# **CHAPTER 10**

# HUMAN RESOURCE DEVELOPMENT

Sector Plan: Chapter 10 Human Resource Development

# CHAPTER 10

# HUMAN RESOURCE DEVELOPMENT

# **10.1** Present Human Resource Development Efforts

Under the present situation, there are huge demands for skilled and capable workers from the industrial and service sectors. This is because severe shortage of highly skilled workers has become apparent with the rapid development of industrial technologies. The government has been taking this issue seriously and implementing various vocational training courses. These courses are administered by several organizations; i.e., MOE, MOIr, MOLSW, and MOI.

# 10.1.3 MOE's Dep. of Non-Formal Education (DNFE)

DNFE provides four types of vocational education and training; i.e., (i) vocational certificate course, (ii) occupational certificate course, (iii) vocational short-course, and (iv) interest group course.

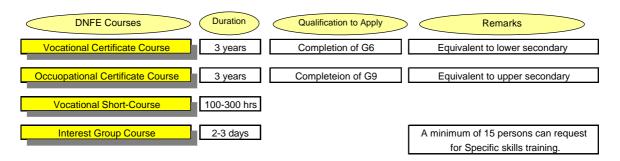


Figure 10.1 DNFE Training Course

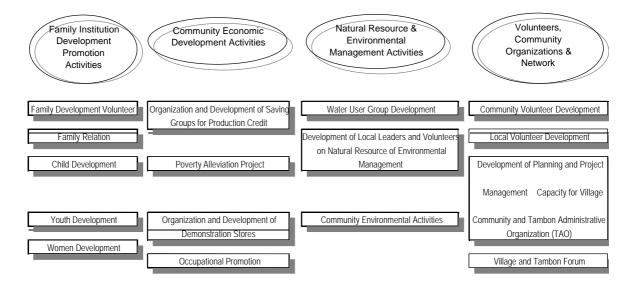
The demand for these courses has become bigger, and 590,000 people, or 1% of the total population, attended these courses across the country (1998). In NBR, 49,000 people participated in such courses.

	Mukdahan	NakonPhanom	Sakon Nakhon	Kalasin	Total
Vocational Cert.	358	0	1,501	924	2,783
Occupational Cert.	278	103	16	126	523
Short-Course	6,315	2,803	10,208	1,042	20,368
Interest Group	6,123	9,643	6,834	2,353	24,953
Total	13,074	12,549	18,559	4,445	48,627

Source: DNFE

# 10.1.4 MOIr's Community Development Department (CDD)

CDD has promoted rural development through various programs. CDD allocates the community development (CD) officers to provinces and districts. There are currently 75 provincial CD officers and 876 district CD officers across the country. CDD's activities are divided into four categories; (i) family institution development promotion activities, (ii) community economic development activities, (iii) natural resource and environmental management activities, and (iv) volunteers, community organizations



and network development activities.

Figure 10.2 Training Courses of CDD

CDD targets villages and communities to improve their living standard. The training courses usually last one to 8 days.

# 10.1.5 MOLSW's Department of Skill Development (DSD)

DSD provides adequate industrial skills for people. DSD sets 12 Regional Institutes for Skill Development (RISD), covering 4 to 7 provinces each. In NBR, Ubon Rachatani RISD covers Mukdahan and Nakhon Phanom, and Khon Kaen RISD takes care of Sakon Nakhon and Kalasin. There are also Provincial Skill Development Centers (PSDC) in some provinces. In NBR, all provinces now have PSDC<sup>1</sup>. DSD conducts various activities, e.g., (i) vocational training, (ii) occupational skill standards promotion (testing), and (iii) skill development promotion (mainly fund).

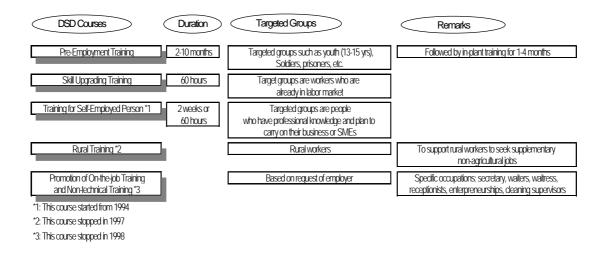


Figure 10.3 Training Courses of DSD

The number of participants has increased more than 6 times during the past five years, from 34,000 to 220,000. This significant rise in participation is attributed to the emphasis on quality of training by DSD. Each course has a limited number of participants—up to 25, or 2 people per machine, in a class. In NBR, nearly 7,000 people participated in various training courses in 1998<sup>2</sup>.

<sup>&</sup>lt;sup>1</sup> Both PSDCs in Sakon Nakhon and Nakhon Phanom were established in 1997; PSDC in Kalasin in 1998, and PSDC in Mukdahan in 1999. <sup>2</sup> This number does not include the mention of the statistic statistics.

