Chapter 6

Impact of Vocational Education and Training on Regional Development

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6.1 Introduction

It is considered a truism that human resource development especially that through vocational education and training is indispensable for regional development. Indeed this was the philosophy behind the establishment of technical colleges and other institutes in Japan in the process of reviving and developing its economy after World War II. Also, schemes of regional development in developing countries include plans for human resource development without exception. However, it is questionable whether endeavors for human resource development "automatically"bringabout regional development.

The first issue is the conditions to be satisfied for the creation of human resource development to bring about regional development. It is necessary to determine the conditions for developing manpower to join the work force in the region and contribute to the region through utilizing the knowledge that acquired through education and training in producing goods, knowledge and services. This is because, in actuality, ex-trainees of training programs do not necessarily contribute to the region in such a manner. Thereareanumberoffactorssurrounding the issue o f regional development through personnel development such aswhether theex-trainees obtain employment in the region or go to big cities to work; whether they chose to work; whether they utilize the abilities developed through training in their work, etc. In a sense the abilities developed through education and training encourage the youth in rural areas to be drained to big cities. The question here is complex because there are people who move to big cities to workbut later return to the region, or those who move to big cities but extend financial support to their families in the region.

The next issue is to whom to offer development programs. The subject matters of the programsaregreatlyaffectedby thecharacteristics of the trainees. The potential enrollees to the programs vary from elementary school, lower secondary, and upper secondary school graduates, to those who are employed and unemployed. It is hard to decide to which group the program should focus on to realize the objective of regional development through human resource development.

Furthermore, it must be determined what types of institutes for vocational training and education are most suited for human resource development. Generally speaking, there are multiple types of institutes which offer vocational education and training. For example, at the secondary education level, there are lower and upper secondary schools, and vocational and specialized schools run by ministries which govern school education such as the Ministry of Education. Also, there are institutes of vocational training at various levels controlled by

ministries responsible for matters related to workers such as the Ministry of Labor. Programs for human resource development within regions cannot be developed unless the types of institutes are selecteddependingonthecontents of theeducation andtraining. The education and training offered at such institutes is not completely independent, and areas and subject matters dealt with by several types of institutes are overlapping in some cases. Another reason which makes it difficult to determine which types of institutes of education and training should be developed is that the education and training considered necessary at present could be irrelevant in the future.

Yet another problem is that it is difficult to cope with the changes in the needs in regions although the subject matters of the education and training should be based upon the needs in each region. Needs concerning the contents of human resource development programs easily change along with changes in the industrial structure. However, it is difficult to change the curriculum for, or facilitiesof,institutes of vocational education and training. What isuptodate atthetimeofestablishment can easilybeobsolete within ten years.

The more important outcome of a project on vocational education and training is that the ex-trainees fully utilize the knowledge and skills that they have acquired through the program in the labor market. It is meaningless to continue offering the same education and training while the needs for education and training change along with the changes in the labor market and social environment. Labor markets continue to change, and it is necessary to keep updating the program to meet the needs. Therefore, it is necessary to pay close attention to the conditions of the labor market and to forecast future trends in operating programs of human resource development.

It has been considered that the enrichment of education and training in the Northeastern Region is an effective measure to minimize the gap between the BMA and the Northeastern Region. However, ex-trainees of training programs tend to seek jobs in the BMA for two reasons. First of all, there are not many jobs suited to skilled laborers in the Northeastern Region. Second, wages tend to be low in the district as they are based the minimum wages in the district, which are lower than those in the BMA. Although some of those working in the BMA extend financial support to their parents in the Northeastern Region, the money brought into the region is merely promoting consumption in the area in an indirect manner. As a result, education and training are causing a drain of manpower from the Northeastern Region to the BMA, and their indirect contribution to the development of the Northeastern Region is minimal. However, it is also possible to consider that education and training are indeed promoting the development intheNortheasternRegion from the viewpoint that the youth, whootherwise work full-time only in the busy season for farmers and work part-time the rest of the time, are having steady jobs in the BMA and are sending money to theirfamiliesin the region.

This study focuses on the Northeastern Thailand Institute for Skill Development and the Ubon Institute for Skill Development, both of which were established with a grant aid cooperation from Japan and where project-type technical cooperation was made, in an attempt to clarify the effects that these projects have had on the objective of minimizing the regional gap between the BMA and the Northeastern Region. Finally we make proposals on the mode of

assistance in education and training most effective in achieving the goal.

6.2 Outlines and Background of the Survey Subjects

This study deals with the following four projects designed for the Northeastern Region, which is the poorest area in Thailand. The projects were carried out at two institutes for skill development in the forms of grant aid cooperation and project-type technical cooperation. Therefore,practically, theprojectsat issue are the following two.

(1) Northeastern Thailand Institute for Vocational Training (later named Khon Kaen Institute for SkillDevelopment (KISD))

- (i) Project for the establishment of the Northeastern Thailand Institute for Skill Development (grant aid cooperation)
- (ii) Northeastern Thailand Institute for Vocational Training (project-type technical cooperation)

(2) Ubon Institute for Vocational Training (later named Ubon Institute for Skill Development (UBISD))

- (i) Project for the establishment of Ubon Institute for Vocational Training (grant aid cooperation)
- (ii) Project for theestablishment of the Ubon Institute for Vocational Training (project-type technical cooperation)

This section discusses the circumstances surrounding the subject projects, in other words, the educational system, labor policy and the vocational training system in Thailand and the outlinesofthesubjects.

6.2.1 Outline of the educational system

Unlike many other countries in Asia, Thailand did not experience occupation by western Powers, thus preserving its own educational culture, which dates back to the period before modern times. Traditional educationinthepre-moderndays was informal, and it was offered by monks at Buddhist temples. Although modern educational system was initiated in the 19th century, it was in the 1930s that a public educational system to cover all the regions in the country was established. Buddhist temples, which were organized under the control of the national government under the Sangha Act of 1902, were utilized in spreading common education in rural areas. Since1932, when the revolution of 1932 took place, up until today, the objective of public education in Thailand has been to promote nationalism with which to unite the nation; and education on the three fundamental principles in the country, namely, "country", "religion", and "king" have been emphasized to accomplish it. This system of national education was more or lessestablished in the late 1930s, when4-year elementary education was implemented. In this sense the major aspect in "education" in Thailand is values education, with which to

develop the nation according to Buddhism (1).

On the other hand, needs for practical education, such as higher education and vocational education, emerged in the 1960s because socio-economic development based upon the "National Scheme for Socio-Economic Development" required the development of human resources necessary for industrialization. This led to the establishment of Khon Kaen University and other institutes to be the cores for regional development in 1960, followed by the enactment of the Private University Act of 1969. Furthermore, Ramkhamhaeng University, which is an open university, was established in 1971, and Sukhothai Thammathirat Open University, a long distance university, was established in 1980, thus greatly expanding highereducation (2).

Human resources developed by the expansion of higher education produced bureaucrats, specialists, and professionals equipped with sophisticated skills and knowledge. However, the shortage of human resources at the level of skilled workers long existed because secondary education was not expanded until the 1990s. The enrollment rate at the lower secondary education level shifted from around the 30% level in the 1970s and the 1980s, while those who continue to study at the upper secondary schools shifted around the high level of 70-80%. The characteristics of public education in Thailand in 1990 can be summarized as follows. Six-year compulsory education focusing on nationalism was more or less established as the length for elementary education. At the secondary education level, 40% of the graduates of elementary schools enrolled in lower secondary schools, and most of the graduates of lower secondary schools continued their studies in general or vocational courses at upper secondary schools. General courses aimed at preparing the students to pursue higher education, while vocational courses offeredpractical education in various areas including technology, agriculture, commerce, home economy, and trade. Both types of courses aim at producing graduates who are strongly oriented to be urban workers rather than takingpartintraditional farming society.

Such a gap between elementary and secondary education wasanobstaclefor theexpansion of secondary education, and people in the country tended not to recognize the necessity of sending children in farming regions to secondary schools. This resulted in the vast majority of the working population being elementary school graduates,andthelaborforceinthecountrywas criticized for being sufficient only forlaborconcentrated industries.

The current educational system (as of 2000) was established by the National Education Plan of 1977, when the 6-year elementary educational system was implemented by uniting a two-phased program of four-year and three-year periods. Six year compulsory education has been offered pursuant to the Elementary Education Act. While formal secondary educational systemsconsist of lowersecondary and upper secondary education, each lasting three years, there are alsononformal curricula of secondary education.

Figure6-1showstheeducationalsystemprovidedbytheNational Education Planof1977. However, the educational administration system in the country is rather complex. At the ministerial level there is the Ministry of Education (Krasuang Sukaathikaan), which mainly controls elementary and secondary education, the Ministry of University Education (Thabuang Mahaawitthayaalai), which mainly controls higher education; the Ministry of Home Affairs

(Krasuang Mahaathai), which controls elementary and secondary education operated by the Bangkok Metropolis and cities with autonomy; and the Secretariat of the National Education Council (Samnakgaan Khana Kammakaan Kaansukaa Haeng Chaat), which is a subordinate organizationofthePrimeMinister's Office andisresponsiblefor the development of educational policy at the national level.

Within the MinistryofEducation, elementary education, lower secondary and formal upper secondary education, and vocational upper secondary education aregovernedbytheSecretariatof the National Board of Elementary Education (Samnakgaan Khana Kammakaan Kaanprathomasuksaa Haeng Chaat), the Department of General Education (Krom Saamansuksaa), and the Department of Vocational Education (Krom Aachiwasuksaa), respectively. Private schools other than those of higher education are governed by the Secretariat of Private Education (Samnakgaan Khana Kammakaan Kaansuksaa Eekachon), and the Raachaphat Institute (former teachers college) and school(s) attached to it are governed by the Secretariat of the Raachaphat Institute (Samnakgaan Khana Kammakaan Sathaaban Raachaphat). Finally, informal education is underthejurisdictionof the Department ofInformal Education (Krom Kaansuksaa Nook Rongrian) (3).

