

## CHAPTER 3

### RESULT OF BASE LINE SURVEY

#### 3.1 FIELD SURVEYS

In accordance with the plan, two (2) surveys teams were employed to conduct the baseline surveys, using the questionnaires which were prepared in advance and in consultation with the OTOP Office (see the samples in Annex 5). The pre-tested survey was carried out to at a village in Ang Thong province in mid-January 2003. Upon the improvement of the questionnaires, full-scale surveys were conducted by the two teams during the second half of January, to cover all the 20 villages in the 11 provinces of the study area explained in the preceding Chapter.

To complete the work efficiently, the Consultant has also engaged two field surveyors for the baseline study and a Computer Assistant for databases and IT analysis. The field surveys were completed as scheduled and the analysis thereof was completed in the first week of February, in time of the arrival of the 2-member Japanese Advisory Group at Bangkok, for a joint review and discussion. It may be added that as the outcome of this exercise, additional field surveys to some of the selected Tambons were made by the Consultant, to gather the additionally required data/information as advised by the Advisers.

#### 3.2 RESULT OF THE SURVEYS

Result of the surveys being described hereunder, in accordance with the given TOR, presents only some important aspects of the villages that are producing the five (5) production groups under study. It has no intention to generalize the picture of the villages and all the products involved in OTOP Movement, due to the very limited size of sampling used. However, details of each village/product under the surveys are appended for reference to this Report as Annex 6 (Annex 6-1~Annex 6-20 for the 20 villages).

##### 3.2.1 Tambons Profile

First of all, it has to be recognized that all the Tambons under study are those that have already recognized by OTOP, their products were certified and granted with the OTOP Logo. The study found that these villages are better off in general in terms of accessibility. Several Tambons located, however, far from town or city about, e.g. 20-60 kms. Basic infrastructures, such as, water-work, road and electricity are already available. Their sizes vary but, the main occupation is similar, i.e., farmer, doing farming, fishery and growing fruits.

Part of these farmers engaged as skilled labors to produce the Tambon products. It should be emphasized, however, that in some villages, the villagers reported that their main occupation is "making OTOP product", for example, Tambon Akaraj and Tambon Chedi hak. In some of these the villages (including Tambon Akaraj) where OTOP products are gaining high popularity, a problem of inadequate/insufficient material

inputs (resources) has already emerged. SMCEs in these villages are being developed into this SME stage and accordingly, they have to look for and secure the materials required from elsewhere. It was therefore observed that an original concept of OTOP, i.e., the production should rely basically on the resources from within the village, will be difficult to maintain under this development process. Table 3-1 provides a summary of features of the village profiles under study. In addition, the following may be noted:

- Information on the village profiles were mostly made available by the Tambon Administration Organization (TAOs);
- They were in the form of publications duly prepared for circulation, covering such important aspects as geographical location, area, brief history of the Tambon, current management/leaders, population, occupation and other general facts about the respective villages in relation to the District and/or Province to which they belong;
- Number of population of these 20 OTOP villages under study ranged from the smallest of less than 2,000 to the largest of over 44,000 persons. About three fifth of these villages each has less than 10,000 people. The capacity of these small villages were therefore impressive;
- Most of the villages were typical agrarian society of which rice farming is the major occupation of the villagers. Other occupations related again mainly to agriculture, covering growing of fruit trees and livestock rearing;
- A few of these OTOP villages where the SMCEs and especially the SMEs are in good progress (e.g., Akaraj village of Ang Thong province, Konsan of Chaiyaphum, Ko-Kha of Lampang and Lamed of Surat Thani), there was already a sign of shortage in local input materials;
- Knowledge of the Tambons involved was good to fair, basically among the people who were working on the OTOP products. Their understanding on the institutions and mechanism involved was limited, however.

### 3.2.2 Products

As mentioned, within the five categories of product groups under study, there are some 14,000 products being produced in the villages in Thailand. Under the scope of the present Study, four products from each category were selected for the review, for a quick assessment of their nature and present conditions of business involved.

Considering new products that were developed in light of the OTOP Movement, Red Hom mali variety (Product Group III) of Tambon Nong Sai, Buriram province, for example, can be considered as an example. A big bundle of these varieties has not been cultivated and produced in this area before. The farmers' group at this village was the first one to introduce the new varieties to be grown in the area and eventually, have gained a wide recognition from public after being granted with OTOP Logo/certificate. Other examples included silk cloth (Product Group I) at Tambon Na Po, Buriram. These products involved basically new designs that were generated/created by the group leader who always try to diversify their products. Similarly, in the case of the artificial flower group (Production Group V) at Tambon Konsan, Chaiyaphum, the chairman of the group also initiated the increase in varieties of flowers being produced.

Table 3-1 Summary table of Tambol profile

Region	Tambon	Province	Population		Main occupation	Remark
			Males	Females		
North	Maepong	Chiangmai	2,561	2,511	Farmer and Cottage Industry	Anex 6-1
	Pabong	Chiangmai	1,751	1,791	Growing fruit trees	Anex 6-2
	Na Khrua	Lampang	5,393	5,206	Rice Framing, fruit tree growing	Anex 6-3
	Ko Kha	Lampang	5,194	5,632	Rice Framing, fruit tree growing and raise farm animal	Anex 6-4
	Na Pa	Petchabun	6,213	6,265	Rice Farming	Anex 6-5
South	Tha Reau	Nakhon Si Thammarat	10,015	10,060	Rice Farming	Anex 6-6
	Chaiburi	Phatthalung	4,106	4,319	Rice Farming, Coconut Plantation	Anex 6-7
	Pakpoon	Nakhon Si Thammarat	18,100	25,900	Rice Farming, Fishery, Orchard	Anex 6-8
	Lamed	Surat Thani	2,347	2,455	Farming, Para Rubber Plantation, Shrimp Farming and Fishery	Anex 6-9
	Pumreang	Surat Thani	3,743	3,766	Fishery, Shrimp Farming and Trading	Anex 6-10
Northeast	Nongsai	Buriram	2,874	3,036	Rice Farming	Anex 6-11
	Na Po	Buriram	4,209	4,324	Rice Farming	Anex 6-12
	Sapontong	Chaiyaphum	4,307	4,346	Rice Farming	Anex 6-13
	Konsan	Chaiyaphum	3,952	4,150	Artificial Flowers, Farm	Anex 6-14
Central and Others	Akaraj	Ang Thong	1,700	1,500	Farmers and Drums Maker	Anex 6-15
	Klong Wua	Ang Thong	817	907	Rice Farming	Anex 6-16
	Bangkaja	Chanthaburi	1,993	2,102	Fruit Plantation and Gem stone maker	Anex 6-17
	Khao Baisri	Chanthaburi	2,920	3,027	Growing fruits	Anex 6-18
	Ban Singh	Ratchaburi	5,288	5,728	Rice Farming and native handicrafts	Anex 6-19
	Chedi Hak	Ratchaburi	6,374	6,717	Rice Farming and Earthware Manufacturer	Anex 6-20

In this area of "new product development", such constraints as a limited resource, know-how and shortage of raw materials supply were mentioned. In some Tambons, development of new products just started, e.g., processed rose apple initiated by the "processed durian group" in Chanthaburi. Most of the other developments could be observed in the areas of design and pattern or shape copiers, such as Bamboo Shade and dolls. Photographs of some of these products are given in Annex 7.

On the production facilities, in general, most of the interviewed groups reported that they had an adequate number of equipment and tools for the present requirement. A few production groups, like the Artificial Flower Group of Tambon Konsan, Chaiyaphum, reported a problem of inadequate availability of tools and equipment, due however to its need to expand the number of its new product varieties (flowers), i.e., different flowers require different/specific tools and equipment. For craftsmanship heritage, it was found difficult to replace in many production groups such as, mat, water hyacinth and bamboo lampshade. There was no report of the need to have additional/new building or production facilities (except some, for displaying their products).

Regarding raw materials, as already mentioned, most of the OTOP products are being produced, using resources that are basically available within the village. Some exceptions include durian, and garlic products that have to secure most of raw materials from other areas, i.e., fresh durian and fresh "tone" garlic which are seasonal fruit and vegetable. More land for growing/producing these inputs and cold storage could be required in the near future. Similarly, in some other villages, the problems of shortage of reed, water hyacinth, bamboo, wood or cow skin for making drums were already pronounced.