<sup>&</sup>lt;sup>2</sup> This number does not include the participants from Mukdahan. In 1998, people from Mukdahan joined training courses of the Ubon Rachatani Regional Institute, which supervised Mukdahan province. In addition, the number does not include the "training self-employed person." Therefore, the actual number is estimated at around 9,000.

	Mukdahan*	Nakon Phanom	Sakon Nakhon	Kalasin	Total
Pre-Employment Training	n.a.	1,606	829	1,212	3,647
Machine Work Shop	-	-	-	-	-
Welding & Sheet Metal	-	13	70	77	160
Automotive	-	545	283	228	1,056
Construction	-	396	51	201	648
Drawing	-	-	-	-	-
Electrical	-	339	207	152	698
Electronic	-	124	-	-	124
Industry Arts	-	189	218	554	961
Business & Service	-	-	-	-	-
Up-Grading Training	n.a.	948	1,377	1,010	3,335
Machine Work Shop	-	-	-	-	-
Welding & Sheet Metal	-	47	32	21	100
Automotive	-	103	65	17	185
Construction	-	123	-	25	148
Drawing	-	40	-	-	40
Electrical	-	25	26	20	71
Electronic	-	585	799	480	1,864
Industry Arts	-	25	431	20	476
Business & Service	-	-	24	427	451
Total			2,206	2,222	6,982

Table 10.2	Participants to SDC	Training Courses in NBR (199	<del>)</del> 8)
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\*Mukdahan Skill Developemt Center was just established in 1999. Therefore, the table does not include i Source: Department of Skill Development

# 10.1.6 MOI's Bureau of Industrial Enterprise Development (BIED) and Bureau of Supporting Industries Development (BSID)

BIED and BSID offer various training for technical skills and management. MOI has 11 Industrial Promotion Regional Centers (IPRC)<sup>3</sup> and implements several training for locals.

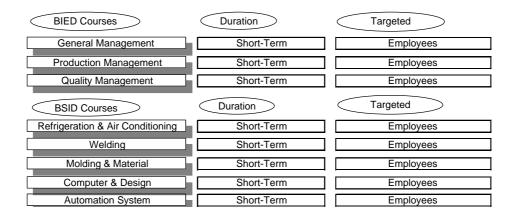


Figure 10.4 Training Courses Offered by BIED and BSID

<sup>&</sup>lt;sup>3</sup> The 11 Regional Centers are located in Changmai, Phitsanulok, Pichit, Udon Thani, Khon Kaen, Nakhon Rachasima, Burirum, Suphanburi, Chonburi, Suratthani, and Songkhal.

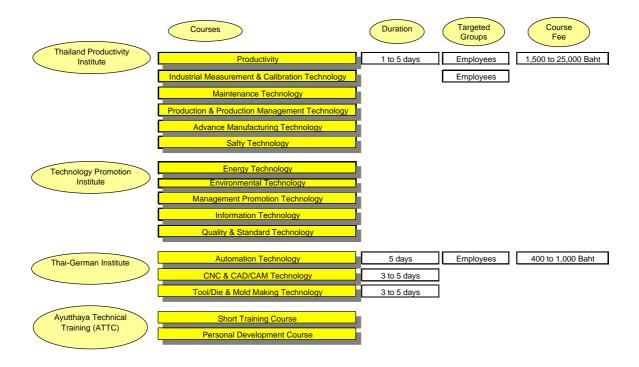
BIED	No. of Participants
General Management	150
Production Management	240
Quality Management	410
Total	800
BSID	No. of Participants
Refrigeration & Air Conditioning	80
Welding	170
Molding & Material	157
Computer & Design	158
Automation System	39
Total	604

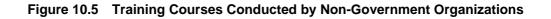
#### Table 10.3 Participants to BIED and BSID Training Courses (1998)

Source: IEAT, Report on the Study of Establishment of HRDCI, 1998

### **10.1.7 Other Non-Governmental Institutes**

Apart from the governmental organizations, there are some non-governmental institutes offering vocational training, e.g., (i) Thailand Productivity Institute, (ii) Technology Promotion Institute, (iii) Thai-German Institute, and (iv) Ayutthaya Technical Training Center (ATTC). The first two are located in Bangkok; Thai-German Institute is found in Chonburi, and ATTC, in Ayutthaya.





Institute		Training Targets		
	Unskilled	5	Skilled	Management
		Basic	Advanced	l
MOE (RI, RIT, DOVE & DNFE)				
MUA				
MOInterior (BCD)				
MOLSW (DSD)				
MOIndustry (BIED & BSID)				
Thailand Productivity Institute				
Technology Promotion Institute				
Thai-German Institute				
Ayutthaya Technical Training (ATTC)				

Figure 10.6 Targeted Areas of Training Institutes in Thailand

# 10.1.8 Successful Implementation of Vocational Training

Such vocational training courses are successfully implemented, because these are carefully planned in consideration of labor market demands and maintain high quality. Especially the courses offered by MOLSW, MOI and non-governmental organizations attract many people who want to gain skills and upgrade their technique. In addition, most courses are short-term and they are easy for people to participate in.

