



## Chapter 1.7: Industrial Development and Employment Generation in Roi-Et

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### 1. Introduction

The general issue of income raising in the province of Roi-Et has been largely discussed in the previous chapters, through a sound case study of Muban Noong Khun. Relevant problems have been scrutinized, taking cue mainly from endogenous factors suggested by the survey of villagers' agriculture production, household expenditure, side job income, etc.

One of the most striking facts observed during that survey is the villagers' wish to have enough firms installed in the area for two main reasons. First, many of them wish their children engaged in paid jobs in small- and medium-scale firms instead of joining their traditional agriculture. Even among those willing to permit their children to work in agriculture, most have them already engaged in that sector and, therefore, have no choice. Second, villagers rely on the fact that creating many firms in the area will generate more market opportunities for their rice, reducing therefore the impact of middle-men's "ruthless" role while increasing their income.

As a matter of fact, creating more firms has come out to be one of the crucial elements on which Roi-Et chamber of commerce focuses its provincial development strategy. Indeed, an interview with the chamber of commerce members has revealed that most of the projects aimed at improving the socio-economic situation in the province converge to one objective: attracting investors, having more firms, and therefore more jobs, created.

Although not in a straightforward manner, the necessity to create new firms and jobs is also favourably echoed in the seventh national development plan. In fact, one of the four major objectives of the plan emphasizes the equitable redistribution of income among Thai citizens. Employment, needless to say, is one of the main tools for income redistribution in a country.

Given the necessity to create more firms in order to create more jobs, felt at both the national and the local levels, the main purpose of this paper is to examine the pace at which firms are created as well as the resulting employment generation momentum. The output of this work should be a modest proposal so as to how, in today's pace, more firms could be created which would offer more employment opportunities to local people.

To reach its objective, this dissertation is divided into three sections. The first is a presentation of general characteristics of Roi-Et in terms of industry and employment. The second section will examine the changes intervened in the process of business establishment and job creation from 1985 to 1991 in order to single out the major trends and determine the most or least effective sectors. Analyses in this section will be done in terms of major industrial categories, different business areas, and also different districts.

A word of caution, however, needs to be inserted at the doorstep of this text. Indeed, reflections here are conducted on the sole basis of available data. These data, taken as they were presented in official documents, might not necessarily be consistent with each other. No surprise, for instance, if the total number of employees in 1989 is different depending on whether it is obtained from different kinds of business activities or from the particular figures of each district. Questioning official figures, anyway, would mean making no use of them.

### 2. Business Establishments and Employment: Generalities

This section presents general information on business enterprises and employment in Roi-Et at present.<sup>1</sup> It is a simple statement of existing facts at a given time and, as such, adopts a static attitude. Its main purpose is to give the reader an idea of what is going to be dealt with in the following sections.

1. "at present" here refers to the most recent available data, and not necessarily to the year 1992.

### a. Business Establishments

Idealistically, the rubric of business establishments would include all kinds of businesses, ranging from manufacture (e.g. fishing net factory, noodle factories ...) to services (hotels, restaurants ...). However, investigations in relevant offices have yielded no serviceable data about service establishments, limiting the scope of this work to industry and other related establishments.

As such, the business establishments registered at Roi-Et industrial office are numbered at 3,723 as of 1991, 89.2% of which are rice mills and 2.3% cassava processing firms. In aggregate, roughly 91.5% of Roi-Et industrial sector directly deals with rice and cassava, highlighting therefore the importance of agricultural output in the industrial sector. Among the remaining establishments, the most outstanding is made up with vehicle repair shops which account for 1.9% of the total number of establishments, followed by concrete product shops which account for 1.2% of the total.

The total number of business establishments provided by the Labour Office is 21,904 for the year 1990 and 20,355 for the year 1991. If these figures are accurate, it can be concluded that there has been a 7.07% decrease in one year. Moreover, deducting from the known number of industrial activities, the number of service establishments in the province can be estimated at 16,632.

### b. Employment

As of 1991, the situation of employment in the province can be described as follows.

Population	1,233,601	100%		
1. Labour	704,756	57.13%	100%	
– Employed	657,678		73.32%	100%
Seasonal	35,843			5.45%
Permanent	621,835			94.55%
– Unemployed	47,078		6.68%	100%
Potential W.	4,472			9.5%
Others	42,606			90.5%
2. Pop. over 13 y.o. not working	156,544	12.69%	100%	
– Family workers	44,380		28.35%	
– Students	61,287		39.15%	
– Too young, too old	39,590		25.29%	
– Others	11,287		7.21%	
3. Under 13 y.o.	372,301	30.18%		

In light of the above figures, it can be observed that, over a total population of 1,233,601 (100%), 704,756 or 57.13% of the total is made up with people able to work. The remaining part is shared by people of 13 years old or more (156,544 or 12.69%) and those less than 13 years old (372,301 or 30.18%).

Out of the total portion of people considered as labour force, 657,678 or 73.32% are actually employed, 621,835 or 94.55% of which are employed permanently and 35,843 or 5.45% seasonally. A striking fact in this regard is that, out of 47,078 people considered as unemployed, only 4,472 or 9.5% of the unemployed population are seeking for a job, while the greater part, 42,606 people or 90.5% of the total unemployed population are not seeking for a job. Among the many reasons susceptible of providing an explanation to this unusual fact, two complementary elements can be mentioned.

First, the active population of Roi-Et is known for its frequent migrations, especially to Bangkok. In fact, "it is a prestige for those who have been to Bangkok or are working there.

This kind of social value makes Roi-Et people migrate at least seasonally, especially during dry season" (Phaisal, 1992, p. 7). Second, these migrations are also due to the fact that a great portion of population is engaged in agriculture. Since during the dry season, farmers have nothing or very less to do in their fields, they opt for migrations to areas where prestige or income could be found. Third, and not the least important, is the fact that, "due to culture and habit, unskilled workers from Northeast Thailand have no discipline, preferring to attend festivals even at the expense of their jobs" (Phaisal, 1992, p. 7). This fact has been promptly confirmed by a group of entrepreneurs interviewed at the chamber of commerce. These entrepreneurs, indeed, cope with this "unavoidable" phenomenon by incorporating these migrations as part of their general strategic planning.

Another fact which deserves attention in the above figures is that, among 156,544 people of age 13 or more, but still considered not able to work, 44,380 or 28.35% of that number are actually engaged in family businesses. This is consistent with the high drop out rates observed after elementary education. It is known, indeed, that poverty forces many children out of school in order to work for their own subsistence or that of their families, especially at the doorstep of junior high school.

### 3. Business Establishments and Employment: Dynamic View

In this section, divided into two subsections, a progressive picture of the number of business establishments and that of employees will be depicted, covering the period of 1985 to 1991. The first subsection will be divided into two main paragraphs, the first covering the number of business establishments and the second the number of employees. The second subsection will then focus on the parallelism between the two trends.

#### 3.1. Evolution of Business Establishments and Employees

In this section, each subsection will be developed in two major optics: the kind-of-business optic and the district optic. As a reminder, the only detailed data obtained for the reflections to be developed here include the industrial sector.

##### A. Business Establishments

###### a. Kind of business

The classification of business establishments per kind of industrial activity, depicted in Table 1, shows that from 1985 to 1991, the number has increased from 2,570 to 3,723, accusing a 44.8% increase in a period of six years. However, there has been no change from 1990 to 1991 where pure stagnation is observed.

In general, a few industrial activities have made significant progress. The case of rice mills, which has been mentioned earlier, can be considered among these. Indeed, among the 1,153 new firms created, 1,032 or 89.5% are rice mills. Taken apart, the number of rice mills has increased by 45%, which is a little higher than increment in the total number of establishments. Almost commensurate to this increment in the number of rice mills is that of agriculture equipment businesses which, despite their small number, have increased by 85.7% (from 7 establishments in 1985 to 13 in 1991).

Two other kinds of activities show noteworthy progress: vehicle-related businesses and some construction material businesses. Among vehicle-related businesses, car repairers have made the most spectacular progress, skyrocketing from 22 establishments in 1985 to 73 in 1991 or 231.8% increase. Closely related to these car repair activities are tyre repair or reshape shops, which have also increased from 6 to 13, or 116.6%. The number of some construction material establishments has also notably increased, especially bricks, concrete products and iron frame (door, window) factories which have increased to 350%, 20% and 78.6% respectively.

Unlike these sectors of activity, some are rather decreasing. The case of cassava processing establishments, for instance, shows that the number of factories has decreased from 92 in 1985 to 87 in 1991. The number of car painting shops has also dropped from 11 to 7 in the same period. Considering their high increment in 1989 and 1990, it can be thought that some of these shops have rather converted themselves into car repair establishments instead of limiting their activities to the mere painting.

###### b. District wise

Table 2 below depicts the progression in the number of business establishments in each district. As one might have expected, Muang district has got the biggest number of establishments as well as the highest share of the total number of establishments created within the retained period. Indeed, out of 3,723 establishments registered in 1991, 612 or 16.4% are found in Muang district. Moreover, among the 1,153 new establishments created in six years, 161 or 13.9% have settled in Muang District. The districts of Selaphum and Suwannaphum, followed by that of Tawatchaburi, have also a high share of the created firms, the two former having 122 new businesses established, or 10.5% of the total newly founded firms, and the latter 120, or 10.4% of that number.

**Table 1:** Number of Business Establishments per Kind of Activity  
1985, 1986, 1989, 1990 and 1991

Kind of Industry	Number of Factories				
	1985	1986	1989	1990	1991
Jute	3	3	3	3	3
Sand	6	6	6	7	7
Meat Ball	3	2	2	3	3
Ice Cream	2	2	4	6	6
Rice Mill	2289	2414	3082	3321	3321
Cassava	92	93	84	87	87
Bread and Dessert	5	5	6	6	6
Noodle	3	3	4	5	5
Ice Cube	3	3	4	5	5
Drinking Water	1	1	1	1	1
Wooden Tile	4	4	4	4	4
Sawmill	1	2	1		
Door and Window Wooden Frame	4	4	5	6	6
Furnitures	9	9	10	14	14
Printing	4	4	4	5	5
Traditional Hard Medicine	1	1	1	1	1
Tyre Repair, Reshape	6	7	10	12	13
Charcoal Stove	1	1	1	1	1
Bricks	2	3	5	9	9
Concrete Product	40	42	43	48	48
Door and Window Frame (Iron)	14	17	19	25	25
Car Engine, Vehicle Repair	22	22	26	50	73
Agriculture Equipment	7	7	11	13	13
Refrigerator Repair	1	1		7	
Motor, Dynamo Repair	3	3	5		
Truck Carcass	5	5	3	3	3
Exhaust Pipe, Spare Parts	4	4	6	9	9
Motorcycle Repair	18	20	25	20	20
Ornament	1	1			
Fish Sauce	1	1	1	3	2
Freeze Room	4	4	4	4	4
Car Painting	11	11	18	23	7
Food Can, Vegetable			1	1	1
Plastic Ware			1	1	1
Iron Ware			1	1	1
L.P.G. Tang			1	1	1
Rice Starch				1	1
Fishing Net				1	1
Plough				1	1
Container (Package)				1	1
Miscellaneous Iron Products				2	2
Miscellaneous Steel Products				6	6
Electric Machines				6	6
<b>TOTAL</b>	<b>2570</b>	<b>2705</b>	<b>3402</b>	<b>3723</b>	<b>3723</b>

Source: Roi-Et Industrial Office

Note: Although all figures in the above table were obtained from official documents, sums here might be different

**Table 2:** Number of Business Establishments per District  
1985, 1986, 1989, and 1991<sup>3</sup>

District	1985	1986	1989	1991
Muang	451	461	595	612
Kasset Wissai	215	229	229	294
Chaturaphak Phiman	185	190	219	245
Tawatchaburi	261	266	390	381
Phanom Phrai	178	187	236	263
Phon Thong	211	215	275	274
Selaphum	266	273	343	388
Suwannaphum	234	262	306	356
Art Samat	168	182	220	257
Pattum Rat	117	125	137	156
Nong Phok	41	48	75	93
Muang Suang	46	57	72	79
Pho Chai	92	96	115	129
Phon Sai	65	72	95	111
Meo Vadee	40	42	48	45
Sri Domdej			15	19
Junk Harn			4	21
<b>TOTAL</b>	<b>2570</b>	<b>2705</b>	<b>3373</b>	<b>3723</b>

Source: Roi-Et Industrial Office

\*Note: Sums might not necessarily be conform to those in official documents

These districts also enjoy a high share of the total number of business establishments in 1991, that is, 10.4%, 9.5%, and 10.2%, respectively. The remaining 55% of the newly founded firms are shared by 13 other districts among which Art Samat and Phon Thong have 7.7% and 7.3%, respectively. Finally, it was not until 1989 that the two "small districts" of Sri Domdej and Junk Harn have seen their first establishments installed.

In terms of the percentage of increment experienced by each province, the most impressive progress has been made by Muang Suang district which has increased the number of its establishments by 71.7% in six years. Almost equal progress has been made in Phon Sai district which enjoys a 70.7% increase. Two other districts have made more than fifty percent increase in the six years period: Suwannaphum, 52.1%, and Art Samat, 52.9%. There is also a number of districts which have made more than the 44.8% global performance of the province: Tawatchaburi, 45.9%, Phanon Phrai, 47.7%, and Selaphum, 45.8%.

It is also worth nothing that, despite its greatest number of establishments in the province, Muang district has done far lower than the global performance in the province in terms of increase in the number of establishments, contenting itself with a 35.6% in six years. It is, however, Nong Phok district which has had the least rate of establishment creation.

## B. *Employment*

### a. *Types of activity*

The number of employees working in each kind of industrial activity is depicted in Table 3. It can be observed that the total number of people working in the industrial sector has increased from 5,412 in 1985 to 7,657 in 1991, or 41.8% increase. Nevertheless, as compared to the previous year, 1991 has experienced a 10-jobs loss. Logically, the greatest number of people is employed by rice mills, in a proportion of 48.3% of the total. Following rice mills are cassava processing firms, the fishing net factory, and jute businesses which employ respectively 8.7%, 7.8% and 7.0% of the total population of employees in the province. Concrete product firms and vehicle repair shops also employ fairly high numbers of people, sharing respectively 4.8% and 4.4% of the total number of employees.

Among all kinds of business activities mentioned in Table 3, again, rice mills have absorbed the greatest number of people employed from 1985 to 1991, the proportion being 49.0% of the 2,245 employees hired during that period. The creation of food and vegetable can and fishing net factories in the province has also contributed in generating 12.8% and 26.7% of the newly created jobs.

There is a number of businesses which, unlike the above mentioned, have rather experienced a decrease in their employment rate. The most outstanding case is that of door and window iron frame businesses which have gone from 150 jobs offered in 1985 to 73 only in 1991, suppressing therefore 77 jobs or 51.3% in six years. In this respect, some other cases also deserve attention, especially the car painting and agriculture equipment businesses, where employment has undergone 48.7% and 36% decrease, respectively. While the case of car painting is consistent with the number of shops which has also decreased in the same period, that of agriculture equipment is rather surprising. In fact, the number of agriculture equipment businesses has sharply increased in this period, and a logical output would have been an increase in the number of employees. Another case in this paragraph is that of cassava firms, the employment rate of which has decreased by 10.7%, certainly commensurate to the decrease in the number of firms as mentioned earlier in this paper.

**Table 3: Number of Employees by Types of Industry  
1985, 1986, 1989, 1990 and 1991\***

Types of Industry	Number of Employees				
	1985	1986	1989	1990	1991
Jute	540	540	541	541	541
Sand	58	58	71	77	77
Meat Ball	15	9	9	10	10
Ice Cream	9	9	17	25	25
Rice Mill	2598	2659	3493	3699	3699
Cassava	754	827	640	673	673
Bread and Dessert	38	38	48	46	46
Noodle	17	17	21	23	23
Ice Cube	36	36	34	52	52
Drinking Water	8	8	8	8	8
Wooden Tile	9	9	56	133	133
Sawmill	126	129	129		
Door and Window Wooden Frame	26	26	30	39	39
Furnitures	58	58	94	150	150
Printing	22	22	22	26	26
Traditional Hard Medicine	7	7	7	7	7
Tyre Repair, Reshape	8	9	13	24	25
Charcoal Stove	3	3	3	3	3
Bricks	16	17	52	81	81
Concrete Product	450	462	311	374	374
Door and Window Frame (Iron)	150	158	360	73	73
Car Engine, Vehicle Repair	148	156	104	253	340
Agriculture Equipment	136	139	74	87	87
Refrigerator Repair	11	11			
Motor, Dynamo Repair	9	9	16		
Truck Carcass	27	27	16	18	18
Exhaust Pipe, Spare Parts	10	10	16	37	37
Motorcycle Repair	43	54	58	43	43
Ornament	3	3			
Fish Sauce	6	6	6	36	21
Freeze Room	30	30	45	45	45
Car Painting	41	41	94	108	21
Food, Vegetable Can			288	288	288
Plastic Ware			10	10	10
Iron Ware			3	3	4
L. P. G. Tang			11	11	11
Rice Starch				7	7
Fishing Net				596	600
Plough				6	6
Container (Package)				13	13
Miscellaneous Iron Products				6	7
Miscellaneous Steel Products				16	14
Electric Machines				20	20
<b>TOTAL</b>	<b>5412</b>	<b>5587</b>	<b>6700</b>	<b>7667</b>	<b>7657</b>

Source: Roi-Et Industrial Office

\*Note: Sums in this table might not always correspond to those in official documents

b. District wise

Computation from the figures depicted in Table 4 below can show that, out of the 2,245 jobs created between 1985 and 1991, 1,040, or 46.3%, have been created in Muang district. 289 others, or 12.8%, have been created in Selaphum district. The remaining 30% are shared by 15 other districts.

In terms of increment in each district, Nong Phok has made the most rapid progress in creating new jobs. The number of jobs created here is 77, that is, 79.3% increase from 1985 to 1991. Another rapid increase in this domain is made in Muang Suang district, which shows a 73.9% increase. Muang district has had a 58.3% increase, followed by Phin Sai with 53.2%.

**Table 4:** Number of Employees per District  
1985, 1986, 1989, and 1991

District	1985	1986	1989	1991
Muang	1782	1850	1865	2822
Kasset Wissai	321	343	299	401
Chaturaphak Phiman	194	197	230	260
Tawatchaburi	347	298	437	425
Phanom Phrai	254	241	316	372
Phon Thong	543	547	646	631
Selaphum	821	878	895	1110
Suwannaphum	391	470	429	512
Art Samat	201	204	274	271
Pattum Rat	117	125	137	167
Nong Phok	97	87	139	174
Muang Suang	46	57	72	80
Pho Chai	152	143	166	182
Phon Sai	77	74	97	118
Meo Vadee	69	73	80	77
Sri Domdej			21	25
Junk Harn			13	30
<b>TOTAL</b>	<b>5412</b>	<b>5587</b>	<b>6116</b>	<b>7657</b>

Source: Roi-Et Industrial Office

### 3.2. Business Establishments Founding and Employment Generation

In this subsection, it will be attempted to figure out the extent to which creation of new firms has resulted in that of new jobs. This will be done by bringing closer the figures separately presented in the previous subsection. The first paragraph of this subsection will focus on a comparison of the total numbers of business establishments and employees, from 1985 to 1991. The second paragraph will present the situation in some selected industrial activities, while the last paragraph will examine the same situation in some districts. For didactic convenience, graphics will be exhibited whenever possible.

a. *Global trends*

**Table 5:** Number of Establishments and Employees, from 1985 to 1991

	1985	1986	1987	1988	1989	1990	1991
Establish.	2570	2705	1073	1140	3402	3723	3723
Employees	5412	5587	6326	6888	6700	7667	7657

The figures presented in Table 5 above depict the progress in the number of both establishments and jobs, from 1985 to 1991. It can be noticed that figures of 1987 and 1988 have been added here. These figures could not be used in earlier pages, for there were no details about their distribution among different kinds of industrial activities or provinces.