In the late 1980s Thailand experienced rapid economic growth, which made the government and the industrial world realize the need for expanding secondary education to enhance the educational level of the nation and to develop human resources with which to cope with technological development and globalization. Additionally, the idea of including upper secondary education in basic education and expanding secondary education were diffused under the influenceoftheprincipleoffree access tobasiceducationdeclaredinthe "Education for All" (World Assembly sponsoredbyUNESCO) held in Jomtien, Thailand in1990.

In such circumstances the first Chatcai cabinet decided in May 1990 that lower secondary education shall be compulsory in the future. Furthermore, in July 1995, Prime Minister Banhaan announced in a general policy speech the plan for expanding compulsory education to twelve years to include upper secondary education (4).

Pilot projects for offering compulsory lower secondary education came to be initiated. While several attempts were made, the most effective method was offering lower secondary education at elementary schools under the Secretariat of National Board of Elementary Education. This was a practical method to offer lower secondary education with minimum financial and personal investments, without causing financial and or other types of burdens on children and their parents, because it employed the resources of elementary schools such as school buildings and teachers and other staff members, and provided education to all the applicants without charging tuition, and lent textbooksandissueduniforms (5).

As a result of this project, lower secondary education was offered to 536,291 students at 6,281 elementary schools in various parts of the country in 1997. In this year 1,707,319 students were enrolled at 2,555 traditional schools for secondary education under the Department of General Education (6). Through the implementation of the policyontheexpansion of access to education, the percentage of school attendance continued to show a sharp rise until 1997, when

the economic crisis attacked the country. As shown in Figure 6-2, the ratio rose from 39.7% in 1990 to 74.2% in 1997 (7). Furthermore, upper secondary education expanded along with the expansion of lower secondary education. While the ratio of students who pursue upper secondary education to those who finished lower secondary education decreased from 94.5% in 1995 to 82.9% in 1999, the percentageofattendancefor upper secondary schools rose from 40% in 1995 to 58.3% in 1999. The ratios of those enrolled in general and vocational courses was about6:4throughout the period (8).

Furthermore, not only secondary education expanded but also pre-school education significantly improved in farming areas. Pre-school classes were established at almost all of the 20,000 elementary schools in the country. This system has set freechildren whograduated from elementary schools but were prevented from receiving full-time secondary education or vocational trainingbecause they had to look after brothers and sistersorotheryoungchildren. It should also be noted that mechanized farming, which requires less manpower, has contributed to the increase of children whogotoschool (9).

The expansion of secondary education made upper secondary education more accessible to children in rural areas or those with low social status. In particular, many of the graduates of lower secondary courses offered at elementary schools governed by the Secretariat of the National Board of Elementary Education tend to choose vocational upper secondary courses (10).

This means that students who live away from vocational upper secondary schools and are not able to attend such schools, or those from more needy families, tend to chose vocational courses. Furthermore, the curricula at vocational upper secondary schools were criticized for being theory oriented and were not suited to skill development, and it came to be considered necessary to reform vocational upper secondary schools. A Dual Vocational Training (DVT) course was established at each school in 1995 with the cooperation of Germany. In the first year, graduates study in classrooms just like students in general courses, and they receive on the job training at offices in factories on three days or so each week in the second and the third years.

Vocational educationhasbeenbeingexpanded rapidly, not only at theupper-secondary but also at the post-secondary school levels. For example, vocational education systems run by the Department of Vocational Education of the Ministry of Education have been set up and expanded asfollows. The teaching certificate issued at the upper-secondary school level is a Certificate in Vocational Education (Prakaatniiyabat Wichaa Chiip: PWC), and that issued to those who completed the DVT course is Certificate in Vocational Education DVT (Prakaatniiyabat Wichaa Chiip Thawiphaakhii: PWC Thawiphaakhii). 420,223 students were enrolled in the PWC courses in 1999, which is 1.5 times that of 274,273 in 1995. Those who finished the two-year post secondary school course, which is open to those who have earned PWCs and the ex-graduates of the six-year secondary programs, receive Diplomas in Vocational Education (Prakaatniiyabat Wichaa Chiip Chang Sung: PWS).

The Diploma in Technician Education (Prakaatniiyabat Wichaaa Chiip Theknik: PWT),

whichused tobeissuedintheoldsystemisnowintegratedintoPWS. The number of students enrolled in the PWS and PWT courses in 1999 was 163,773, which is about 1.8 times that of 92,551 in 1995. Students with PWSs can receive Higher Diplomas in Technical Education (Prakaatniiyabat Wichaa Chiip Khruu Theknik Chan Sung: RTS) after completing a two-year program of professional education. Thenumber of students (in the program) has increased two fold from 1,229 in 1995 to2,682in1998 (11).

Among PTS programs, establishment of a program towards a bachelors degree was formally approved at the mechatronics department at Pathumwan InstituteofTechnology in1999 with grant aid cooperation from the Japanese government, and as a result of the Project on the Expansion of Pathumwan Institute of Technology, which was implemented from 1992 to 2000 by JICA.

While all of the above courses of different levels are under the control of the Department of Vocational Training, they are not being offered at different levels of schools. Rather, the schools have a PWC course as the basic program and also offer advanced courses depending on the capacityofeachschool and the needs of the district that it belongs to. Therefore, it appears that there are three-year, five-year, and seven-year vocational colleges (Witthayaalai) to offer uppersecondary and post-secondary education.

There is also a vast variety of institutes for vocational educationotherthanthosecontrolled by the Department of Vocational Training. For example, those under the jurisdiction of the Ministry of Education are: vocational training colleges, which areprivate institutes to offer upper secondary and post secondary education controlled by the Secretariat of the Board of Private Education; and the Rajamangala Institute of Technology (Sathaaban Theknoloyii Rajamangala) to offer upper secondary to college education. Art and dramatic schools are controlled by the Department of Art Bureau, a general course towards a certificate to teach vocational courses at institutes for secondary education is controlled by the Department of General Education, and an upper secondary course offered by King Mongkut (King Mongkut) Institute of Technology is controlled by the Ministry of Higher Education(12). Rajamangala has developed an original curriculum, and private institutes to offer PWC courses may adapt curriculum developed by Rajamangala or by the Department of Vocational Training, as they deem suitable in light of their conditions and principles. The numbers of the students working towards PWC, PWS, PWT, PTS and undergraduate degrees from Rajamangala were 712,327, 390.828, 2,682 and 25,661, respectively(13).

While the above summarizes the educational system as of 2000, a large-scale educational reform to follow the modernization of education is being made pursuant to the National Education Act of 1999 (14)("Education Act"), which came into forceonAugust20,1999. The Constitution of the Thai Kingdom of 1997, under which the Act was enacted, provides that twelve-year basic education shall be offered free of charge. Based upon this provision the Act provides that the compulsory education shall be offered for nine years, and the twelve-year basic education shall beofferedfree of charge by 2002.

Other aspects of education reform to be realized by the Act include: educational

administration reform; enactment of laws providing for a right to receive education and duty to educate; reform of educational methods; reformconcerning teachers; introduction of a system for the evaluation of the quality of education; reform of educational finance; conversion of universities to juridical persons; and promotion of educational technology (15). Theeducational system in Thailand is expected to be drastically remodeled through these reforms and changes, and reform is taking progress under the leadership of the Department of Educational Reform, which has been organized by a law in force only for a limitedperiodoftime.

As for vocational education, Section 20 of the Education Act provides that "vocational education and training shall be provided by national and private institutes for education and corporations, or by cooperative endeavorsofinstitutesofeducationandcorporations. Vocational education and training shall be subject to the Vocational Education Act and other related statues." The Vocational Education Act did not exist when the Education Act was enacted, but it was draftedbytheDepartmentofVocational Education of the Ministry of Education, submitted to the Minister o f Education in September2000,andisnowbeingdeliberated (16).

6.2.2 Labor policiesandthesystemofvocational training

Labor administration in Thailand is considered to have been initiated in the 1930s after the revolution of 1932. The ministry in charge of the administration was the Home Office, and it administered labor-related issues through the department of employment(17). However, not much had been done until systematic socio-economicdevelopment came tobedoneinthe1960s.