# **10.2** Thai Education and Labor Market Situation

# 10.2.3 Lower Educational Attainment of Thai Labor Force

There are currently 33 million workers nationwide, and 30 million of them are employed. More than half of the employed is in the informal sector. Those in formal private sector account for 40%. In addition, nearly 40% of workers are engaged in the agricultural sector, followed by the service sector (36%) and the industrial sector (24%). This means that the Thai economy still relies much on the agricultural sector and the Thai industrial sector occupies only a small portion of the economy, in terms of labor force. It is attributable to the relatively low educational attainment of workers, i.e., 68.7% of workers attained primary education or less, 12.5% gained lower secondary, 5.5% reached upper secondary, 5.7% went to vocational and technical, and 5.6%, to university. As shown below, 53% and 24% of workers with primary

education or less are engaged in agriculture and enter the industrial sector as unskilled workers respectively.

Table 10.4	Educational /	Attainment and	Occupation
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	Agriculture	Professional	Managerial	Clerical	Sales	Transport &	Craft	Service	Total
		& Technical	& Exective			Communication		& Sports	
Primary or Less	52.7	0.5	1.4	1.0	11.6	4.0	23.9	4.9	100.0
Lower Sec	26.1	2.2	3.5	7.0	18.4	6.2	27.9	8.7	100.0
Upper Sec	20.1	5.0	3.3	11.5	20.1	4.2	23.7	12.1	100.0
Voc & Tech	8.4	13.5	7.4	24.7	19.0	4.4	18.1	4.5	100.0
University	1.4	64.0	14.5	3.8	9.8	1.1	2.0	3.4	100.0

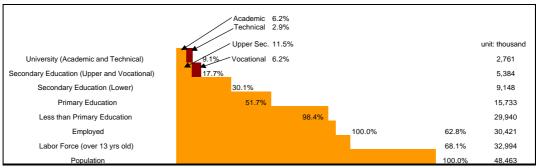
Source: Labor Force Survey 2000.

NBR also shows the same phenomenon as the national level, but much severer. Unemployment rate is relatively high at 7.1%, and seasonally inactive labor accounts for 9.3%. Nearly 70% of workers are engaged in the informal sector. The percentage of people working in the agricultural sector is 57% and those in the industrial and service sectors are 18% and 26%, respectively. The employed with vocational and technical education background amounts only to 3.1% of the total employed workers. Such small portion of workers with adequate skills and knowledge causes less development of the industrial and service sectors in NBR.