Existing conditions of the OTOP products under study differed considerably, in terms of their history, development stages, production volume and sale (see Table 3-2). The following may be noted:

- From the case studies, it was obvious that while several were newly developed products (explained above), many of them were traditional products which have been producing by the villagers for many decades. The Japanese drum products at Akaraj village, for example, have been developed and produced continuously for more than 50 years;
- Production capacity of most of the products was small and limited. While Product Groups I-IV followed generally the patten of "made to order", products in Group V (Ceramic, Coconut Shell Products, Buffalo Skin Products, Artificial Flowers and Japanese drum) were produce regularly in quantity (by month or per year) regardless the fluctuation of market demand;
- Unit prices of these products (as shown in the Table 3-2) varied from a few Baht to several thousand Baht, depending on their types and complication of their respective production processes. These reflect, however, sophisticated nature of the existing OTOP products;
- Similarly, production prices also vary. In this connection, the figures revealed that the prices were normally 30-40% higher than the production costs;

Table 3-2 Summary table of the products under study

Product Group (I-V)	Product's name	Tambon/Region	Production capacity	Product Cost (Baht/unit)	Product Price (Baht/unit)	Revenue/sale	Remark
I	Cotton fabric	Na Pa/North	not available	200 Baht/meter	not available		Annex 6-5
	Pumreang Silk Weaving	Pumreang/South	made to order	80-380 Baht/yard	90-200 Baht/yard, 2,000 Baht/piece	not available	Annex 6-10
	Silk cloth	Na Po/Northeast	1,000 pieces/week	244.84-279.50 Baht/meter	350-500 Baht/piece	300,000 Baht/month	Annex 6-12
	Dolls maker	Ban Singh/Central	made to order	vary by size/type	50-1,000 Baht/piece	6,000,000 Baht/year	Annex 6-19
II	Bamboo Lamp Shade	Pabong/North	made to order	vary by size/type	250-1,000 Baht/piece	not available	Annex 6-2
	Yan Lipao Products	Tha Reau/South	made to order	297.50-587.50 Baht/piece	380-580 Baht/piece	200,000 Baht/month	Annex 6-6
	Kratip Kaw	Sapontong/Northeast	8,500 piece/year	12.86-45.70 Baht/piece	20-200 Baht/piece	106,300 Baht/year	Annex 6-13
	Water hyacinth Products	Klong Wua/Central	made to order	70% of selling price	40-250 Baht/piece	not available	Annex 6-16
	Reed mat	Bang Kaja/Central	made to order	98-145 Baht/piece	145-400 Baht/piece	500,000 Baht/year	Annex 6-17
III	Fermented garlic	Maepong/North	made to order	vary by size/type	50-150 Baht/bottom	140,000 Baht/year	Annex 6-1
	Salted eggs	Lamed/South	made to order	26 Baht/box and 53 Baht/box	35 Baht/box and 70 Baht/box	not available	Annex 6-9
	Red Hommali	Nongsai/Northeast	made to order	2.5 Baht/kg	not available	500,230 Baht/year	Annex 6-11
	Processed Durian	Khao Baisri/Central	4,000 kg/year	not available	25-200 Baht/each	not available	Annex 6-18
IV	Wood carving	Na Khrua/North	not available	not available	10-10,000 Baht/piece	not available	Annex 6-3
	Chinese earthenware	Chedi Hak/Central	not available	vary by size/type	100-300 Baht/piece	6,000,000 Baht/year	Annex 6-20
	Buffalo Skin Products	Pakpoon/South	2,050 pieces/year	147.33-2,947.20 Baht/piece	450 Baht/piece, 5,500 Baht/piece	2,927,400 Baht/year	Annex 6-8
V	Coconut Shell Products	Chaiburi/South	12,000 pieces/month	26.30-46.70 Baht/piece	30-150 Baht/piece	220,000 Baht/month	Annex 6-7
	Ceramic	Ko Kha/North	not available	vary by size/type	not available	not available	Annex 6-4
	Artificial flowers	Konsan/Northeast	300 bundles/month	2.50-40.00 Baht/bundle	10-55 Baht/bundle	117,000 Baht/year	Annex 6-14
	Japanese drum	Akaraj/Central	500 drums/month	105-70,000 Baht/piece	150-100,000 Baht/piece	not available	Annex 6-15

- For a few production groups, due probably to their weaknesses in bookkeeping and the large varieties of their products, the unit prices were not readily known;
- To the question of total sale, one third of the total 20 cases under study could provide the exact amount of their annual sale, ranging from about Baht 100,000 of the Artificial Flowers and Kratip Kaw to some Baht 6,000,000 of the Dolls and Chinese earthenware products;
- Problems found on this subject were diversified, including, scarcity of raw materials, problem on quality control (mass production), inadequate documented records of the products and the production processes, etc.

### 3.2.3 Marketing and Financial Aspects

#### 3.2.3.1 Marketing aspect

Domestic market is the principal outlet of OTOP products. However, it should be noted that as many as nine (9) products (out of the 20 products under study) already have export markets too. These products, by Product Groups, include the following:

##### Product Group I

- 1) Dolls of Tambon Ban Singh, Ratchaburi;
- 2) Silk cloth of Tambon Na Po, Buriram;

##### Product Group II

- 3) Kratip Kaw of Tambon Saponthong, Chiyaphum;
- 4) Water hyacinth products of Tambon Klong Wua , Ang Thong;
- 5) Reed mat of Tambon Bang Kacha , Chanthaburi;

##### Product Group III

- 6) Fermented garlic of Tambon Maepong, Chiangmai;
- 7) Processed durian of Tambon Khao Baisri, Chanthaburi;

##### Product Group V

- 8) Coconut shell products of Tambon Chaiburi, Nakhon Si Thammarat;
- 9) Japanese drum of Tambon Akaraj, Ang Thong;

It was further observed that these export OTOP products have their origins from all the four Regions of the country. There was no report on the export market of Product Group IV (handicrafts), although this could probably due to the limited number of sampling under the present scope of study, see for more details in Table 3-3.

As indicated in the Table, only six out of 20 products had already their "brand-names" or "trademark". Marketing channels focussed primarily on the local markets. Some advanced production groups like those for the processed durian, the Japanese drum, the Coconut Shell, etc., they have already been trying to sell their products in many overseas markets, such as, Australia, Malaysia, Hong Kong, Japan and Singapore. The Processed Durian Group promoted its product by its own marketing company. Others, however, rely basically on the assistance from middleman and government agencies in promoting their products and total sale, e.g., organization of "trade fairs" and "exhibitions" of OTOP products at the various places and occasions by the OTOP Office, MOC, TAT, etc. The levels of their incomes were normally subject to the distribution coverage of their products, types and locations of their stores/markets.

Table 3-3 Summary table of market and finance by product type

Product Group (I-V)	Product's name	Tambon/Region	Brand/ Trademark	Market	Finance		Remark
					Investment Fund (Baht)	Source of Fund	
I	Cotton fabric	Na Pa/North	No	Local Market and Trade Fair	43,000	Community Development Office, Social Welfare Office and Provincial	
	Pumreang Silk Weaving	Pumreang/South	Yes	Surat Thani and Sale festival	230,000	Government Saving Bank, Social Invest Fund	
	Silk cloth	Na Po/Northeast	No	Bangkok, Chiangmai, Khon Kaen,	410,000	Social Invest Fund and Government Saving Bank	
	Dolls maker	Ban Singh/Central	OPOR	Export and Domestic Product	50,000	Ministry of Industry	
II	Bamboo Lamp Shade	Pabong/North	No	Local Market and Trade Fair	2,760	Provincial Industrial Promotion Department	
	Yan Lipao Products	Tha Reau/South	No	Nakhon Si Thammarat and Nearby Provinces	600,000	Community Development Office	
	Kratip Kaw	Sapontong/Northeast	No	Local, Japan and Germany	60,000	Office of Industry, Department of Nok Rong Rean	
	Water hyacinth Products	Klong Wua/Central	No	Export and domestic markets	100,000	SIF, Provincial Development Fund and Ministry of Agriculture and Cooperative	
	Reed mat	Bang Kaja/Central	No	Trade Fairs and Export	not available	Provincial Promotion Center	
III	Fermented garlic	Maepong/North	Siriamphai	Chiangmai, Bangkok, America, Singapore and Dubai	614,300	Ministry of Industry and Government Saving Bank	
	Salted eggs	Lamed/South	Yes	70% Local Market, 30% Surat Thani Cooperative	56,000	Community Development Office	
	Red Hommali	Nongsai/Northeast	No	Contract with private company	200,000	Department of Agriculture Extension (DAE)	
	Processed Durian	Khao Baisri/Central	PA GLAB	Local and Export Market	573,000	Agriculture Department	
IV	Wood carving	Na Khrua/North	No	Chiang Mai, Lampang, Phuket	310,080	Tambon Administration Organization	
	Chinese earthenware	Chedi Hak/Central	Yes	Ratchaburi, Northeastern Region	not available	not available	Private enterprise
	Buffalo Skin Products	Pakpoon/South	No	Bangkok, Chaingmai, Kanjanaburi and Phuket	not available	Community Development Office and others government office	
V	Coconut Shell Products	Chaiburi/South	Submission Process	Canada, Malasia, America, Japan and etc.	80,000	Department of Agriculture Extension (DAE)	
	Ceramic	Ko Kha/North	No	Expo and Jatujak weekend market	not available	not available	Private enterprise
	Artificial flowers	Konsan/Northeast	No	Trade Fair and Sale festival	90,000	Community Development Office	
	Japanese drum	Akaraj/Central	No	Local Market, Japan and Africa	not available	not available	Private enterprise

Mention should be made additionally here on the "trade fairs" that were organized occasionally by the government agencies, both domestically and internationally. Many, if not all, of the existing production groups enjoyed this "free ride/service" that they could promote their products without much cost involved. However, there were also some groups that could not enjoy this privilege due to their limited resources. Some of them even could not afford to transport their products to different venue (of the trade fairs). These groups had to cover a high cost for their lodging and food for overnight stays, in order to sell their products in a large quantity. Eventually, these groups earned no profit and sometimes, lose some money as well.

On the promotion measures of OTOP products locally, it should be noted that some production groups indicated a common problem of unavailability of a specific/permanent store/outlet for displaying their respective products. With this kind of constraint, most of the products could be distributed in a very limited vicinity of their own shops/offices and only in their hometown.