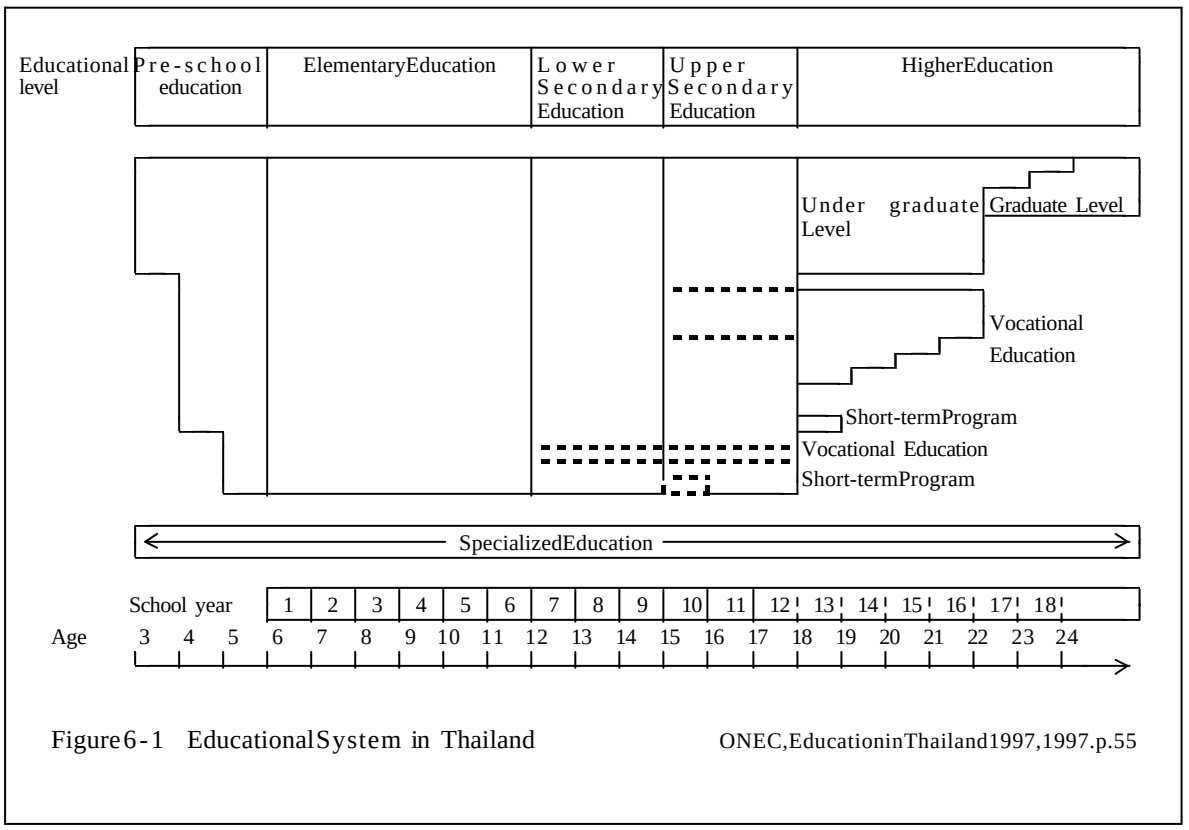


Figure6-1 EducationalSystem in Thailand ONEC,EducationinThailand1997,1997.p.55

The major issues for Thailand in this period were unification of the nation and the establishment of a nation-state by the promotion of nationalism, and maintenance of independence from the western powers through such endeavors.

It became necessary to provide integrated control over protection of workers and labor relations after industrialization through economic development started to develop, and this led to the establishment of the Department of the Labor (krom Raenggaan) within the Home Office in 1965. As the issues to be dealt with by the Department continued to expand, it was abolished and re-organized as the Department of Skill Development (DSD) (Krom OhattanaaFiimuu Raenggaan) and the Department of Social Welfare and Labor (Krom Sawasdikaan lae Khumkhroong) in 1992. Later these two departments were united to be the Ministry of Labor and Social Welfare (Krasuang Raenggaan lae Sawasdikaan Sangkhom) in1993 (18).

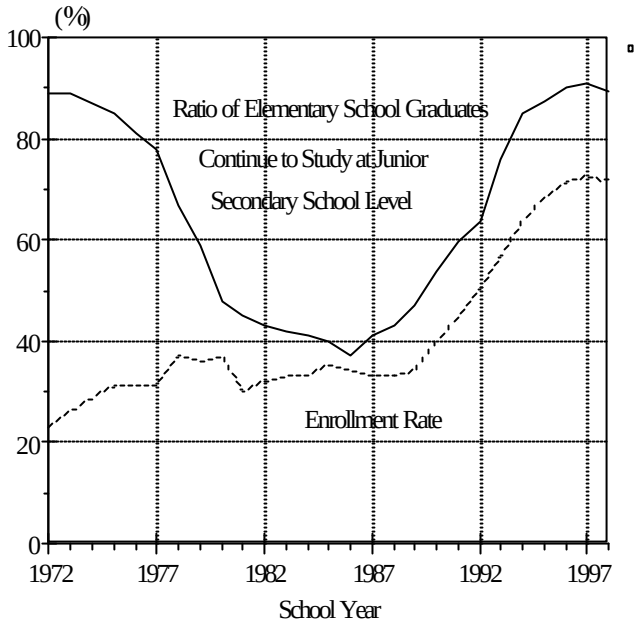


Figure 6-2 Trend of Enrollment Rate at Lower Secondary School Level and the Ratio of Elementary School Graduates Continuing Studies

The two institutes for skill development, which are the subject of this survey, were established under the Department of Labor of the Home Office. The outlines of the policies of the Department were as follows. The Department of Labor continued to show most expansion among the twelve departments in the Home Office, and it had as many as 19 sections, including the administration section, just before it expanded to twodepartments. Additionally it had local labor offices in73prefectures to offeradministration services including labor relations,mediation and employment services. The major fields dealt with by the Department of Labor were: employment services, protection of laborers, vocationaltraining,andlaborrelations (19).

The employment services refer to agency services to intermediate between employers and those seeking employment, and aims at ensuring employment security. Protection of laborers refers to control of all the industries and commercial establishments from the viewpoint of the protection of laborers pursuant to the Labor Law, which was enacted in 1955. Some of the major issues in this field includes protection measures concerning labor by women and children, prohibition of employment of children under twelve, compliance of the minimum standards for health, safety and welfare of laborers, the operation of social compensation funds to cover labor related damage and injuries, deliberation on and administration of minimum wages. The objective of vocational trainingistheexpansion of employment services targeted at unskilled and unemployed laborers through developing skills. Issues concerning labor relations include negotiation between laborersandemployers, labor unions,andthemediationoflabordisputes.

In particular, systematic administration of vocational training was initiated in 1953, when Vocational Training Section was set up in the Division of Youth Welfare, Department of Social Welfare of the Home Office, and it was transferred to the Center for Vocational Training (Sun Fuk Aachiip) in 1964. Further, the Center for Vocational Training was upgraded to the Division of Vocational Development, Department of Labor when the department was established in 1965. Following the foundation of the National Institute for Skill Development (NISD: Sathaaban Phatanaa Fiimuu Raenggaan Haeng Chaat) in 1969, regional Institutes for Skill Development (regional ISD: Sathaaban Phatanaa Fiimuu Raenggaan Phaak Phuumiphaak) came to be established in various regions one after another. By 1991, ISDs to be the center in each region were established in Ratchaburi, Chonburi, Lampang, Khon Kaen, Songkhla, Nakhon Sawan, Ubon Ratchathani, and Surat Thani. Such establishment of ISDs in various regions was based upon the Local Economic Development Core plan, which was a measure for correcting regional gaps (20). Many of the prefectures where ISD was established were overlapping with the target areas for tax concessions under the Promotion of Investment Act. In addition to functioning as the center for vocational training for the BMA, NISD came to be the leader for regional ISDs, as thenumber of such regional institutes increased.

Along with the establishment of the Ministry of Labor and Social Welfare, the departments of employment services and of laborers' protection were separated from the above-mentioned DSD, and the DSDcame todealonlywithskilldevelopment. As thedepartment for instructors training in the NISD was transferred to the DSD when this reform tookplace, the NISD has lost the function asthecentral authority,andthusbecameoneoftheregionalISDs.

While each ISD is playing a key role in vocational training, DSD has been developing Provincial Centers for Skill Development (PCSD: Sun Phattanaa Fiimuu Raenggaan Cangwat) in prefectures without ISDs. Currently there are either ISD or PCSD in 56 out of 76 prefectures in the country.

The activities of DSDaresummarizedasfollows (21):

1) To monitor and forecast the demand in human capital resources to cope with the educational reform of thecountryinindustrial infrastructure, business, services and agriculture;
2) To meet the demands on the laborers in the national and international labor markets through development of potential abilities of the laborers, thusenhancing the levels of the labor force;
3) To encourage the private sector to participate in skill development;
4) To promote cooperation for skill development at thenational and the international levels; and
5) Todevelopinformation systems for skill development atthemicroandmacro levels.

DSD administration is subject to The Law Concerning the Promotion of Vocational Training B.E. 2537 (hereinafter the Vocational Training Law) (22), which was enacted in December 1994, and it came into force in March 1995. The law defines vocational training as "to teach or improve the knowledge, skills and the thinkingpower of the trainees in an effective manner, without making them bear the expenses of training, so that the trainees will be able to obtain a job inthereainwhichtheyreceivedtraining" (Art. 4). The Vocational Training Law consists of Chapter I: "The Committee on the Promotion of Vocational Training", Chapter II:

"The implementation of Vocational Training", Chapter III: "Training for the Enhancement of Skill Levels", Chapter IV: "Skill Levels Examination", Chapter V: "The Rights and Privileges of those who offer Training",andChapterVI:"RelatedPersonnel and Registration Officers".

Generally the Law aims at encouraging the private sector to participate in vocational training through measures such as giving tax breaks. However, it does not provide for major reform by the government, and thus it is more of a procedural law and is different from the various laws enacted after the Constitution of 1997, which aimed at structural reforms. Turning to the area of education, which is closely related to vocational training, the National Education Law was enacted and enforced in 1999, and a bill concerning vocational training is being deliberated. Although it seems necessary to revise the existing law or draft a new one concerning vocational training i n order to maintain conformity, so far the Ministry of Labor and SocialWelfare is not workingontheissue.

The Committee on the Promotion of Vocational Training established according to the provision of Chapter I holds the administrative vice-minister as the chairman, and consists of 17 members includingpersonnel from the Ministry of Labor and Social Welfare such as the director of the department of Skill Development, these from the Ministry of Education such as the director of the Department of Vocational Education, and those from other Ministries such as the Ministry of Higher Education and the Ministry of Defense, as well as representatives of employers and laborers (Art. 7). Their duties are;

(1) to determine the types of jobs for which to offer and encouragevocational training, to set up skill standards, and to submit policy proposals concerning the enhancement of the skill levels to the Home Office;

(2) to make rules concerning the research on the necessity of vocational training, enhancement of skill levels, setting up of Skill Standards, Skill Standards Testing and skill development;

(3) to make rules and establish procedures of skill competition at the national level in each job area;

(4) to establish qualificationofinstructors for vocational training for each type of job;

(5) to promote and evaluate vocational training, enhancement of skill levels, setting up of skill standards, and skill level examinations with the collaborative activities of the government and the private sector;

and (6) others provided for by the ministry ordinance (Art. 10).

DSD performs its duties concerning vocational training, which is a part of labor administration, according to the policy proposed by this committee and approved bythecabinet.