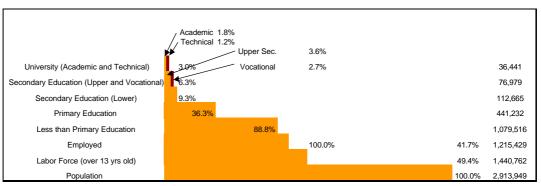
Ihai	land	Mukdahan	akhon Phano	Sakon Nakhoi	Kalasin	NBR T	otal
	(%)						(%)
32,994,300	100.0	158,271	304,432	464,804	390,459	1,317,966	100.0
1,887,900	5.7	n.a.	n.a.	n.a.	n.a.	n.a.	-
1,780,100	5.9	7,849	11,416	10,114	12,799	42,178	3.5
30,420,500	95.5	146,950	276,472	411,084	380,923	1,215,429	84.4
1,418,000	4.5	11,321	27,960	53,720	9,536	102,537	7.1
1,155,800	3.6	3,156	33,683	27,699	58,258	122,796	9.3
31,838,500	100.0	158,271	304,432	464,804	390,459	1,317,966	100.0
2,788,600	9.2	16,978	21,545	26,761	29,617	94,901	7.8
12,001,500	39.5	25,971	39,889	104,057	110,475	280,392	23.1
15,629,800	51.4	104,000	215,037	280,266	240,830	840,133	69.1
30,419,900	100.0	146,949	276,471	411,084	380,922	1,215,426	100.0
12,095,300	39.8	98,488	165,285	246,906	198,563	709,242	56.6
7,299,300	24.0	9,772	44,600	86,364	79,235	219,971	17.5
11,018,200	36.2	38,688	105,274	77,814	103,125	324,901	25.9
30,412,800	100.0	146,948	315,159	411,084	380,923	1,254,114	100.0
	32,994,300 1,887,900 1,780,100 30,420,500 1,418,000 1,155,800 31,838,500 2,788,600 12,001,500 15,629,800 30,419,900 12,095,300 11,018,200	(%)           32,994,300         100.0           1,887,900         5.7           1,780,100         5.9           30,420,500         95.5           1,418,000         4.5           1,155,800         3.6           31,838,500         100.0           2,788,600         9.2           12,001,500         39.5           15,629,800         51.4           30,419,900         100.0           12,095,300         39.8           7,299,300         24.0           11,018,200         36.2	(%)         (%)           32,994,300         100.0         158,271           n         1,887,900         5.7         n.a.           1,780,100         5.9         7,849           30,420,500         95.5         146,950           1,418,000         4.5         11,321           1,155,800         3.6         3,156           31,838,500         100.0         158,271           2,788,600         9.2         16,978           12,001,500         39.5         25,971           15,629,800         51.4         104,000           30,419,900         100.0         146,949           12,095,300         39.8         98,488           7,299,300         24.0         9,772           11,018,200         36.2         38,688	(%)         (%)         32,994,300         100.0         158,271         304,432           n         1,887,900         5.7         n.a.         n.a.         11,416           30,420,500         95.5         146,950         276,472         27,960           1,155,800         3.6         3,156         33,683           31,838,500         100.0         158,271         304,432           2,788,600         9.2         16,978         21,545           12,001,500         39.5         25,971         39,889           15,629,800         51.4         104,000         215,037           30,419,900         100.0         146,949         276,471           12,095,300         39.8         98,488         165,285           7,299,300         24.0         9,772         44,600           11,018,200         36.2         38,688         105,274	(%)         (%)         158,271         304,432         464,804           n         1,887,900         5.7         n.a.         n.a.         n.a.           1,780,100         5.9         7,849         11,416         10,114           30,420,500         95.5         146,950         276,472         411,084           1,418,000         4.5         11,321         27,960         53,720           1,155,800         3.6         3,156         33,683         27,699           31,838,500         100.0         158,271         304,432         464,804           2,788,600         9.2         16,978         21,545         26,761           12,001,500         39.5         25,971         39,889         104,057           15,629,800         51.4         104,000         215,037         280,266           30,419,900         100.0         146,949         276,471         411,084           12,095,300         39.8         98,488         165,285         246,906           7,299,300         24.0         9,772         44,600         86,364           11,018,200         36.2         38,688         105,274         77,814	(%)         (%)         158,271         304,432         464,804         390,459           n         1,887,900         5.7         n.a.         n.a.         n.a.         n.a.         n.a.         n.a.         n.a.         n.a.         10,114         12,799           30,420,500         95.5         146,950         276,472         411,084         380,923         380,923           1,418,000         4.5         11,321         27,960         53,720         9,536           1,155,800         3.6         3,156         33,683         27,699         58,258           31,838,500         100.0         158,271         304,432         464,804         390,459           2,788,600         9.2         16,978         21,545         26,761         29,617           12,001,500         39.5         25,971         39,889         104,057         110,475           15,629,800         51.4         104,000         215,037         280,266         240,830           30,419,900         100.0         146,949         276,471         411,084         380,922           11,018,200         36.2         38,688         165,285         246,906         198,563           7,299,300	(%)         32,994,300         (%)         158,271         304,432         464,804         390,459         1,317,966           n         1,887,900         5.7         n.a.         n.a.         n.a.         n.a.         n.a.         n.a.           1,780,100         5.9         7,849         11,416         10,114         12,799         42,178           30,420,500         95.5         146,950         276,472         411,084         380,923         1,215,429           1,418,000         4.5         11,321         27,960         53,720         9,536         102,537           1,155,800         3.6         3,156         33,683         27,699         58,258         122,796           31,838,500         100.0         158,271         304,432         464,804         390,459         1,317,966           2,788,600         9.2         16,978         21,545         26,761         29,617         94,901           12,001,500         39.5         25,971         39,889         104,057         110,475         280,392           15,629,800         51.4         104,000         215,037         280,266         240,830         840,133           30,419,900         100.0         146,949

Table 10.5 Labor Market Situation in NBR	Table 10.5	Labor Market	Situation in NBR
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Source: Labor Force Survey 2000; Changwat Statistics 1999



The following figures will give a clear picture of the current labor market in Thailand. These indicate employed people by educational attainment.





Source: Changwat Statistics 1999.

# Figure 10.8 Educational Attainment of Labor Force in NBR

Workers completing vocational and technical education account for 5.7% of the total workers, who should support the industrial sector in Thailand. However, most of these workers do not become professional technical workers. They are usually engaged in the industrial sector as semi-skilled workers. It is apparent that the industrial sector faces severe shortage of highly educated personnel, who can be technical workers and play an important role to lead the Thai industry. This situation is now being focused as a big obstacle for further industrial development, i.e., from labor-intensive industry to technology-intensive industry.