As observed earlier, from 1985 to 1991, the number of business establishments has increased by 44.8%, while that of employees has increased by only 41.4%. It can be asserted, in other words, that increase in the number of firms has yielded no consequent results in terms of jobs created. This might be due to the fact that most enterprises come out with only one person who is counted among employers, marking therefore no change in the list of employees. In this sense, a new firm does not necessarily imply new jobs. Another fact is that there are firms which operate as pure and simple family exploitations, the members of which do not necessarily need to be identified as employees, nor do they require regular salary or wage, albeit living on the activity.

The average increase in the number of employees in the industrial sector is 374 per year. Considering the number of employed people in the province, evaluated at 47,078 as presented in the first section of this paper, and assuming that the total population of unemployed people in the province remains stable, it would take some 125.8 years for the province to provide jobs to all needy people.

However, it is suggested in available documents<sup>2</sup> that the service sector provides roughly twice as many jobs as does the industrial sector. In fact, the total number of employees known in the Labour Office in 1991 is 20,355. Therefore, if the industrial sector employs 7,657 people in the same year, it can be deducted, as mentioned earlier in this paper, that 12,788 people are employed by service establishments. From deduction to deduction, it could then be assumed that a maximum of 1,122 people find a job every year. In this case, to absorb 47,078 unemployed people, approximately 42 years would be necessary.

Fortunately, permanent migrations and family businesses absorb part of unemployed people. Nevertheless, there is still a real need for urgent radical measures in order to speed up this obviously low pace.

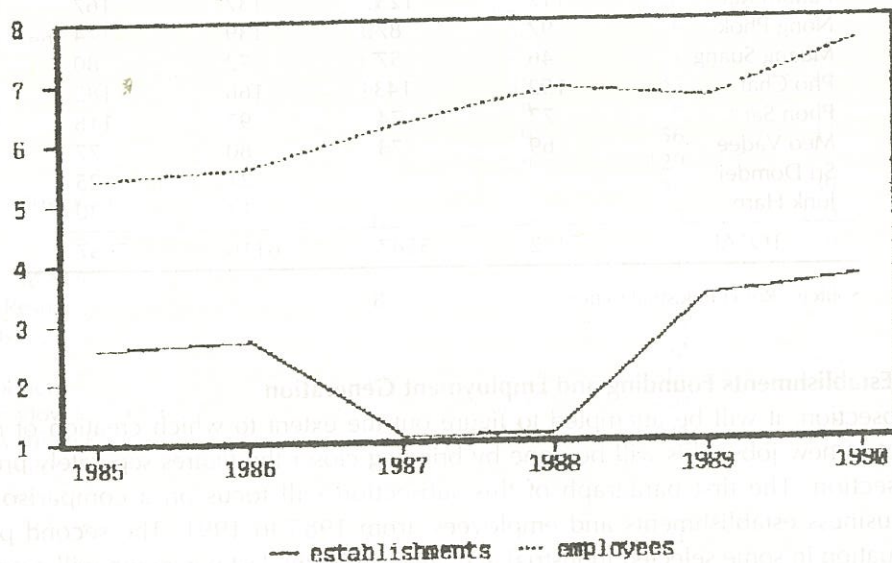


Fig. 1: Establishments and Employees: Global Trends

#### b. Trends in selected activities

Three major activities have been selected for closer examination in this paragraph given the number of establishments and employees, and the kind of change intervened therein. These are rice mills, cassava processing firms, and vehicle repair shops.

##### Rice Mills

**Table 6:** Establishment and Employee Trends in Rice Mills

	1985	1986	1989	1990	1991
Establish.	2289	2414	3082	3321	3321
Employees	2598	2659	3493	3699	3699

2. Roi-Et Labour Office

The above figures, otherwise expressed in Figure 2 beneath, show that, for rice mills, there has been stagnation in both the number of establishments and that of employees between 1990 and 1991. Since this activity is the greatest in terms of both aspects, if not looked at carefully or accompanied by serious progress or diversification in other areas, there might be fear that in the future, fewer people will expect to find jobs.

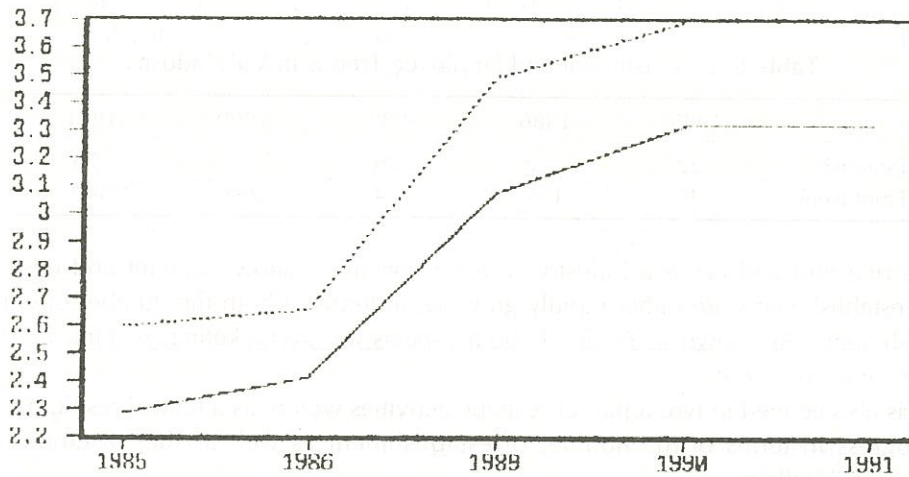


Fig. 2: Establishments and Employees in Rice Mills: Comparison

Cassava

**Table 7:** Establishment and Employee Trends in Cassava Firms

	1985	1986	1989	1990	1991
Establish.	92	93	84	87	87
Employees	754	827	640	673	673

Data in Table 7 above are also expressed in Figure 3 below. A flagrant fact is that the number of both establishments and employees has decreased in this activity. Stagnation in 1990 and 1991, in this case, is rather a fairly positive fact, as compared to the general trend which is rather declining.

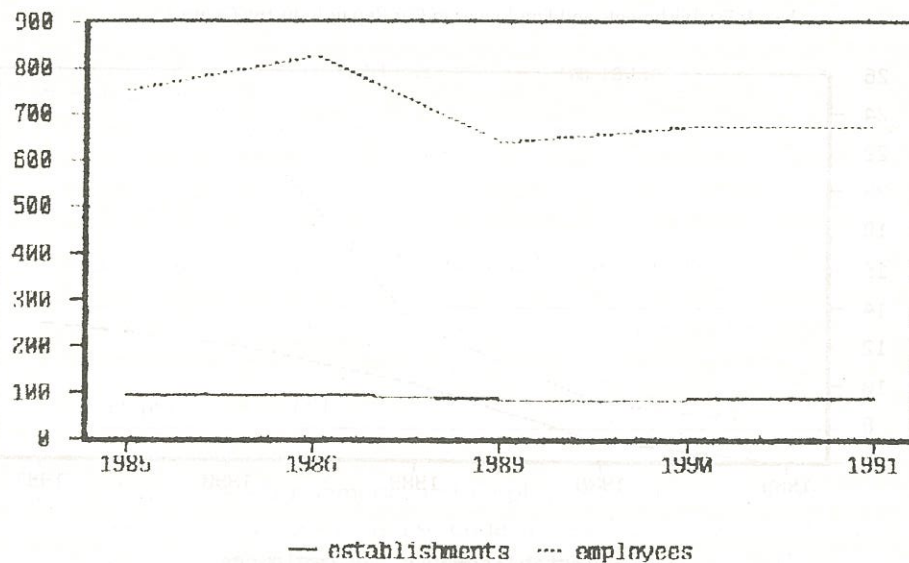


Fig. 3: Establishments and Employees in Cassava Firms: Comparison

As a tentative explanation to this declining trend, two points can be made. First, tapioca, the crop from which cassava is processed, is known as being the crop which, progressively, exhausts fertility in the soil where it is cultivated. There might be, therefore, less and less land for tapioca in the region. Second, the price at which tapioca is sold is considered to be very low, and therefore, might incite fewer people to continue its exploitation, at least in some regions.

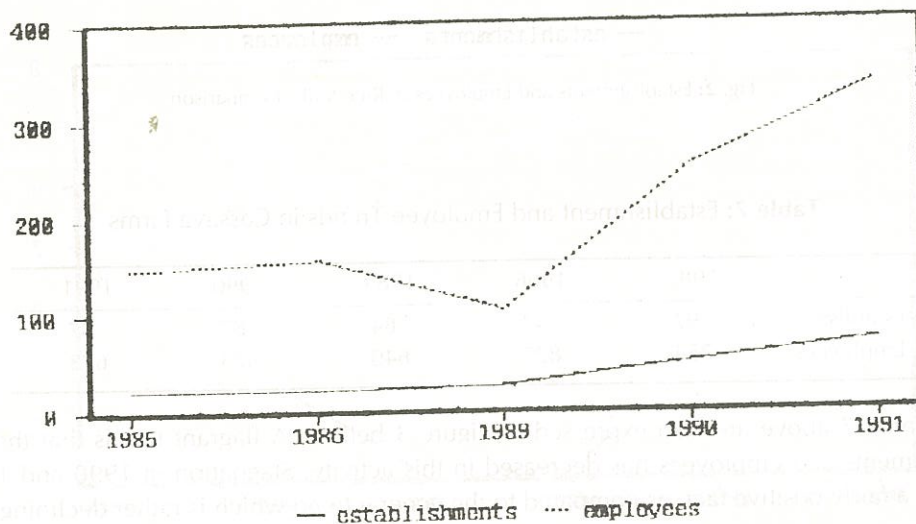
#### Vehicle Repair

**Table 8: Establishment and Employee Trends in V.R. Industry**

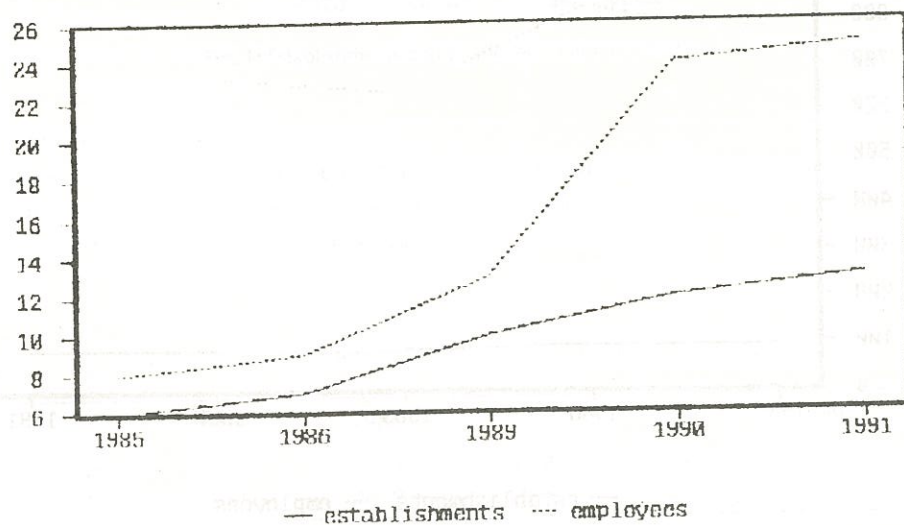
	1985	1986	1989	1990	1991
Establish.	22	22	26	50	73
Employees	148	156	104	253	340

Unlike the rice mill and cassava industry which respectively show stagnant and declining trends, vehicle repair establishments are rather rapidly growing, in terms of both the number of employees and that of establishments. As shown in Figure 4, both aspects are skyrocketing, making in 1991 roughly three times the figures of 1985.

This trend is also echoed in tyre repair or reshape activities which, as a logical result, have also made significant progress in terms of the number of establishment as well as that of employees. This is expressed in Figure 5 below.



**Fig. 4: Establishments and Employees in Car Repair Industry: Comparison**



**Fig. 5: Establishments and Employees in Tyre Activities: Comparison**

According to Roi-Et Chamber of Commerce, every day, some 400 trucks circulate from Roi-Et to Bangkok, and vice versa. Intra- and inter-province traffic have also significantly increased. Moreover, the number of passenger cars and buses has rapidly increased in recent years. No surprise, therefore, if sharp progress is made in these closely related business areas.

c. *Trends in selected districts*

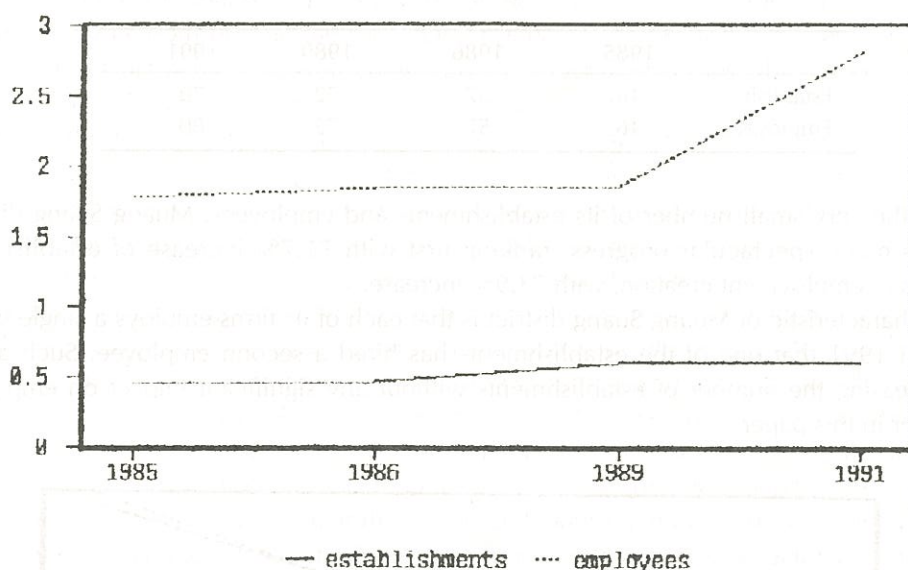
This paragraph focuses on the changes which have occurred in a number of provinces in the fixed period. Again, districts will be selected here on the basis of the number of establishments and employees, and the importance of changes undergone in these six years.

Muang District

**Table 9:** Establishment and Employee Trends in Muang District

	1985	1986	1989	1991
Establish.	451	461	595	612
Employees	1782	1850	1865	2822

As mentioned earlier, Muang district logically has the highest number of establishments and employees in the province. The percentage of increment, however, is not the highest. The district, in fact, lags behind nine others in terms of the pace of increase in establishment creation, with its 35.6%, and is the third in terms of job creation, with 58.3%. The trends are schematized in Figure 6 bellow.



**Fig. 6:** Establishments and Employees in Muang District: Comparison

Selaphun District

**Table 10:** Establishment and Employee Trends in Selaphun District

	1985	1986	1989	1991
Establish.	266	273	343	388
Employees	821	878	895	1110

Considering the number of establishments and employees, Selaphun district is the second in the province. In terms of progress, however, it has also done far less than many other districts. The number of its establishments has increased by 45.8%, and that employees by 35.2%. The graphic is presented bellow, in Figure 7.

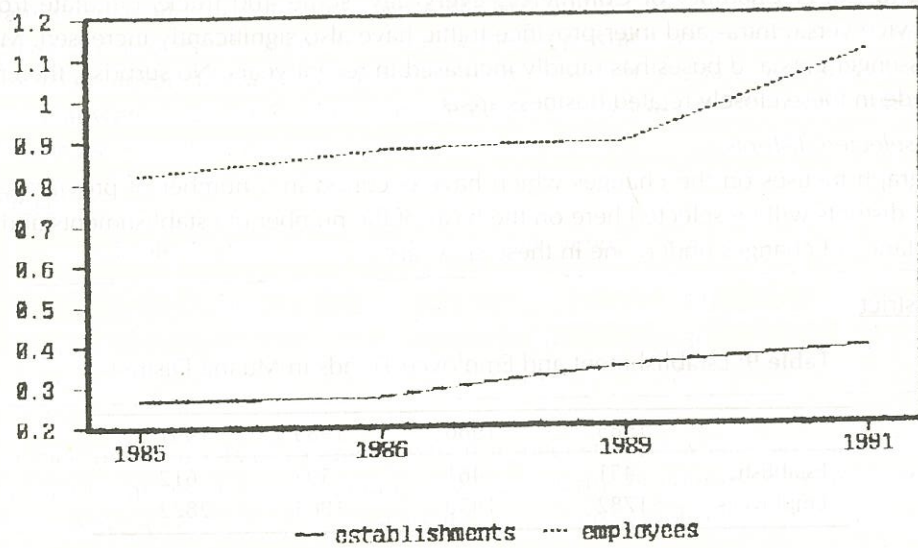


Fig. 7: Establishments and Employees in Selaphum District: Comparison

Muang Suang District

**Table 11: Establishment and Employee Trends in Muang Suang District**

	1985	1986	1989	1991
Establish.	46	57	72	79
Employees	46	57	72	80

In spite of the very small number of its establishments and employees, Muang Suang district is the one which has made spectacular progress, ranking first with 71.7% increase of establishments and second in terms of employment creation, with 73.9% increase.

A special characteristic of Muang Suang district is that each of its firms employs a single worker, and it was not until 1991 that one of the establishments has hired a second employee. Such a case contributes to increasing the number of establishments without any significant impact on employment, as discussed earlier in this paper.

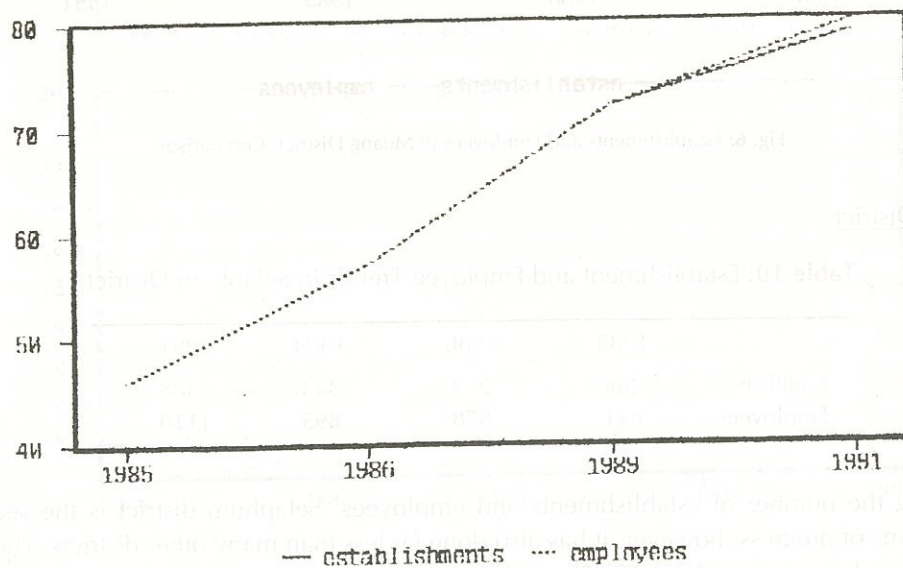


Fig. 8: Establishments and Employment in Muang Suang District

#### 4. Concluding Remarks

This chapter has tried to highlight the pace at which firms are created in the province of Roi-Et, and the resulting impact on employment generation. Changes have been examined from two main viewpoints: the types of industrial activity and their district wise distribution. Data are taken from the industrial sector where details are available about the changes occurred during the period between 1985 and 1991.

As a global output of the reflections conducted in light of available data, it has been observed that the pace of employment creation is relatively slower than that of firm creation. This is a paradoxical finding, since common sense would suggest that, the more firms are created, and the more employment is generated. This is likely due to the appearance of many firms with only one employee, as observed in Muang Suang district.

Analyses in this chapter have also highlighted the dominant importance of agriculture output in the development of industrial sector. Indeed, more than ninety percent of the total number of establishments, and more than sixty percent of employees belong to agro-industrial firms (see index). These industries, however, unlike vehicle repair firms and some others, have made less progress in recent years.