Currently the DSD consists of 17 departments and divisions including an administrative division. The areas being dealt with b y DSD canbedivided into the following eight categories from the viewpoint of services offered to people, namely, (1) vocational training, (2) skill up grading training, (3) promotion of Skill Standards Testing, (4) training of trainers and instructors, (5) registration of vocational training courses under the Vocational Training Law, (6) registration of the training courses for employees at enterprise, (7) skill competition, and

(8) borrowing from the skill development fund (23). Among those it is (1) vocational training, (2) skill up grading training, (3) administration of Skill Standards Testing, and (7) skill competition that ISDs offer.

The basic project in (1) vocational training is pre-employment training, which aims at offering training to instill basic knowledge and skills to both men and women who seek employment and to prepare them for the labor market. The trainees are to receive in-plant training at companies and factories for 1-4 months, after having received training involving equipment and machinery for training at an institute for vocational training for 2-10 month. The target group for this training consists of those aged between 13-15 years old elementary school graduates who seek employment without having access to further education. Pre-employment training consists of 6-10 month courses to be offered at an institute for vocational training and other courses are taught by the instructors of the instituteatplacesother than the institute. This is because 2-4 months of a mobile training program (24), which used to be conducted, became part of the pre-employment training system since 1997. According to the statistics for 1999, 21,603peopleregistered for the training offered within institutes for vocational training, of whom 14,600 completed the training (25). The numbers of those who registered for the training offered outside the institutes and those who completed such training were 51,871 and 50,564, respectively (26).

Skill upgrading training aims at developing special skills and knowledge in specific fields in industry, commerce, and services to those who have already obtained employment, and consists of over 60 hours of courses. Additionally 30-60 hours of short programs, which used to be referred to as "promotion of training within a company" such as "special training" and "supervisors' training" came tobepartofthisframework since1998. The total number of those registered for these programs was 158,467, and that of those who completed the programs was 143,325, respectively (27). However, the numbers concerning those who registered for skill upgrading training is about half of these figures, judging from the statistics for 1997 and earlier.

Skill Standards Testing aims at judging and certifying the quality of laborers according to the National Skills Standards set by the Committee for thePromotion of Vocational Training,and also at giving incentives to laborers. It was when the National Committee for Skill Development was established in 1968 that the National Skill Standards started to be developed. The committee made subcommittees for the development of skill standards and testing consisting of government personnel, employers, and employees, and made themofficial committees within the Home Office in 1978. Further, the committee changed its title to the National Skill Standards Committeein1992,anditwasplacedundertheMinistryofLabor and Social Welfare when the ministry was established in 1993. Later the committee for the promotion of vocational training came to cover the authority and duty of the committee when the Vocational Training Act was enforced (28).

At the beginning, in 1971, the number of subjects for the Skill Standard Testing was 3. The number increased gradually, and the number of subjects newly included in the 1970s, 1980s and 1990s were 8, 14 and 46, respectively. Also, the Standards have been subject to revision

since1997. 21 subjects werenewlyincluded in2000,thus covering 89 subjects. (One of them has beendeleted from the list.) There are Level 1 (basic level), Level 2 (intermediary level), and Level 3 (advanced level) for each subject. It issaidthat, generally, it is the Level 1 testing that those who received pre-employment training at an institute for vocational training can pass, and they can passhigher levels asthey obtain work experience. 39,242 took the test and17,249 of those passed in 1999 (29).

The "competition" is a contest that the Department of Skill Development carries out every two years in cooperation with the private sector for those aged under 20 related to skills in the areas of industry and business. It is also the activity of the department to send laborers who did well in the competitions to international competitions. Each ISD acts as a window to join the competitions (30).

While the above outlines the system of vocational training, the following is a summary of the employment situation in Thailand. According to the National Census conducted in 2000 (31), the population of the country is about 60,62 million, up 11.1% from some 54,55 million according to the previous census in 1990. The labor force is about 32,98 million, where the numbers of the employed, seasonal workers, unemployed are 22,31 million, 8.07 million, and 2.60 million, respectively, with an unemployment rate of 7.87%. Although the ratio of those in farming is onthe decrease, about a half of the labor force is in farming, and their ratio isashigh as 56.7% (66.8% in 1990). However, the decrease in farming population and the increase in those in manufacturing, commerce, and services have slowed down since the economic crisis of 1997. The statistics of the status of workers demonstrate that ratios of those whose status is unstable are high: for example, family workers, who do not receive wages, and the self-employed, are as high as 30.9% and 32.8%, respectively. On the other hand, the ratios of those in the private sector and public sector (including civil servants) are 25.2% and 9.4%, respectively.

Although the definitions of categories for the National Census are different from those for the Labor Statistics, it is worth introducing the figures according to the Labor Statistics (32). According to the Labor Statistics as of May 2000, the total population was about 62,34 million. The labor force was about 33,27 million, of which the numbers of the employed, seasonal workers, and unemployed were about 30.44 million, 1.46 million, and 1.36 million, respectively with an unemployment rate of 4.10%. The unemployment rate is 6.79% for the Northeastern Region, which is higher than the national average, and the unemployment of the youth (aged between 15-24) is outstanding. According to an analysis by industry, the fraction of the labor force in farming, forestry, hunting, and fishery was 42.2%. The reason why the figures of the Labor Statistics and the National Census are different seems to be that the latter covers the laborers activities for the past 12 months while seasonal laborers work only in the busy seasons for farmers. According to the statistics by the status of workers, family workers, who do not receive wages, and the self-employed, workers in the private sector, and civil servantsare22.4%, 32.7%,32.7%and8.8%,respectively.

Recruitment activities by employers center around traditional methods such as putting

posters in front of factories or direct or indirect personal recruitment. Even though various types of employment agencies have joined the picture, their influence on the recruitment is still minimal (33). Although the Ministry of Labor and Social Welfare operates public human resources offices, they are not very effective either. It is pointed out that one of the characteristics of the labor market in Thailand is that the ratio of those who migrate to foreign countries is high. Migration of laborers to other Asian countries such as Taiwan and Singapore and to the Near and Middle East was outstanding in the 1970s on wards. The government stopped encouraging such migration in the early 1990s in consideration of the influence the Gulf War and labor shortage at home; however, it once again came to promote migration of some workers after the country was faced with the recent economic crisis. For example, the government is encouraging Thai food cooks to work abroad as goodwill ambassadors to introduce Thai culture. According to statisticsbythegovernment, 202,000 people were working abroad, of which 179,000 were in other Asian countries, however these figures may be smaller than the actual numbers (34).

A study by Tasaka has discussed the labor market in farming villages in detail. By analyzing the temporal and permanent migration of workers from farming villages to big cities, he found that there are four categories in labor markets in farmingvillages that migrate to cities, dependingonthesocial structure within the villages and their geographic conditions. According to Tasaka there is: (1) a labor market of "professionals and supervisors", where the laborers must be college graduates equipped with sophisticated knowledge; (2) a labor market of those equipped with skills and knowledge necessary to work in modern factories, where the laborers are high school graduates or ex-trainees of vocational schools, thus qualifying for favorable working conditions and wages; (3) a labor market of those who are equipped with skills necessary for domestic industry; and (4) a labor market of those who arenotequippedwith the above-mentioned skillsorknowledge (35).

The vocational training that institutes for vocational training offer is targeted at the category (4), above, and aims at upgrading the labor force to the level of category (3). While this analysis by Tasaka has been based on the conditions in the farming villages in the 1980s, when the labor markets in farming villages were immature, it has been pointed out by recent studies that conditions have changed drastically in farming villages. According to the survey that Kitahara et al. conducted in the Roi Et prefecture in the Northeastern Region in1996,avast majority of farmers have a side job, and farming has become a paying job. Furthermore, there are small-sized businesses that havecreated employment opportunities within farming villages in direct relationship with the BMA. These facts indicate that farming villagesarenotonly sources of labor force supply for big cities, but also have formed their own labor markets, and that markets have been growing within such villages due to the development of communication and transportation systems (36).

6.2.3 Outlines of the survey subjects

(1) Khon Kaen Institute forSkill Development

It was decided in the 4th National Plan for Socio Economic Development initiated in October 1976 that the second-phase measures to expand institutes for skill development be continued to the third phase. This measure was considered timely and was supposed to contribute to the realization of (1) narrower income gaps, (2) maintenance of national security, (3) improvement of wage structure and expansion of employment opportunities, (4) increase of the population growth and improvement of human capital, and (5) development of farmingvillages,amongnineobjectivesof the national plan.

Kohn Kaen Institute for Skill Development (KISD) was planned and established for the people in the Nakhon Sawan and Songkhla areas and the Northeastern Region to offer opportunities for practical vocational training, in which the needs of the labor market were reflected. Phase 3 of the expansion measure was part of the 4th National Plan for Socio Economic Development, following NISD established by Phase 1 of the expansion measure and Regional Institute for Skill Development established in Ratchaburi, Chonburi, and Lampang establishedbyPhase2ofthemeasure. Japanoffered grant aid cooperation of one billion yen to cover the costs of the building, equipment and facilities. A project-type cooperation was also conducted a fouryearprogram extending from December 1977 to December 1981. The institute accepted its first trainees for 12 job categories in July 1979 (thenumber of thecategorieswas 19 when theprogramwascompleted), and thecooperation period was extended to March 1983.

Fifteen experts were sent to the Institute from Japan (4 on a short-term basis and 11 on a long-term basis), and the 160 million yen worth of equipment were shipped freeofcharge along with 7.8 million yen worth of hand carried equipment. On the other hand, twenty-one Thai expertsweresenttoJapan, 5 to receiveadministrative and, 6 to receive technical training.

According to the evaluation made at the end of the project, skills transfer to the counterparts proceeded smoothly. Additionally, the operation of the center was found to have met the needs for vocational training in the community through offering various courses at basic and inter-mediate levels mainly for young unemployed people who cannot receive education withintheschooleducation systemduetopoverty and other such reasons. However, it has been pointed out that the measures for decentralization of industry and promotion of local industry in the Northeastern Region, which had been planned to be implemented at the same time as measures concerning vocational training, had not been so successful, and as a result a vast majority of those who received training moved to other regions because demand for workers did not increase in the region (37). In fact this problem had been recognized in the research conducted in preparation for theproject (38); however, it is a socio-economicissue,whichcould not be solvedbyalocalinstituteforskilldevelopment.