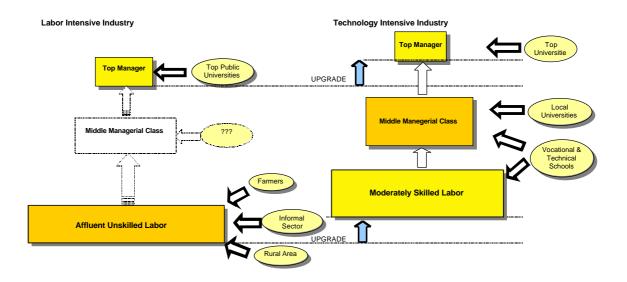
# 10.2.4 Unbalanced Structure in the Thai Industry Sector

The current structure of the industrial sector in Thailand is quite unbalanced. There are affluent unskilled workers with low educational backgrounds. Such workers are supplied from the rural area, especially in the agricultural sector. On the contrary, there are only few people who are highly educated and usually graduate from prestigious universities, e.g., Chulalongkorn and Thamasat Universities. Most of them

Source: Labor Force Survey 2000

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are currently in top managerial positions and play important roles in the country's industrial sector. As a result, a unique structure appeared that few top managerial personnel control a huge number of unskilled workers. As long as the Thai industry has relied on labor-intensive economy, this affluent cheap labor force significantly help the economic growth of the country. However, with the rising labor cost in Thailand relative to its neighboring countries, such as Vietnam, China and Lao PDR, the country is forced to change its industrial structure, that is, from being a labor-intensive industry to a technology-intensive industry. This structural change requires more middle-class workers, such as middle-management personnel, engineers and designers. In addition, it is highly necessary to raise the skill level of workers.





# 10.3 Issues to be Addressed in NBR Human Resource Development

#### 10.3.3 HRD and Industrial Development in NBR

#### (1) Shortage of Vocational Training Opportunities

In NBR, there is serious shortage of vocational training opportunities. Under the current situation, many people cannot enjoy their vocational education. Only 34 vocational schools with 35,000 enrolled students are too small comparing to the demands.

In addition, informal training courses offered by MOE, MOI, and MOLSW are also limited. Most people have to wait to receive this training opportunity or give it up.

(The detail information of institutions offering vocational education is referred to the Chapter 11, Education.)

## (2) Vocational Education Does Not Meet Industrial Demands

Vocational education and training play an important role to create skilled workers and knowledgeable personnel. This field of education, therefore, is a key for human resource development in industrial sector. However, vocational education in NBR does not contribute much to creation of skilled labor for the region's industrial development. This is attributable to low quality of vocational education. Most students completing vocational education would be unemployed or self-employed. Even if they entered the industrial sector, they would not be skilled workers, but semi-skilled workers. To become skilled workers, they are usually offered short-term skill training, which is provided by the government or by the company they work for.

The following figure indicates the flow of students. Students with low educational attainment in NBR, e.g., lower secondary or less, tend to enter the agricultural or the industrial sector as unskilled workers. On the other hand, students with medium or higher level of education are usually engaged in the service sector or the industrial sector as skilled/semi-skilled workers. Students completing vocational education enter the industrial sector as semi-skilled workers or run their own small business. Skilled labor is usually provided from outside of NBR or unskilled/semi-skilled workers are upgraded through training courses. In this respect, NBR's vocational education does not thoroughly contribute to the region's industrial development. On the other hand, short-term training courses, provided by the government and non-governmental organizations, play an important role of building skilled labor.

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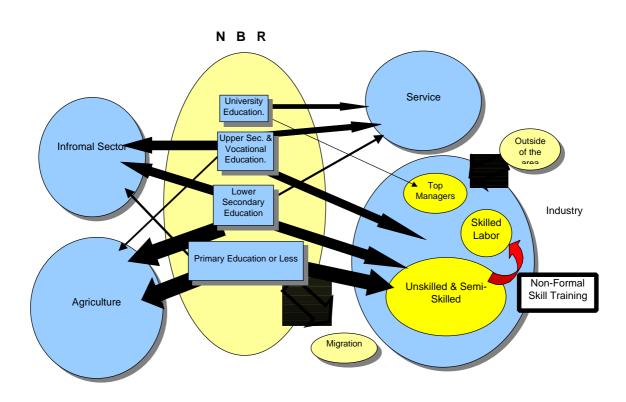


Figure 10.10 Flow of Students in NBR

# (3) Lack of Information Exchange between Education Sector and Industrial Sector

During the interview to various educational institutes in NBR, it was found that schools do not keep track of their graduates. In addition, the schools do not conduct any counseling on career development and placement service. Most students seek jobs by themselves. This oversight is attributable to serious lack of information and communication between the school and the industrial sector. This situation prevents promotion of employment and produces workers with unnecessary skills.

To overcome this problem, the schools must have more contact with the industrial sector and keep track of their graduates. Such information will become important measures to the future career development of students and the regional labor market situation.