Again, due to the currently lack of a wide spread of marketing practice among the existing production groups, most of them did not realize the additional distribution cost that could incur in the future. As an advantage, however, selling prices of most the OTOP products were low and almost the same in everywhere, regardless the different locations of production sites. Some production groups claimed also that they keep their production prices low because their competitors were selling the same products at low prices.

During the course of this study, it was noted that many "quality products" were not widely distributed even in their own villages or provinces. Mass distribution system is therefore far behind and in general, not in the minds of the producers/villagers at the present. These are some of the serious and existing problems regarding the marketing of OTOP products that need to be looked at by all concerned.

### 3.2.3.2 Financial aspect

In addition to the technical aspect, recognized OTOP villages/products would be eligible to receive financial assistance from the various government agencies and private institutions too. During the course of this study, the interviewees were asked to answer some important questions as following:

- What kind of financial resources that they have accessibility?
- What amount did they obtain?
- How did they allocate the money/fund received?

As shown in the Table 3-3, the interviewees indicated various kinds of funding sources that were made available to them particularly for the investment purpose. It should be mentioned that in addition to seed funds which come from members, most of other sources were from the government sector, e.g., the Community Development Office (MOI), the Government Saving Bank, the Department of Agricultural Extension (MOAC), the Tambon Administration Office (TAO), the Ministry of Industry, etc. The amount of funds to the different production groups/enterprises varied from a few thousand Baht to as much as over Baht 600,000 per case. Three (3) private enterprises under study (i.e., Chinese earthenware, Ceramic and Japanese drum makers), did not



disclose the details on this matter but, it was made to understand that their funding sources were from commercial banks of the private sector.

The interviewees reported that the funds that were channeled through the various government agencies have been helpful and they have been used in a very productive manner. However, the funds were usually too small to do any big investment, particularly for the purchase of equipment, lands and/or building. The major part of funds was used therefore for raw materials or finished products from the members, which included wage payments. Because of the limited funds from the government sources, the villagers reported that they had to try to find their own ways to solve the problem too, such as following.

The Water Hyacinth Group leader at Tambon Klong Wua, Ang Thong province, for instance, donated a piece of his land for building the office, as a center for displaying their products. The Processed Durian Group built a small factory and a display center on their own land, but borrowed production equipment from other group. Most of the equipment was supplied by and with the assistance from MOAC and the Ministry of Industry. The Bamboo Product Group at Pabong, Chiangmai received a product display shop built by the Ministry of Industry at one of a new historic tourist spots. The Silk Products Group raised partly their own fund through selling "shares" to members, creating funeral funds and saving funds. The Group was also supported by other sources, such as Social Investment Fund, the Government Saving Bank and Tambon Administration Organization to conduct training program for silk production, silk weaving, embroidery, organic fertilizer production, tie, bag and artificial flower making.

Another sources of assistance included the Coordination Committee of Royal Project Initiatives under H.R.H. Princess Sirindhorn and the Academic Institution of Department of Education for buildings and training center. The Bamboo Handicraft Group had to get financial support from outside to use as its revolving fund, e.g., the Provincial Office of Industry (Baht 5-60,000) and the Department of Informal Education (Baht 11,000). The group members borrow this money and pay back in kind such as rice container, shop-stick box, etc.

The Artificial Flower Group received assistance-in-kind, such as mold of making flowers, compressor and cut machine, from the Department of Community Development. The value was, however, more than Baht 200,000.

Yan Lipao Group of Tambon Tha Reau, Nakhon Si Thammarat province, formalized the establishment of the group in order to secure fund for procurement of raw materials and for selling to the members. The fund was used also for buying back the finished and semi-finished products. Another means was to sell "shares" to the members.

In addition, the Community Development Office (provincial level) supported these many production groups with building as well as involving fund.

The Leather Carving Products Group of Tambon Pakpoon, Nakhon Si Thammarat was supported by Tambon Administration Organization, the District Health Office and the Community Development Office. The Group eventually could built its common building but, still faced a problem of limited revolving fund for its 73 members.

The Coconut Shell Products of Tambon Chaiburi, Nakhon Si Thammarat was supported by the Department of Community Development for involving fund and the Department of Agricultural Extension for building the Center for Product Distribution, sale promotion and training. Two other groups in Surat Thani province were assisted by the Community Development Office, for the revolving funds. It may therefore be concluded that every production group and in every region obtained somehow a certain kind of financial supports to operate their business.

In summary, the people concerned knew and felt that many sources of funds could be approached for their production and related purposes. However, they hardly knew the relationships of these resources and especially, relationship between the funds and the "OTOP Movement". They had a limited knowledge on the whole funding mechanism being arranged by the Government, except those resources from the agencies/offices that are working in the villages and closed to them. Most of them also felt that more funds are required for effective promotion of their production and sale.

### 3.2.4 Human resources

At the present stage of development, all the production groups under study are still rather small in size. Most of them are SMCEs of traditional nature, involving only a limited number of workers and/or employees in doing their business. In addition to the management staff, number of members per production group ranged from less than 20 to about 200, depending on nature of product types and processes involved. As an example, a rice mill at Tambon Nong Sai, Buriram has only six (6) employees to work with, but it has as many as 180 members in its network. Other groups could require a lot more labor/employees but less number of members in the production system. Generally, labors at the grassroots level were farmer-housewives who hardly have high educational background but, possess special skills and use their free time efficiently producing the OTOP products in their respective villages.

Table 3-4, provides a group of data on "members" or in other words "workers" who were involving mainly in production processes of the OTOP products under study. On the basis of this data it may be said that an average size of workers involved per OTOP product is about 90. However, it was of interest to note that one third (35%) of the existing production groups, each involved more than 100 persons of workers/members. The following provide a summarized picture of the distribution of these groups in terms of the size of their members:

- Number of the groups with members of less than 30 persons = 5 (25%)
- Number of the groups with members of 31-60 persons = 5 (25%)
- Number of the groups with members of 61-100 persons = 3 (15%)
- Number of the groups with members of > 101 persons = 7 (35%)

Impact of the OTOP Movement on local employment was thus impressive. OTOP production activities generated positively employment for rural and unskilled labor, particularly those who have to be in-active during the off-farm season. However, considering the possibly future requirement for a mass and skilled labor for SMEs, this could be a constraint to be looked at.

Table 3-4 Summary table of management status

Product Group (I-V)	Product's name	Tambon/Region	Members	Manager/Management	Bookkeeping		Accounting	
					Complete	Incomplete	System	Non system
I	Cotton fabric	Na Pa/North	43	Chairman		✓		✓
	Pumreang Silk Weaving	Pumreang/South	150	Chairman		✓		✓
	Silk cloth	Na Po/Northeast	300	President	✓		✓	
	Dolls maker	Ban Singh/Central	80	Chairman	✓		✓	
II	Bamboo Lamp Shade	Pabong/North	119	Chairman		✓		✓
	Yan Lipao Products	Tha Reau/South	185	Chairman	✓		✓	
	Kratip Kaw	Sapontong/Northeast	30	Leader		✓		✓
	Water hyacinth Products	Klong Wua/Central	80	Chairman		✓		✓
	Reed mat	Bang Kaja/Central	23	Leader		✓		✓
III	Fermented garlic	Maepong/North	50	Leader		✓		✓
	Salted eggs	Lamed/South	56	Leader		✓		✓
	Red Hommali	Nongsai/Northeast	180	Chairman	✓		✓	
	Processed Durian	Khao Baisri/Central	25	President		✓		✓
IV	Wood carving	Na Khrua/North	200	Chairman		✓		✓
	Chinese earthenware	Chedi Hak/Central	38	President	✓		✓	
	Buffalo Skin Products	Pakpoon/South	73	Chairman		✓		✓
V	Coconut Shell Products	Chaiburi/South	104	Chairman	✓		✓	
	Ceramic	Ko Kha/North	17	President		✓		✓
	Artificial flowers	Konsan/Northeast	35	Chairman	✓		✓	
	Japanese drum	Akaraj/Central	20	Chairman		✓		✓

Mentioning about the labor quality, result of the interviews already indicated that skilled labors are required by most of the production groups, except the ones for water hyacinth and perhaps, the processed durian. Training needs were pronounced particularly at the management level, for performing office work, business and marketing activities. Other subjects of interest include bookkeeping and accounting, production efficiency and quality control. It was reported, for example, that the rice mill operated at only about 41% of its capacity due basically to poor/lack of production plan. Regarding the bookkeeping, of the 20 cases under study, 13 (65%) did not have a complete record of their business. They neither had a complete accounting system in place.

In connection with the above, a comprehensive "human resource development (HRD) program" should be required, taking into consideration also other management and related organizational aspects to be discussed hereunder. It should also be mentioned that almost all the interviewed persons expressed their requirements for some sorts of training, either formal or informal one, in their efforts to improve the administrative and managerial aspects of their respective groups.

On the social aspect, it can be said that local leadership was relatively strong everywhere. The village heads in many cases act as "leaders" of the production groups too, whatever form they are. Being recognized as the leaders by the villagers, they could pull together with ease the necessary resources from within the villages. They acted as the center of new information and often concept for various undertakings. Strong leaders could motivate even the thinking and initiatives of the fellow villagers, creating a unity within the village as well as the production group.