For a while after the project had been completed, KISD's target area included all the prefectures in the Northeastern Region. However, it came to cover seven prefectures in the northern region after the establishment of institutes in Ubon Ratchathani and Nakhon Ratchasima. Furthermore, it also came to govern PCSD, which was established gradually in other prefectures.

Currently pre-employment training in 36 types of jobs is being offered in the fields of

construction (14), automotive industry (7), electrical/electronics (8), welding (6), and craft (1). The length of training period varies from "two-month training at ISD plus one month in-plant training" to "10 month training at ISD plus two-month in-plant training", depending on job areas. The most common patterns consist of four-month training at ISD plus one or two-month in-plant training. Originally the courses targeted unemployed young people aged between 16 and 25; however, there are trainees younger than 16 or over 25. All the applicants to the center have been accepted, as the number of trainees is 923, which equals the number of applicants. This is also true of 1999. As of 2000, the number of trainees, those who had completed training, and those confirmed to have obtained jobs were 923, 589, and 199, respectively.

The ratio of those who had secured employment was 33.8%. Among those who are in the fields of construction, automotive, electrical/electronics,andwelding the ratio was 36.7%, 30.4%, 29.3%, 41.7%, respectively. Compared with past performances, it is considered that the quality of the trainees has deteriorated because the acceptance rate was 3.5 at the time of establishment but it is 1.0 right now. As for skill-upgrading training, courses are offered for 61 types of jobs. According to the interviews held at KISD, 80% of those receiving skill-upgrading training are currently unemployed.

(2) Ubon Institute for Skill Development

The Thai government continuedtopromote human resourcedevelopment, putting emphasis on suchobjectives as increasing employment opportunities, narrowing income gaps, and regional developmentinthe5thandthe6thNationalPlanforSocio-economicDevelopment (1982-1986 and 1986-1991).

Although KISD, which has been mentioned above, had already been established in the Northeastern Region, the jurisdiction of the center covered as many as 17 prefectures and the capacity of the center was not sufficient to meet all the training needs of the people in the target area. As a result, a majority of the trainees were from areas near the center, and there were a number of young people in areas away from the center who were not able to receive training despite their wishes. Additionally, those who were not able to receive training were moving from ruraltourbanareasasunskilledlaborers, and thegovernment had to take measurestocope with the problem.

In these circumstances the government, in an attempt to develop skilled laborers to meet the needs of the industry and the region, divided the Northeastern Region into two areas, consisting of 9 northern prefectures to be covered by KISD and 8 southern prefectures to be covered by a new institute for skill development in Ubon. To make the establishment of the new institute possible, Japan extended a grant aid cooperation of 2,337 million yen to cover the costs of the buildings and the equipment of the new institute. Furthermore, the country made project-type technical cooperation for five years from October 1988 to September 1993. The Ubon Institute accepted its first trainees in June 1989. Japan sent in a total of 38experts (1 on a short-term and 17 on a long-term basis) and offered some 300 million yen worth of

equipment. Furthermore, 8 Thai experts were sent to Japan to receive administrative training and 20 sent to receive technical training.

UBISD is the 8th institute for vocational training to be opened in Thailand, and it marked the completion of the long existed network plan to establish centers for the development of practical skills in various places in the country, thus providing necessary infrastructure in HRD. Incidentally KISD and UBISD came to cover 7 northern prefectures and 7 southern prefectures, respectively, after an institute for skill development was established in Nakhon Ratchasima. Also, they are supervising PCSD, which were later established in each prefecture.

Currently pre-employment training in a total of 17 types of jobs is being offered in the fields of construction (6), automotive (4), electrical/electronics (3), and machinery/ welding (4). The length of trainingperiod is either "six-month training at ISD plus three month in-plant training" or "10 month training at ISD plus two-month in-plant training",dependingonjobareas. However, the above- mentioned courses are pre-employment training introduced in the institute brochure, and training in such areas as computer maintenance, data recording, and diamond cutting arealso offered upon request from companies. Inparticular, training indiamond cutting is unique in that it has been offered upon request from a company in Bangkok, which bears the cost of training including facilities and instructors. UBISD recruits trainees, and offers a space for training. After four-months training, those trainees who are found to have cleared certain standards move to the BMA with the instructors and areemployedbythecompany. It has been found through the questionnaire survey, which will be mentioned later, that those trainees (all female) are receiving relatively high wages and their working conditions are favorable. However, what is interesting about this type of training is that it is not in concert with the originalobjective of the institute to stop the drain of workers to Bangkok.

The number of trainees in 2000 was 689. According to the statistics for 1998 (the latest of the available figures) the ratio of those who obtained jobs in construction, automotive, electrical/electronics and machinery/welding are 52.2%,43.0%, 45.7% and50.7%, respectively. These figures show whether the companies who offered in-plant training hired trainees after the training, but it has been said that all the trainees will be hired eventually. Although almost all the trainees of UBISD were being employed in 1995, situations are changing after the currency crisis. The number of applicants remains about twice the capacity. Incidentally, the number of trainees in the other courses of pre-employment training, skill-upgrading training and special training are 837, 1,847 and1,717, respectivelyin2000 (39).

6.3 Outline of the Evaluation Survey

6.3.1 Theory behindthe survey

Traditionally, the establishment oftheinstitute, which is theproject target, transfer of skills to counterparts, the mode of utilizing equipment, the number of students, and such other matters were evaluated in the light of R/D, in evaluatingprojects inthefieldofeducation and training.

Evaluation on these points was made for KISD and UBISD at the time when the projects were completed; and it has been found that the objectives of the projects have been achieved for the most part (40). While such objectives are merely used as indexes to demonstrate the activities of the projects, originally they are benchmarks in that if they are achieved, higher-level objectives will also be achieved given that outer conditions are satisfied. It is possible in developing countries, where the outer environment changes over time, that outer conditions are not satisfied. In such circumstances it is necessary to modify objectives as appropriate. To express this idea in the context of PDM, it is necessary to restate project objectives in such a way as to cope with the changes in outer conditions.

Because both the KISD and the UBISD projects were assistance initiated more than 10 years ago, it is impossible to make plans strictly based upon PDM. However, higher-level objectives had been more or less defined, and project objectives expressed as plans. As for

Table 6-1 Framework of the Project

Framework of the Assistance to UBISD		Framework of the activities of the KISD and UBISD in this survey	
Target Group	Instructors at new ISD to be established in Ubon, Thailand	Target group	Workers and potential workers in the northeastern region
Higher objective	To establish a new ISD in the south part of the northeastern Thailand to achieve the objectives set under the 5th and the 6th national economic and social development plan including expansion of employment opportunities, minimization of income gaps, and promotion of regional development, and develop skilled laborers to meet the need of industries and community.	Higher Objectives	To expand employment opportunities To minimize income gaps To realize regional development
		Objectives of the project	The target figures concerning the "outcomes" below such as the number of workers produced by ISD, improvement in productivity, improvement in productivity for the region as a whole
		outcome	Production of skilled laborers to meet the needs of industry and community, and improvement in productivity
Project objectives	(1) To offer vocational training to young people at the new ISD (2) For Japanese experts to enhance the skills and abilities of ISD instructors in terms of teaching method and the development of teaching materials	Target figures	Target figures concerning the following outputs including initial R/D (e.g., number of trainees and courses)
Outcome	(1) Construction of school building of the new ISD and preparation of necessary equipments and materials (2) Development of skilled laborers to meet the needs of industry and community (3) Improvement of Thai instructor's skills and abilities (4) Development of southern area in the northeastern Thailand (5) Nation-wide networking of local centers for vocational training	output	Implementation of vocational training Numbers of trainees, ex-trainees, courses etc.

UBISD, the elements of PDM are integrated in the case reports, and such elements are demonstrated in Table 6-1 (41).

In this table, frameworks of project-type technical cooperation, grant aid cooperation and the activities of UBISD are overlapping, thus making it difficult to understand the structure. While the basic objective of project-type technical cooperation is the transfer of skills to instructors through technical cooperation, the "higher-level objective" of UBISD is regional development through the development of skilled laborers. In other words from theviewpoint of UBISD, the main outcomes of the creation of skilled laborers, improvement of productivity in society as a whole, and development of instructors are merely a means for producing such results. In making an overall evaluation of the project from the viewpoint of the "correction of regional gaps", which is the objective of this study, it is necessary to measure the effects corresponding to the "higher-level objectives". To this end it is necessary not tobeconfined by the framework of cooperation and aid, and examine the project from the framework of higher-level objectives.

Aside from the PDM, effects of the projects are expressed as output (results or the activities) or outcome (fruits). There is still room for disagreement about the definitions of theseterms; however, for the purposeofthispaperwedefinethemasfollows: Output refers to concreteamount oformode of activities, whileoutcome refers to "the fruitsbrought about bythe activities" (42). It can also be said that outcome consists of the results of the interaction between output and social environment (43).

The right hand column in the table shows the definitions of output and outcome. It goes without saying that the evaluation of technical cooperation itself is important; however, this study does not cover this subject because reports on this matter have already been published, as mentioned earlier (44). The evaluation of the process is not the target of this study either, but this will be covered as deemed necessary because it has something to do with the policy recommendations to be made in the end. As there are a vast variety of outcomes of education and training, the scope of outcomes is determined by the scope of the analysis. Therefore, such secondary outcomes as thosebrought about by the establishment of UBISD are not dealt with in this study. The projects can be expressed in a straight forward manner as in the right column, by defining the results as outputs and outcomes, setting project objectives as the values to be satisfied by outputs and outcomes, and drawing a framework to connect activities and higher-level objectives with theelements.