# (4) Estimation of Necessary Number of Middleclass Workers in Future NBR Labor Market

The future development of NBR relies on the formation of the middleclass worker who is capable of works required advanced skills, such as engineering, designing and management. The following table indicates how many middleclass workers are

necessary in NBR until 2020. These figures are based on estimation of the urbanization rate of NBR. According to this estimation, the urban population ratio in NBR becomes 23.5% in 2010, and 29.5% in 2020 from the current 16.0%. With rapid increase of the urban population, total number of employed people increases from the current 1,409,000 to 1,557,000 in 2010 and to 1,689,000 in 2020. The current number of middleclass workers is 106,000, which is almost as same as the number of workers completed tertiary education. This means that middleclass workers usually attain tertiary education level including diploma level in vocational education, and Bachelor's and master levels in university education. With the urbanization rate in NBR, 191,000 middleclass workers estimated to be necessary in 2020.

On the other hand, the real situation in NBR is unlikely to meet this requirement of 191,000 middleclass workers or 193,000 workers educated in tertiary level, due to shortage of higher educational institutions. Currently there are only 8 institutions in NBR, 4 out of which were recently established and do not fully function yet. Considering the Northeastern region as a whole, 21 institutions<sup>4</sup> are added to those 8 (Therefore, total number of tertiary educational institutions is 29 in the Northeastern of Thailand). In addition, the government has been trying to establish IT campuses nationwide, which use a satellite system to conduct lectures. In NBR, three IT campuses are planned and in the Northeastern region 10 IT campuses in total are planned to be built. In the reality, however, the institutions located outside NBR cannot produce large number of middleclass workers working in NBR. Most students having moved outside NBR tend to continuously stay at the place located in their universities or go to outside the Northeastern region such as Bangkok. In the case of Khon Kaen University, for instance, only 10% of the total students are from NBR. Also, approximately 30% of those students do not go back to home provinces after graduation.

Considering these local conditions, we made three scenarios below. The first scenario is that the current situation continues until 2020 without any radical expansions of educational institutions. The second scenario is a case of realization of 10 IT campuses with 1,200 student-capacity each (equivalent to 300 students each grade) in the Northeastern region in 2005 as being planned. The other is a case of realization of IT campuses with 2,000 student-capacity each (equivalent to 500 students each grade). The scenario 1 indicates shortage of 46,000 middleclass workers in NBR until 2020. This shortage should be supplied from non-NBR people. In the scenario 2, there happens shortage of 33,000 middleclass workers until 2020. In the scenario 3, the number of middleclass workers in 2020 is likely to meet the requirement. However, the scenario 3 assumes that each IT campus has 2,000

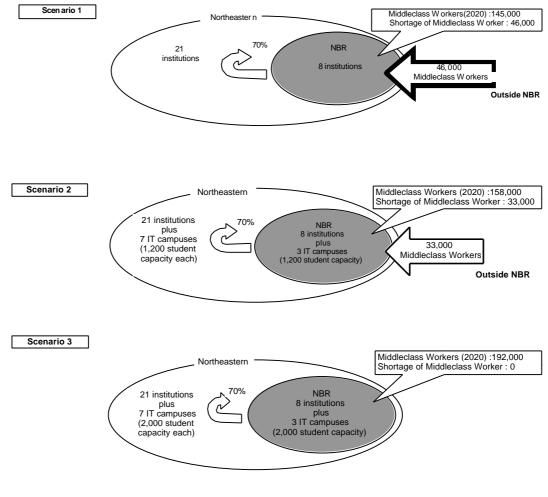
<sup>&</sup>lt;sup>4</sup> Khon Kaen University, North-Eastern University, College of Bhandit Asia (located in Khon Kaen), Mahasarakhan University (Mahasarakhan), Ubon Ratchathani University, Ratchathani College of Technology, North-Eastern Polytechnic College (Ubon Rachathani), Suranaree University of Technology, Vongchavalitkul University (Nakhon Ratchasima), Rachatani U-don College of Technology, Suntapol College (Udon Thani) 3 RITs and 7 RIs.

student-capacity, which is significantly large size of institutions in the Northeastern region. It seems to be quite difficult. After all, we think the scenario 2 has the highest possibility. In this case, 33,000 middleclass workers should be recruited outside of NBR in 2020.

# Table 10.6 Employed Population Attaining Tertiary Education or More and Middleclass Workers in NBR

		1998	2005	2010	2020
Ratio of Urban Popuration (%)		16.0	20.1	23.5	29.5
Total Employed ('000)		1,409	1,490	1,557	1,689
Total Employed Attaining Tertiary Education or More ('000)		107	130	151	193
Needy Middle-Class Employed ('000)		106	129	150	191
Estimated Number of Middle-Class Employed ('000)	Scenario 1	106	117	127	145
	Scenario 2	106	117	129	158
	Scenario 3	106	117	135	192

Source: JICA Study Team



Source: JICA Study Team



# **10.4 Regional Human Resource Development Plan**

# **10.4.1 Development Objectives**

As analyzed in the foregoing sections, NBR should develop its human resources in order to promote the regional development. The proposed plans herein have the following three objectives.

First, the plan promotes NBR to create capable and knowledgeable personnel in consideration of the present industrial demands and the future trend of technology development. These people will become middle-class workers in the various sectors in NBR.