However, local leadership has in general a common constraint of technical knowledge and skills for modernized management practices. In this connection, it was also noted during the field studies that some villages started to employ/engage already young graduates (native/local people) to help them in performing such tasks as bookkeeping and accounting. This is an emerging phenomena that is already observable, although far from being efficient and consistent in general.

### 3.2.5 Management aspect

This is one of the two aspects proposed to be covered additionally by the Consultant, in an effort to learn from the case studies their relevant experiences on the subject. At this early stage of development of OTOP Movement, management was found to be a big problem of almost every village/production group. It was found that management of OTOP production groups is generally in the hands of a few key personnel within the management group led by either one of the following:

- Leader, of a loosely structured group producers;
- Chairman, of a more organized SMCE; and
- President, of an established SME (see again, Table 3-4).

The terms "leader" is used here to reflect the top management of those primitive production groups in villages. The leaders found in this category were more of traditional leadership. Some of them were just "housewives" with specific skills who took

the initiative to lead small production groups for a simple finished product or, a group that belong to a certain production line.

The terms "Chairman" is used to name the leader of SMCEs, as it is generally named and called. Status of SMCE leaders is somewhat higher than the above-mentioned group leaders. Most of them are the village heads, either current or former ones. As the matter of fact, they are official leaders of their respective villages. The terms "President", on the other hand, is used to name the leaders of SMEs in view of their professionalism. Some of these leaders were leading businessmen in the villages who took the leadership in establishing their own enterprises for producing the OTOP products.

Figures 3-1 and 3-2 illustrate the typical organizational charts of the existing SMCEs and SMEs, as reported/explained by the interviewees. The major difference between the two categories is the expanded functions and corresponding positions on the side of SMEs, in addition to the registration aspect. SMEs have a tendency to cover more functions, e.g., production control, marketing promotion, information system and others. At this stage of development, however, not all the SMEs that could afford to have all the functions already in place.

Producers of the 20 OTOP products under study could be classified as following:

- Individual producers = 3 cases (15%)
- Group producers = 5 cases (25%)
- SMCEs = 8 cases (40%)
- SMEs = 4 cases (20%)

For Products Groups I (weaving/textile group) and V (general ware/appliance group), individual producers were predominant. Otherwise, it may be said that most of the existing OTOP products are being produced by a certain kind of advanced production groups, especially the SMCEs and the SMEs (see the details in Table 3-5).

From the Table, it should be noted also that four (4) of the 20 cases have already been developed to the SMEs stage. They included the silk cloth product of Tambon Na Po (northeastern region), the processed durian product of Tambon Khao Baisri (central region), the wood carving product of Tambon Na Khrua (northern region) and the Chinese earthenware of Tambon Chedi Hak (central region).

The success of these cases was attributable to various factors. Among the others, it was the administrative skills and management competency of the group leaders. These people normally took leadership in introducing the market, new need/demand for the products, production prices, etc., to their members/villagers. They serve also as the key information in most cases.

For the SMCEs, it was observed that most of the group leaders did not have any particular way/idea to control the quality of their products. The villagers/members were taught to be self-controlled of their own finished products, such as, mat and water hyacinth handicrafts. For food category, such as processed durian and fermented garlic, the use of charts and other methods to help control quality of the products by the leaders was observed, but not on a regular basis.

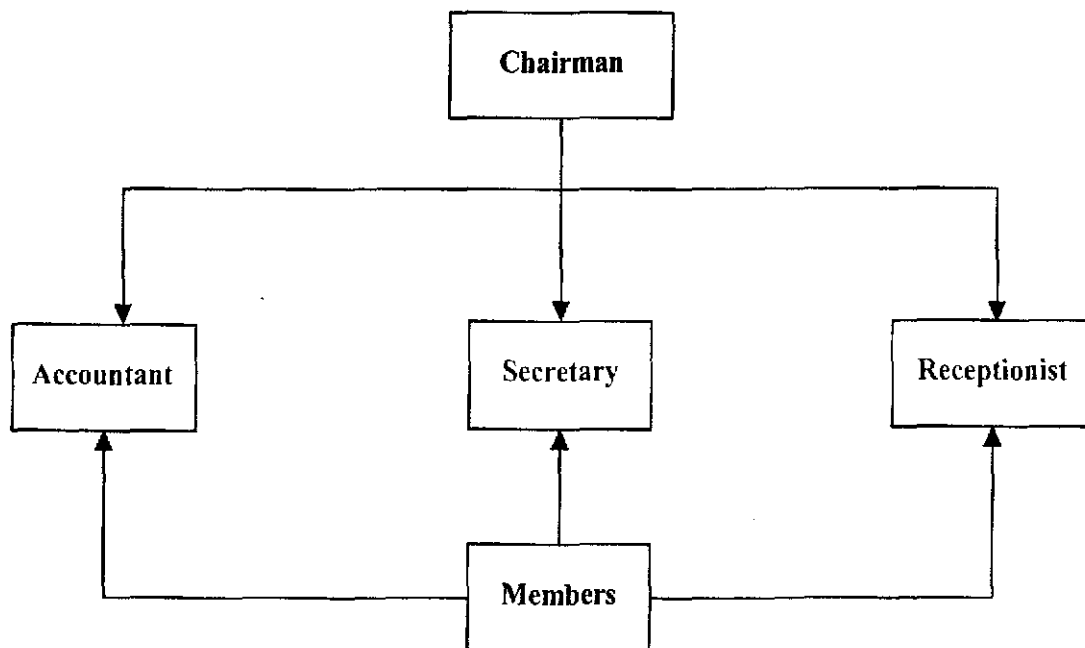


Figure 3-1 Typical Organization Chart of SMCEs

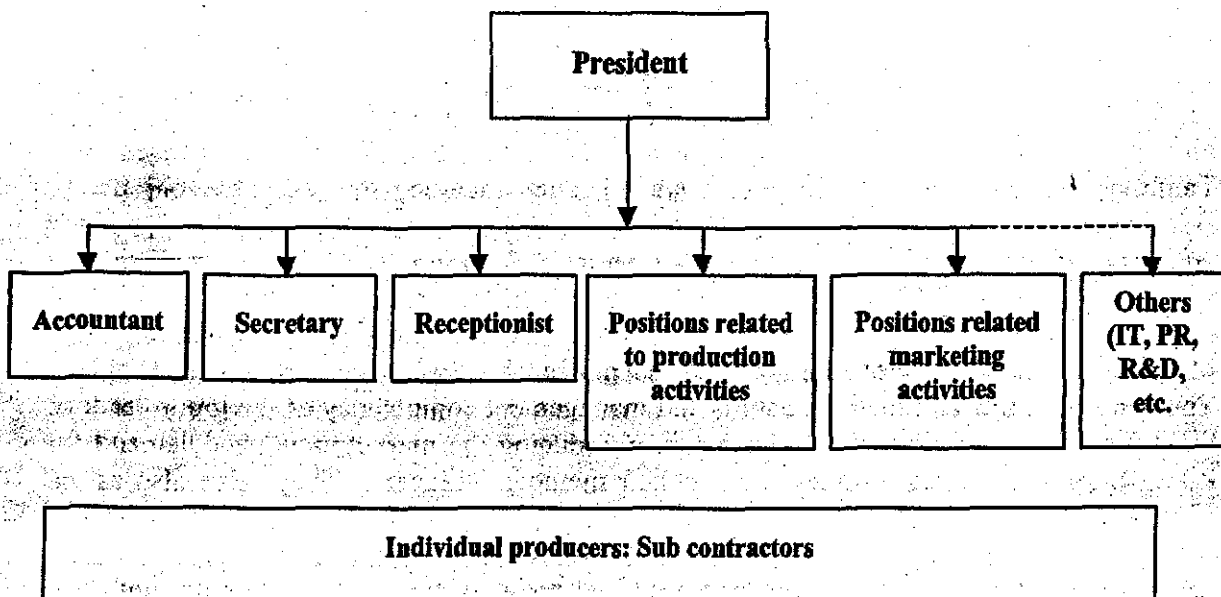


Figure 3-2 Typical Organization Chart for SMEs

Table 3-5 Summary table of registration development status of organization

Product Group (I-V)	Product' name	Tambon/Region	Group name	Development Status				SME potential	
				Individual	Group	SMCE	SME	Individual	Group
I	Cotton fabric	Na Pa/North	Women's Weaving Group of Ban Chaliang Lap Tai			✓			✓
	Pumreang Silk Weaving	Pumreang/South	Pumreang Silk Weaving Group			✓		✓	
	Silk cloth	Na Po/Northeast	Na Po Cottage Industry Center				✓		
	Dolls maker	Ban Singh/Central		✓				✓	
II	Bamboo Lamp Shade	Pabong/North	Ban Pa Bong Wickerwork Group			✓			✓
	Yan Lipao Products	Tha Reau/South				✓			✓
	Kratip Kaw	Sapontong/Northeast	Registered with the Office of Community Development		✓			No	No
	Water hyacinth Products	Klong Wua/Central				✓			✓
	Reed mat	Bang Kaja/Central			✓				✓
III	Fermented garlic	Maepong/North	Papai Group		✓				✓
	Salted eggs	Lamed/South			✓			✓	
	Red Hommali	Nongsai/Northeast	Nong Sai Farmer Group Rice Mill			✓		No	No
	Processed Durian	Khao Baisri/Central	Established in 2000				✓		
IV	Wood carving	Na Khrua/North	Handicraft/ Community Trade Center			✓			✓
	Chinese earthenware	Chedi Hak/Central	Ratchaburi big earthen jar industry and Ratchaburi Jar Traders' Association				✓		
	Buffalo Skin Products	Pakpoon/South	Registered with the Office of Community Development		✓			No	No
V	Coconut Shell Products	Chaiburi/South				✓			✓
	Ceramic	Ko Kha/North	Mae Ban (Housewives) Ceramic Group				✓		
	Artificial flowers	Konsan/Northeast	Registered as One Tambon, One Product	✓				✓	
	Japanese drum	Akaraj/Central		✓				✓	

Looking further at the factors of success of these groups, the case of unpolished rice group may firstly be cited. This group had engaged a contracting company to help it in performing quality control. The company also extends financial help to the group in terms of "working capital for purchasing paddy". As a whole this group could accomplish quite well, generating considerable benefits and bringing satisfaction to their members.