Now, a crucial point here is the definitionofskilledlaborers in terms of "fruit" (45). As discussed in details in 5.4, below, indexes of the numbers of trainees or ex-trainees as outputs, are not satisfactory as an index in project evaluations. It is necessary to examine not only the number but also the quality of skilled laborers. Thus, an index on the improvement of productivity has been set as an index for project evaluation. Furthermore, it is considered that there are effects and utility in outcomes (46), the degrees at which the ex-trainees are satisfied with the training are measured to demonstrate the utility. In general, cost effectiveness has not been analyzed in project evaluations in the past. However, in evaluating both ISDs it is

necessary to examine,inthelightoftherelationshipbetweenISDsandthelabor market, whether the ISDs have producedtheex-trainees to the labor marked in such a way thattheyarerelevant to the investments made in the ISDs; whether the ex-trainees are qualified to be skilled laborers in the labor market;and what roles the ex-trainees have inthelabormarket.

The easiest method for evaluating projects on education and training is to take the whole activities of a project as a system and compare the inputs and outputs (or outcomes) of the system to assess its effectiveness. Here, the inputs of the system are equipment, buildings, training materials, instructors, trainees and such other items. All of these can be expressed in terms of financial value. Facilities are calculated as expenses as well as the labor of the staff including instructors. Also trainees bear some costs,eventakingintoconsiderationthe expected increase in their wages in the future, in that they do not work while receiving training. This paper evaluates these ISDs through comparing the inputs and outputs and outcomes, and conducting cost-performanceandcost-benefit analyses to assess their effectiveness.

The contribution to the realization of higher-level objectives will be touched upon in the financial effects; however, it can be said that a project is contributing to regional development if it is found, through a cost-benefit analysis, that it has improved productivity (or produced outcomes) exceeding its costs (inputs).

6.3.2 Outline of the field study

We conducted a survey in the BMA, and the Northeastern Region of Thailand, mainly in Kohn Kaen and Ubon prefectures. The periodofsurvey, survey methods, targets, and the items in the questionnairesareasfollows:

Period: Preliminary survey: 10/31/2000 - 11/16/2000
Main survey: 11/28/2000 - 12/30/2000

Methods: In the preliminary survey we gathered information about the target institutes and prepared questionnaires. Based upon the results of the preliminary survey, we conducted questionnaire surveys on (1) trainees and (2) ex-trainees of KISD and UBISD, and (3) interviews of the ex-trainee supervisors. At the same time, we visited vocational upper secondary schools governed by the Ministry of Education in an attempt to obtain information about the local labor market and the current status of the supply of laborers by institutes for education and vocational training.

Outlinesofthesurvey:

(1) Questionnaire surveyoftrainees

Both for KISD and UBISD, a questionnaire survey was conducted on 200 trainees receiving pre-employment training offered within the ISD and 100 trainees receiving skills up-grading training. We set priority on courses so that the samples will be evenly spread in terms of coursesand educational background. However, as the survey was conducted right after

a school year had ended, most of the courses had been finished or turned into in-plant courses. Therefore, trainees in almost all the courses offered within the institutes were the targets of the survey. Thenumber of questionnaire sheets distributed and collected at the ISDs and collection rates areasfollows:

KISD Number of distributed copies: 328
(Pre-employment training: 197 Skill up-grading training: 131)
Number of collected copies: 282
(Pre-employment training: 187 Skill up-grading training: 95)
Collection rate: 86.0%

UBISD Number of distributed copies: 361
(Pre-employment training: 219 Skill up-grading training: 142)
Number of collected copies: 248
(Pre-employment training: 177 Skill up-grading training: 71)
Collection rate: 68.7%

Questionnaire items:
* Types of training and the characteristics of trainees such as age and educational background
* Reason for participating training
* Evaluationoftraining
* Plans for the future

(2) Questionnaire surveyonex-trainees

For both ISDs the main target of the survey was the ex-trainees who participated in pre-employment training; however, we alsohadex-trainees of other courses cooperate with us at the companies who have hired both ex-trainees of pre-employment training and other types of courses. Using the list of ex-trainees, we selected companies for which ex-trainees were working for in Khon Kaen and Ubon Ratchathani, wheretheISDsarelocated, and the BMA,and we visited them to conduct the research. Although we had intended to distribute 200 copies each for KISD and UBISD (100 in Khon Kaen or Ubon Ratchathani, and 100 in BMA), we were not able to achieve this target because there were a number of ex-trainees whohadquitthe job before the survey. The number of questionnaire sheets distributed and collected at the ISDs and collection rates are as follows.

KISD The Kohn Kaen area
Number of distributed copies: 67 Numberofcollectedcopies: 52
The BMA
Number of distributed copies: 118 Number of collected copies: 53
Total

Number of distributed copies: 185 Numberofcollectedcopies: 105
(Collection rate: 56.8%)

UBISD The Ubon Ratchathani area
Number of distributed copies: 98 Number of collected copies: 89
The BMA
Number of distributed copies: 142 Numberofcollectedcopies: 107
Total
Number of distributed copies: 240 Numberofcollectedcopies: 196
(Collection rate: 81.7%)

Note: In the BMA there are companies who hire ex-trainees of both ISDs, and, therefore, the number of copies distributed are overlapping inpart. The total number of the distributed copies is 240.

Questionnaire items:
* Types of the training course, and the characteristics of individual targets such as age and educational background
* Reasons for receiving training
* Evaluationofthetraining
* Current status in the workplace, wages, financial support to parents,plansforthe future,etc.

(3) Interviews of ex-trainees' supervisors

Along with the above mentioned questionnaire survey on the ex-trainees, we conducted interview surveys with their supervisors. Out of 72 companies that we visited, we were able to interview the supervisors at 53 companies. The total number of responses is 58 because more than 2 people were interviewed at somecompanies, and some of the companies in the BMAhad hired ex-trainees of both ISDs. At the same time as the interviews we also conducted a simple questionnaire survey on the evaluation of ex-trainees. The numbers of companies where we conducted thissurveyare as follows:

KISD
The Kohn Kaen area: 19 companies
The BMA: 12 companies
* Weconducted a survey on the evaluation of ex-trainees of both ISDs at 2 companies.

UBISD
The Kohn Kaen area: 15 companies
The BMA: 9 companies
* Weconducted a survey of theevaluationofex-traineesofbothISDsat2companies.

Questionnaire items:

* Evaluation of ex-trainees (in comparison with workerswithdifferent educational backgrounds) from theviewpoint of the supervisor
* Supervisor's expectation toward ISDs

6.4 Results of the Questionnaire Survey

In this chapter we introduce the major outcome of the results of the questionnaire survey and present our analysis. Further, based upon the responses from ex-trainees, we will demonstrate the factors determining their satisfaction (effect of the project) that we found through covariant structural analysis. Although the questionnaire contains some questions on the evaluations of the vocational training that the targets are receiving (have received), we dispense with detailed analysisofthetrainingprocesses at KISD and USISDbecause this paper is focused on theanalysisofinputs and outcomes of the systemandthecircumstances surrounding it.

6.4.1 Survey of trainees

* Characteristics of the targets

First we clarify the characteristics of the trainees in terms of their age, educational background, and the reasons for receiving the training. Because the trainees have not completed their training, it is impossible to assess the impact of the training on them. However, these questionnaire results provide valuable information to take into consideration in determining the impact at the time that the traininghasbeencompleted.

Tables 6-2 and 6-3 show the ageandeducational background of the targets by instituteand course. Although the data is of part of the trainees, general trends can be found in these tables. As has been mentioned in 6.2.1, above, the basic targets of pre-employment training are unemployed young people aged up to 25, the training is being offered to young people with an educational background of lower secondary education or upper secondary education. However, due to the influence of the recent economic situation, about 10% of the trainees have received higher education, and someofthetraineesarerelativelyold. Other courses of skill development are meant for those who have received higher education. It is considered that such courses include those offered upon request of companies.

* Reasons for receiving training

Table 6-4 shows the values for various reasons, where the targets were asked to indicate how much the listed factors motivated them on a scale of 1 to 5. (1: Not motivated at all, 2: Motivated just a little, 3: Motivated to some extent, 4: Motivated very much, 5: Most strongly motivated). Results for pre-employment training and other types of training courses were compiled separately because thecharacteristics of the trainees greatly varybycourse.

The factors which were highly recognized as a reason for receiving training regardless of

Table 6-2 Characteristics (Age) ofTrainees (Enrollees)

Age		~15	16~18	19~21	22~25	26~30	31~35	36 ~	Total
KISD	Pre-employment training	3	100	56	23	10	4	1	197
		1.5%	*50.8%*	*8.4%*	*11.7%*	*5.1%*	*2.0%*	*0.5%*	*100%*
	Other training courses	0	4	4	16	17	10	23	74
		0.0%	*5.4%*	*5.4%*	*21.6%*	*23.0%*	*13.5%*	*31.1%*	*100%*
	Total	3	104	60	39	27	14	24	271
		1.1%	*38.4%*	*22.1%*	*14.4%*	*10.0%*	*5.2%*	*8.9%*	*100%*
UBISD	Pre-employment training	5	81	55	20	7	0	0	168
		3.0%	*48.2%*	*32.7%*	*11.9%*	*4.2%*	*0.0%*	*0.0%*	*100%*
	Other training courses	0	0	1	2	8	11	30	52
		0.0%	*0.0%*	*1.9%*	*3.8%*	*15.4*	*21.2%*	*57.7%*	*100%*
	Total	5	81	56	22	15	11	30	220
		2.3%	*36.8%*	*25.5%*	*10.0%*	*6.8%*	*5.0%*	*13.6%*	*100%*
Total	Pre-employment training	8	181	111	43	17	4	1	365
		2.2%	*49.6%*	*30.4%*	*11.8%*	*4.7%*	*1.1%*	*0.3%*	*100%*
	Other training courses	0	4	5	18	25	21	53	126
		0.0%	*3.2%*	*4.0%*	*14.3%*	*19.8%*	*16.7%*	*42.1%*	*100%*
	Total	8	185	116	61	42	25	54	491
		1.6%	*37.7%*	*23.6%*	*12.4%*	*8.6%*	*5.1%*	*11.0%*	*100%*

Table 6-3 Characteristics (Educational Background) of Trainees (Enrollees)