The examination of the situation in each district has also suggested no significant progress either. Muang district, with its greatest number of establishments and employees, has contented itself with a relatively low growth pace as compared to some other districts. Moreover, those districts which, like Muang Suang, have shown some progress, have contributed less to employment creation.

The verifications above call for the following final comments. First, in today's pace, it will take some decades for the province to provide jobs to all unemployed people. Radical measures are therefore necessary to create revolutionary changes and boost the situation quicker. One of these measures would be to attract investors from outside the province, an idea which might not be new for the members of Roi-Et Chamber of Commerce. There are, however, a number of obstacles which need to be overcome if entrepreneurs are to be attracted from outside. Among these, the most outstanding is that of infrastructure, mainly in the transportation sector. In fact, to date, the sole means of transportation from and to Roi-Et is buses and trucks. It is also contended that booking for a plane seat in Khon Khaen is getting difficult given the level of saturation there. In this regard, the railway and airport projects, which are already under consideration, are strongly recommended, and so is the highway project for direct access to the coastal areas, either towards Eastern seaboard of Thailand or Vietnam.

Achieving the airport project, especially, would play a major role in inciting foreign investors to settle in the province. Thai people are encouraged to invite Japanese entrepreneurs to invest in this province. A useful gadget would be the creation of an international training centre at which Thai, but also Cambodian, Laos ... workers will be trained. Such a realization would bring two notable results. One is that, if realized by JICA (Japan International Cooperation Agency), the project will be quite instrumental in attracting Japanese ODA (Official Development Assistance) or JOCV (Japan Overseas Cooperation Volunteers) in the region. Another is that the quality of labour force in the province would be improved. It is known indeed, that the quality of labour force in Roi-Et is very low, a factor which keeps investors away from the province (Phaisal, 1992, p. 7).

Second, stagnation in agro-industries, especially rice mills, is a proof of interrelationship in the whole system. Farmers, as mentioned in earlier chapters, complain that their production can not increase any more, unless effort be made for viable water supply systems. There is a way to think, therefore, that stagnation or slower pace in rice production might have no positive effect in the activities of rice mills. Although the situation is not extremely harmful, it can be observed that it is decelerating. Therefore, this paper strongly supports the claims of local farmers for more and viable water supply infrastructure.

Third and finally, discrepancies among districts have confirmed the national concern that rapid economic growth has not been accompanied by its equitable spread among regions. In order to encourage investors to settle all over the province, special advantages should be granted to those who plan to settle in districts other than Muang, especially in terms of taxes and loans.

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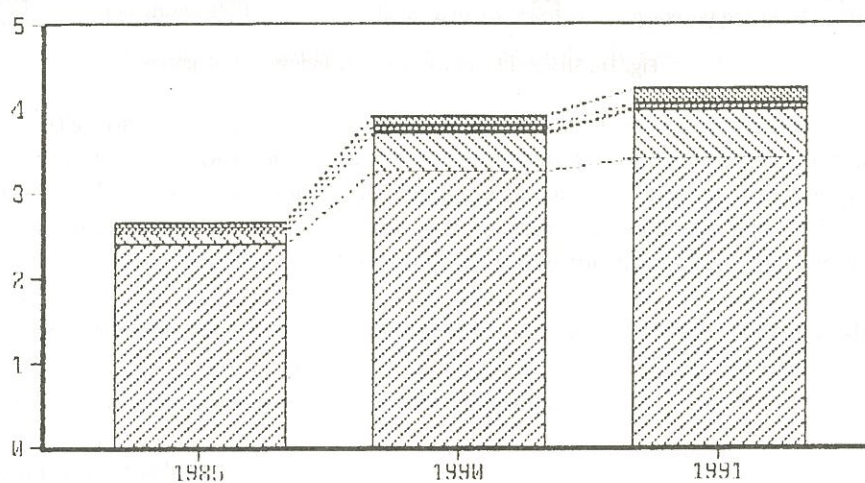
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## APPENDIX

**Table 12:** Number of Establishments per Industrial Category

Business Category	1985	1990	1991
Agro-industry	2397	3268	3410
Food and beverage	18	25	30
Sawmill and furnit.		25	24
Construction	79	70	64
Services	54	105	187
Others	22	16	8
<b>TOTAL</b>	<b>2570</b>	<b>3509</b>	<b>3723</b>

Source: Roi-Et Industrial Office



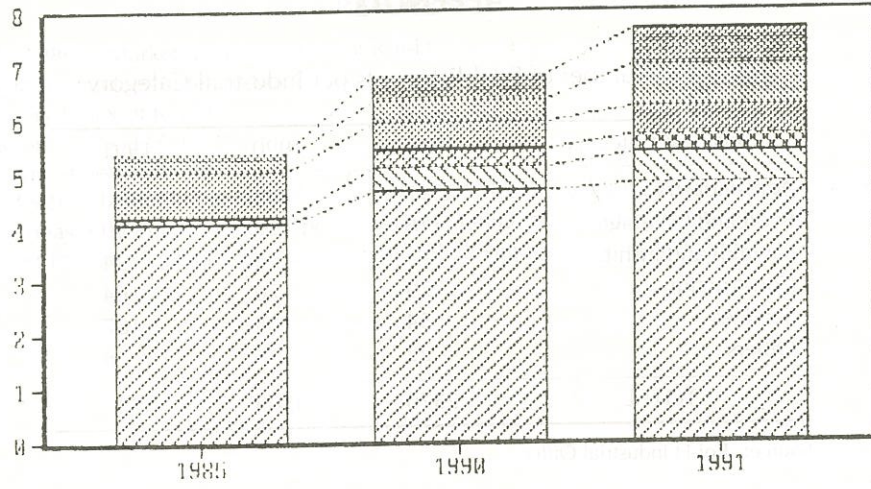
agro-industry food and beverage sawmill and furnit. construction services

**Fig. 9:** Share of Establishments among Industrial Categories**Table 13:** Number of Employees per Industrial Category

Business Category	1985	1990	1991
Agro-industry	4086	4654	4804
Food and beverage	129	440	574
Sawmill and furnit.		339	322
Construction	862	504	532
Services	229	407	760
Others	106	462	665
<b>TOTAL</b>	<b>5412</b>	<b>6806</b>	<b>7657</b>

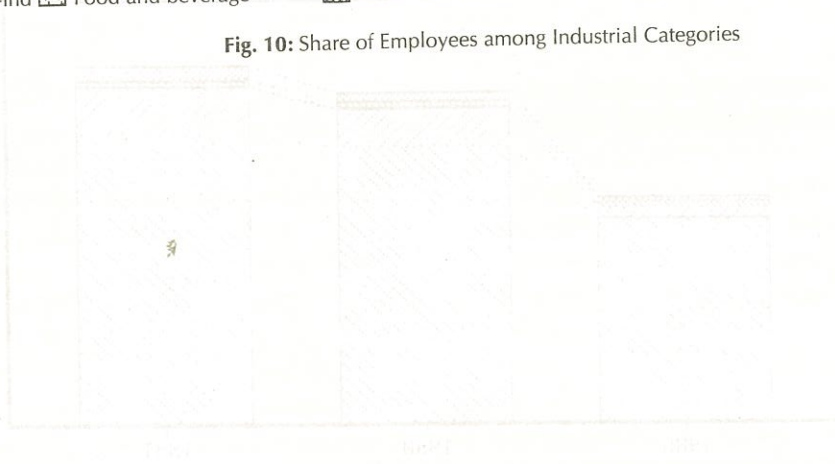
Source: Roi-Et Industrial Office





Agro-ind Food and beverage Sawmill & furnit. Construction Services

Fig. 10: Share of Employees among Industrial Categories



## Chapter 1.8: Summary and Recommendations

**Boliko MBULI, TAJIMA Miki (Ms.), KATO Norio,  
UMEMURA Tetsuo, TAKAYAMA Tomohisa  
and TANIGUCHI Yasuaki**

### 1. Summary of WG-I Study

#### a. Change of Household

Compared with the situation 10 years ago, the total population of Nong Kung village has a little bit increased in 1992 in spite of the decrease in the number of children. However, the population of sixty-five years and above is increasing. The family size, which has probably become smaller than in the past, is mostly 4 to 5 persons.

Since the early 80's, the belongings of the people and the commodities in the stores in Nong Kung village have changed quite a lot. Some of the prominent things are television sets and electric fans owned by villagers, and beer and bread in the shops. This change was caused mainly by the electrification of the village. Electricity enabled people to have these electric appliances five years ago and refrigerators for beer in shops. Another one problem is that the more expensive the things are, the wider the disparity among villagers becomes.

These changes of belongings also affect the household expense. In 1992 average cash expenditure per household is 2,112 Baht per month, though it was only 450 Baht in 1980. The pattern of expenditure distribution changed remarkably in the direction of more equalization.

#### b. Change of Agriculture Product

Due to the increase in the expenditure for agricultural equipments as well as the introduction of fertilizer five years ago, the agriculture productivity is increasing recently. The productivity of rice was 25 tang/rai in 1980, while 27.98 tang/rai in our 1992 survey. The production of rice in 1980 was mainly for their consumption. On the contrary, they can now produce rice for sale. On the other hand, the price of rice has been steadily increasing. In 1980, it was 25 Baht/Tang, while 35 to 40 Baht/Tang in 1992. As a result, both high productivity and steadily increasing price contribute to the increase in household income.

However, in order to increase the productivity further, there are still some problems:

- (1) Water supply improvement
- (2) Shortage of agricultural investment
- (3) Instability of the price of cash crops

First of all, they can not produce rice twice a year due to the fact that they mainly depend on rainfall. Only 6% of them can use irrigation.

Second, most of them use traditional instruments such as buffalo and so on. Only one household uses tractor. The increase of fertilizer price also affects their agriculture income.

The Bank for Agriculture and Agricultural Cooperatives (BAAC) also plays an important role in this village. However they need more financial support for agricultural investment and technical support.

Finally, unstable price of cash crops such as tobacco, vegetables, fruits and so on affect the income of some households. Village head also pointed out that if more cash crops are produced, their prices will decrease. In the case of tobacco product, its price increased from 2.32 Baht per kg in 1981/82 to 2.63 Baht per kg in 1984/85, then decreased to 1.88 Baht per kg in 1987/88, according to the Economic Report on Thailand (1990-91).

### c. Side Job Activity and Migration

According to our survey, per capita income of Nong Kung village is 6,016 Baht, which is a little less than per capita income of Roi-Et as a whole (6,874 Baht).

Side job and migration play a great role as a source of income. In spite of typical agricultural and traditional village, their economic background is greatly changing. Biggest change might be income structure. About 30% of their total income now depends on side job income. Major side job activity is sewing (20 of 59–34%, average annual income is 17,553 Baht). This tendency will continue and according to this trend, income gap is likely to widen among villagers.

In the case of migration, the trend changed during the past 12 years. Destination of migrants mainly shifts from Rayon province to Bangkok or Central region because of higher wage and labour shortage in Bangkok.

Contribution to household income by migration is also big. Average amount of remittance to household with migrants is 14,646 Baht. This amounts to around 36% of the income of the household with migrants income. Reasons of migration are mainly economic consideration and the shortage of job opportunities during dry season. Recruiting process in rural area in Thailand mainly depends on the human connection or information through friends or relatives according to a TDRI report. Nong Kung is also no exception.

Opinions are different, sometimes for migration, sometimes against migration. Those who have negative views are mainly senior generations, managers and government officials. They are afraid that migration leads to the lower development in rural areas. On the other hand, young generations have positive views about migration.

### d. Industrial Activity and Job Creation in Roi-Et

This part has tried to highlight the pace at which firms are created in the province of Roi-Et, and the resulting impact on employment generation. Changes have been examined from two main viewpoints: the kind of industrial activity and district. Data were taken from the industrial sector where details are available about the changes occurred from 1985 to 1991.

As a global output of the reflections conducted in light of available data, it has been observed that the pace of employment creation is relatively slower than that of firm creation. This is a paradoxical finding, since common sense would suggest that, the more firms are created, and the more employment is generated. This is likely due to the appearance of many firms with only one employee, as observed in Muang Suang district.

Analyses in this paper have also highlighted the dominant importance of agriculture output in the development of industrial sector. Indeed, more than ninety percent of the total number of establishments, and more than sixty percent that of employees, belong to agro-industrial firms. These industries, however, unlike vehicle repair firms and some others, have made less progress in recent years.

The examination of the situation in each district has also suggested no significant progress either. Muang district, with its greatest number of establishments and employees, has contented itself with a relatively low growth pace as compared to some other districts. Moreover, those districts which, like Muang Suang, have shown some progress, have contributed less to employment creation.

## 2. Recommendations

As the final conclusion of our study, we would like to put forward several recommendations as follows.

### a. Agricultural Aspects

#### i) *Harvesting rice twice a year*

In Nong Kung, most farmers produce rice once a year. Our suggestion, which is actually the view of the village head, is that it would be helpful for the increase of agricultural income to produce rice twice a year rather than producing cash crops due to the instability of cash crop price, on the one hand, and due to the steady increase of rice price, on the other. For the purpose of harvesting rice twice, it is necessary to improve the present water supply system. The village headman is planning to renovate the old canal to the wider and deeper one by financing the project from various sources such as remittances, savings of elder villagers and so on. He believes that he can do it.

ii) *Low fertilizer price by subsidy from government*

Using fertilizer leads to high productivity. Even though government pays the subsidy for the fertilizer, the price is still too high to increase the use of fertilizer.

iii) *Raising the rice price*

In the past, Thai government adopted a rice pricing system in which the domestic price of rice was set below the international price of rice by the amount of rice premium. By this system the domestic price of rice was kept fairly low compared with the prices of other industries. This is reflected by an abnormal industrial structure of Thailand, compared with those of the Philippines and Indonesia. In 1988, agricultural GDP in value is only 17% of total GDP, while agriculture labour is 64% of total labour. As a result, labour productivity in agriculture is only 24% of the national average. This level of agriculture labour productivity in Thailand is very low compared with that of the Philippines and Indonesia, which is about 50% either case, though technology of rice production does not seem to be much different between these countries. One important reason is that the price of rice is set at quite a low level relative to the prices of other industries in Thailand.

This means that Thai farmers are forced to sell rice at a low price. As a result wages in the industrial and service sectors can be kept at a low level. In this way, the agricultural sector in Thailand could contribute to the development of industrial and service sectors. In other words, the agricultural sector in Thailand may be said to have been exploited for the sake of the development of other industries.

Now the other industries are dominant. The agriculture sector now can be supported by these industries. In other words, the domestic price of rice should be maintained at a high level above the international price of rice, while subsidies should be provided to rice exporters to fill the gap between the domestic and international prices for the purpose of maintaining their international competitiveness. This is, so to speak, "reverse rice premium".

The farmer's income will be raised and the income disparity will be improved in this way. But here arise two problems. One is the source of subsidies. Probably this will not be a serious problem because government budget of Thailand has been surplus in recent years. Another problem is inflation. If the price of rice goes up, wages go up, and product prices go up, thus resulting in inflation. However, severe inflation can be avoided by raising the price of rice gradually over a relatively long period of 5 or 10 years.

**b. Migration Aspects**

Facing to the reality, migration, both seasonal and permanent, should be promoted unless income generating sources such as side job opportunity is improved. Also if productivity of rice will not be improved, they can not but get some income in another way. Improvement of recruiting system is also important. They mostly depend on the connection through friends and relatives.

For the improvement of these problems, we would like to suggest from both short and long term points of view.

i) *Short term suggestions*

- Promote income by migration.
- Give migrants correct information about the job availability in other area. Concretely speaking, set up "Job Information and Promotion Centre" which has a network with Amphoe level.

ii) *Long term suggestions*

- Promote rural development projects such as irrigation and road construction
- Try to attract the industrial development in rural areas.
- Promote side job opportunity.

**c. Side Job Aspects**

- i) Sewing activity becomes the major side job in Nong Kung village. 42 households (40%) have a sewing machine already. Introduction of sewing machine costs 4,000 Baht per unit. This means initial cost is quite low. Once they get sewing machine, if they have skill, they can work in their house. In house activity is also an important point because most housewives prefer to work inside of their houses according to our survey. Furthermore, if someone could engage in a paid job, she/he might get about 17,000 Baht annually. From those facts, promoting sewing activity as side job is the most proper choice right now.

ii) This means not only to increase training opportunity but also to promote and develop the market channel. Due to the improved transportation, Nong Kung village is no longer an isolated village, but it has potential power once villagers establish their own market channel.

iii) Feasibility analysis

Suppose that the number of total household which engage in sewing activity would be doubled, additional income for Nong Kung village will be 340,000 Baht annually. Total annual income from side job will be 1,426,780 Baht which means 30% increase. Initial cost will be 120,000 (Average cost of sewing machine, 6,000 Baht, times 20). Training cost and cost for developing market channel should be counted but it is difficult to estimate so that, in this stage, those cost will be ignored. When we just follow this principle and all other factors remain unchanged, the marginal income will be 11,000 baht (17,000-6,000) annually. In this sense, this project can be said feasible.

iv) Action plan

a. Increase sewing machines in the village by themselves.

To accomplish this purpose, grant or loan should be provided by agricultural extension office.

b. Improve sewing skill

To reach this aim, training should be provided. One solution is to input NGO's or JOCV (Japan Overseas Cooperation Volunteers, JICA) to train villagers.

c. Develop market channel

Middlemen should be used. And government supported promotion should be also taken.

#### **d. Job Creation Aspects (Roi-Et)**

i) *Attraction of investors from outside the province*

It will take some decades for the Roi-Et province to provide jobs to all unemployed people. Radical measures are therefore necessary to create revolution and boost the situation quicker. One of these measures is the attraction of investors from outside the province, an idea which might not be new for the members of Roi-Et Chamber of Commerce.

ii) *Improvement of infrastructure and transportation*

There are, however, a number of obstacles which need to be overcome if entrepreneurs are to be attracted from outside. Among these, the most outstanding is that of infrastructure, mainly in the transportation sector. In fact, to date, the sole means of transportation from and to Roi-Et is buses and trucks. It is also contended that booking for a plane seat in Khon Khaen is growing difficult given the level of saturation there. In this regard, the railway and airport projects, which are already thought of, are strongly recommended, and so is the highway project for direct access to the sea.

Achieving the airport project, especially, would play a major role in inciting foreign investors to settle in the province. Thai nationals are encouraged to invite Japanese entrepreneurs to invest in this province.

iii) *Setting up international training centre*

A useful arrangement would be the creation of an international training and research centre at which Thais, but also Cambodians, Laotians will be trained and do research. Such a realization would bring two notable results. One is that, if realized by JICA (Japan International Cooperation Agency), the project will be quite instrumental in attracting Japanese ODA (Official Development Assistance) in the region. Another is that the quality of labour force in the province would be improved. It is known indeed that the quality of labour force in Roi-Et is very low, a factor which keeps investors away from the province (Phaisal, 1992, p. 7).

iv) *Improvement of water supply infrastructure*

Stagnation in agro-industries, especially rice mills, is a proof of interrelationship in the whole system. Farmers complain that their production can not increase any more, unless effort be made for viable water supply system.

v) *Special advantage to investors*

Discrepancies among districts have confirmed the national concern that rapid economic growth has not been accompanied by its equitable spread among regions. In order to encourage investors to settle all over the province, special advantage should be granted to those who plan to settle in districts other than Muang, especially in terms of taxes and loans.

