most important factors for achieving tangible results from cluster activities were the motivation and teamwork of the working group(representing the cluster)that led the activities and good communication with outside supportorganizations.

Particularly important issues for cluster-support organizations are, at the time of embryo stage of a cluster, to ensure smooth communication between the cluster and outside entities, and to build a functional network, while at the same time respecting the autonomy of the members of the cluster and their representative organization.

7.1.2.3 Issues for Cluster Members and the Cluster Representative Organization

(1) Motivating Cluster Activities, and Nourishing a Sense of Belonging

Successful cluster activities are driven when they provide incentive for each member company to seek the expected results. Such incentive creates motivation and enthusiasm for participation in cluster activities, which in turn foster ownership.

Although it is widely believed that time is required for development ofownership, it is also important to create a mechanism to raise awareness of cluster members under leadership of cluster leaders and facilitators, and develop the cluster’s self-driven capability.

(2) Improvement of Operational Capability of Small Enterprises

For the promotion of clusters made up primarily of small enterprises, public support should be extended to the improvement of overall managerial capability of each member company, including quality control, production technology, and technology for cultivation of raw material inputs, as well as business management techniques.

(3) Improvement of Marketing Capability by Capitalizing on the Agglomeration Effect

In the nilam cluster in Sumedang, the collection of market information and technical information as well as price negotiations have to be done by each enterprise or farms individually, because no network has been created. In reality, however, most enterprises and

farms lack the ability to collect information and are in a weak bargaining position. The same kind of problem is seen in the Bukittinggi cluster.

(4) Development of Human Resources for Leading Clusters, and Cluster Representative Organizations

The development of human resources for leading clusters, and development of organizations that represent clusters, are issues that partially overlap the issues that are also discussed in this report. These issues must be addressedfrom perspectives of dealing with the issues relating to recognition of the cluster and its activity by outside parties and the improvement of a mechanism to train facilitators with leadership, in addition to the issues concerning cluster members.

(5) Effective Implementation of Cluster Activities

To effectively implement programs for cluster developmentactivities, it is important to understand the current state of the cluster at the beginning of the program and set special goals to be achieved at the end of the program. Then, interim evaluation should be carried out in the course of program implementation to modify or adjust actions to reflect the evaluation results, thereby to ensure the accomplishment of the goals.

Evaluation should focus on the measurement of the program effect as to how far it has achieved the present goal for cluster development. In the Bukittinggi cluster's case, however, evaluation looked into as to whether the action program was carried out as planned, and did not go as far as to gauge the effects of the action program. Without a proper evaluation mechanism, it is difficult to achieve the program goals, even if action programs for cluster development are carried out as planned.

7.2 A Framework for Cluster Development Strategy

7.2.1 Organization of Cluster development Strategyand Action Program

While the cluster development approach is a new policy instrument and thus requires a variety of innovative efforts,funds and human resources available to actual support are limited. To effectively and efficiently implement policy under such conditions it is of great importance to adopt a strategic stance and concentrateavailable resources toward a specific direction.

Issues identified by the present study as being of high urgency and high priority for promotion of Indonesian clusters are boiled down to the overall objective, i.e., "Promotion of Creating a Favorable Environment for Promoting Clusters and of Revolution in Awareness on Stakeholders." Toward the goal, more active involvement of facilitators and stakeholders in and outside within the clusteris critical. Also, it is imperative to grow out a situation where the leadership comes from government officials, and to ensure self-driven development of the clusters and their members.

Given the limitation of funds andhuman resources, the JICA Study Team proposes three Master Strategiesand six Action Programs (AP) as shown below.

Strategy 1: Building the Framework for Cluster development, andAwareness-Raising Activity

- AP 1-1 Campaign for nationwide dissemination of good practices
- AP 1-2 Establishing cross-departmental and administrative boundaries cluster support organizationsat local government level

Strategy 2: Support for and Strengthening of Cluster Activities

- AP 2-1 Training and assignment of cluster development facilitators
- AP 2-2 Promotion of a shared vision and mission, and catalyzing joint activities

Strategy 3: Strengthening Capabilities of Cluster Enterprises

AP 3-1 Support for improvement of business and management techniques
AP 3-2 Improvement of enterprise counseling and guidance services

Issues related to cluster activities and the connections to the Action Programs are shown below, in Table 7.2-1.