Educationallevel		Elementary school graduates Lower secondary school dropouts	Lower secondary school graduates Upper secondary school dropouts	Upper secondary school graduates	Graduates or dropoutsof higher education institutes	Total
KISD	Pre-employment training	16	109	53	23	201
		8.0%	*54.2%*	*26.4%*	*11.4%*	*100%*
	Other training courses	3	14	4	54	75
		4.0%	*18.7%*	*5.3%*	*72.0%*	*100%*
	Total	19	123	57	77	276
		6.9%	*44.6%*	*20.7%*	*27.9%*	*100%*
UBISD	Pre-employment training	11	108	45	16	180
		6.1%	*60.0%*	*25.0%*	*8.9%*	*100%*
	Other training courses	0	1	4	48	53
		0.0%	*1.9%*	*7.5%*	*90.6%*	*100%*
	Total	11	109	49	64	233
		4.7%	*46.8%*	*21.0%*	*27.5%*	*100%*
Total	Pre-employment training	27	217	98	39	381
		7.1%	*57.0%*	*25.7%*	*10.2%*	*100%*
	Other training courses	3	15	8	102	128
		2.3%	*11.7%*	*6.3%*	*79.7%*	*100%*
	Total	30	232	106	141	509
		5.9%	*45.6%*	*20.8%*	*27.7%*	*100%*

Table 6-4 Reasons for ParticipatinginTraining (Trainees)

Training course ISD Surveyitems	Total Average (SD) # of valid responses	KISD Average (SD) # of valid responses	UBISD Average (SD) # of valid responses	Test (*1)
Pre-employmenttraining				
Toobtain knowledge needed in job	4.23 (0.95) N=366	4.26 (1.02) N=199	4.20 (0.87) N=167	
Toobtain skills neededin job	4.15 (0.89) N=365	4.14 (0.96) N=199	4.15 (0.81) N=166	
Togetagoodjob	3.88 (1.13) N=364	3.91 (1.18) N=197	3.84 (1.07) N=167	
Toimprove social standings	3.82 (1.08) N=361	3.92 (1.10) N=195	3.71 (1.04) N=166	+
BecauseI was unemployed atthat time	3.68 (1.09) N=363	3.67 (1.15) N=198	3.68 (1.03) N=165	
Toearnhighwage	3.53 (1.09) N=359	3.45 (1.17) N=195	3.62 (0.99) N=164	
Togethighsocial position	3.34 (1.14) N=357	3.31 (1.18) N=193	3.38 (1.09) N=164	
Because family/relatives encouraged me to do so	3.27 (1.32) N=363	3.26 (1.31) N=198	3.28 (1.35) N=165	
Because I was not able to receive more school education	3.19 (1.29) N=364	3.14 (1.30) N=199	3.26 (1.29) N=165	
Becauseschool teacherencouragedme to doso	2.24 (1.31) N=362	1.99 (1.25) N=198	2.55 (1.32) N=164	**
Becausemy supervisor encouraged metodoso	1.83 (1.24) N=356	1.62 (1.14) N=195	2.07 (1.31) N=161	**
Other training courses				
Toobtain knowledge needed in job	4.34 (0.96) N=119	4.19 (1.03) N=70	4.57 (0.82) N=49	*
Toobtain skills neededin job	4.26 (0.94) N=120	4.14 (0.99) N=71	4.43 (0.84) N=49	+
Toimprove social standings	3.70 (1.14) N=119	3.64 (1.17) N=72	3.79 (1.10) N=47	
Togetagoodjob	3.59 (1.29) N=120	3.59 (1.26) N=71	3.59 (1.34) N=49	
Togethighsocial position	3.09 (1.36) N=115	3.14 (1.35) N=69	3.00 (1.38) N=46	
Toearnhighwage	2.86 (1.30) N=115	3.07 (1.25) N=69	2.54 (1.31) N=46	*
Because my supervisor encouraged me to do so	2.43 (1.61) N=114	1.91 (1.29) N=70	3.25 (1.73) N=44	**
Becausefamily/relatives encouraged me to doso	2.26 (1.37) N=112	2.51 (1.36) N=71	1.83 (1.30) N=41	*
BecauseI was unemployed atthat time	2.15 (1.50) N=112	2.60 (1.60) N=70	1.40 (0.91) N=42	**
Because I was not able to receive more school education	1.99 (1.29) N=114	2.24 (1.35) N=71	1.58 (1.10) N=43	**
Becauseschool teacherencouragedme to doso	1.77 (1.14) N=110	1.99 (1.25) N=70	1.40 (0.81) N=40	**

(*1) **--ThegapbetweentheaveragevaluesforKISDandUBISDwasastatistically significant 1%.
* ThegapbetweentheaveragevaluesforKISDandUBISDwasastatistically significant 5%.
+ The gap betweenthe average values for KISDand UBISDwasastatistically significant 10%.

course were: to obtain knowledge necessary for jobs, and to obtain technical skills necessary for jobs. They are followed by to get a good job,andtoimprovesocialstanding.

In the case of those receiving pre-employment training, the values for factors other than those mentioned above, with the exception of 2, were above 3. One of the factors whose value is low is "because I could not go to upper school", and this implies, whether it is good or bad, that ISD isnotfunctioningas substitute for education within the school education system. It can be said that the fact that the values for "because a school teacher encouraged me to go to KISD/ UBISD" and "because supervisors/managers of companies encouraged me to go to KISD/ UBISD" significantly differ for KISD and UBISD means that the latter is doing better in PR activities to attract trainees. On the other hand, trainees in theother training coursesdidnotgive high points to factors other than the 4 mentioned above probably because they were already employed.

* Evaluationoftraining

Although the evaluation of training is not the main issue for this survey, the questionnaire contained questions on this matter and asked the targets to write about the strengths and weaknesses of KISD and UBISD. Thus, we shall touch upon the strong and weak points of the ISDs fromtheviewpoint of the trainees.

As for KISD, most of the comments on the strengths concern the instructors, and the trainees mentioned that theinstructors are qualified to teach skills and knowledge to them. This means that the instructors at KISD have been well trained and have sufficient teaching experience. However, at the same time, a number of the trainees also desire that the instructors make more efforts in teaching. One area which is also commentedupon byanumberoftrainees is about facilities and equipment,andithasbeencommentedthatthefacilities and equipment are satisfactory in terms of their numbers. Other strengths commented on are that the ISD offers opportunities to receive vocational training to anybody, that it offers a good learning environment, that the institute is well disciplined, and that training and education is offered free of charge. Judging from the comments it seems tohavebeenrecognized that the ISD has made it possible for people with lower-income to receive vocational training.

On the other hand, most comments on the weaknesses of the institute were about the facilities and equipment. It has been commented that they are out of order or obsolete. A majorityofsuchcommentsarefromtrainees taking courses in machinery. Halfofthecomments on the training itself expressed that it is desirable to expand the period for training so that the trainees can learn more sophisticated skillsandknowledge. There are also such other comments, for example, that there should be more classrooms and lavatories and that scholarship should be granted sooner. Although there are some requests concerning the instructors, there are not any negative comments on them, and it is considered that the strength of the KISD is in its instructors.

On the other hand, the areas that trainees at UBISD mentioned as the strengths of the institute are mostly about its overall operation, and many of the trainees mentioned that the

buildings and environment are wonderful, that the institute is well disciplined, and that it helps trainees enhance their employment opportunities. The second common comment is that the facilities and the equipment are adequate to the trainees, followed by the comment that the teaching techniques of the instructors are superb. However, the comments on the instructor's accountforonly15%of the total, which isconsiderably low compared with80%forKISD.

The comments on the weaknesses are that the machinery are old and obsolete, that the ISD should develop new courses on more sophisticated matters, that scholarship should be offered sooner, and that the instructors should teach moreeagerly. However, there is no matter which is heavily commented upon, implying that the ISD doesnothaveanyserious problems.

In sum, the strong and the weak points of the KISD is that it has quality instructors and that its facilities and equipment are old, and the strength of UBISD lies in its facilities and equipment. Itisconsideredthat this differencederivesfrom the fact that UBISD wasestablished 10 years after KISD. Another point worth noting is that comments on the weaknesses represent half of the comments for KISD, while they represent only 1/4 as for UBISD; in other words, the operation of the latter is better recognized. Incidentally such comments agree with those of ex-trainees for the most part. As such it is reasonable to consider that the above-mentioned commentsarereliableasopinions of those who have first hand experiences with the ISDs.

* Plans for the future

We analyzed where the trainees receiving pre-employment training think they would be if they had not received the training. The reason that we excluded the trainees in other types of courses is that a vast majority of thoseareemployed, thus clearly their characteristics differ from those of the trainees in the courses of pre-employment training. To the question "what do you think you would be doing if you had not received training?" 48.8% of the trainees responded that they would be going to other types of schools. "Other types of schools" include both schools within the school education system and other types of schools of non-formal education such as ISDs. In other words, the responses of the traineessuggest they think it necessary tolearn skills and knowledge before finding employment. The next largest group (27.4%) responded that they "would not have not found a full-time job", and 18.4% responded that they "would have been working". It isconsidered that "to work" includes work asafarmer, and it is reasonable to infer that it is difficult to obtain a job without receiving training at an ISD.

The questionnaire also included questions onplans for the future. Those who plan to find employment in the Northeastern Region account only for 29.2%; and 41.4% of the trainees plan to work in the BMA, and12.0%plan topursueeducation at higher levelinstitutes. The ratioof those whoplantomovetoBangkokforKISDisdifferentfromthatforUBISDpartlybecauseof the difference in the sizes of industry in Kohn Kaen and Ubon Ratchathani. Incidentally, those who wantto work overseas account for 4.9%.