The Silk Products Group was another successful case in terms of the management and employment it has generated, i.e., the number of members involved (about 300 members). The Group divides jobs to the members that work permanently in the office as a specialized unit, fixes the wage rate for each job, then keeps all the working in process under control. Quality inspection is done by the one who takes the product to market. Production price is determined by its quality. The members of this Group got the first award from competition for many years. The Group becomes well known to tourists and the village is known as a touristic place. It now can sell its products more in a retail manner than the wholesale one. The Group has to keep a good record because it has to purchase inputs for the members, resulting in a favorable price and good quality for them. The members can then pay attention more to their work. The leader of the Group always pay attention to the new design for the product, so this Group always has new products to the market. These altogether have resulted in a good fame to its store and fortune from the selling volume returned to the Group and members. To expand the business further, the Group is concentrating at the present in producing products and buying the inputs from outside the village.

The Artificial Flower Group, also referred to previously, controls the product by requesting the members to produce the product at the Chairman's house during the rainy and winter seasons, to prevent water wetting the products. After receiving the products, the Chairman would check the quality. Bookkeeping has to be well recorded because the wage is paid per piece of work. The Chairman creates jobs to the village and the products are in need of the market. However, expanding new type or variety of the flowers was reported to be not easy (a constraint), as more sophisticated equipment is always needed.

The following cases were a sort of mixture of those successful cases and those which were still struggling for the success. In the case of Bamboo Lamp Shade Group, only the leader of the group would check the product quality after the members sent them to his house for sell. Bookkeeping was recorded only when he received the product, covering names of the members, quantity obtained and price thereof. This, as a matter of fact, is nothing but a personal enterprise (of the leader). The members got only the wage that they supposed to be paid. This Group is likely to face difficulty to enlarge its business because the limited and uncertainty of market.

Yan Lipao Group, on the contrary, is well organized and able to pay even the dividend to its members. It competes with local middlemen, handles well the bookkeeping, sets the committee to check the products and evaluate the members. Similarly, the Coconut Shell Products Group is also well organized. Responsibility of its members is high. This Group sells products together but, deducts 3 % of the sale value for activity of the group. It is capable also in allocating the quota of production to the members when there is an order from aboard. It handles bookkeeping with computer and welcome foreign visitors.



The two production groups of Surat Thani are loosely organized. Pa Tho Pumreang Group pays wages to the members according to piece of work. There is no dividend and it is just like an individual enterprise. The Salted Eggs Group was, however, enjoying the free-ride services provided by the government agencies in helping them doing the campaign. It often joins the agencies to the "trade fairs" to sell its products. During the inactive production period, the members would do their own business. There is not much incentive for the Group to go international and beyond its present capacity.

On bookkeeping, although it was evident that every group has been trying to keep its records in one way or another, the quality was found poor in general. There was no consistency in the format used and in many cases, important messages were not covered. Analysis of the production cost and/or production sell was hardly done by any production group. Similarly, on the quantity aspect, it was observed that there was no any strong practice on the production plan. Management of the traditional SMCEs was, therefore, generally weak.

### 3.2.6 Information Technology

As the second proposal of the Consultant, the study on this aspect had an aim to identify development status of all the production groups in this respect. Like in many other sectors and industries of the Thai society, information technology (IT) of all the 20 case studies was still weak in general. Outcome of the study revealed that only three (3) of the 20 villages/production groups (15%) have an access to "internet services". They were:

- Silk cloth production group of Tambon Na Po
- Processed durian production group of Tambon Khao Baisri; and
- Coconut shell production group of Tambon Chaiburi.

Four (4) production groups (another 20%) reported that they had computer facilities although, not yet linked to an internet network (see the details in Table 3-6). It should be observed, however, that these seven (7) groups have already been in their advance stages of organizational development, i.e., either SMCEs or SMEs.

The remaining production groups (65%) had neither the facilities nor the access to internet and therefore, must rely on other kinds of public relation activities, including mass media like newspapers, radio and television whichever available and affordable. Furthermore, the lack of qualified/experienced personnel on the subject was also reported to be another major constraint for these groups to handle computers and their related accessories.

From the study, it could be concluded that within the context of OTOP Movement, the degree of IT development is still relatively low. However, there has already been a good sign of increasing demand for this and in the near future, it is expected that many of the existing OTOP production groups will start using more and more internet services and deploy computer facilities to assist their production and marketing activities.

**Table 3-6 Summary table of information technology (IT)**

Product Group (I-V)	Product' name	Tambon/Region	Availability/Accessibility of IT	Remark
I	Cotton fabric	Na Pa/North	No	
	Pumreang Silk Weaving	Pumreang/South	No	
	Silk cloth	Na Po/Northeast	Yes	
	Dolls maker	Ban Singh/Central	Yes	Computer set and assesories
II	Bamboo Lamp Shade	Pabong/North	Yes	Computer set and assesories
	Yan Lipao Products	Tha Reau/South	No	
	Kratip Kaw	Sapontong/Northeast	No	
	Water hyacinth Products	Klong Wua/Central	Yes	Computer set and assesories
	Reed mat	Bang Kaja/Central	No	
III	Fermented garlic	Maepong/North	Yes	Computer set and assesories
	Salted eggs	Lamed/South	No	
	Red Hommali	Nongsai/Northeast	No	
	Processed Durian	Khao Baisri/Central	Yes	
IV	Wood carving	Na Khrua/North	No	
	Chinese earthenware	Chedi Hak/Central	No	
	Buffalo Skin Products	Pakphoon/South	No	
V	Coconut Shell Products	Chaiburi/South	Yes	
	Ceramic	Ko Kha/North	No	
	Artificial flowers	Konsan/Northeast	No	
	Japanese drum	Akaraj/Central	No	

### 3.2.7 Conditions towards SMCE and Company

Referring once again to the Table 3-5 which explained the development status of the 20 production groups under study, i.e., individual producers (3 cases), group producers (5), SMCEs (8) and SMEs (4). Information from the same Table indicated that all the five (5) **Product Groups** have potential to be developed/upgraded to SMEs, either in the form of individual/family enterprise or a group/company. Of the 20 **products**, however, three (3) were found "no SME potential" due basically to their limited market-size. Considering SME as the ultimate aim for the development of these OTOP production groups, it can therefore be concluded that there is still a lot of room and work to be carried out to accomplish this.

From the analyses discussed in 3.2.1-3.2.6, it may also be concluded that the followings are basic "conditions" for OTOP production groups towards SMCEs and SMEs:

- 1) Good/strong leadership/management;
- 2) Availability of adequate funds;
- 3) Necessary administrative skills in place (bookkeeping, accounting, etc.);
- 4) Certain degree of production development and control;
- 5) No constraints in raw materials; and
- 6) Marketing oriented mind.

It is natural to assume that traditional knowledge and skills for the production (local technology) already exist, as all the 20 cases under study were OTOP products being promoted under the OTOP Movement/Program. Nevertheless, information in the same Table (Table 3-5) already indicated that at the time of this study, eight cases (40%) were still at their stages of either individual or (loosely structured) group producers. Of the eight cases, only two were considered no potential to be developed/upgraded to SMCEs/SMEs.

The above only reflects that the potential for developing/upgrading the OTOP production groups to SMCEs and/or SMEs is generally high. This should be applicable particularly to the remainder of those 461 products duly certified **OTOP products**. In the medium term, the 2,683 or even all the 24,581 items of the existing and potential village products could be put forwarded for consideration and certification by the OTOP Office. Theoretically, in the long run, all the Tambons in Thailand each could have one certified product, following the original concept of the One Tambon One Product.

Timeframe for this development process, however, is neither clear nor definite as far as the 20 study cases are concerned. Depending on the status related to the above-mentioned 5-6 conditions that each production group has, SMCEs and SMEs can be developed at different speed/time scale. The case of Japanese drum product of Tambon Akaraj could be a good case to illustrate this. Local technology and the production of this kind of product has been developed and in existence for over 50 years but, the products are still being produced mostly by individual producers. Their market have been expanding, including overseas (Japan and countries in Africa). With the already emerging leadership among the young generation within the village and appropriate assistance from external (government and private) agencies, production groups in this village should become SMCEs or SMEs in no time.

### 3.3 SUMMARY

As explained, results of the field surveys were relatively consistent in terms of a general tendency in the development process and the problems faced. All the villages under study own their specific technical knowledge and labor skills that eventually brought about the development of OTOP products and their fame. New product design development has been limited but, is emerging after OTOP Movement took place. Most products followed a "made to order" sale pattern; most of the designs, size and/or shape were received from middleman and/or regular customers who often bring samples to the villagers and accordingly, demand for the products.