## PART II: EDUCATION, HEALTH AND OTHER HUMAN RESOURCES DEVELOPMENT QUESTIONS

### Chapter 2.1: Education for Quality Human Resource — A Case Study in Roi-Et, Thailand —

KAMIYA Masahiko

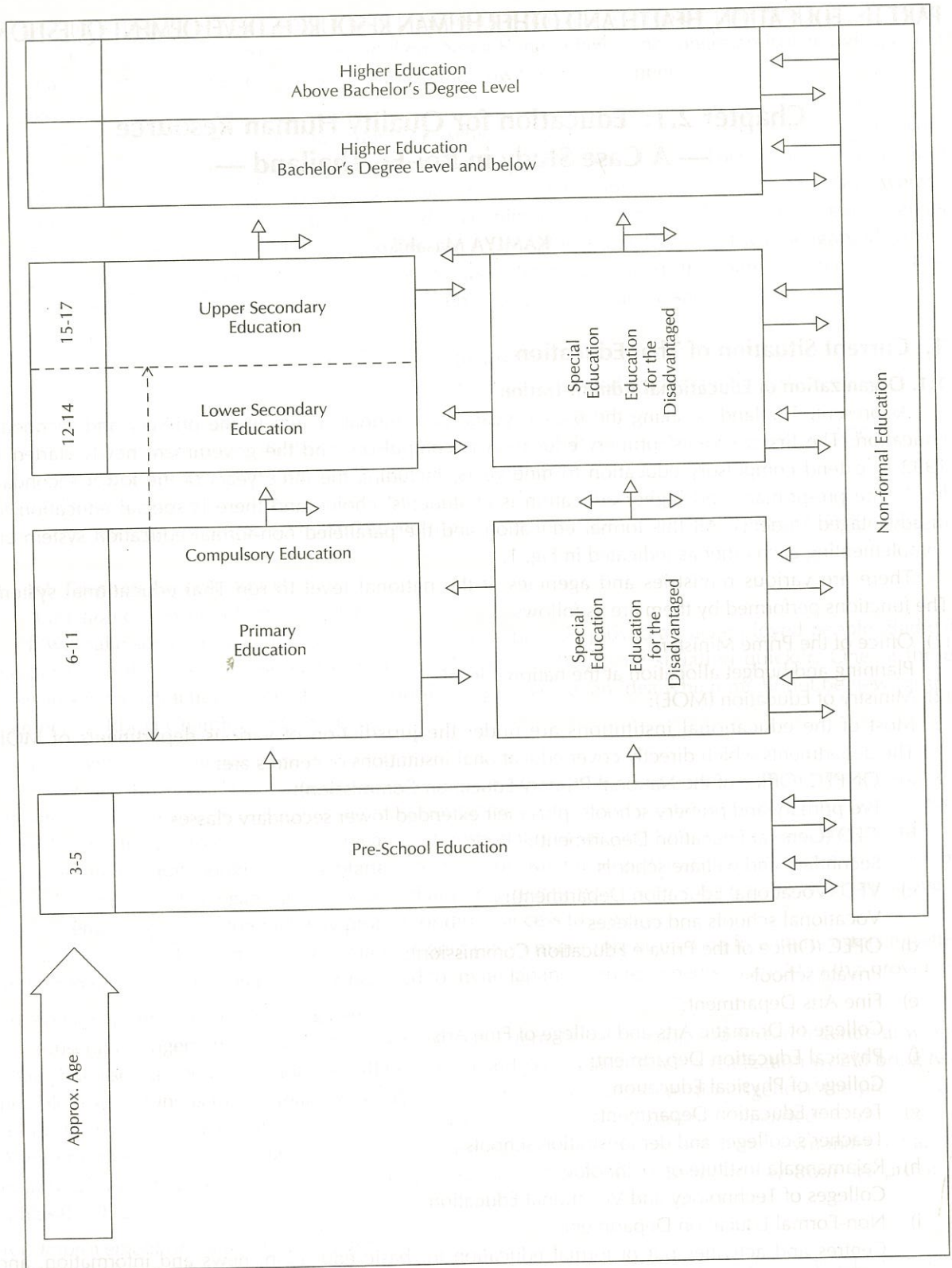
#### 1. Current Situation of Thai Education

##### 1.1. Organization of Educational Administration

At present, Thailand is taking the 6–3–3 (years) educational system in the primary and secondary education. The first six years' primary education is compulsory and the government newly started in 1992 to extend compulsory education to nine years, including the three years of the lower secondary level. The pre-primary and higher education is at students' choice and there is special education for disadvantaged students. All this formal education and the paralleled non-formal education system are complementing each other as indicated in Fig. 1.

There are various ministries and agencies at the national level to run Thai educational system. The functions performed by them are as follows.

- (1) Office of the Prime Minister:  
Planning and budget allocation at the national level
- (2) Ministry of Education (MOE):  
Most of the educational institutions are under the jurisdiction of various departments of MOE. The departments which directly cover educational institutions or centres are:
  - a) ONPEC (Office of the National Primary Education Commission):  
Pre-primary and primary schools, plus their extended lower secondary classes
  - b) GED (General Education Department):  
Secondary and welfare schools
  - c) VED (Vocational Education Department):  
Vocational schools and colleges
  - d) OPEC (Office of the Private Education Commission):  
Private schools
  - e) Fine Arts Department:  
College of Dramatic Arts and College of Fine Arts
  - f) Physical Education Department:  
College of Physical Education
  - g) Teacher Education Department:  
Teacher's colleges and demonstration schools
  - h) Rajamangala Institute of Technology:  
Colleges of Technology and Vocational Education
  - i) Non-Formal Education Department:  
Centres and activities out of formal education for basic education, news and information, and skill training
- (3) Ministry of Interior (MOI):  
Primary schools in the municipalities and Bangkok Metropolitan Administration are covered by MOI.
- (4) Ministry of University Affairs:  
Higher education in governmental and private universities are covered by this ministry. It is responsible for 43 universities and 13 demonstration schools, but there is no university in Roi-Et.
- (5) Other Government Agencies (No school of this type in Roi-Et):
  - Ministry of Defense supervises Armed Forces Academies.



Source: EDUCATION IN THAILAND of the Office of the National Education Commission, Office of Prime Minister (May 1980)

Fig. 1 Educational System of Thailand

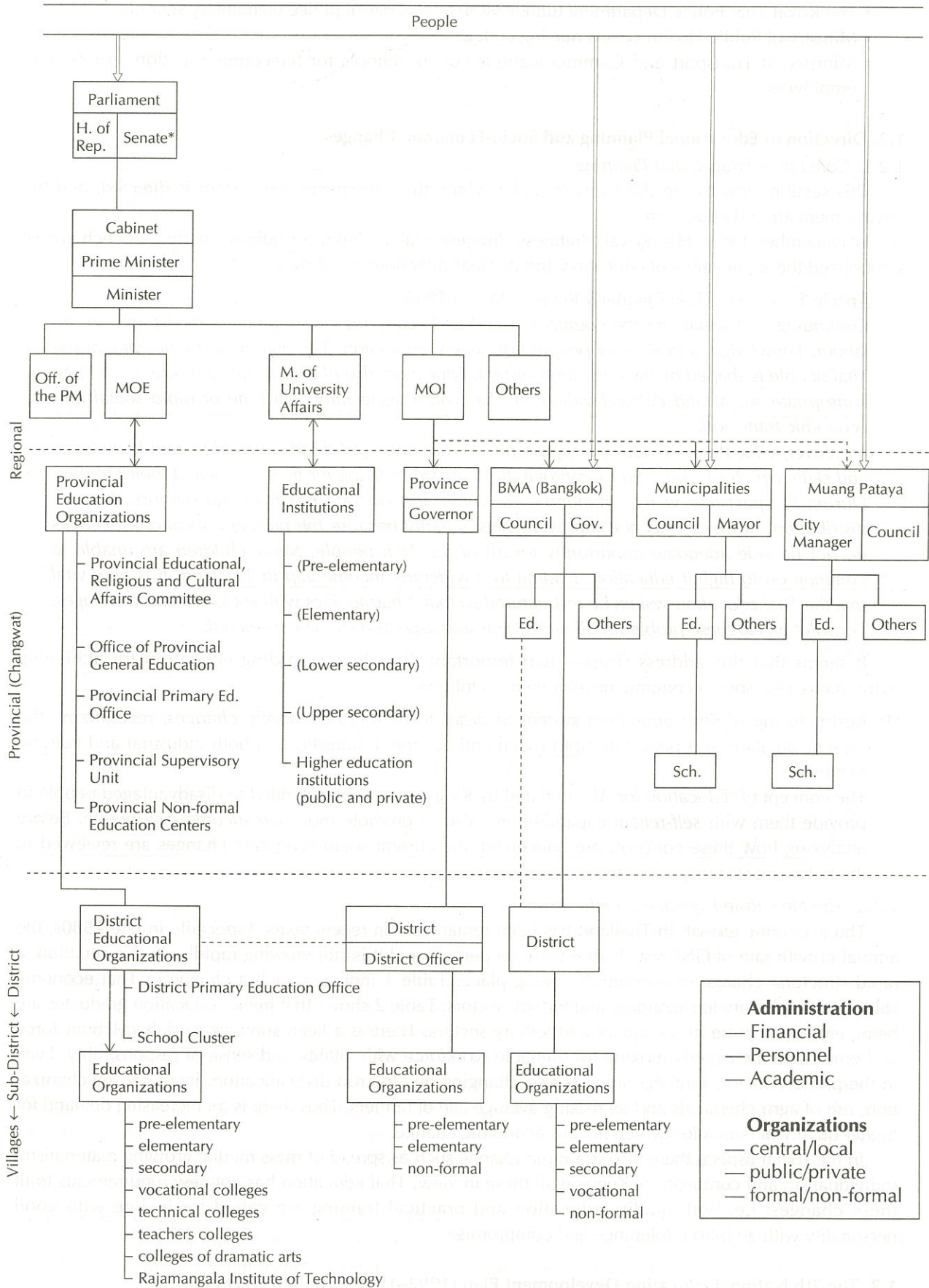


Fig. 2 Organization of Educational administration in Thailand



- The Royal Thai Police Department (under MOI) covers patrol police elementary schools.
- Ministry of Public Health covers nursing colleges.
- Ministry of Transport and Communications covers schools for telecommunication and railway employees.

## 1.2. Direction of Educational Planning and Socio-Economic Changes

### 1.2.1. Concept of Educational Planning

This section aims to see the concept under which the aforementioned system is directed, and the environment around education.

In December 1991, Her Royal Highness Princess Maha Chakri Sirindhorn made a speech which symbolized the significance of education and its clear directions as follows:

**Article 1.** (Source: TDRI Quarterly Review, March 1992)

*Continuing and sustaining the country's social and economic development will depend on the labour, knowledge, and skills of people from every profession. The quality and efficiency of the Thai people is shaped by the education system. Education also plays a significant role in instilling appropriate social and cultural values in Thai youth, especially at a time of rapid social and economic transition.*

*Moreover, education provides an opportunity for the poor and disadvantaged to gain knowledge and skills which can be used to improve the standard of living for themselves and their families. During the past few years, Thailand's economic growth rate has been satisfactory. Income distribution, however, has not improved. This is partly because the present educational services do not provide adequate opportunity for all of the Thai people. Many children are unable to continue on to higher education, leading to a widening income gap in Thailand. It is now vital that the Thai education system be restructured so that it harmonizes with socioeconomic changes. For solutions to these problems, all viewpoints and aspects must be considered.*

It seems that this address stresses two important directions regarding education for achieving harmonious Thai socio-economic development as follows:

- (1) Restructuring of Thai education system in order to fit socio-economic changes, recognizing the present situation as a period of rapid social and economic transition (in both industrial and cultural contexts).
- (2) The concept of 'Education for All', initiated by King Rama V, be extended to disadvantaged people to provide them with *self-reliant* capability and also to promote more *fair income distribution*. Before analyzing how these concepts are conceived, the current socio-economic changes are reviewed in the following section.

### 1.2.2. The New Role Expected on Education

The economic growth in Thailand has been remarkable in recent years. Especially in late 1980s, the annual growth rate of GNP was higher than ten percent and it is still growing rapidly. In this situation, a rapid structural change in economy is taking place. Table 1 indicates such a change in Thai economy shifting from primary to secondary and tertiary sectors. Table 2 shows that higher education graduates are being employed more in secondary and tertiary sectors. There is a keen shortage in skilled labour force and employers are eagerly looking for trainable workforce with vitality and sense of responsibility. Even in the primary sector, rural economy is also changing due to crop diversification, increased mechanization, use of agro-chemicals and increasing average age of farmers. Thus there is an increasing demand for higher quality of education which fits this economic change.

In the social aspect, there also is a rapid change such as spread of mass media, growing materialism, individualism and competition. Keeping all these in view, Thai education has got new requirements to fit these changes: i.e. both quality education and practical training are called for in line with good personality with ambition, tolerance and compromise.

## 1.3. The 7th National Education Development Plan (1992-1996) (The 7th NED Plan)

### 1.3.1. Stream from the 6th NED Plan (1987-1991)

After a satisfactory quantitative achievement in primary education, the 5th and the 6th NEDPlans placed emphasis on the qualitative aspect and educational services addressed to the disadvantaged.

**Table 1:** Employment by Sectors: 1986 to 2001

(No. of Persons)	1986	1991	1996	2001
Agriculture	17802760	18702707	18817698	18088987
Industries	2793030	3947970	5416002	7224467
Services	6076510	7828835	9934360	12321632
<b>TOTAL</b>	<b>26672300</b>	<b>30479512</b>	<b>34168060</b>	<b>37635086</b>
Shares (In Percentages)				
Agriculture	66.75	61.36	55.07	48.06
Industries	10.47	12.95	15.85	19.20
Services	22.78	25.69	29.07	32.74
<b>TOTAL</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Average Growth Rate per Annum (%)				
Agriculture		0.99	0.12	-0.79
Industries		7.17	6.53	5.93
Services		5.20	4.88	4.40
<b>TOTAL</b>		<b>2.70</b>	<b>2.31</b>	<b>1.95</b>

Source: NESDB (1988)

Quoted in "Proceeding of Workshop on Human Resource Problems and Policies" (TDRI Publication)

**Table 2:** Shares of Employment by Education: 1977-1986

1977	(in Percentages)						
	<P4	Element	Second	Vocat.	Teacher	Univ.	TOTAL
Agriculture	17.74	80.96	1.17	0.04	0.07	0.01	100.00
Industries	12.14	77.13	7.01	2.26	0.19	1.27	100.00
Services	13.85	57.43	13.95	4.88	6.24	3.64	100.00
<b>TOTAL</b>	<b>16.57</b>	<b>76.45</b>	<b>3.95</b>	<b>1.10</b>	<b>1.17</b>	<b>0.77</b>	<b>100.00</b>
1986							
Agriculture	11.12	85.30	3.01	0.28	0.14	0.14	100.00
Industries	8.10	69.78	13.91	4.51	0.47	3.24	100.00
Services	8.26	51.01	15.83	7.58	8.10	9.21	100.00
<b>TOTAL</b>	<b>10.15</b>	<b>75.86</b>	<b>7.07</b>	<b>2.39</b>	<b>1.99</b>	<b>2.53</b>	<b>100.00</b>

Source: NSO, Labour Force Surveys, 1977 and 1986, July-September

Reflecting the resultant problems of the 5th NEDPlan, which was an overproduction of graduates in the fields unrelated to the national development needs and a shortage of graduates in the fields vital to development, the 6th NEDPlan established more realistic goals and greater integration with socio-economic development needs. As a whole, the 6th NEDPlan seems to have achieved satisfactory results in furthering quantitative targets. However, concerning the quality of education, it is still below the expected standard (cf. "Ministry of Education, Thailand Centennial 1892-1992" P.40) even though the effort to revise the curricula at every level was made in 1990. Along with this historical stream, 7th NEDPlan has an important role in improving the educational quality and further expansion of educational opportunities, where extension of compulsory education and life-long education are newly stressed for coping with the socio-economic and demographic change. Furthermore, it is interesting to note that the religion is highlighted under the national education plan.

### 1.3.2. Goals of the 7th NEDPlan and Key Policies

The direction of the 7th NEDPlan is to develop human resources which can meet the challenge for Thailand at a turning point to be a member of NIES where the shift from the rural-dominated society to the industrial and service oriented society must be achieved. To adapt itself to this rapid change, since the 5th NEDPlan, the conventional recognition of seeing education merely as a means of *manpower production* has been changed to the concept of *human resource development* which puts more

importance on moral and cultural training, aiming at increasing the quality of each individual. The contents of the 7th NEDPlan are briefly introduced below.

- (1) The Extension of Educational Opportunities:
  - More opportunities for disadvantaged groups need to be provided.
  - Extension of compulsory education from 6 to 9 years be achieved by the end of the 7th NEDPlan.
- (2) Improvement of Education Quality
- (3) Education for Occupations
- (4) Education for Science and Technology Development
- (5) Life-long Education
- (6) Education for Human Resource Development
- (7) Education for Good Health
- (8) Education for the Promotion of Democracy
- (9) Private Education
- (10) Arts, Culture and Religion
- (11) Administration and Resource Mobilization for Education Provision

Source: "Ministry of Education, Thailand, Centennial 1892-1992"

## 2. Quality of Education at the Local Level: — A Case Study in Roi-Et —

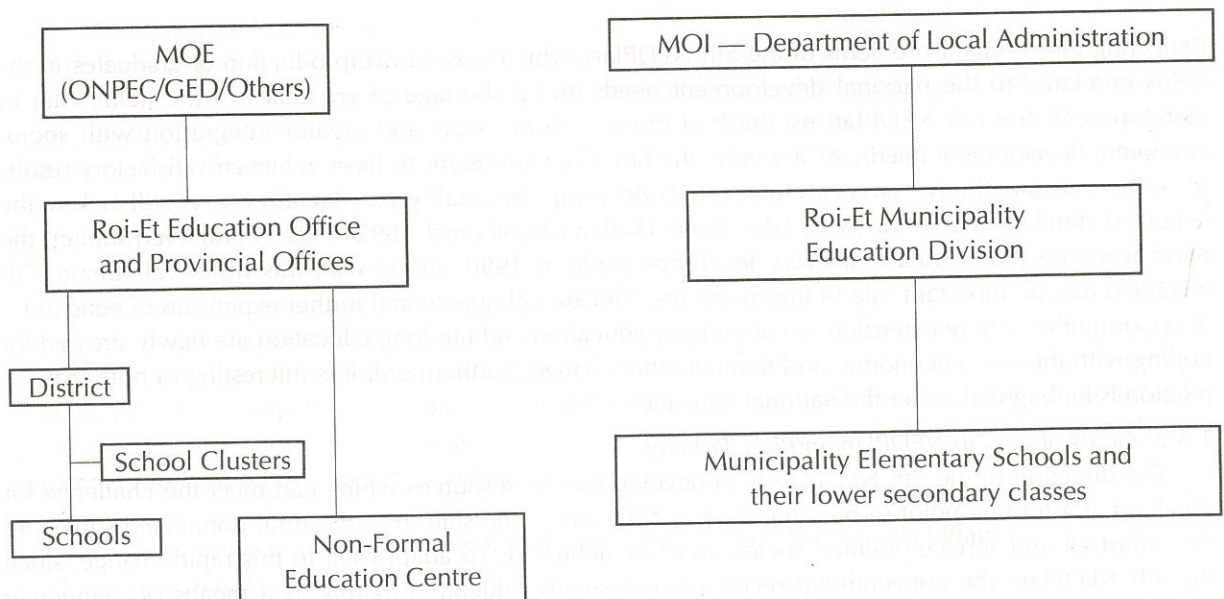
The purpose of this section is to examine the qualitative aspect of Thai education for the successful implementation of the 7th NEDPlan in Roi-Et. Roi-Et has the following three urgent policies which MOE has formulated at the local level.

- (1) Extension of educational opportunities
- (2) Education for the development of democracy
- (3) Education for work

The qualitative situation and related issues and policies are the main topics here. The quantitative aspect concerning the extension of compulsory education is reviewed in the next section.