Secondly, the plan proposes NBR to initiate the creation of human resources in new fields of industry. These will include Information technology (IT), tourism, and biotechnology. These fields are not fully developed in Thailand yet., but these are significantly demanded by the international markets. NBR has a high potential to develop these new fields of industry.

Third, to develop the region's human resources, it is highly important to coordinate between education sector and industrial sector. The plan promotes the relationship between these two sectors to strengthen.

# 10.4.2 Targets and Scenario

# (1) Targets in Creation of Middle-Class Workers

#### 1) Short-Term Scenario (2000-2004)

- More in-service training is offered.
- Capacity of tertiary educational institutes is prepared to be expanded.
- New tertiary educational institution is prepared to be established.

# 2) Medium-Term Scenario (2005-2009)

• The number of middle-class workers is increased by 23% in NBR, from 106,000 (1998) to 130,000.

# 3) Long-Term Scenario (2010-2020)

• The number of middle-class workers is increased more by 50% in NBR, from 130,000 (2005) to 195,000.

# (2) Targets in Human Resources in New Fields

#### 1) Short-Term Scenario (2000-2004)

• New fields of education and training are prepared; i.e., IT, Tourism, and biotechnology.

#### 2) Medium-Term Scenario (2005-2009)

• Potential personnel in such new fields account for 1,000 in NBR.

#### 3) Long-Term Scenario (2010-2020)

• Potential personnel in such new fields account for 5,000 in NBR.

#### 10.4.3 Strategies

#### (1) Capacity Expansion and Quality Improvement of Institutions

NBR's human resource development in industrial sector requires quantitative expansion and qualitative improvement of tertiary education. Increasing middle-class workers is a key to promote the NBR's development. Because most middle-class workers have more than diploma level of educational attainment, it is very important to focus educational institutions offering diploma level of education or more. The plan considers to expand the student-capacity of such educational institutions and to improve their educational quality.

#### (2) Preparation of New Fields of Education and Training

To meet the future demands from industrial sector and to characterize the NBR's human resources from the other regions, it is very important to develop and promote new human resources. This means skillful and knowledgeable personnel in new fields of education, such as IT, tourism, and biotechnology. Fortunately, NBR has huge potentials for such fields. Through development of such new fields, NBR can be a center of human resources and promote the region's economic and social development.

#### **10.4.4 Human Resource Development Programs and Projects**

For NBR human resource development, the following programs and projects are proposed.

#### Higher Education Improvement Program

- IT HRD Center Project in RIT Kalasin
- New Rajabhat Institute Mukdahan Project

#### **Vocational Education Improvement Program**

- Vocational School System Reform Project
- Internship Project
- Vocational Education Expansion Project

The proposed plan above is directly related to the education sector. For the vocational improvement program and three projects of it, the details are referred to the educational sector development plan described in the Chapter 11 of Part II.

Description is made hereunder for the Higher Education Improvement Program. In the two projects under the program, the New Rajabhat Institute Mukdahan Project is planned based on the concept of GMS International University / Training Center Project, which is proposed in the education sector.

# (1) IT HRD Center Project in RIT Kalasin

### 1) Background

It is quite important to develop the human resources that have knowledge and skill in new fields. In particular, priority should be given to the IT field. Expansion of educational capacity is needed for promoting IT, since a shortage in higher education is apparent compared with high demand for this field.

There are two ways for expanding education for IT: a new construction of higher institute and an expansion of existing higher education institute. The latter way is preferable to the former way in terms of costs, because an effective utilization of the existing facilities and staff can reduce the required costs for IT education.

The existing higher education institutes in NBR are assessed focusing on IT-related education. Rajamangala Institute of Technology (RIT) Kalasin was selected based on the assessment.

#### 2) Location

The main campus of RIT, Kalasin

#### 3) Implementation Agency

RIT, Kalasin

#### 4) Project Content

It is proposed that IT Human Resource Development Center (IT HRD Center) be constructed in RIT Kalasin to perform the following roles:

• To educate 1,440 students in the IT field by establishing three IT-related courses:

Computer Science, Information System and Computer Education;

- To improve education for the existing courses in terms of IT utilization;
- To offer short-term training programs for community people to cope with the new IT-oriented society; and
- To offer short-term training programs for Indochina people with a use of its past experiences in the cooperation activities with Indochina countries.

# 5) Implementation Schedule

Figure 10.12 illustrates the overall project implementation schedule. IT HRD Center will start operation from the academic year 2005.

	2002								2003																20	04	ŀ					2005							
	1	2 3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8 9	9 1	0 1	1 12	2 1	2	3	4	5	6	7	8	9	10	11	12	1 2	2 3	4	5	6
Pre-implementation Phase																																							
Feasibility Study																																							
Governmental Approval			T				I										T					T		Γ														Γ	
Project Implementation			Г																			Γ																	
Selection of Contractor/Supplier	r		T														1																					Γ	
Engineering			T														T					T		Γ														Γ	
Construction																																						Γ	
Procurement of Equipment		Τ	T	Γ													÷					ŀ													÷		Ì	Γ	
Institutional set-up																																							

Figure 10.12 Overall Project Implementation Schedule

# 6) Initial Investment Cost

The initial investment cost is estimated at Baht 75 million.