In the case of new product item which has different design or shape, the relevant production group would imitate/copy it from the market and reproduce exactly the same (shape or pattern), but with certain change in color or size. For product identification, it was not always easy as there have been products that neither carry "names" of the makers nor "origin" of the products. However, for some products, like woven cotton or silk, they can be distinguished from other designs by special mark or pattern. As a whole, the demand for many products was on an increasing trend and accordingly, several Tambons already faced a problem of inadequate/scarcity of raw materials from within their respective areas.

At the present level of development stage, most of the production groups faced no major financial problem. They could secure funds from various resources, both from the government and private sectors. Some groups could even mobilize additional contributions from the group members. However, in terms of quantity, there has actually been a problem of inadequacy for some SMCEs. For immediate future, when the quantity of production is expected to increase due to new market, this problem could be more severe for many SMCEs and SMEs being developed.

The lack of knowledge to control and manage credit terms and to collect/keep account of cash flow and other important records were "common" to many production groups. Requirement for additional training in financial management for all the groups was evident. Additional management skills was also necessary for all the group leaders and members, especially for those groups that will upgrade themselves to SMEs in the future, e.g., Wood Carving Product Group in Na Khrua, Lampang, the Cotton fabric in Na Pa, Petchabun, etc.

Further training programs in marketing, sale and distribution were also required. However, because of the low level of educational background of general farmers (group members), tailored-made types of training programs and appropriate time allocation should be required for these groups of trainees. Particularly in the area of marketing, none of the group could be considered marketing-oriented. They had hardly any marketing plan for their products in advance. Every group faced the problem of limited understanding on the marketing and the related mechanism. Accordingly, most products have limited distribution channel both in the local market (nation-wide) and international ones. Many production groups complained that there has been no market to sell their products.

On the distribution system, as some products are bulky, the cost of their transportation is high and not convenient/profitable to be transported from place to place. The production groups of these products therefore sell their products to a few big wholesalers in the big cities where the main tourist destinations are located.

However, many of the OTOP products are displayed and sold at various trade fairs, occasionally organized/promoted by provincial and other government offices, including the OTOP Office. This is a kind of marketing promotion by external parties, without substantial cost to the producers. Nevertheless, most of the production groups already expressed their requirement for permanent market places for displaying their products beside the local market where the products are produced. They could not afford to find or rent a suitable product display center. In this connection, some local government agencies have also been trying to build the display centers and find additional locations to sell the OTOP products but still, far from adequacy.

On the information technology, as expected, at this stage of development, only 15% of the production groups under study had a full access to an internet. A few others had already computer facilities to assist their work, a good sign of effort to step forward into this modernized world of technology and information system that are important for future SMCEs and SMEs. Appropriate and timely support from government agencies concerned and especially the OTOP Office to the potential SMCEs/SMEs on this subject, e.g., organization of various training, provision of certain hardware and soft-wares, etc., should be desirable.

## CHAPTER 4

### IMPACT ASSESSMENT

#### 4.1 INPUT-OUTPUT ANALYSIS

Input-output analysis is presented hereunder to illustrate some aspects of macroeconomic impacts of OTOP Development Policy on the national economy. In view of the limited data and timeframe, the outcome of this exercise only reflects the impacts in a very broad terms and perspectives. It was also an intention to learn from the present project about the activities that require to be carried out additionally, should a full-scale and effective assessment is to be achieved by the OTOP Office in the future.

##### 4.1.1 The Basic Framework

An economy comprises of different sectors which relate to each other to various extent, depending on the complexity of the economy. It is the "linkage" among sectors in the economy that forms the key of input-output analysis. Through production linkages, any change in demand of product in one particular sector will generate subsequent demands for outputs of other sectors (as inputs to produce the output). This is called intermediate demand. The subsequent demands generated will further generate secondary and tertiary (intermediate) demands and so on. The expansion of those subsequent demands is regarded as "multiplier effects" generated from the change in demand of that particular sector. While some inputs are outputs of other sectors in the economy, certain inputs come from imports. They are leakage. Hence, the effects will gradually decline. This is commonly known as "multiplier effect" through the "backward linkages" of sectors in the economy.

Another type of linkages (so-called forward linkages) can also be generated from the relationship among sectors in the economy. Depending on the scale, an expansion of supply from a sector to others in the economy could result in a change in the total supply of those sectors and generate price effects.

Input-output model is a tool to analyze such multiplier effects generated from an expansion of final demand or supply in an economy. This study concentrates on the multiplier effects of "backward linkages".

##### 4.1.2 The Methodology

The methodology for the analysis of multiplier effects can be explained hereunder:

Input-output transaction table is essential for the development of input-output analysis. Thailand has periodically prepared a 180x180 input-output table for its economy. The latest version of I-O table for Thailand is for 1998 and used for this study.

The general form of I-O table is

$$\sum_{j=1}^n X_{ij} + F_i = X_i$$

$$\sum_{j=1}^n X_{ij} + V_j + M_j = X_j$$

Where:  $X_{ij}$  = Distribution of output from industry i to produce output in industry j

$X_i, X_j$  = Total output of industry i or j

$F_i$  = Final demand for output of industry i

$V_j$  = Value added of industry j

$M_j$  = Import

$i, j = 1, 2, 3, \dots, n$

The first equation shows the sum of distribution of output along the row of the table i.e. distribution of output from industry i to industry j plus total final demand (domestic and export) equal to total production of industry i. Similarly, the second equation above shows the input structure of industry j in producing its output. It shows the consumption of outputs of industry i as inputs to produce the output of industry j plus the value added generated by industry j and imports equal to the total (value) of output of industry j.

From the transaction table above, the fixed coefficient production function of different industries can be developed (along the column) as follows:

$$X_{ij} = a_{ij} * X_j$$

or

$$a_{ij} = X_{ij} / X_j$$

Where  $a_{ij}$  is fixed coefficient indicating the amount of output from industry i to industry j per unit of output of industry j

The above relationship developed from transaction table could be written in matrix form as follows:

$$X = AX + F$$

or

$$X = (I-A)^{-1} * F$$

Where:

$$X = \begin{bmatrix} X_1 \\ X_2 \\ X_3 \\ \cdot \\ \cdot \\ \cdot \\ X_n \end{bmatrix}, F = \begin{bmatrix} F_1 \\ F_2 \\ F_3 \\ \cdot \\ \cdot \\ \cdot \\ F_n \end{bmatrix}, A = \begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ a_{31} & a_{32} & \dots & a_{3n} \\ \dots & \dots & \dots & \dots \\ \dots & \dots & \dots & \dots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{bmatrix}$$

The last equation illustrates the relationship between outputs of different sectors in the economy due to the change in final demand. The inverse matrix captures the direct and indirect effects generated from such a change. Thus, for this study, it can be used to analyze the change in production of different sectors in the economy directly and indirectly affected by the change in final demand for OTOP products in particular year. The total effects (direct and indirect) will show the importance of the OTOP as the generator of multiplier effects on the economy.

For the OTOP analysis, the 180 sector input-output transaction table (see the details in Annex 8) needed to be modified to suit the purpose of the study. In this case, the emphasis would be placed on the sectors related to OTOP products, agriculture and agro-based industry. The size of the matrix was reduced to manageable one of 32x32.

One of the basic tasks was then to synchronize the 5 groups of OTOP products with the sectors classified in the I-O table. This is done by using the 20 surveyed OTOP products which were distributed across the 5 groups as follows:



OTOP	I-O sector
Fermented garlic	Fruits and vegetable processing
Salted egg	Other food processing
Processed durian	Fruits and vegetable processing
Bamboo light stand	Wooden furniture and fixture
Bamboo weaving	Wooden furniture and fixture
Mat	Other fiber products
Chava glass(grass?) basketry	Other fiber products
Yan Li Pao basketry	Other fiber products
Wooden sculpture	Wooden furniture and fixture
Wooden product	Wooden furniture and fixture
Japanese drum	Saw mill and wooden materials and products
Ceramic	Ceramic and earthen wares
Chinese earthenware	Ceramic and earthen wares
Hand fabric	Textile products
Pumrieng cloth	Textile products
Silk cloth	Textile products
Dolls made of cloth	Textile products
Leather sculpture	Leather products
Buffalo skin play	Tannery and leather finishing
Red France Jasmine rice	Crop

From the OTOP products above, the sectors that should be emphasized in aggregating the 180x180 I-O table to 32x32 one are food processing, handicraft, earthenware (non-metal), fabric and cloth and wooden product. These are identified as 10 sectors in I-O classification.

The 1998 national input-output transaction table is then adjusted according to the reclassified sectors. The adjusted transaction table is used to develop the technical coefficients as described in the equation earlier and, an inverse matrix developed (see Annex V).

#### 4.1.3 The Inverse Matrix

From the aggregation of sectors above, the 1998 input-output table was regrouped and input-output coefficients were derived. The input-output coefficient table was then used to produce inverse matrix as shown in Table 4-1 below. Details of the input-output coefficients and inverse matrix by sectors are shown in Annex V. Total intermediate effects indicate the direct and indirect effects generated by an increase in final demand of product from row sector. The value of 1 indicates the direct effect or the initial demand in the particular sector while the figures after the decimal point reflect the indirect effect. Thus, the value of 1.2848 of total intermediate effect of crop sector means an increase in final demand for 1 unit of crop production will generate total intermediate demand in the economy by 0.2848 units. The latter shows the expansion of demand in other sectors as inputs to produce additional one unit of crop. The distribution of such multiplier effects by sectors is shown in Annex V. Differences in total intermediate effects indicate the different capacities of the sectors in generating multiplier effects in the economy. And also, the values under the wages and salaries column indicate the total

effects of the final demand in products of row sectors on return to wages and salaries (or employment creation) while those for total value added and import indicate the impact on income and import of an increase in final demand of the sectors.