### 2.1. Local Organization of Educational Administration and Its Problems

As seen before, there are many ministries or agencies involved in the educational organization. In Roi-Et, the provincial and private educational institutes are covered by the offices of the Ministry of Education (MOE) and the Municipality primary schools belong to the Ministry of Interior (MOI). The detailed diagram is shown in Chart 2. In the case of Roi-Et, it can be simplified as follows.



In order for the Thai education system to adapt itself to the socio-economic changes, more coordination among offices and agencies concerned and more efficiency will be required. For example, among MOE agencies there are strong vertical structures and they seem to have a tendency to make light of the horizontal relationship.

## 2.2. What is the 'Quality' of Education?

The ideal goals of education (schooling) would be to:

- (1) Acquire knowledge and learn how to learn (Intellectual Development)
- (2) Find how to share joy with others, and develop one's own character (Spiritual Development), and
- (3) Know how to get healthy and vital through physical exercise, health check, and health information (Physical Development)

Therefore it could be said that the higher the total level of attainment of these goals, the higher is the quality of education. To attain these objectives, every necessary and adequate resource should be mobilized. Quality education requires school facilities, textbooks, learning materials, readiness of students, good condition of health, good administrative system, teaching materials and methods, well-trained teachers, and financial arrangements to support them. In other words, these factors are the determinants of the quality of education.

The next question is to what extent those goals should be attained or for what objectives these should serve. Everybody wishes to live happily in the society. Then education would be a means for the pursuit of economic, physical, spiritual development in harmony with others at the individual level, mobilizing existing and hidden capacity or talent of everyone. And the total upgrading of all individuals is expected to lead to national development. In case of Thailand, the education which fits the socio-economic changes is seriously needed for the sustainable and stable national development. Especially, there is a shortage of skilled workers and trainable workers who will be the middle management and lead the sustainable development for the future.

Another problem is that the migrant pressure of young generation from rural to urban areas is high on account of their poverty and increasing income gap between those areas. Most of those people, however, become unskilled workforce and help expand the slum area. For the solution of this problem and for the balanced national development, the low quality of education is a bottleneck, and the education to promote self-reliant life and participation is called for to raise their quality of life. Consequently, the 'quality' of education in Thailand should be measured by;

- (1) the resource input which leads to the improvement of quality of life, on top of the overall personal intellectual, spiritual and physical development, and
- (2) the capacity to produce workforce that can meet ever-changing demand of the society.

## 2.3. Intellectual Development

### 2.3.1. Situation Around Intellectual Achievement

In Thailand, the curriculum of primary education is grouped into four subjects: i.e. Basic skills (Thai language, mathematics), Life experiences, Character development, and Work orientation. In addition, there is a special experience subject, such as English for higher grade students (cf. Table 3). Table 4 shows an example of curriculum timetable of grade 6 in Roi-Et. The school hour is from 9:00 to 16:00, and Saturdays and Sundays are the days off. From grade 1 to 4, they have five hours of lessons and the students at grade 5 and 6 have six hours per day. In total, they have more than 200 school days a year, which means at least 1,000 hours of lessons are provided annually.

It is known that the achievement of mathematics and science is low at the national level. For example, "National testing of 12 graders showed that the majority of students failing math and science; 50 percent failing social science, and 40 percent failing Thai language." (TDRI) And the data from Roi-Et Primary Education Office shows that the level of mathematics is much lower; i.e. sixty points at the national level, while in Roi-Et Province, forty points only. Table 5 shows the achievement of each subject.

**Table 3: Elementary Education Curriculum (Revised 1990)**

Areas of Experience	Appropriate Time Allocation								
	Grade 1-2			Grade 3-4			Grade 5-6		
	%	P/Y	P/W	%	P/Y	P/W	%	P/Y	P/W
1. Basic Skills (Thai, Mathematics)	50	1,500	37.50	35	1,050	26.25	25	750	18.75
2. Life Experiences (Science, Social studies)	15	450	11.25	20	600	15.00	25	750	18.75
3. Character Development (Physical education, Health education, Arts)	25	750	18.75	25	750	18.75	20	600	15.00
4. Work Orientation	10	300	7.50	20	600	15.00	30	900	22.50
TOTAL	100	3,000	75.00	100	3,000	75.00	100	3,000	75.00
Special Experience (English, Vocational ed.)	—	—	—	—	—	—	—	600	15.00

Note: 1 period = 20 minutes  
P/Y: Periods per year  
P/W: Periods per week

**Table 4: Curriculum Time Table of Grade 6 at Primary Education**

	09:00   10:00	10:00   11:00	11:00   12:00	12:00   13:00	13:00   14:00	14:00   15:00	15:00   16:00
MON	Math	Life Exp.	Thai		Character Development	English	Selective Subject
TUE	Math	Thai	Life Exp.		English	Work Orientation	Physical Exercise
WED	Math	Thai	Life Exp.		English	Life Exp.	House Keeping
THU	Math	Life Exp.	English		Art	Selective Subject	Boy Scout
FRI	Math	Thai	Life Exp.		English	Work Orientation	Physical Exercise

Note: 12:00 - 13:00 = Lunch hour  
Life Exp. = Life Experience

**Table 5: Average Point of Each Subject of Grade 6 Students in 1991**

Thai Language	65.42	Character Development	80.29
Mathematics	43.85	Work Orientation	78.26
Life Experience	62.76		

According to our interview with teachers, the subjects easy to teach are work-orientation, house-keeping and physical exercise. Those difficult to teach are mathematics and Thai language. This fact seems to reflect each achievement. The reasons raised by them were (1) low educational background of some parents which results in low consciousness toward education, especially the subjects which seem unrelated to daily life, (2) shortage of materials, (3) the old teaching method and insufficient training of teachers, (4) too difficult level of test, (5) high absence rate of some poor students. Although some teachers make additional lessons to lowly achieving students, it is not a fundamental solution.

Concerning the secondary level, the curriculum which is based on the credit system at the lower and the upper secondary levels is shown in Tables 6 and 7. An example of curriculum time table is on Table 8. Regarding the achievement, the situation seems to be worse. The data from Roi-Et Provincial General Education Office (GEO) is indicated in Table 9.

**Table 6:** Lower Secondary Education Curriculum (Revised 1990)

Courses/Subjects	Period/Week/Semester								
	Grade 7			Grade 8			Grade 9		
	Required		F E	Required		F E	Required		F E
	Core	E		Core	E		Core	E	
1. Language									
Thai	4	—	}	4	—	}	4	—	}
Foreign lang.	—	—		—	—		—	—	
2. Science and Mathematics									
Science	3	—	}	3	—	}	3	—	}
Mathematics	3	—		3	—		—	—	
3. Social Studies	2	2	}	2	2	}	2	2	}
4. Personality Development									
Phys. educ.	1	2	→ 10	1	2	→ 10	1	2	→ 3
Art education	1	—	}	1	—	}	1	—	}
5. Work-Oriented and Vocational Education									
Work-oriented	—	2	}	—	2	}	—	2	}
Voc. educ.	—	—		—	—		—	—	
<b>TOTAL</b>	14	6	10	14	6	10	11	6	13
		30			30			30	
<b>Activities</b>									
1. Activities specified in MOE regulation regarding activities organized in institutions under MOE									
1.1 Boy scouts, girl scouts, junior red-cross, girl guides		1			1			1	
1.2 Others		1			1			1	
2. Guidance, problem-solving or learning development activities		1			1			1	
3. Independent act		2			2			2	
<b>TOTAL</b>		35			35			35	

**Table 7:** Upper Secondary Education Curriculum (Revised 1990)

Courses	Grade 10 – 12		
	Number of Units		
	Required		Free Electives
Core	Elect.		
Thai	6	—	} → 45 Buddhist students must learn Buddhism 1 subject/semester all through the 3 years
Social Studies	6	—	
Physical Education	3	3	
Science	—	6	
Vocation-Oriented Education	—	6	
Mathematics	—	—	
Foreign Language	—	—	
Art Education	—	—	
Vocational Education	—	—	
<b>TOTAL</b>	15	15	
		30	
<b>Activities</b>			
1. Activities specified in the Ministry of Education regulation regarding activities organized in educational institutions under Ministry of Education			1 period/week
2. Guidance, problem-solving or learning development activities			2 periods/week

**Table 8:** Curriculum Timetable 1992 — Lower Secondary Level (Grade 7)

	1 08:30   09:20	2 09:20   10:10	3 10:10   11:00	4 11:50   12:40	5 12:40   13:30	6 13:30   14:20	7 14:20   15:10	8 15:10   16:00
Monday	School Guidance	Science	Science	Work Experience	Free	Physical Exercise	Social Study (Int'l)	
Tuesday	Selective Subject-1	Selective Subject-1	Social Study	Physical Exercise	Thai	Moral Study	English	
Wednesday	English	Vocational Study	Health Education	Math	Free	Thai	Boy Scout	
Thursday	English	Art	Science	Selective Subject-2	Selective Subject-2	Math	Thai	Student Meeting
Friday	English	Social Study	Thai	Math	Moral Study	Academic Activity	Social Study (Int'l)	Student Meeting

**Table 9:** Achievement of Major Subjects at Grade 9 in Roi-Et Province

Social Study	36.92	Mathematics	19.06
English	23.79	Science	22.01
Thai	22.01	Standard	50.00

The table shows that the achievement is much lower than the standard in all the subjects surveyed. In fact, some of the reasons why nearly half of primary school graduates choose not to go on to secondary education are its high cost and the low quality (TDRI). This quality problem seems to affect the labour market also; "Roi-Et Provincial Labour Office could find 11,538 vacant positions. It organized application and conducted skill test for 1,053 applicants. Only 636 were recruited. The reasons are (1) the applicants were unqualified for the positions, (2) unwillingness to work outside their community" (Source: "Summary of Roi-Et Background Information"). For the extension of compulsory education and for the labour market, therefore, this problem should be solved urgently.

Through our interview with secondary school teachers, the following reasons were pointed out; (1) the outdated teaching method, (2) no consistency between primary and secondary schools, (3) Insufficient basic education, (4) low popularity of the subject (in the case of mathematics). To solve this problem, Provincial General Education Office (GEO) stressed the necessity of more teacher training and the enhancement of motivation for studying. Their efforts to raise the quality are; (1) to introduce the two-way teaching method to set students in the centre, (2) to develop local work curriculum according to the interest of students and labour market, (3) to keep educational materials and equipments up-to-date and efficient, and (4) development of teachers. Especially for the consistency problem, GEO has set three projects designed to bridge between primary and secondary education.

- (1) Exchange of and cooperation in educational materials (Textbooks/Charts)
- (2) Sending secondary school teachers to primary schools
- (3) Exchanging teachers between primary and secondary schools

### 2.3.2. Curriculum Change for Student Participation

To adapt itself to recent socio-economic changes, the curriculum was revised by the Ministry of Education in 1990. It gives a new direction with a special emphasis on *student-centred approach* to let students acquire knowledge through self-study and self-involvement. "Desired characteristics of learners is to be able to think, to apply the knowledge, to solve problems and to work systematically." ("Manual for Primary Education" MOE 1990) In other words, two-way teaching method is suggested to replace the old one-way teaching method.

Through our interviews, it was found out that every school or organization recognizes significance of this method. However, many teachers are still using old teaching method owing to the shortage of new teaching materials and learning opportunities.

## 2.4. Spiritual Development

### 2.4.1. Education for Democracy

#### a) Why 'Democracy' Now?

To raise the standard of living and to ensure self-reliant life for all people in the society, thinking ability to solve one's own problem in harmony with others would be one of the most important requirements. Furthermore, in order to support the continuous and dynamic expansion of Thai economy, more vitality, motivation and cooperation among people will be essential. Another factor would be that the world political situation changed drastically these years so that the government could introduce a more liberal system. Also, in the 7th National Economic and Social Development Plan, decentralization is one of the main targets for more participation of people. Accordingly, a student-centred approach has been introduced. As one of the three urgent educational policies in Roi-Et, education for democracy was proposed to encourage young students to think and participate in accordance with their own voluntary decisions. At the same time, good order and discipline are stressed under its purpose that "learners possess ability to adapt themselves and work as a team, acquire knowledge and value of democracy under the constitutional system of monarchy, and to be aware of their own duty to cooperate in national defence and development" (Roi-Et Education Office).

#### b) Students' Autonomous Activity for Participation and Self-Reliance

To implement the democracy education, student activities are organized under the teachers' advice. Students are led to elect their committee members who share committee duties for managing a democratic organization of the students council. In Roi-Et Province, three pilot schools at the primary level have been set up in each district. For example, at Nuan Ta Sang Primary School, the students elect 15 council members who are divided into five project sections; i.e.

1. Knowledge
2. Sports and Health
3. School Buildings
4. Religion and Culture
5. Control of Behaviour

Every school has this kind of student council for self-discipline and division of duties. Keeping the rules is also stressed. During morning activities when they salute the national flag, teachers and students council emphasize the daily guidelines at school.

At the secondary level, they also promote student activities, such as school committee election every year, activities cutting across school grades but grouped by colour in accordance with specified functions such as room cleaning, food preparation, income-earning activities and so on.

#### c) For Better Political Behaviour

As part of education for democracy, the promotion of good political behaviour is also emphasized. To enhance the awareness in election, teachers and students undertake activities such as marching to encourage community people to go for voting at every level of election, demonstrating how to vote, making a contest for slogan.

Another problem is that there are still many cases of buying and selling votes, or corruption, which perpetuates the unfair social system and prevent Thai people from developing a more democratic society. This kind of traditional political behaviour is often linked with the mafia organization that threatens the people.

Therefore, the desirable behaviour is taught as part of moral education for students by stressing the disadvantage of selling votes. And the students sometimes hold an activity to persuade their parents and community people to avoid this kind of undesirable political behaviour.

### 2.4.2. Moral Education

To cope with the rapid socio-economic changes such as growing materialism, flood of information, etc. and also to adapt themselves to the increasing demand for trainable workforce, the education for moral and ethics has been brought to attention. As an ideal goal, it is said that "critical thinking skills and learning how to learn, combined with traditional Thai values for moderation, patience, compromise, and social harmony may be the desirable mix." (TDRI Quarterly Review) In this regard, moral education is



closely related to Thai tradition and religion. This is especially true in Roi-Et where 99.8 percent of population are Buddhists (Roi-Et Provincial Education Office).

In fact, monks play an important role in moral education at schools from primary to college levels. For example, at Ban Pluai Primary School, the monk visits the school to teach moral for the Grade 5 and Grade 6 classes for one hour every week. In upper secondary schools, Buddhist students must learn Buddhism all through the three years. In Roi-Et Vocational College, there is a special room for moral education where the students sit on the floor. In line with religion, they have boy scout and girl scout activities once a week up to lower secondary level to foster teamwork and discipline.

According to our interview with the Roi-Et police station about youth crime, the most common crime is theft. Concerning drug addiction, there are some cases of using Marijuana or thinner, but no case of heroin. The background of such youth crime includes; (1) poverty (for theft) and (2) problems in their family. As far as we have seen, the situation about youth crime did not seem serious. However, it could have been more serious without the tradition of Buddhism.

There are some critical views to regard Buddhism as an unproductive convention which hinders national development. Many religious Buddhists seem to concentrate on merit making for the next world rather than on pursuing visible wealth in this world. Nonetheless, should we consider the virtue of social unity, harmonious way of life, logical thinking and traditional Thai values, it would certainly deserve encouragement as a good subject for moral education.

## 2.5. Physical Development

### 2.5.1. School Lunch Programme

To raise the quality of education from the physical aspect, nutrition is one of the most important factors. Especially free lunch programme is very attractive to needy students. At primary and secondary schools in Roi-Et, every student can take free lunch once or twice a week depending on the school. Basically, it costs only one or two baht per student in rural areas, but some of the needy students can get free lunch everyday. For example, 222 students (about 10 percent of the total students) get free lunch everyday in municipality schools.

Some materials for lunch are provided from their own chicken farms or the fish ponds in the school. Lunch is prepared by parents or sometimes by upper grade students under the supervision of teachers.

### 2.5.2. Health Care Programme

The common diseases in schools are cold and diarrhoea. The public health office visits schools once a week or every two weeks. Education of dental care is widely practised. Physical exercise and health lecture are provided at least once a week. Environmental education is also made to teach students the correct way of garbage disposal to avoid diseases from dirty environment. In case of municipality schools, the percentages of school children with certain health problems are as follows. Apparently, many students have health problems related to nutrition.

• Nutritional Anemia	20.00%
• Protein Energy Malnutrition	15.59%
• Iodine Deficiency	21.45%

(Roi-Et Municipality: Health Department)

## 2.6. Improvement of Situation Around Teachers

The quality of teachers would be one of the most important factors for improving the quality of education. As already pointed out, many teachers seem to use old teaching methods. According to our survey, teacher training is provided once or twice a year for about two days each time. In addition, they have moral education as well. There are approximately 9,400 teachers at primary level, but only 400 can take training annually (Roi-Et Provincial Education Office). And some teachers pointed out that the level of training is low.

The P/T ratio (pupils to teacher ratio) in Roi-Et Province from pre-primary to college level is 17.4 as of 1992, which seem to be quite all right, compared with the world average of primary P/T ratio of 33 in 1985-88 (UNDP). However, the number of qualified teachers in some specific fields like music or cultural subjects at municipality schools or computer and electronics fields at Technical College, fails to satisfy the demand. Specifically at the secondary education, the average number of students per

classroom is 41 in 1991. Considering the extension of compulsory education, more classrooms will naturally be required.

About the wage of teachers, the average at one primary school was 15,000 baht per month, which seems all right, compared with the first salary 8,000 baht of Chulalongkorn University graduates.

To adapt the new curriculum for improving the quality of education, appropriate teacher training should be strengthened urgently, and also the number of qualified teachers in aforementioned areas should be increased to meet the demand.

### **3. Education for Work in Roi-Et Schools**

#### **3.1. Primary and Secondary Levels**

There is a special budget for education for work in Roi-Et which amounts to two million baht (Provincial Education Office), since it is accorded high priority in the local development policies. This budget is spent to run the centre, and for materials, salary of trainers and so on. Eight projects are suggested by MOE, such as garment, jewelry making, etc.

Besides work-oriented subjects, there is a special programme for work experience one hour per week, or on an ad-hoc basis. As far as we learned from our interviews, schools have their own farm or fish pond for practical purposes such as growing fish for the lunch programme. Moreover, occupational training such as mushroom growing, haircut, sewing machine practice, et. are provided in some primary schools. Sometimes they sell their own produces such as eggs and establish a company or a bank under the advice of teachers. At the secondary level, a contest of craft works, information of local jobs that students are interested in, training by teachers from Agricultural College, open profession lesson or actual work experience on shops and factories are provided. Further details of income generating projects are introduced in the next section.

Through these activities, students at the primary level are provided with basic knowledge and skills to foster a habit of practical work and to establish a vocational foundation for them. At the secondary level, the aim is to foster positive attitudes towards a career, enhancing personality development and a work habit, and providing opportunities to explore wider career options.

#### **3.2. Vocational Schools and Colleges**

In Roi-Et, there are several vocational colleges which incorporate the upper secondary level as part of the programme, such as Technical College, Agricultural College, Vocational College, etc. Their system is five year programme which consists of first three years of Certificate course and upper two years of Diploma course. Applicants can take an entrance examination even for the Diploma course if they are upper secondary graduates. The tuition fee depends on the department and the course, and generally it costs more than 2,000 baht per year. But the applicants are increasing since it is closely connected with their employment.

The characteristics of these colleges are as follows:

- (1) to have an internship programme in cooperation with public offices or private companies
- (2) to survey labour market situation by using enterprise information and keeping close relationship with enterprises,
- (3) to follow up the employment of students, and
- (4) to collaborate between Vocational Education Office, and ONPEC or GED offices in providing vocational training for secondary school students.

According to a Thai professor, this represents a new stream in Thai education.