# (2) New Rajabhat Institute Mukdahan Project

#### 1) Background

Social and economic development requires human resources that are well cope with the regional industrial development and changes in the industrial structure. The development of such human resources is the important issue for NBR.

The common language and culture are the character of the region including NBR and Laos. It is expected that making this character stronger through human resource development gives political stability, better peace and friendship, and wider exchanges of social and economic activities. In addition, Mukdahan will be the eastern "gateway town" to Laos via the Second International Bridge.

However, Mukdahan has no higher institute that can offer bachelor degree. It is necessary for students in Mukdahan to study for getting bachelor degrees in other provinces and live apart from their parents. This obliges their parents to pay extra costs for education, or not allow their children receive the higher education institute.

It is very important for Thailand to establish a higher education institute in Mukdahan, and give educational opportunities to Laos, taking an initiative.

The presence of existing educational organization is one of the key factors for establishing the new institute in Mukdahan. It is considered that Rajabhat Institute (RI), which has 36 campuses throughout the country, is suited to establish a new higher institute in Mukdahan.

It is highly necessary to establish the Rajabhat Institute, Mukdahan for providing education opportunities in higher education to Lao people as well as the community people.

### 2) Location

Mukdahan

#### 3) Implementation Agency

Office of Rajabhat Institute Council (ORIC) under the Ministry of Education

#### 4) Project Content

The project is divided into two phases.

In the first phase, New RI, Kalasin will receive Lao students with supports from the sister institute, RI, Maha Sarakham. It aims at enabling RI to receive Lao students, even before New RI, Mukdahan starts operation with good performance. The first phase consists of four components as shown below:

- Oversea training of teachers of New RI, Kalasin and RI, Maha Sarakham;
- Dispatching external experts to New RI, Kalasin from abroad;
- Awarding a scholarship to Lao students in New RI, Kalasin; and
- Receipt of Lao students by New RI, Kalasin.

In the second phase, New RI, Mukdahan will be established with supports from the sister institute, RI, Ubon Rachathani. It aims at human resource development for local development and receipt of Lao students. The second phase consists of seven components as shown below:

- Establishment of New RI, Mukdahan;
- Facility development of New RI, Mukdahan;

- Curriculum development of New RI, Mukdahan;
- Oversea training of teachers of New RI, Mukdahan and RI, Ubon Ratchathani;
- Dispatch of external experts to New RI, Mukdahan from abroad;
- Award of a scholarship to Lao students in New RI, Mukdahan; and
- Receipt of Lao students by New RI, Mukdahan.

### 5) Implementation Schedule

Figure 10.13 illustrates the overall project schedule. New RI, Mukdahan will start operation from the academic year 2007.

	2001				2002				2003			2004				2005				2006				007	2008				2009			2010			0	
	1	2	3	4 <sup>·</sup>	1 2	3	4	1	2	3	4	1	2	3 4	1	2	3	4	1	2	3	4 1	2	3	4	1	2	3	4	1	2	3 4	1 1	2	3	4
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Pre-implementation Phase																																				
Feasibility Study																																				
Foreign Supports																																				
Loan Agreement																																				
Project Implementation																																				
New RI, Kalasin					Τ	Γ															Τ		Τ										Г	Г		
Oversea Training of Teachers						Т	Γ																	Г				T		Т		Т	Г	Т		
Dispatch of External Experts					Τ	Γ															Τ		Τ										Г	Г		
Scholarship to Lao Students						Т	Γ																					T		T		Т	Г	Т		Γ
New RI, Mukdahan			T			Г										Γ					Т		Т	Γ								T	Т	Г		1
Selection of Consultants						Т	Γ																	Γ				1		1		T		Г	1	
Engineering Service					T																															1
Selection of Contractor/Supplie	er					Г																		Γ						T				Г		Γ
Construction																																	Т			1
Procurement of Equipment					Τ	Г																	Т							T			Т	Г		T
Institutional set-up/Test-run					T	T	Γ							T	ſ	Γ	Γ							Г	Γ							T	T	T	T	T
Oversea Training of Teachers			1		T	T	Γ							T	T	Ē	Γ			Ē				Ē	Ē							T	T	T	T	T
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Scholarship to Lao Students			1		T	T	T							T	1							1	T	Γ		Π	ļ			÷				L		⊨

#### Figure 10.13 Overall Project Implementation Schedule

#### 6) Initial Investment Cost

The initial investment cost is estimated at approximately Baht 824 million for construction of New RI, Mukdahan.

The proposed plan above is directly related to education sector. The detail information is referred to the Chapter 11.