Table 7.2-1 Relationship Between Cluster Activity Issues and the Action Programs

◎ Issue to be solved by implementing the action plan
○ Issue to be solved partly by implementing the action plan

Issue		Action Program					
		AP 1-1	AP 1-2	AP 2-1	AP 2-2	AP 3-1	AP 3-2
Issues for central and regional government entities	Help improve, disseminate cluster development guidelines			◎			
	Build an efficient cluster development organization that is not limited by administrative district of departmental boundaries		◎				
Issues connected to cluster organizations	Spread knowledge of the cluster development concept, and prepare hands-on facilitators	◎		◎			
	Build effective inter- and intra-cluster networks, and facilitate alliances	○			◎		
Issues connected to cluster enterprises and the cluster representative organizations	Encourage motivation for participating in cluster activities, and a sense of belonging	◎			◎		
	Improvement of operational capabilities of micro enterprises					◎	◎
	Improve marketing that exploits the effects of agglomeration				○		
	Develop the human resources and representatives that will lead clusters			○	◎		
	Implement effective cluster activities				◎		

Source: JICA study team.

Chapter 8 Action Programs

This chapter presents the detailed content of Action Programs discussed in Chapter 7 as a means of promoting cluster development. “Cluster Guidelines” as developed by the JICA Study Team are provided in section 8.3.

8.1 Recommendations on Strategy for Cluster Development in Indonesia

The JICA Study Team has formulated three Master Strategies and six Action Programs based on them, as follows:

Master Strategy 1: Building the Framework for Cluster development, and Awareness-Raising Activity
- AP 1-1 Campaign for nationwide dissemination of good practices
- AP 1-2 Establishing cross-departmental and administrative boundaries cluster support organizationsat local government level

Master Strategy 2: Support for and Strengthening of Cluster Activities
- AP 2-1 Training and assignment of cluster development facilitators
- AP 2-2 Promotion of a shared vision and mission, and catalyzing joint activities

Master Strategy 3: Strengthening Capabilities of Cluster Enterprises
- AP 3-1 Support for improvement of business and management techniques
- AP 3-2 Improvement of enterprise counseling and guidance services

8.2 Action Programs

8.2.1 Master Strategy 1: Building the Framework for Cluster Development, and Awareness-Raising Activity

8.2.1.1 AP 1-1:Campaign for nationwide dissemination of good practices

Rationale for program proposal:

In many clusters, companies are mostly dubious about the possibility of economic development by cluster activity, serving as an impeding factor for cluster development.

However, there are successful cases of cluster development in Indonesia and neighboring countries. And these success stories were introduced by organizing the study tour in Central Java as part of the pilot project, producing positive impacts on participants. Therefore, this approach is considered to be useful for promotion of cluster activities. The action program proposed here will include not only introduction of success stories, but also benefits brought by cluster development activity, launching methods, organization of cluster stakeholders, and the method for collaboration with outside resources and organizations. Also, it is expected to encourage the exchange between clusters.

(1) Objective

To disseminate and firmly establish the concept of cluster development among related government officials and private persons in regions where there is potential for development of clusters, regions where clusters are in a formative stage, and regions where cluster are in a development stage; also, to promote understanding of cluster activities, and strengthen motivation for participation.

(2) Result

Result A: The concept of a cluster becomes well known, and there is understanding regarding cluster activities. At the same time motivation to participate in activities is strengthened, and adoption of the cluster approach is encouraged among government officials and persons in the private sector who have relations with development.

8.2.1.2 AP1-2: Establishing cross-departmental and administrative boundaries cluster support organizationsat local government level

Rationale for the program proposal:

As discussed in Chapter 2, inter-departmental cluster support is already established in Central Java by using the forums (FPESD and FEDEP).

To ensure effective implementation of cluster development programs, it is recommended to establish a council at the central government level to formulate cluster development guidelines. The council will then develop a mechanism to ensure flexible support that enables regional cluster development which goes over administrative boundaries, design a mechanism to enable inter-departmental cluster development at the local government levels, secure a budget required to implement the mechanism, and indicate the guidelines to provincial governments. In response, provincial governments will establish a permanent regional cluster development committee to lead and supervise cluster development activities not restricted either by regency or city boundaries as well as divisional and departmental administrative borders.

(1) Objective

To eliminate administrative boundaries forcluster development and strengtheninglinkages and interactions among divisions and department within the local government.

(2) Results

Result A: Guidelines for development of regional clusters will be drafted by the central government, as well as by multiple divisions and departments by the local government.

Result B: Support arrangements on behalf of broad regional cluster development will be made by provincial governments based on the guidelines.

Result C: Based on the guidelines, an inter-departmental cluster development committee will be organized by within the local government by cutting across the border between divisions and department.

8.2.2 Master Strategy 2: Support for and Strengthening of Cluster Activities

8.2.2.1 AP 2-1: Training and Assignment of Cluster development Facilitators

As pointed out earlier, most clusters in Indonesia are still in the formative stage and few have entered the growth stage. Clusters in the formative stage need the leadership to pave way for networking (called initiation[11]). If the cluster has no company or person who can play the leadership role, professional support must be obtained from outside stakeholders, including local government or BDS provider. A person who provides such support is called the facilitator.