Concerning the employment opportunity, the demand from labour market is strong and these vocational colleges are getting popular. In Technical College, for instance, the number of students is increasing 20 percent annually, and the selection ratio has got twice in the past two years. Now the problem is the shortage of teachers in computer, electronics, and their industry-oriented subjects.

#### **3.3. Non-Formal Education**

In Roi-Et, non-formal education is conducted by Non-Formal Education Centre. Working skills help a lot, especially in case of unemployment or unfavourable social conditions. When working hours do not

permit the enrollment in the full time formal education, non-formal system is very convenient. In this sense, this education system plays an important role in creating self-reliant life. Three types of vocational courses provided by the Centre are noted below.

- (1) The vocational training in the Centre:  
The Centre provides three-hour courses per day with three shifts for three months such as Type-writing, Radio repairing, Electricity, etc.
- (2) The mobile vocational training  
If 15 or more rural people form a group, the training similar to one in the Centre can be provided.
- (3) The interest group programme  
If 15 or more people with the same interest form a group, they can request a teacher of a specific skill for maximum 30 hours. (ex. Nampra making)

#### 4. Conclusion

To ensure the extension of education opportunities and to meet the social demand, increasing the quality of education is one of key requirements. Indeed, the quality education will lead to more job opportunities and fairer income distribution in the future. Also, for the labour market, good quality of human resource is now very much in need. For the spiritual readiness for this change, democracy education is also stressed. By developing the concept of 'Khit-Pen'\*, Thai education seems to be determined to get the people more active in leading a harmonious way of living.

In the stream of educational expansion, much of the resource will be allocated to quantitative aspects. However, we can not forget to improve the quality at the same time. For this purpose, especially teacher's improvement and more efficiency among agencies are urgently called for. Furthermore, the standard to evaluate its quality should be established. To avoid the same problem in developed countries, especially Japan, overall intellectual, physical, spiritual development should be measured by Thai-specific standard, making full use of Thai traditional values and religion.

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\*This is a slogan for the literacy campaign in Thailand. 'Khon Khit-Pen' in Thai means 'thinking man' who can think and act voluntarily.

## Chapter 2.2: Extention of Educational Opportunities in Roi-Et

KOBAYASHI Takemichi

### 1. Introduction: History of Educational Development in Thailand

#### 1.1. Formal Education

Prior to the introduction of a formal educational system, temples were the providers of basic education in Thailand. In 1892 the government set up basic education schools in all temples in Bangkok and other major cities.

The first formal educational programme was drawn up by the government in 1898, modeled after the British system. However, compulsory education was not introduced into Thailand until the promulgation of the Primary Education Act in 1921. The act emphasized the intention of the state to make basic education available to every Thai citizen.

With the introduction of the First National Economic Development Plan in 1960, elementary school education was extended from 4 years to 7 years, although compulsory education remained at 4 years. In the case of secondary schools, the curriculum was separated into two levels, viz. 3 years for lower secondary and 2 years for upper secondary.

The system was again changed in 1978 to comprise 6 years of elementary school education and 6 years of secondary school education, a system that remains intact until today (see Fig. 1 & 2). It was followed by the Elementary School Act of 1980, which made it compulsory for children aged between 8–15 years to go to school until they have completed 6 years of elementary education.

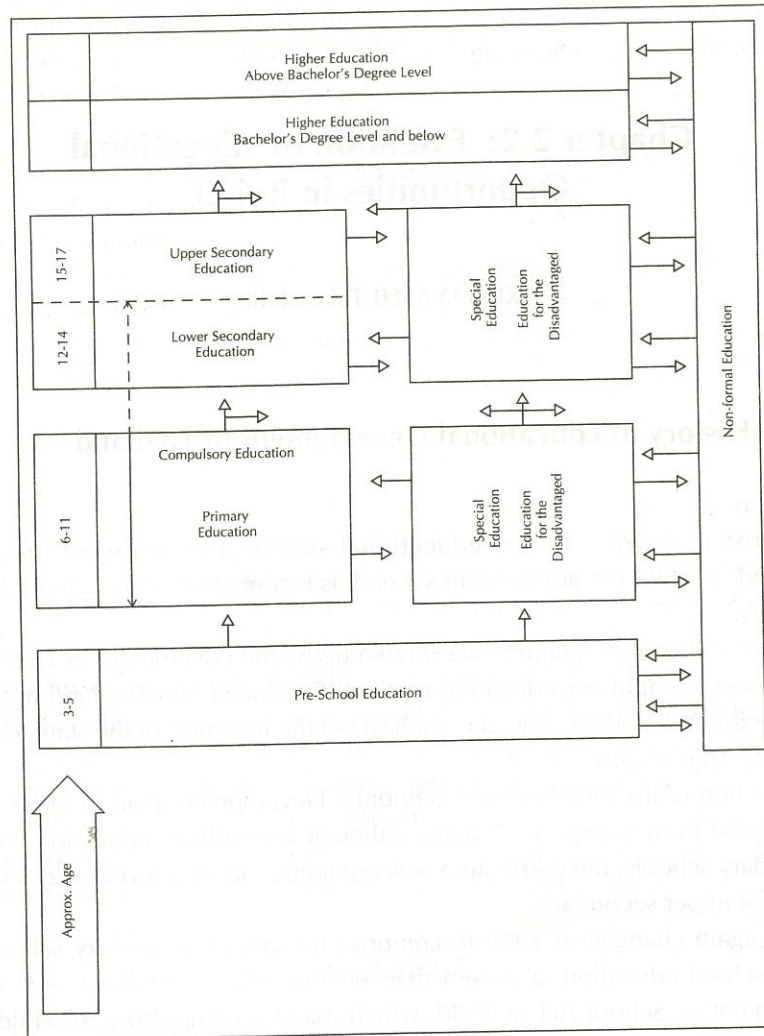
During the 1960s and 1970s, the government was committed to extending compulsory education to the masses irrespective of geographical areas. This included the establishment of schools and branches of schools in remote areas to provide education to the rural people.

#### 1.2. Non-Formal Education

The Non-Formal Education Department (NFED) has been set up since 1979 under the Ministry of Education. NFED was born inheriting the advocacy of "Adult Education", which dates back to December 1937, to carry out the work of adult education as one of the policies of the then Prime Minister. The statement of the policy then was announced in the House of Representatives, and a committee was set up to deliberate on "the modalities and management of adult education."

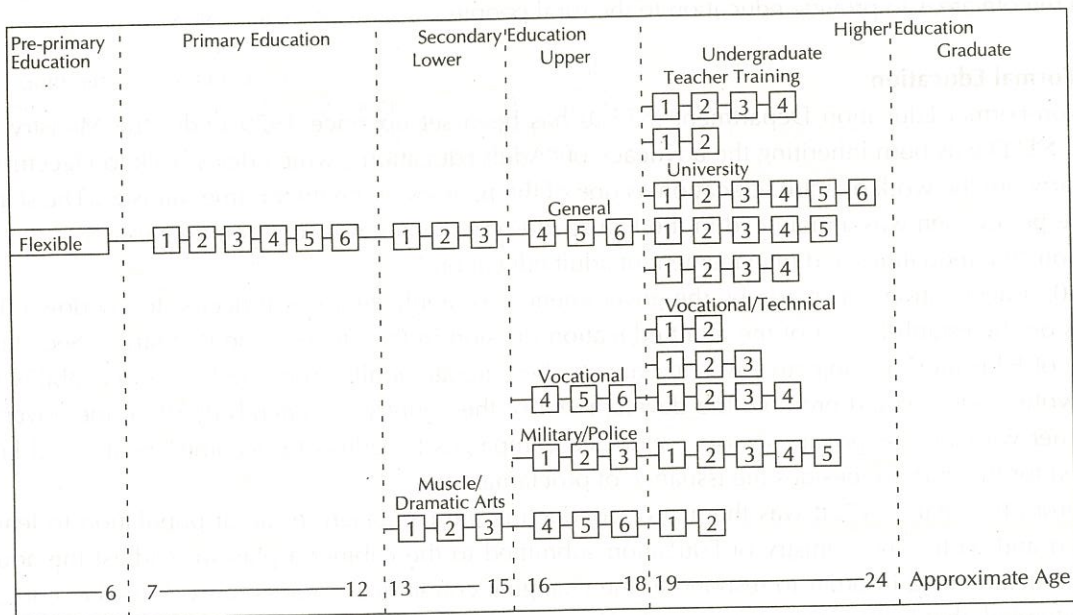
In 1940, a declaration was made by the government to promulgate a Royal decree to lay down the regulations on the establishment of the adult education division in the office of the Permanent Secretary of Ministry of Education. Its objective was to educate the illiterate adults up to the level of capability to read and write, which would promote the development of the country in general. In 1945, the government together with various private sectors conducted campaigns for adults to become literate, and law was enacted for the purpose besides the issuance of proclamation.

Later, from the year 1947, it was the age of conducting the campaign for adult population to learn how to read and write. The Ministry of Education submitted to the cabinet a plan to readjust the adult education structure. And in order to respond to the changing conditions of the country, the adult education was extended, that is the curriculum covering lower and upper secondary education taking only one year to study. The services of public libraries were arranged, and audio-visual units set up for official public relations.



Source: EDUCATION IN THAILAND, Office of the National Education Commission, Office of the Prime Minister (May 1980)

Fig. 1 Education System



Source: EDUCATION IN THAILAND, Office of the National Education Commission, Office of the Prime Minister

Fig. 2 Structure of the Present School System

In 1951, the centres for training adults on fundamental education were established, the subjects of which covering health, agriculture, industry, etc. for upgrading the level of people's livelihood. In 1979, the non-formal education management was upgraded to a department and, at the same time, some offices were transferred to come under this department.

As the authority and responsibility of administrative units of the NFED have been undergoing changes between 1979 and 1991, and also in view of the fact that the names of certain official units seemed not necessarily appropriate for their duties and responsibilities, it was felt opportune in 1991 to improve or rearrange the allocation of official units so that the official performance be flexible, efficient and relevant for current situation (see Fig. 3 or 5 for the curriculum structure of Non-Formal Education).

### 1.3. Focus

In the 7th National Economic and Social Development Plan (NESDP) the transitional rate from elementary to secondary education is planned to increase to 73 percent of those who finish primary education in 1996.

Going side by side with the 7th NESDP, in October 1992, the government announced the education policy to extend the compulsory education in Thailand from 6 Grades to 9 Grades. This policy met public praise. However, it is also true that some critics say the plan, while good in theory, won't produce results of its own.

The focus of this report will be on the approaches being made to extend educational opportunities in Roi-Et and the problems which will arise in the process of such approaches.

## 2. Extention of Educational Opportunities in Roi-Et

### 2.1. Education System and Policy of Roi-Et

#### 2.1.1. Education System of Roi-Et

In Roi-Et there are six jurisdictions that provide the formal educational opportunities for school-age students. Of these six, the Office of the National Primary Education Commission (ONPEC), General Education Department (GED) and Municipalities are mentioned as common public organizations, which cover about 96 percent of students in Roi-Et. (see Table 1)

**Table 1:** Number of Students, Classrooms, and Teachers in Roi-Et

Jurisdiction	Schools	Classrooms	Students	Teachers
ONPEC	789	7,259	161,765	9,382
GED	46	809	33,193	2,081
VED	3	77	2,548	215
Municipalities	7	94	2,685	152
OPEC	17	168	5,283	229
Fine Arts Department	1	10	340	50
<b>TOTAL</b>	<b>863</b>	<b>8,417</b>	<b>205,814</b>	<b>12,109</b>

Source: Roi-Et Education Office 1991

\*Abbreviations

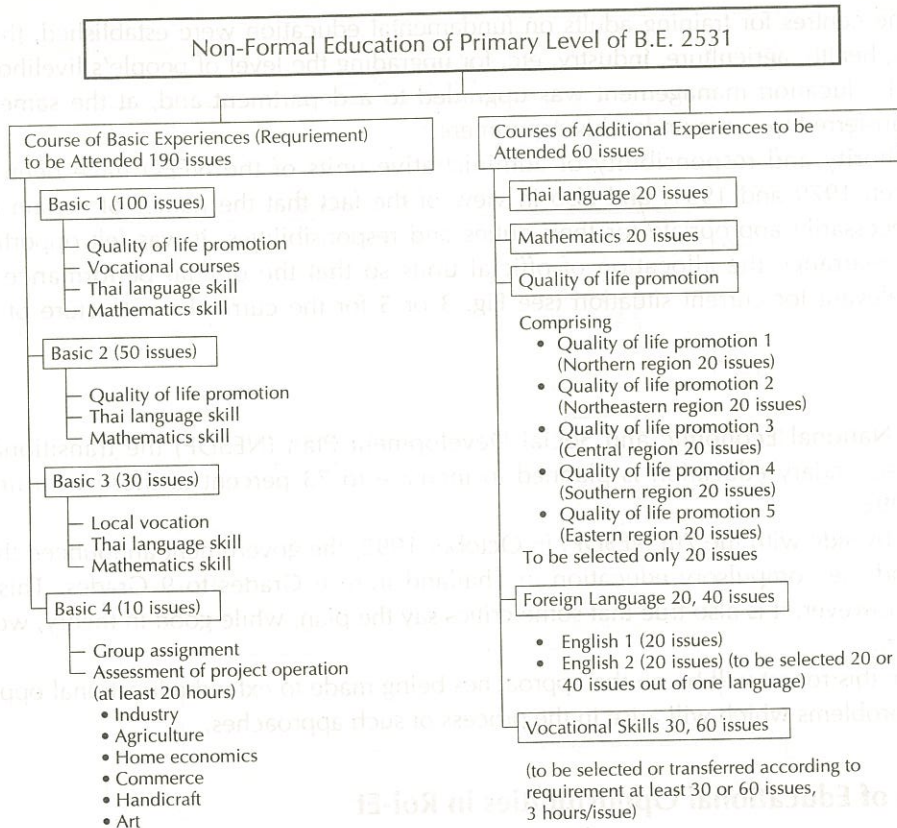
VED = Vocational Education Office

OPEC = Office of the Private Education Commission

On the other hand, for those who can not attend formal education, opportunity to study in the non-formal education where people can get certificates up to the upper secondary level is provided.

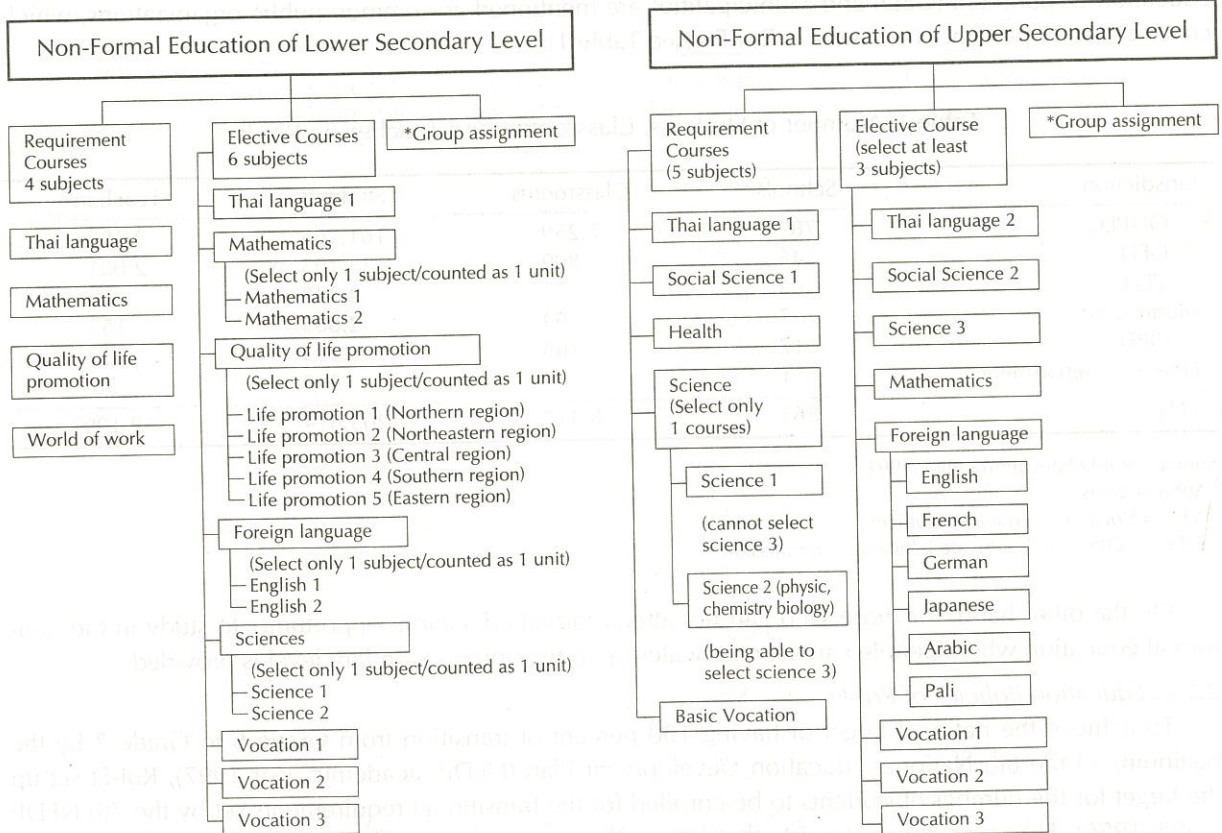
#### 2.1.2. Education Policies of Roi-Et

To achieve the national target of having 100 percent of transition from Grade 6 to Grade 7 by the beginning of the 8th National Education Development Plan (NEDP, academic year 1997), Roi-Et set up the target for the number of students to be enrolled for the transitional requirements set by the 7th NEDP (1992-1996). However, the fact exists that before the government set the accelerated target on transitional rate under 7th NEDP, Roi-Et had the regular target aimed at only 60 percent as a transitional rate



Note: The learner attended the NFE primary level should pass and accumulate at least 190 issues from requirement courses and 60 issues from elective course, the period of which should be at least 500 hours.

Fig. 3 No.3 Curriculum Structure



\*The learner should meet group assignment according to the Department's requirement.

Fig. 4 No.4 Curriculum Structure

\*The learner should meet group assignment according to the Department's requirement.

Fig. 5 No.5 Curriculum Structure

by 1996 (see Table 2). The difference of 38 percent between before and after the announcement of 7th NEDP is quite large and it is easy to imagine that huge efforts have to be made by each organization to achieve this accelerated target. Also, the coordination between organizations and related agencies are essential.

**Table 2:** Target of Transitional Rate in Roi-Et

Academic Year	1992	1993	1994	1995	1996
G6 Graduates	24,875	24,488	23,392	22,875	22,170
G7 Enrollment					
Formal	12,946	15,535	17,251	18,871	19,541
Non-formal	984	1,117	1,346	1,700	2,186
TOTAL	13,930	16,652	18,597	20,571	21,727
Transitional Rate					
Accelerated (%)	56.0	68.0	79.5	90.0	98.0
Regular (%)	43.0	47.0	52.0	56.0	60.0

Source: Roi-Et General Education Department

## 2.2. Plans and Problems of Each Organization

### 2.2.1. ONPEC and GED Offices

Both ONPEC and GED fall under the jurisdiction of the Ministry of Education (MOE) and they cover most of primary and secondary students in Roi-Et, respectively. Table 3 depicts the budget of MOE in fiscal year 1993. The budget of MOE will grow by 25.8 percent compared with the fiscal year 1992 but its share against the whole National budget will remain around 15 percent, almost the same figure as of 1992. In October 1992, the government announced a plan to extend compulsory education from 6 to 9 years. But should the government consider education as a priority sector, they should have put more emphasis on the budget of MOE.

**Table 3:** Budget of MOE

Fiscal Year	1992	1993	Increase
Amount (mil. baht)	69,738.3	87,742.5	18,004.2
Share (%)	15.1	15.7	0.6

Source: BKK Post. Oct. 28, 1992

ONPEC has a plan to open Grade 7 classrooms in 81 primary schools in order to extend basic educational opportunities in 1993. ONPEC schools are trying to recruit Grade 7 students by holding a guidance meeting once a month with parents. At the guidance, teachers inform parents of the importance of education and also suggest them to let their children continue studying at the secondary level.