**Table 4-1** Multiplier effects on production, income and import of an increase in final demand

Sector		Total Intermediate	Wages & Salaries	Total value added	Import
Crop	1	1.2848	0.2860	0.6163	0.8513
Livestock	2	1.9994	1.0068	0.5415	0.7995
Other Agriculture	3	1.4189	0.4210	0.4967	0.8175
Minerals	4	1.4123	0.4153	0.3925	0.8661
Meat processing and dairy products	5	1.3375	0.7855	0.2281	0.3998
Fruit and vegetable processing	6	1.7146	0.7169	0.4377	0.7213
Other food processing	7	1.3040	0.6708	0.1404	0.2787
Rice Milling	8	2.0609	1.0622	0.5898	0.8766
Other grain processing	9	1.9294	0.9368	0.4616	0.7627
Other food products	10	1.6748	0.6895	0.3531	0.5775
Bottled drinks	11	1.5020	0.5088	0.2745	0.7909
Tobacco processing and products	12	1.1881	0.1887	0.0873	0.8087
Spinning and Weaving	13	1.5864	0.5882	0.2191	0.5202
Textile products	14	1.8130	0.8149	0.2504	0.5907
Other Fibers	15	1.7010	0.7034	0.3397	0.6820
Tannery And Leather Finishing	16	1.2391	0.2548	0.1000	0.1881
Leather Products	17	1.4367	0.4396	0.3380	0.5554
Foot Wear, Except Of Rubber	18	1.4401	0.4417	0.2555	0.4992
Saw mill and wood	19	1.7013	0.7040	0.3237	0.6334
Wooden Furniture & Fixture	20	1.4057	0.4073	0.3273	0.6121
Paper and printing	21	1.4865	0.4879	0.3337	0.5552
Chemical products	22	1.6082	0.6140	0.2617	0.5181
Petroleum Refineries and Products	23	1.0919	0.0922	0.1349	0.3671
Rubber and plastic products	24	1.6793	0.6811	0.3159	0.5751
Ceramic And Earthen Wares	25	1.7002	0.7040	0.3364	0.6931
Manufacturing	26	1.6831	0.7079	0.3252	0.5929
Electricity and water supply	27	1.8563	0.8587	0.3820	0.8616
Construction	28	1.6989	0.7050	0.2869	0.6209
Trade	29	1.3238	0.3267	0.5578	0.9102
Transport	30	1.8010	0.8073	0.2674	0.6709
Other services	31	1.4096	0.4221	0.3189	0.8877
Unclassified	32	1.8419	0.9252	0.1987	0.6491

#### 4.1.4 The Direct and Indirect Impact in the Economy

The 5 groups of OTOP products fall into 10 sectors of the input-output model. The multiplier coefficients above can be used to discuss the potential impact of different groups on the economy. Table 4-2 shows the sectors in I-O classification under different groups of OTOP.

**Table 4-2** Potential direct and indirect impacts of 5 groups of OTOP products on production, employment, income and import

Sector		Total Intermediate	Wages & Salaries	Total value added	Import
Group I					
Spinning and Weaving	13	1.5864	0.5882	0.2191	0.5202
Textile products	14	1.8130	0.8149	0.2504	0.5907
Average		1.6997	0.7015	0.2347	0.5554
Group II					
Other Fibers	15	1.7010	0.7034	0.3397	0.6820
Saw mill and wood	19	1.7013	0.7040	0.3237	0.6334
		1.70115	0.7037	0.3317	0.6577
Group III					
Meat processing and dairy products	5	1.3375	0.7855	0.2281	0.3998
Fruit and vegetable processing	6	1.7146	0.7169	0.4377	0.7213
Other food processing	7	1.3040	0.6708	0.1404	0.2787
Other food products	10	1.6748	0.6895	0.3531	0.5775
		1.5077	0.7157	0.2898	0.4943
Group IV					
Wooden Furniture & Fixture	20	1.4057	0.4073	0.3273	0.6121
Group V					
Ceramic And Earthen Wares	25	1.7002	0.7040	0.3364	0.6931

a) *Impact on intermediate demand* the impact on intermediate demand shows the potential multiplier effects on the economy of a particular sector in stimulating production expansion. As shown in Table 4-2, an increase in 1 unit (e.g. baht) of demand for each of the 5 groups of OTOP products potentially generate between 1.4 – 1.7 units of direct and indirect effects on demands for outputs of the production sectors of the economy. Group 1, 2 and 5 has relatively higher multiplier effects than group 3 and 4. Among food processing, fruit and vegetable processing sector relatively has higher multiplier effects on intermediate demand than others.

b) *Impact on Wages and Salaries* the potential impact on wages and salaries are quite similar among the 5 groups, except for wooden furniture and fixture which is lower than others (Table 4-2). An increase in one Baht of final demand in products of the 5 groups, except for wooden furniture and fixture can create about Baht 0.7 of wages and salaries. This item indicates the potential impacts on labor income of the economy. The magnitudes of the impacts generated by the 5 groups are generally high compared to other sectors in the economy (Table 4-1).

c) *Impact on Income* An increase in final demand for an OTOP product could directly and indirectly generate about Baht 0.23 – 0.33 of income or value added to the economy. These are compatible to other sectors in the economy, although relatively low, compared the primary production of agriculture such as crops and livestock (Table 4-1). Thus, in general, the potential direct and indirect contribution of OTOP products to income or GDP is not different from other sectors. Nevertheless, since OTOP is mainly participated by the rural communities, the potential impact on equity is likely to be positive, although the data did not permit the analysis.

d) *Impact on Import*, Import is leakage in I-O analysis. Hence, higher import generated by an increase in final demand would generate more leakage and hence reduce its potential multiplier effects on intermediate demand. As shown in Table 4-2, an increase in one Baht of demand for OTOP product could generate between Baht 0.5 – 0.7 of imports.

#### 4.1.5 The Potential Impact of OTOP Development Policy

It is natural to assume that the OTOP Development Policy generated an incremental demand for OTOP products in the market. Data on demands for OTOP products (by main groups) for a certain period (e.g., 2002) are therefore required for the analysis of direct and indirect impacts of the Policy, using the inverse matrix. Such demand should be the incremental demand generated by the Policy, i.e. the difference between with and without OTOP project.

It was reported that in 2002, the total value of sale of products from all Tambon in Thailand was Baht 24,000 million (see Table 4-3). However, distribution of the sale by types of products was not available. It is important to note here that most of these products were not the duly certified OTOP products but were outstanding products of the reported Tambons sold to the markets and partly induced by the campaigns of this Policy. As mentioned earlier, according to a report, there is approximately 24,581 items of goods being produced by all the Tambons in Thailand. About 2,700 products have already been presented to the National OTOP Committee for evaluation. After a year of the policy implementation, 461 products (comprising some 2,683 items of goods) have been certified as the OTOP products. In order to avoid confusing with the duly qualified OTOP products, the term "Tambon Product" here is used to refer to Baht 24,000 million sale of the outstanding products from all Tambon in the country.

Impacts of the OTOP Development Policy are expected to increase and expand gradually in terms of the total sale and others, when the number of certified products increases. It is important, however, to keep track/statistics of the incremental demand for OTOP products each year, in order to determine the impacts quantitatively, using the I-O technique duly discussed.

At the present state of development when there is only a limited amount of figures/records on the subject, e.g., on the total sale and number of Tambon involved, it was estimated that an average sale of products per Tambon was about Baht 3.5 – 4.0 million in 2002. In the real world, the average sale of each certified OTOP product could be many times higher than the general ones and hence, the potential impacts of OTOP products in the coming years.

Table 4-3 Total Sales and Profits of Tambon Products by Month, 2002

Month	Sale (mil Baht)	Capital (mil Baht)	Profit (mil Baht)	Profit/sale (%)
January	231.68	156.85	74.82	32.29
February	998.51	521.43	477.08	47.78
March	1,051.95	745.41	306.54	29.14
April	1,366.05	1,036.09	329.97	24.16
May	3,629.83	2,660.46	967.34	26.65
June	2,454.41	1,832.73	621.67	25.33
July	2,120.50	1,571.15	549.34	25.91
August	2,397.14	1,790.54	606.60	25.31
September	2,464.78	1,819.88	644.90	26.16
Oct.-Dec.	7,235.87	-	-	-
Total	23,950.72			

Source: Ministry of Interior

The above-mentioned aggregate value of demand for Tambon products, as it was made available to the present study, does not permit the analysis of different contributions to the economy of the different OTOP product groups. For illustration purpose, it is further assumed that the demand for each product group was the same, i.e., about 20% or Baht 4,800 million each, potential effects/impacts of the Tambon Products in 2002 could be shown in Table 4-4 below.