The facilitator is expected to play a variety of roles according to the type of cluster and the development stage. In particular, clusters in the formative stage are in the need for the facilitator who has coordinating capability to organize the cluster network, communication skills, and the ability to negotiate with government and other outside organizations.

(1) Objective

To training competent facilitators and to assign them to appropriate positions, thereby facilitating cluster development.

(2) Results

Result A: Revision of training materials including therein preparation of Cluster Guidelines

Result B: Increased participation in facilitator training programs, and progress in assigning facilitators to regions where they are most needed.

8.2.2.2 AP 2-2: Promotion of a shared vision and mission, and catalyzing joint activities

As the prerequisite to invigoration of cluster activities, stakeholders who constitute the cluster, both inside and outside the cluster, must share a vision and mission for cluster development. In particular, in the formative stage of cluster development when collective activities have still to produce visible results, the facilitator needs to promote the sharing of the vision/mission among stakeholders through facilitation activities, while providing support for the startup and continuation of collective activities.

This action program is proposed to be implemented as a model project and will be driven by facilitators who have received training.

(1) Objective

To implement cluster activities designed to create a sense of ownership and unification among cluster members by strictly applying the PDCA cycle, with an aim to create successful cases.

(2) Results

Result A: An organization that represents the cluster will start up and a “vision” or “mission” will be jointly shared by stakeholders.

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[11] The act of building the base for launching collective activity as the cluster (including the startup of a cluster working group or a cluster representative organization)

Result B: Collective activities are carried out according to the PDCA cycle, fostering a collective consciousness among the enterprises, and awareness of belonging.

8.2.3 Master Strategy 3:Strengthening Capabilities of Cluster Enterprises

8.2.3.1 AP 3-1：Support for improvement of business and management techniques

This action program is proposed to use SHINDANSHI more effectively so as to provide corporate diagnosis and guidance service by using a combination of the locally available resources, while upgrading of capability and skills of extension officers by using the work with SHINDANSHI in the form of OJT.

Under the program, SHINDANSHI will be positioned within local government as a training instructor or advisor for extension officers, in order to develop their capacity. In addition to achieving transfer of technology from SHINDANSHI consultants to extension officers, arrangements are made to form a team by SHINDANSHI and extension officers to perform diagnoses of microenterprises and small businesses that compose the cluster.

(1) Objective

To improve business operation and management techniques of owners/managers of companies in the cluster, by means of corporate diagnoses and guidance service provided by utilizing SHINDANSHI and extension officers as local government resources.

(2) Results

Result A: Improved ability of extension officers.

Result B: Through thediagnoses and guidance provided the SHINDANSHI and extension officer teams, managerial capabilities of owners/managers of cluster companies are improved.

8.2.3.2 AP 3-2 Improvement of enterprise counseling and guidance services

Clusters in Indonesia are generally characterized by industrial agglomeration mainly consisting of SMEs and MEs. Naturally, the cluster can be energized by strengthening individual companies. In this connection, attention should be paid to the managing style of SMEs, which mainly depend on capability of owners and their families, in comparison to large enterprises that employ highly specialized workers.

The improvement of counseling and guidance services for SMEs means the provision of unified, professional service covering modern forms of production and management, which leads to the strengthening of individual companies.

(1) Objective

To help solve problems confronted by microenterprises and SMEs.

(2) Results

Result A: Collection of data on SHINDANSHI, extension officers and specialists.

Result B: A section ("window") that has a database about SHINDANSHI, extension officers and specialists in the province is established by each provincial government, to assist microenterprises and SMEs.

8.3 Preparation of JICA Cluster Guidelines

In connection with drafting of the Cluster Guidelines, one of the activities in group AP 2-1, Training and Preparation of Cluster Development Facilitators, the JICA Study Team recommends that they be prepared on the basis of the JICA Cluster Guidelines.

The following section summarizes the policy behind the drafting of the JICA Cluster Guidelines to be proposed.

8.3.1 Organization of the JICA Cluster Guidelines

The organization of the JICA Cluster Guidelines is as follows.

Glossary (Definition of terms)
Preface
Part I Concept, Objective and Target Users
1. Objective and Target Users
2. Concept and Structure of the Guideline
3. Objective and Benefit of Cluster Development
4. Cluster Development Stakeholders
Part II Implementation of Clustering
1. Outline of Cluster Development
2. Flowchart of Clustering
2.1 STAGE 1: PreparationforTarget Cluster Development
2.2 STAGE 2: Initiationto Establishmentof Cluster Development Framework
2.3 STAGE 3: Implementation of Action Plan