GED also has a plan to establish new secondary schools and branches especially in areas where the transitional rate is low. Besides, GED has plans to lower the students' expenditure expected for the lower secondary education. According to the GED officer, they are as follows.

- Exempt tuition fee for 95 percent of students
- Provide free textbooks for every student
- Provide dormitory for those who live in distance
- Provide lunch at a low price
- Provide income generating opportunities

The last project needs more explanation. With this project, students will earn money while they are in school. GED has a plan to allocate budget of 100,000 baht each for 10 schools every year to let the students organize a company. Teachers will be advisors and the money they earn will be used for students' benefits.



Like ONPEC schools, GED schools also hold meetings with Grade 6 students and their parents in order to recruit Grade 7 students to their lower secondary schools.

In spite of the efforts made by ONPEC and GED, owing to the low income of students' households, the awareness of both parents and students still remains low. The shortage of budget is going to be another big problem, too.

### 2.2.2. Municipal Office

According to the projection of demographic structure during the 7th NEDP, the number of primary school-age population will decrease during this period (see Table 4). In spite of this projection, the budget for the municipal schools is increasing (see Table 5). Accordingly, it can be argued that now is a good opportunity for the municipal school office to improve primary school facilities to a higher level and to emphasize the extension of educational opportunities to a larger number of municipal population.

**Table 4:** Projection of Demographic Structure 1992–1996

Age Group	1992	1996	+/-
0–2	3.58	3.47	-0.11
3–5	3.72	3.55	-0.17
6–11	7.58	7.40	-0.18
12–17	8.50	8.60	+0.08

Unit: million, Source: 7th NEDP (1992–1996)

**Table 5:** Budget of Education Department of Roi-Et Municipality

Year	Budget from MOI	Budget from Municipality	TOTAL
1992	15,800,300	3,049,120	18,849,420
1993	21,206,220	4,211,570	25,417,790

Unit: Baht, Source: Education Department of Roi-Et Municipality

In practice, Roi-Et municipal schools have a plan to establish Grade 7 classes at two schools in the next two years. The tuition fees and the cost of the uniform of these secondary schools are planned to be free so that the students from poor households can attend. Of course, owing to the budget limitation, it is not easy to cover all of the student expenditure. However, when we consider the fact that the municipal schools are the last resort of the poor people, further efforts by municipal schools need to come forward.

Since the municipal schools open their gate to every student and provide free tuition education and school lunch at a low price (in some case it is free), most students in these schools are from poor families. For this reason, there are some problems concerning the students' poor household background. The are:

- Students can not afford to buy school materials.
- Because of needs to help their parents, some students absent themselves from school.
- After finishing Grade 6, most students begin to work to help their households.

On the other hand, the problems associated with the school administration are:

- Lack of facilities
- Lack of specialized teachers
- Lack of effective education administration
- Lack of organizations for collecting and providing information

### 2.2.3. Non-formal Education Centre

The Non-formal Education Centre of Roi-Et provides three kinds of education. These are 1) basic education, 2) vocational education, 3) information service. In this section, the focus will be on the basic

education, especially from the standpoint of extention of educational opportunities from Grade 6 to Grade 7.

According to the Non-formal Education Office, the total budget for the non-formal education in 1992 is 9,312,764 baht and the budget for extention from Grade 6 to Grade 7 is 810,500 baht or 8.7 percent. Since the non-formal education was established for people's various learning needs, the smallness of the budget for this specific project is easily understandable.

The achievement and the plan of the Non-formal Education Centre are shown on the table below.

**Table 6:** The Achievement and Plan of the Non-Formal Education Centre

Year	1991	1992	1993	1994	1995	1996
Target	765	982	1,117	1,346	1,700	2,186
Classrooms	140	283				
Distance Learning	1,252	3,143				
Self-Instruction	20	40				
Vocational Cert.	83	163				
TOTAL	1,495	3,929				
Achievement (%)	195	369				

Source: Non-Formal Education Centre

In 1991 and 1992, non-formal education has achieved its target. However, we can not be too optimistic with this result for three reasons. First of all, the target figures are set at quite low levels. If we remember the number of Grade 6 graduates (24,875 in 1992), we can see this problem easily. Second, tuition fee for this curriculum costs at least 350 baht per semester. Even though it is less expensive relative to the formal school tuition fees, it is still unaffordable for needy students. Third, students in primary schools do not get enough information about non-formal education. Because of these reasons, the demand for non-formal education remains low.

### 2.3. Attitudes of Students Toward Education

During our fieldwork in Roi-Et. I had some opportunities to visit primary schools. There I asked one question for students to survey the students' awareness toward secondary school education. The question asked was a very simple one.

"DO YOU WANT TO STUDY IN SECONDARY SCHOOL?"

The answers to this question and features of the four primary schools I visited are introduced below.

#### 2.3.1. BAN PLEUY Primary School

- Students' awareness of secondary level education

**Table 7:** Students Awareness of Education

Grade	G1	G2	G3	G4	G5	G6	TOTAL
YES	18	N.A.	18	18	17	32	103
NO	3	N.A.	17	6	17	8	51
TOTAL	21	N.A.	35	24	34	40	154

Popular reasons for the answer "NO" are as follows.

- They think their parents can't afford the tuition fee of secondary school.
- Their parents don't want them to study at secondary school.
- They want to help their parents.
- They don't want to study at any higher level.
- School lunch programme  
This school provides free lunch for every student once a week. On the other days, lunch costs 2 baht. This school plants vegetable for lunch.

- Textbook lending programme  
This school lends textbooks to needy students. The budget for this programme comes from the government.
- Others  
Teachers of this school visit students who are absent from school more than a week. According to teachers, this will prevent students from being used as child labour in their home.

### 2.3.2. WEL WAT Primary School

- Students' awareness toward secondary level education was not available.
- School lunch programme  
This school has a fund for free lunch. It provides free lunch for 20 students everyday. These students help washing dishes after lunch. Lunch costs 2 baht for other students.
- Transitional rate  
Transitional rate from this primary school to secondary school was about 70 percent last year. The remnant 30 percent students help their parents or work illegally. Transitional rate of this school is quite high compared with other schools. According to its school principal, the opinions of parents are playing a very important role in the students' high transitional rate. Although people of this area are poor, the awareness of parents toward education is high. Another interesting reason is that on account of high quality of the secondary school in this area, parents in other areas move to this area to put their children in its primary school so that they can go up to the secondary school of this area. Generally speaking, these students appear intelligent and their households seem to have no problem of affordability about the secondary school fee.
- Development of parents' awareness  
This school has a project called 'parents meeting project'. This project provides guidance for parents about the importance of education on special days such as Mother's Day, Graduation Day and the day before the entrance ceremony. For this reason, parents' awareness of education in this school area is high.
- Problems of this school  
Most of students are from poor households so that they have to help their parents. Therefore, they sometimes can not concentrate on their studies.

### 2.3.3. BAN NOAN TAR SANG primary School

- Students' awareness of secondary level education.

**Table 8:** Students Awareness Toward Education

Grade	G1	G2	G3	G4	G5	G6	TOTAL
YES	18	1	11	17	14	15	76
NO	7	13	7	4	5	0	36
Absent	2	0	1	0	1	1	5
TOTAL	27	14	19	21	20	16	117

Popular reasons for the answer "YES" are as follows.

- They want to get more knowledge.
- They think that studying is fun.
- They want to be a doctor or a teacher.

Popular reasons for the answer "NO" are as follows.

- They think their parents can't afford the tuition fee
- Their parents don't want them to study in secondary school.
- They don't want to study in any higher level.
- They have to help their parents.

- School lunch programme

This school provides 12 free lunch everyday and free lunch for all students once a week on Tuesdays. Lunch costs 1 baht. Those who have no parents or whose parents do not have any land to cultivate will get free lunch. They plant vegetable such as lettuce, cucumber and chili for lunch.

- Development of parents' awareness

This school holds seminars or conferences once a term (3 times per year) to develop parents' awareness of education, especially of secondary education. Everytime more than 80 percent of parents attend, according to the principal. At the seminar, teachers explain the importance of education to parents. Also, teachers show the problems of students and inform the record of students to parents.

#### 2.3.4. BAN TA KITE KLANG Primary School

- Students' awareness toward secondary level education

**Table 9:** Students Awareness Toward Education

Grade	G1	G2	G3	G4	G5	G6	TOTAL
YES	14	9	10	12	13	12	70
NO	0	0	4	1	2	11	18
Absent	1	2	2	0	2	0	7
TOTAL	15	11	16	14	17	23	95

Popular reasons for the answer "YES" are as follows.

- They want to get more knowledge.
- They like studying.

Popular reasons for the answer "NO" are as follows.

- They have to help their parents (One of the students who answered this reason said that his elder brother who was in Grade 5 would proceed to secondary school).
- They think their parents can not afford tuition fee of the secondary school.
- They do not want to study at any higher level.
- They have already got the job after they graduate.

- School lunch programme

Most students bring lunch from home, but 7 or 8 students can have free lunch each day. Budget for these free lunch are supported by donation.

- Scholarship

Each year 5 students get scholarship of 200 baht. Qualifications for this scholarship are as follows.

- A student who has achieved good grades.
- A student from a poor household.
- A student living without parents.

- And the most important condition is

- A student willing to continue studying in secondary school.

- Development of parents' awareness

Teachers visit parents whose children are willing to continue studying in secondary school to give parents more information about secondary school.

- Others

This school is cooperating with a secondary school and tuition fee of some students from this primary school will be free in this cooperated secondary school.

#### 2.3.5. Conclusion of the Survey

The total result of questionnaire survey for students' awareness are as follows.

**Table 10:** Students Awareness Toward Education (TOTAL)

Grade	G1	G2	G3	G4	G5	G6	TOTAL	%
YES	50	10	39	47	44	59	249	68.0
NO	10	13	28	11	24	19	105	28.7
Absent	3	2	3	0	3	1	12	3.3
TOTAL	63	25	70	58	71	79	366	100.0

As observable from the reasons for the answer "NO", most are related to poverty of their households. Children seem to realize that their households are poor, so that they have to help their parents.

On the other hand, more than 70 percent of students showed affirmative attitudes for continuing their study. If we consider the fact that government's policy of extending compulsory education from Grade 6 to Grade 9 was announced only in this October, the transitional rate must have been accelerated radically as a result of this formal announcement by the government.

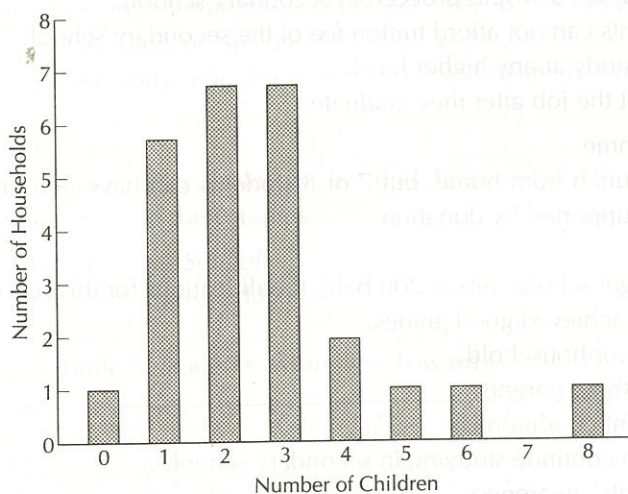
The school lunch is provided at a low price, for schools themselves have their ideas such as planting vegetable and raising fish in school yard to reduce students' expenditure. So there were few students who could not afford their lunch these days.

While I was interviewing with teachers, I was often frustrated to find that the teachers of some schools did not have accurate information or record of their graduates. They did not know the number of students who had entered secondary school last year. So I strongly felt the necessity of an organization which could monitor the status of their graduates. Without proper information, schools can not plan their strategies for the next academic year. Of course, there are some organizations which collect the record of students but, at least for me, they did not seem to work effectively.

#### 2.4. Attitudes of Parents Toward Education

We also had some opportunities to visit villages in Roi-Et and there I made another questionnaire survey to households regarding education.

The total number of households surveyed was 26. The number of children in these households are shown on the graph below.



20 households out of 26 had relatively small number of children. Of these, 26 households were related to farming as their occupation.

In my survey, I asked the educational background of parents and also asked how they were thinking about their children's educational background. As a result, I could find a tendency that the higher educational background the parents have, the higher the parents want their children to proceed. This does not mean that parents should have higher educational background. What really matters is the parents' awareness of education. If parents do not understand the importance of education, their children have no way to choose. As principal of Ban Pleuy primary school said, the opinion of parents constituted a very important part of students' transition. To make proper decisions on their children, parents have to acquire proper information about secondary schools. From this point of view, I asked them about their idea regarding the tuition fee of secondary school.

Following is the result of this question:

- They have no idea .....3
- Very expensive .....6
- Reasonable .....4
- About 2,000 baht per year .....4
- Less than 1,000 baht per year .....5
- Not available .....4

Since we can not find any unity in these answers, it can easily be said that most parents do not have or are not given proper information about tuition fee which is considered as one of the most important elements for parents to decide their children's transition.

### 3. Concluding Remarks

Given the policy of the government to extend compulsory education from Grade 6 to Grade 9, the transitional rate from Grade 6 to Grade 7 is expected to increase radically. Of course, many problems have to be solved to extend the compulsory education successfully.

First, government has to solve the problems associated with inequality of income distribution. Especially in the provincial areas, children are considered very important labour force not only for households but also for their community, and children themselves realize their situation as such. Therefore, after they finish Grade 6, some of them must being to work for the family, otherwise family can hardly survive.

Second, children and parents in provincial areas can not value the meaning of extention of education correctly because they can not see any difference in employment opportunities between Grade 6 graduates and Grade 9 graduates. This is the main cause of the lack of the willingness toward more education among some parents. Therefore, offices and teachers must work hard to provide the proper labour market information to promote the awareness of the value of education among parents.

Third, people are not given enough information on the advantage of education owing to the lack of coordination among educational offices. The government must establish a system for cooperation among each organization, so that the system can provide proper and prompt information about education to students and parents.

While I was in Thailand for our fieldwork, I was able to observe many faces of this country. Skyscrapers in the capital, beautiful temples, people begging the money and so on. What has impressed me the most was the smile of children everywhere. I still can remember those smiles clearly. I wish our fieldwork would be one step for me to brighten the children's smile all over the world.

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3. Introduction to Non-Formal Education Department: Non-formal Education Centre
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... these were not the only reasons for the reforms. It can be said that the reforms were not only a financial reform but also a reform of the financial system as a whole. It is considered as one of the most important reforms for reforming the financial system.

3. Concluding Remarks

... Given the policy of the government to extend the financial system, it is expected that in the future, many financial institutions will be established. It is expected that the financial system will be extended to the non-urban areas.

First, these reforms will help to solve the problem of the financial system. It is expected that the financial system will be extended to the non-urban areas. It is expected that the financial system will be extended to the non-urban areas.

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While I was in Thailand for our research, I was able to observe many cases in this country. It is expected that the financial system will be extended to the non-urban areas. It is expected that the financial system will be extended to the non-urban areas.

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## Chapter 2.3: Public Health Development for Quality of Life — A Roi-Et Study —

YOTSUMOTO Kenji

### 1. Introduction

Thailand has made impressive progress in both economic and social development in the past few decades. Bangkok the capital city of this country has changed its landscape with high buildings and traffic congestion. These phenomena can be found not only in Bangkok but also in other municipalities including the Northeast region of the country. In the economic sector, self-consumption oriented agriculture has changed its character into the cash-crop oriented one and diversified. Thailand is transforming itself into a newly industrializing country based upon agro-industries and other economic sectors.

However, 1987 survey of basic minimum needs indicated that in rural areas where 80 percent of the population live, 12,000 villages (about 20 percent) are classified as being most in need of development. As compared with other countries, Thai economic growth is rather high, but the gap in income distribution between the rich and the poor remains large, as is the gap between urban and rural regions.

From the integrated development point of view, public health issues are crucial to realize better condition of living. To improve health status of the population, the concept of primary health care—self reliant and community participation oriented approach—and the betterment of basic health services are indispensable to provide health education, basic sanitation, healthful nutrition, maternal and child care, prevention of infectious diseases, appropriate treatment of sickness and essential drugs. Improvement of health status of the people does not depend only on health sector but also on all social development sectors such as water supply and sanitation, education and social security.

Needless to say, fundamental cause of poor health must be the economic poverty. But we should give attention to the realization of social justice—distribution of pie of economic growth—as well as expansion of national economy.

The main purpose of this chapter is to analyze the achievement of public health activities and unsolved problems in Roi-Et. The chapter is made of four sections. In the next section, nationwide public health problems and performance of national policies such as 6th National Economic Development Plan are reviewed. The third section is spent for analysis on health issues in the province. After explanation about major health problems such as diarrhoea, vaccine preventable diseases, parasites and iodine deficiency disorders and their background, an analysis of health services and health activities in the rural communities and schools is presented. Family planning activities as an important element of public health service component and the environmental health are also covered in this section. Fourth section is the concluding remarks.

Human resource development is the key word of this chapter for two reasons. First, human resource development is a key factor of both planning and implementation of health service and community health care. Second, human resource development of beneficiaries through health education means the improvement of quality of life of the people—main development actors of the country.

### 2. Health Problems and Progress in Thailand

#### 2.1. National Health Status

As already mentioned in the foregoing introduction, Thai society is facing a rapid social change resulting from current economic progress and development. The diffusion of basic services such as primary health care has direct impact on the survival and well-being of the population on one hand but



on the other, new public health problems such as HIV/AIDS are rapidly and seriously spreading. Accordingly, the unsolved public health problems are as follows;

#### *Infant and under five mortality*

According to UNICEF (United Nations Children's Fund), Thailand is ranked 86th out of 129 developing and developed countries in terms of infant and under five mortality rates which are 28 and 33 respectively as of 1992 (129th ranked out of 129 countries, Japan's infant and mortality rates are 5 and 6 out of every 1,000 live birth). Thailand's infant and under five mortality rates in 1980 were 103 and 149. This dramatic reduction of both indices results from the development of public health services, primary health care activities.

#### *Diarrheal diseases*

Diarrhoea caused by unsafe drinking water, unclean foods, poor practice of personal hygiene is dramatically reduced and it is one of the main factors of infant and under five mortality reduction. Thai government has paid much attention to rural drinking water supply as well as stable provision of water supply for agriculture. In addition, oral rehydration therapy (ORT) has widespread through drug cooperatives, village health volunteers and village health communicators. Nowadays, oral rehydration salt (ORS) is produced locally and is available at low cost. Its distribution has increased from 1.6 million packets to more than 2.5 million packets since 1982. Nevertheless diarrhoea remains a common disease and second major cause of infant mortality after respiratory infections.

#### *Vaccine preventable diseases*

Vaccine preventable diseases such as diphtheria, pertussis, tetanus, polio, measles and tuberculosis have two features. First, they are very difficult to cure. Second, they are easily preventable through vaccination. Therefore, the most appropriate countermeasure is preventing their prevalence by immunization.

Since immunization was introduced as one of important elements of primary health care in Alma-Ata declaration (1978), many countries recognize its importance. Since mid 1980s, UNICEF and WHO began worldwide campaign to accelerate immunization prevalence against major six diseases, so called EPI (Expanded Programme on Immunization). By the end of 1990 many countries, including Thailand, achieved its target of 80 percent coverage of immunization. The secrets of Thai success in the achievement were the activities of well-organized health volunteers and health communicators.

#### *Malnutrition*

Thailand has never faced long term and severe famine like African countries. Consequently, it is scarce to find third degree protein-energy malnutrition. However, among rural population, the chronic first and second degree malnutrition are prevalent. Micronutrient malnutrition such as iron deficiency anaemia is common among school children and pregnant women. Iodine deficiency disorders are endemic in North and Northeast regions, especially among hill tribes.