Table 4-4 Possible impacts of Tambon Products in 2002

(Unit: mil. Baht)

Sector under	Total Intermediate	Wages & Salaries	Total value added	Import
Group I	7,786	3,215	1,072	2,546
Group II	7,795	3,224	1,521	3,014
Group III	6,907	3,279	1,328	2,263
Group IV	6,439	1,869	1,502	2,803
Group V	7,786	3,224	1,539	3,179
Total	36,704	14,803	6,962	13,795

Note: The values were derived by multiplying the approx. Baht 24,000 million (in Table 4-3) with the average multiplier effects by groups of OTOP in Table 4-2.

In summary, effects of the Tambon products created directly or indirectly by the OTOP Development policy in 2002 included the following:-

- Generation of direct and indirect intermediate demand in the order of about Baht 12,700 million;
- Generation of wages and salaries in the order of about Baht 14,800 million (or, an employment of some 400,000 people/labors);
- Increase in GDP of the economy in the order of about Baht 7,000 million ; and

- Increase in import in the order of about Baht 13,800 million.

It should be noted that the total GDP for Thailand in the same year (2002) was Baht 5,208 billion.

With the increase in number of certified OTOP products in the market, it is natural to anticipate that the multiplier effects will also increase. As an example, if the OTOP products successfully increase to cover all the Tambon in Thailand, i.e., 7,388 Tambons or 7,388 OTOP products, each of the above figures could correspondingly increase by about 15 times. This is the potential outcome of the OTOP Development Policy, should its implementation continue into future.

#### 4.1.6 The Constraints of the Study

It must be noted however that although the I-O technique was proved useful and therefore should be used in the future as a tool for assessing macro-impacts of the Development Policy, **data** are the main constraint of the present I-O analysis. In the future, values of production of OTOP should be available by groups or sectors in I-O table for a more comprehensive analysis. Among others, at least data of the following five (5) production groups need to be systematically collected and verified by the responsible agency to ensure the accuracy.

- Group I: Weaving or textile group
- Group II: Wickerwork group
- Group III: Food and beverage group
- Group IV: Handicraft group
- Group V: General ware/appliance group.

Another constraint is the lack of Social Account Matrix (SAM) to construct the income feedback effects. For immediate reference, a brief introduction to this Matrix is given in **Annex 9**.

The present I-O table limits the production multiplier effects. As income-consumption effects are important for rural economy, the extended I-O or SAM analysis will give full account of the potential effects of OTOP on the economy. However, similar to I-O analysis, SAM analysis requires a basic SAM transaction table that not available at present. On the other hand, development of SAM transaction table is highly resource consuming and need careful consideration.

For future assessment of the OTOP project, it is recommended that:

- A systematic collection system for OTOP related data should be established;
- Basic data should include production and cost structure by types and tambon;
- Quality control on data collection system should be emphasized;
- There should be a regular update/improvement of I-O analysis on potential impacts of OTOP products,
- Expansion of basic I-O analysis to SAM analysis to capture income feedback effect.

## 4.2 MACRO-IMPACT ASSESSMENT OF OTOP

Base on the results of the base line surveys discussed in Chapter 3, the Consultant felt that OTOP project is one of the pragmatic policy of this government that will help the Thai people especially those involve with the OTOP product specifically and the OTOP Movement in general. However, due to the limitation of data and information available in the first year implementation of the OTOP Development Policy, the assessment being carried out in this section was based on the field surveys and opinion of the consultant team. The assessment will cover the area of average product scale of SMCE, labor, goods and service of the group with pricing, input capacity of SMCE and output capacity of SMCE.

### 4.2.1 Average Product Scale of SMCE

The average product scale of SMCE depends on many factors. First of all, type of product is a key factor for average product scale of SMCE. An example is the different between leather carving in the south and the jasmine rice processing in the northeast. The first product requires high skill labor whereas the second type of product depends on the machine or equipment used for milling rice.

Secondly, the OTOP has classified products into five categories. However, in each category the products from each Tambon are different in type even though they fall into the same group.

Thirdly, an average product scale of SMCE depends on the size of the group and also the time required to making a product. For instance, leather carving requires more time to finish a piece of work than the bamboo rice container. In addition some of the products do not finish itself within the group; it needs to be decorated or assembled by people outside the group.

Fourthly, the production scale of SMCE depends on the working capital required to buy the raw materials for the product. Examples of this reason include the production of salted egg, drum, leather and wood that all require a high working capital.

Fifthly, the nature of forming a group will affect the production scale of SMCE too. For instance, the drum product in Ang thong where the group was established but the production is still produced separately by individual members of the group and sells by them. On the other hand, the leader owns the artificial flower shop in the northeast while the members are his sub-contractors.

Therefore, it may observe at this stage that the average product scale of SCME is ranging from small to large scale depending on the type of product, size of the group and time of producing that product. It is suggested that the in-depth study of the representative of OTOP product of each category or group of product should be carried out.

#### 4.2.2 Labor

It is obviously observed that OTOP Development Policy will create a job opportunity for local people who participate in OTOP activities. Not only the labor used in production but also the labor/employment that are generated in both the downstream and upstream industries. Therefore, the OTOP provides employment opportunities in the local community and other related industries. One good example is the drum product; the employment creation is not only at the production of drum but also at the production sites of leather and wood industries.

Besides, OTOP will have a great impact on the labor utilization in each sector or at different kinds of product and in different areas. However, totally, OTOP will contribute a lot on employment to the society. I-O analysis in the preceding section generates the results of the employment from this policy, however, the number of certified products should be accurately assessed.

#### 4.2.3 Goods and Services of the Group with Pricing

Under the OTOP program at least SMCE has been identified in each of the area. Goods and services are both produced based on individual and group efforts, depending on the product type. For instance, drum is produced by individual whereas jasmine rice or coconut shell products are produced from the SMCE. However, as far as the pricing is concerned the price is decided by the individuals and the committee of the group based on the product made by members of the group, like the Yan Lipao Product in the south and the Japanese drum in Ang Tong which are produced on the order from customers. However, it was observed that the SMCE has not much experience in pricing goods and services as the marketing costs was in all included in the price structure.

#### 4.2.4 Input Capacity of SMCE

From the base line surveys and field visits of 20 products from 20 Tambons, it was found that the demand for inputs of OTOP products has been expanding. However, there are 3 kinds of input to be considered for SMCE. First input is raw materials to be used for production. It is obvious that the demand for raw materials has been increased substantially since the promotion of OTOP program started. The leather carving in the south and drum making are good examples. There are two OTOP products which are not only using the same raw materials but also have to compete with other products like purse, belt and brief case industry.

The second input needs to be mentioned here is the labor. The objective of OTOP is to create employment in the local community. However, most of OTOP products are labor intensive, e.g., silk weaving, salted egg production, leather carving, drum making, etc. Therefore, there is a limit or constraints for SMCE in expanding the production. This is a weakness of labor-intensive kind of production especially the product that required the skill of labor like leather carving and also time during the production process.



The third input is working capital for the SMCE to buy raw materials for production. Most of OTOP-SMCE are quite small and the lessons learned from the base line surveys revealed that one of the obstacles for SMCE to increase its production is the lack of (adequate) working capital. Thus, the assistance from many government agencies concerned is the starting endowment. It is, however, that more capital is required for the increase of production to serve the demand and promotion of OTOP. Thus, the village fund under the government policy is also helping in this sector, but the demand for working capital is still increased.

In addition, it is not applied for all OTOP that need to use local input except labor. It is found from the survey that the demand for raw materials is increased and the raw materials are purchased from other area or other region. Example of these issues is the salted egg and drum productions. The egg are brought from Nakorn Pathom and Ratchaburi Provinces (in the Central) to make as salted eggs in Surat Thani (the South). The leather are purchased from Samut Prakarn Province to make drum in Ang thong and leather carving in the south.

#### **4.2.5 Output Capacity of SMCE**

Most of OTOP products from SMCE are labor intensive and take time for production. It is, therefore, a constraint to increase production capacity. Unless the SMCE needs to be collected or be expanded so that the output capacity can be increased in order to meet the demand in the future. One mature of OTOP product is the handmade products, thus, the capacity of SMCE to increase output depends on the skill labor required as well.

#### **4.2.6 Contribution to GDP**

It is a good opportunity for the government agency concerned to look at the contribution of OTOP to GDP. It is estimated by the Department of Community Development that OTOP has contributed about Baht 24,000 in the year 2002. Thus, if the promotion of OTOP by the government is still continued in 2003 and onward, it is expected that OTOP will add up more to GDP both in the short- and long-run.

In this connection, it is necessary for OTOP office to start with the data compilation from government agencies concerned in setting up the database for OTOP in this year and on wards.

#### **4.2.7 Income, Equity and Profit**

Impacts of OTOP may be assessed on such aspects as income, equity and profit of beneficiaries of this project. As a result of the observations from the base line surveys, OTOP has a substantial impact on the income, equity and profit of the people who involve in OTOP Movement. The data has been confirmed from each SMCE, as cited in the base line survey and from the I-O model.

#### **4.2.8 Employment**

As obviously accepted that most of OTOP products are labor intensive, this program generates more employment from the increase in production of OTOP. The I-O analysis in the preceding section has demonstrated the employment generation of this policy.

#### **4.2.9 Intangible Benefit**

OTOP does not only provide the job opportunity to local community but also the employment in other sectors. Moreover, there is a linkage to other industries from one OTOP product to the others. At least, OTOP generates employment in other sectors which in turn, reduces the unemployment and increases income of the people in other sectors.