Thai government has been promoting school and community fish pond programme successfully, being used both as a source of food, income and water supply for agriculture. In addition, the school nutrition surveillance has been sustained. School children who have nutrition problems are assisted through free school lunch project and supplementary feeding provided by a village health centre and other medical services.

#### *Maternal and child health*

Children's death mainly happens in the early stage of their life, meaning that the appropriate interventions to prenatal, delivery and postnatal stage are necessary. Thailand has introduced its systematic maternal and child health care as early as 1970 combined with family planning activities. Nowadays (as of 1991) prenatal care covers 64.6 percent of mothers and postnatal care covers 83.6 percent of mothers. And also 70.8 percent of deliveries are attended by health personnel or trained traditional birth attendants. The rate of those pregnant women who received tetanus toxoid immunization is as high as 75.6 percent.

Thailand is one of the most successful countries in family planning activities. Result from 72.1 percent contraceptive prevalence declined national population growth rate from 3 percent to 1.4 percent. As a background of widespread success in family planning, the reduction of infant and under five mortality should be pointed out for making parents to accept contraceptive practice.

### *HIV and AIDS*

HIV and AIDS are newly emerging public health problems in Thailand as well as other countries. Since first AIDS case was reported in September 1984, 142 confirmed AIDS patients, 371 ARC cases and 32,553 HIV positive cases are reported by 1991. But the exact number of HIV and AIDS cases is unknown. Since April 1989 Thai government has been undertaking Medium Term Plan for AIDS Prevention and Control to promote social mobilization and health education to prevent sexual transmission and strengthen primary health care to prevent prenatal transmission of the disease. Prostitution and poverty as its background can not be denied as its hot-bed. Consequently, the prohibition of prostitution and solution of poverty problems are also needed in addition to medical approaches. For this reason, the treatment services to the patients and counselling for the infected people are essential.

## **2.2. National Economic and Social Development Plan (NESDP)**

Since 1961 Thai government started the formulation of five year economic and social development plan to accelerate economic growth of the country. National Economic and Social Development Board (NESDB) was set up with support of international agencies such as IBRD, to play a key role in economic planning. By now, six NESDPs have been completed and the seventh NESDP started this year. Main objectives of these plans have been to increase GNP and per capita income, sustain high level of employment, appropriate balance of international payment, maintain price stability, redistribution of income and improvement of rural development.

Health development is also an important element since first NESDP. At the beginning, the emphasis was on construction of health facilities to expand their geographical coverage. Since second NESDP, however, the emphasis was shifted to optimisation of resource utilization. At the same time new programmes such as maternal and child health care and family planning, nutrition, environmental health and communicable diseases control and eradication were introduced. In the fourth plan (1977–1981) full attention was given on health development to mitigate urban-rural gap interns of the quality of health services. During this period, the government made efforts to increase the number of health personnel and improve basic health services. In the fifth plan (1982–1986), the concept of primary health care was strongly introduced to solve public health problems and to improve quality of life through community participation and strengthening of rural people by themselves. In this period, community based health system such as village health volunteer, village health communicator started to be organized.

## **2.3. Sixth NESDP (1987–1991) Goals**

The sixth plan as a whole emphasized defensive strategies rather than making flexible economic system, because that period was characterized by international political instability, economic depression and protectionism. In this plan, the human resource development to improve quality of life and "Health for All" achievement came to the fore through basic human needs approach. Major health development policies in sixth NESDP were to:

1. Promote opportunities of the people to participate in the development of the quality of life.
2. Extend primary health care and support the communities' efforts in order to solve existing health problems.
3. Promote the decentralization and increase the role of people in decision making, problem identification, need assessment, strategy formulation and resource management.
4. Strengthen intersectoral collaboration and coordination, knowledge and experience exchange among agencies.
5. Strengthen intersectoral collaboration between public and private sectors.
6. Increase efficiency of public health development.
7. Upgrade the quality of health services to meet needs of the people.
8. Strengthen health manpower development.
9. Revise existing laws and regulations to be conformed with current situation.
10. Promote effective transfer of public health technology among communities and test new model and technologies which could be utilized in generating community leadership and technical cooperation.

11. Strengthen research and development for innovating new models and approaches in application of technologies for health development, particularly in improving quality of preventive, promotive, curative and rehabilitative services, and
12. Develop new alternative system of health financing by mobilizing more resource through health insurance or provision of services for the poor and the aged.

#### **2.4. Seventh NESDP (1992–1996) Target**

The seventh NESDP started this year. The main objectives are economic growth, economic stability and redistribution of income. In the health development plan, new tendency and problems are considered to establish new health strategies as follows;

##### *1. Demographic changes*

Thailand has reduced its population growth rate combined with expected life expectancy improvement based on development of basic health care. At the same time, unavoidable problems caused by migration from rural agricultural to urban industrial areas, known as "urbanization", has become serious.

##### *2. Socio-economic, cultural, political and environmental changes*

Income distribution gap between the rich and the poor, between rural and urban have widened. From political point of view, government has recognized some serious problems such as traffic accident, AIDS, environmental health, occupational health and consumer protection.

##### *3. Changes in the health status of people*

The difference of health status of the people between urban and rural areas has widened. Infant mortality and maternal mortality have reduced in developed area but are still high in less developed area in the country. The disease pattern among people has also diversified. Poverty related diseases still remain in rural area but among urban population, heart diseases, cancer, circulatory diseases and mental health problems are major health problems.

##### *4. People's participation and self reliance in public health*

Despite the people's participation approach launched during the past decade, quality of participation is still limited. From the self reliance point of view, self care and appropriate health technology such as traditional medicine have been neglected.

##### *5. Health resource*

Resource allocation to the health services has been increased but expenditure has been increasing rapidly too. In health manpower, maldistribution between urban and rural areas has aggravated.

##### *6. Health services*

Nowadays, the health infrastructure and the network of health volunteers and health communicators cover the whole country. However, the quality of health care at village health centres and district hospitals are still low and unable to meet people's expectations.

##### *7. Health administration*

To increase efficiency of health administration, many problems are yet to be solved. Some of them are related to decentralization. Inefficient cooperative mechanism between Ministry of Public Health and other relevant agencies also needs to be solved.

##### *8. Health technology*

The gap in health technology between urban and rural areas should be solved and redistribute them on the basis of real need.

To solve above problems and to achieve the goal, the seventh health plan has put forward four principles, namely, coverage and equity, integration and sustainability, flexibility and conformity, and self-reliance and popular participation. Among these principles, self reliance and popular participation is especially emphasized. For ensuring the sustainability of development at the grassroots, locally existing potentials such as traditional medicine and the involvement of non governmental organizations (NGO) are crucial.

#### **2.5. Conclusion**

As mentioned above, the policy direction of Thai health development plans from first to seventh development plans have changed from facilities oriented to community oriented. Such transition is made

in parallel with socio-economic, cultural and demographic changes of the society. The importance of the role of non governmental organizations is currently emphasized. It is very clear that Thai development policies have been fully respecting international advocacies such as Alma-Ata declaration, United Nations Decade for Clean Water, global goal of International Year of Child and Expanded Programme on Immunization (EPI) proposed by WHO and UNICEF.

### **3. Public Health Problems and Progress in Roi-Et**

#### **3.1. Major Public Health Problems in Roi-Et**

According to the Roi-Et Hospital, among 66 diseases under surveillance diarrhoea ranked number one. Dengue Hemorrhagic Fever is another serious problem. Parasite and liver fluke are also found in high prevalence in the province. Among school children, skin diseases and lice are common problems. Nutritional problems such as iodine deficiency disorders, iron deficiency anaemia and first degree of protein-energy malnutrition are spreading among school children and pregnant women.

Vaccine preventable diseases such as diphtheria, pertusis, tetanus, polio, measles and tuberculosis were reduced dramatically through expanded programme on immunization (EPI) implemented during the 1980s.

Currently, new diseases and health problems have emerged instead of the above poverty related ones. As a consequence of economic development and social change, urbanization and prevalence of life style based upon market economy, the urban-, modern-, and western-type diseases and health problems are gradually becoming serious. Among ten leading causes of death, according to the Roi-Et Hospital report as shown in Table 2, malignant neoplasm, heart diseases, diseases of liver and pancreas, diabetes melitus, and nephritis are ranked high, indicating very rapid changes in health environment among people living in Roi-Et province.

Regarding maternal and child health, it was found that the Roi-Et infant mortality rate per one thousand livebirth is only 4.8 (1991) and under five mortality rate per one thousand livebirth is only 11.3 (1991). Meanwhile the national data as of 1991 indicate that infant mortality rate is 26 per one thousand livebirth and under five mortality rate is 34 per one thousand livebirth, which is much higher than those of Roi-Et. Presumably, high prevalence of pregnant women who were given paranatal care is as high as 89.1 percent, prevalence of deliveries which were attended by health personnel or trained traditional birth attendant as high as 96.7 percent and coverage of immunization for pregnant women against tetanus toxoid as high as 92.9 percent must have contributed immensely for realizing such outstanding results in the province.

But from the point of view of protein-energy malnutrition, 16.3 percent of preschool children are categorized as first degree protein-energy malnutrition. It means that the basic medical care has developed but food provision is not sufficient among children. Chronic malnutrition problem must be one of the next targets for improving quality of life of the people in the province.

HIV and AIDS are newly emerging public health problems in Thailand as well as other developing and developed countries. In Roi-Et, some people who were infected to AIDS or HIV in other cities such as Bangkok and Chiangmai are the source of secondary infection. Since 1989, 16 AIDS cases have been reported and 3 of them died already. At present, 13 AIDS patients (12 male and 1 female) are confirmed. And 449 HIV positive cases (279 male, 170 female and 12 unknown) except paranatal transmission are reported. But the real number of patients and infected persons according to health officials are expected to be higher. Roi-Et authorities have already begun preventive and educational countermeasures. They established anonymous AIDS test system for those who wish to take, and 11,176 people have been tested. In primary and secondary schools, total 35 times of anti-AIDS educational session have been organized and 3,878 students attended. Anti-AIDS education is also promoted to community leaders and 1,790 community leaders were educated through 13 anti-AIDS educational sessions.

#### **3.2. Family Planning Activities**

Before family planning activities were introduced, the average family size was rather larger than now. In the society characterized by labour intensive agriculture and high mortality rate, parents needed many children as labour force and insurance against high mortality tendency. Such situations resulted in high population growth rate of 3.0 percent during 1960s. Consequently, Thai government has introduced

population policy and family planning activities during second NESDP period combined with maternal and child health care to reduce both high population growth rate and high infant and under five mortality rates.

Nowadays, family planning activities in Roi-Et as well as in other rural provinces are vigorously being carried out through community based health care system. Village health volunteer and village health communicator tell people why family planning is needed and introduce methods of contraception such as pills, IUD and vasectomy. As shown in Table 5, contraceptive prevalence rate is 74.0 percent. Some methods of contraception are available in the village health centre and hospital but mainly for female. Methods of contraception for male are not welcome in the conservative rural society.

As a consequence of the prevalence of delivery in health facilities, especially for women with two children, health volunteer and health communicator recommend to accept contraception when they go to hospital to give birth to the second child. Table 5 confirms this tendency and shows high prevalence of female sterilization as high as 49.9 percent.

From the "informed consent" point of view, whether the explanation about irrevocability of female sterilization is made or not is not clear. Also some health personnels at the village level do not have any information about the side effects of contraceptive injection.

### **3.3. Public Health in Roi-Et Municipality**

Roi-Et municipality has its own independent public health care system different from the provincial one. Public health care for the residents is taken care of by Public Health and Environmental Department of the municipality office. Its mandates are curative, preventive and promotive activities for public health including maintenance of drainage network and environmental health in the public spaces such as market places in the city. Public Health Service Centre covers promotion for good health, diseases prevention and curative activities including dental care. But medical doctors are allocated to the centre because of financial constraints of the municipality.

In the municipality, there is a provincial hospital and it is the main reason why patients do not want to come to the centre which does not have sufficient capacity to meet people's needs. For outreach health care, Health Service Centre of the municipality organizes mobile medical teams and provides health check in communities and municipal schools. This year more than 2,000 people have been met by the team. Now, municipality office is establishing the public health network in the city. Two village health volunteer offices are opened already and the final target is 13 village health volunteer offices in the municipality to strengthen the community based public health service and primary health care.

In the municipality, public health problems are different from those in rural areas. As a consequence of the prevalence of market economy based life styles and economic development, new tendency such as smoking, alcoholic and environment related health problems such as poisoning and traffic accidents become serious instead of poverty related health problems. Details about environmental health are discussed in 3.5.

### **3.4. Public Health and Education**

For the promotion of public health activities for school age children and their families, the school is the most appropriate channel. In Thailand, Provincial Primary Education Office in each province has responsibility for primary education including public health check for students, health control and health education in cooperation with public health office. In the municipality, Municipal Education Office and each school promote these in cooperation with Health Service Centres. Common health problems among school children are cold, chronic malnutrition, iodine deficiency disorders, dental problems and lice caused by poor personal hygiene practice. Students have height and weight check in each semester, and the parasite check once a year.

Recently dental check is introduced as a routine activity. Accidents and sicknesses in the school are treated in first aid room in each school but medical personnel is not allocated. From the nutritional point of view, schools provide lunch for students and those from poor families have free lunch. To prevent iodine deficiency disorders, public health office provide iodine to be added to the drinking water in the rain water tank in school compound. The police department also cooperates in public health and environmental education for students through sending policemen to schools every month to have anti-narcotic education and traffic education classes.

In non formal education channel through radio and mail, public health education for the quality of life is introduced. Encouragement of personal hygiene practice, food hygiene, water and sanitation, AIDS are the topics emphasized.

At present, health check at schools covers very basic elements. It needs to be strengthened so as to include "positive health" activities such as physical fitness tests and physical strength checks.

### 3.5. Environmental Health

Environmental health problems and the community approach to these are rather new phenomena. The issues are going to be serious as a consequence of rapid economic growth and urbanization. From the public health point of view, the problems in Roi-Et in this regard are as follows;

- Environmental sanitation in the market places in the municipality
- Contamination of canals caused by blocking of canals made here and there for road construction in the municipality
- Poor garbage collection system
- Poor food hygiene surveillance and poisoning prevention.
- Exhaust gas and traffic congestion leading to accidents
- Insufficient quality of water supplied by water works
- Poor public drainage and lack of the drain water treatment system

Safe drinking water supply is a fundamental element of the healthy urban life. Developing food hygiene systems and criteria to survey sanitary conditions are also important elements, for the lack of sanitation is a main cause of diarrhoea and poisoning which ranks high among out-patients in the Roi-Et Hospital (Table 3).

Poor hygiene and garbage collection systems in the market place and non-existence of hygiene criteria for restaurants also contribute to the potential risk in the health of the people. Polluted canal water creates another problem for the control of dengue hemorrhagic fever. Poor garbage collection and waste disposal systems cause not only the hygiene related problems, but also mean dissipation of resources, for these preclude possibilities of resource recycling. Exhaust gas and traffic congestion problems are directly inflicting harmful effects on human health and the function of the city.

A large amount of money is needed to solve them. These problems will cause serious negative impact on the quality of life, unless they are solved in their early stage. These problems need to be covered not only by health sector, but also by many public service sectors in collaboration with each other. Cooperation with the private sector is also important to establish new initiatives.

## CONCLUDING REMARKS

Thailand has successfully achieved goals of NESDPs and realized economic and social development. In the public health field, many poverty related problems have been solved and health status and the quality of life of the people are dramatically improved but new public health problems have emerged. Particularly, new trends associated with the rapid social changes such as prevalence of modern and market economy oriented life style and urbanization tend to create new types of health problems such as environmental health problems which should be prioritized first among many public health issues. Also diseases such as AIDS are now becoming a serious problem.

Population policy and family planning activities are some of the most successful public health activities in Thailand but demographic change from a society which has many children to another which has many aged people has created new problems. The public health sector is facing difficulties to solve these problems. This tendency will be more serious in the future.

Also there are other remarkable achievements upon which new efforts in the future should be built. High coverage of immunization, prenatal care, postnatal care and high prevalence of delivery attended by health personnel or trained traditional birth attendant are now becoming "common sense" among people. Such a situation provides an opportunity to stimulate needs for and expand primary health care.

To solve these public health problems every effort must be made to develop sufficient quality human resource and coordination and collaboration among public sector and also with private sector.

**Table 1: Key Health Indices**

Index	National	Roi-Et
Demographic Indices		
Crude Birth Rate (per 1,000 population)	17.0 (1990)	15.4 (1992)
Crude Death Rate (per 1,000 population)	4.5 (1990)	5.3 (1992)
Population Growth Rate (%)	1.4 (1988)	1.0 (1992)
Infant Mortality Rate (1992) (per 1,000 livebirth)	26	4.8
Under Five Mortality Rate (1992) (per 1,000 livebirth)	34	11.3
Maternal Death Rate (per 1,000 livebirth)	40 (1989)	10 (1992)
Average Life Expectancy at Birth (male/female)	62/66 (1985-1990)	—
Health Indices		
Immunization Coverage (%)		
BCG	96	100
DPT3	90	98.7
OPV	90	98.6
Measles	80	86.4
TT Pregnant Women	75.6 (1990)	92.9 (1992)
Family Planning Prevalence (%)		
Contraceptive Prevalence Rate	72.1 (1990)	74.0 (1992)

Source: Roi-Et Hospital and UNICEF

**Table 2: Ten Principal Causes of Death**

(per 100,000 population 1992)

1. Malignant Neoplasm, all forms	84.05
2. Heart Diseases	47.55
3. Liver and Pancreas Diseases	39.70
4. Pyrexia of Unknown Origin	15.52
5. Other Accidents	12.18
6. Tuberculosis, all forms	11.51
7. Disease of Respiratory Systems Other than the Upper Respiratory Tract	11.20
8. Paralysis, all types	6.98
9. Diabetes Mellitus	6.17
10. Nephritis, Nephrotic Syndrome and Nephrosis	4.87

Source: Roi-Et Hospital

**Table 3: Ten Principal Causes of Illness of Out-Patients**

(per 100,000 population 1992)

1. Diseases of Respiratory System	118.03
2. Diseases of Digestive System	143.10
3. Symptoms and Ill-defined Conditions (Name of disease unidentified)	122.66
4. Infectious and Parasitic Diseases	75.18
5. Accident, Poisoning and Violence	54.05
6. Disease of the Musculoskeletal System and Connective Tissue	50.80
7. Diseases of the Skin and Subcutaneous Tissue	46.08
8. Diseases of the Genitourinary System	34.77
9. Diseases of the Nervous System and Sense Organs	32.83
10. Endocrine, Nutritional and Metabolic Diseases	26.82

Source: Roi-Et Hospital

**Table 4:** Maternal and Child Health

Prenatal Care	89.1
Postnatal Care	70.3
Delivery attended by health personal, trained traditional birth attendants	96.7

Source: Roi-Et Hospital

**Table 5:** The Contraceptive Prevalence

The Contraceptive Prevalence (%)	74.0
Methods of Contraception (%)	
NORPLANT	1.3
Vasectomy	3.4
Pills	15.9
Injection	11.0
IUD	18.5
Female Sterilization	49.9

Source: Roi-Et Hospital

**Table 6:** Immunization Coverage

Infant					
	1987	1988	1989	1990	1991
BCG	98.68	100.00	100.00	100.00	99.95
DPT	79.09	95.70	95.90	92.18	99.91
OPV	78.12	100.00	95.63	94.18	99.87
Measles	59.87	73.60	78.63	81.41	88.10

Source: Roi-Et Provincial Health Office

**Table 7:** Environmental Health Prevalence (%)

Access to sanitary latrine	92.2
Access to safe drinking water	87.2

Source: Roi-Et Hospital

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