Such structure changes in thecourseoftime. Those who plan to work in the Northeastern Regions in 10 yearsare39.4%,while those who plan to work in the Bangkok

Table6-5 Current Conditions WithoutTraining (Trainees receiving pre-employment training)

	Working	Without a steady job	Going to another school	(Others)		Total
				Unemployed	Inagriculture	
KISD	42 *21.2%*	56 *28.3%*	95 *48.0%*	5 *2.5%*	0 *0.0%*	198 *100%*
UBISD	26 *15.2%*	45 *26.3%*	85 *49.7%*	12 *7.0%*	3 *1.8%*	171 *100%*
Total	68 *18.4%*	101 *27.4%*	180 *48.8%*	17 *4.6%*	3 *0.8%*	369 *100%*

Table6-6 Plans for the Future (Trainees receiving pre-employment training)
Right aftercompletion of training In 5 years In 10 years

	Work in the north-eastern region	Work somewhere else in Thailand	Work somewhere else in Thailand	Work abroad	Do not have a steadyjob	Go to school	(Others)		Total
							Noplans	Undecided	
KISD	71 *36.0%*	65 *33.0%*	12 *6.1%*	11 *5.6%*	2 *1.0%*	26 *13.2%*	10 *5.1%*	0 *0.0%*	197 *100%*
UBISD	36 *21.2%*	87 *51.2%*	12 *7.1%*	7 *4.1%*	3 *1.8%*	18 *10.6%*	6 *3.5%*	1 *0.6%*	170 *100%*
Total	107 *29.2%*	152 *41.4%*	24 *6.5%*	18 *4.9%*	5 *1.4%*	44 *12.0%*	16 *4.4%*	1 *0.3%*	367 *100%*
KISD	83 *41.7%*	46 *23.1%*	24 *12.1%*	20 *10.1%*	6 *3.0%*	15 *7.5%*	5 *2.5%*	0 *0.0%*	199 *100%*
UBISD	38 *22.4%*	67 *39.4%*	15 *8.8%*	15 *8.8%*	0 *0.0%*	29 *17.1%*	5 *2.9%*	1 *0.6%*	170 *100%*
Total	121 *32.8%*	113 *30.6%*	39 *10.6%*	35 *9.5%*	6 *1.6%*	44 *11.9%*	10 *2.7%*	1 *0.3%*	369 *100%*
KISD	83 *43.0%*	38 *19.7%*	21 *10.9%*	30 *15.5%*	5 *2.6%*	5 *2.6%*	11 *5.7%*		193 *100%*
UBISD	59 *35.3%*	46 *27.5%*	12 *7.2%*	24 *14.4%*	3 *1.8%*	17 *10.2%*	6 *3.6%*		167 *100%*
Total	142 *39.4%*	84 *23.3%*	33 *9.2%*	54 *15.0%*	8 *2.2%*	22 *6.1%*	17 *4.7%*		360 *100%*

Table6-7 Willingness to Work for Themselves(Trainees receiving pre-employment training)

	Willing towork for themselves				Not willing to work for themselves	Total
		Northeastern Region	Bangkok	others		
KISD	149 *75.3%*	107 *54.0%*	25 *12.6%*	17 *8.6%*	49 *24.7%*	198 *100%*
UBISD	132 *77.2%*	67 *39.2%*	42 *24.6%*	23 *13.5%*	39 *22.8%*	171 *100%*
Total	281 *76.2%*	174 *47.2%*	67 *18.2%*	40 *10.8%*	88 *23.8%*	369 *100%*

Metropolitan area in10yearsare23.3%,whichisabouthalfofthepercentageofthosewhoplan to work right after the training. Also, it is worth noting that 15.0% of the trainees want to find employment overseas in 10 years. In other words, responses of the trainees indicate that they want to find a job in the BMA for some years after the training and then come back to the Northeastern Region or go to foreign countries to work.

Furthermore, we asked questions to find what the trainees think about operating their own business. Entrepreneur ship is prevalent in Thai culture. It is hard to assess if the trainees can run their companies, but they would contribute to the development of the Northeastern Region if they coulddoso.

6.4.2 Survey of ex-trainees

* Characteristics of the targets

Tables 6-8 and 6-9 show the ageandeducational background of the targets by instituteand course. The samples for pre-employment training are relatively even in terms of their ages. A comparison of educational background of the targets by the areas in which they found employment reveals that those who are employed in the BMA have better educational background in general. This may be because the ex-trainees covered bythis survey are those we were able to trace; however, it is reasonable to infer that better educational attainment is necessary to get a job in relatively large-scale companies in the BMA. As for other types of training courses, the educational levels of the ex-trainees coveredbythissurvey is relatively low as for KISD while the ratio of those who have received higher education is high for the target ex-trainees for UBISD. This is because the targets include ex-trainees who received training related to computers and are thus exceptional samples with higher educational levels. Incidentally, some of the sample ex-trainees of UBISD have found employment in the BMA include some 40 individuals in the lapidary of diamonds, and it is necessary to take into consideration theinfluence of this fact in analyzing the results.

* Impactsoftraining

Table 6-10 shows the values for various impacts of training where the targets were asked to indicate how much the listed impactsareapplicableto their experiencesonascaleof1to5. (1: Not useful at all, 2: Useful just a little, 3: Useful to some extend, 4: Useful very much, 5: Most useful) The question items are categorized as "personal impacts", "social impacts", and "impacts on one's standings in community" (although they may not beimpacts in the strict sense of the term), and they are listed in the order of the values given to them. The table deals only with the evaluationbyex-trainees who receivedpre-employment training.

First of all, the items that had the private impactsmostlyare"gettingknowledgenecessary for jobs,and"gettingskillsnecessaryforjobs". This means thatmajor objectivesoftheISDsto offer opportunities to give vocational training to unemployed young people and help them

Table 6-8 Characteristics of Ex-Trainees (Ages)

		Pre-employment training						Other courses					
Institutes	Age / Labor market	**16~18**	**19~21**	**22~25**	**26~30**	**31~**	**合計**	**16~18**	**19~21**	**22~25**	**26~30**	**31~**	**合計**
KISD	Northeastern region	2 *5.0%*	5 *12.5%*	15 *37.5%*	11 *27.5%*	7 *17.5%*	40 *100%*	0 *0.0%*	0 *0.0%*	3 *50.0%*	2 *33.3%*	1 *16.7%*	6 *100%*
	Bangkok	18 *32.1%*	17 *30.4%*	8 *14.3%*	10 *17.9%*	3 *5.4%*	56 *100%*	0 *0.0%*	4 *80.0%*	0 *0.0%*	1 *20.0%*	0 *0.0%*	5 *100%*
	Total	20 *20.8%*	22 *22.9%*	23 *24.0%*	21 *21.9%*	10 *10.4%*	96 *100%*	0 *0.0%*	4 *36.4%*	3 *27.3%*	3 *27.3%*	1 *9.1%*	11 *100%*
UBISD	Northeastern region	1 *5.6%*	4 *22.2%*	3 *16.7%*	2 *11.1%*	8 *44.4%*	18 *100%*	0 *0.0%*	1 *1.5%*	11 *16.7%*	23 *34.8%*	31 *47.0%*	66 *100%*
	Bangkok	27 *29.7%*	32 *35.2%*	19 *20.9%*	13 *14.3%*	0 *0.0%*	91 *100%*	0 *0.0%*	6 *50.0%*	4 *33.3%*	2 *16.7%*	0 *0.0%*	12 *100%*
	Total	28 *25.7%*	36 *33.0%*	22 *20.2%*	15 *13.8%*	8 *7.3%*	109 *100%*	0 *0.0%*	7 *9.0%*	15 *19.2%*	25 *32.1%*	31 *39.7%*	78 *100%*
Total	Northeastern region	3 *5.2%*	9 *15.5%*	18 *31.0%*	13 *22.4%*	15 *25.9%*	58 *100%*	0 *0.0%*	1 *1.4%*	14 *19.4%*	25 *34.7%*	32 *44.4%*	72 *100%*
	Bangkok	45 *30.6%*	49 *33.3%*	27 *18.4%*	23 *15.6%*	3 *2.0%*	147 *100%*	0 *0.0%*	10 *58.8%*	4 *23.5%*	3 *17.6%*	0 *0.0%*	17 *100%*
	Total	48 *23.4%*	58 *28.3%*	45 *22.0%*	36 *17.6%*	18 *8.8%*	205 *100%*	0 *0.0%*	11 *12.4%*	18 *20.2%*	28 *31.5%*	32 *36.0%*	89 *100%*

Table 6-9 Characteristics of Ex-Trainees (Educational Background)

		Pre-employmenttraining					Other courses				
		Elementary school graduates Lower secondary school dropouts	Lower secondary school graduates Upper secondary school dropouts	Upper secondary school graduates	Graduates or dropouts of higher education institutes	**Total**	Elementary school graduates Lower secondary school dropouts	Lower secondary school graduates Upper secondary school dropouts	Upper secondary school graduates	Graduates or dropouts of higher education institutes	Total
KI SD	Northeastern region	16	16	11	0	43	5	2	2	0	9
		37.2%	*37.2%*	*25.6%*	*0.0%*	*100%*	*55.6%*	*22.2%*	*22.2%*	*0.0%*	*100%*
	Bangkok	9	29	13	3	54	0	3	2	0	5
		16.7%	*53.7%*	*24.1%*	*5.6%*	*100%*	*0.0%*	*60.0%*	*40.0%*	*0.0%*	*100%*
	Total	25	45	24	3	97	5	5	4	0	14
		25.8%	*46.4%*	*24.7%*	*3.1%*	*100%*	*35.7%*	*35.7%*	*28.6%*	*0.0%*	*100%*
UBISD	Northeastern region	5	4	3	6	18	9	8	6	48	71
		27.8%	*22.2%*	*16.7%*	*33.3%*	*100%*	*12.7%*	*11.3%*	*8.5%*	*67.6%*	*100%*
	Bangkok	12	50	30	1	93	1	6	5	0	12
		12.9%	*53.8%*	*32.3%*	*1.1%*	*100%*	*8.3%*	*50.0%*	*41.7%*	*0.0%*	*100%*
	Total	17	54	33	7	111	10	14	11	48	83
		15.3%	*48.6%*	*29.7%*	*6.3%*	*100%*	*12.0%*	*16.9%*	*13.3%*	*57.8%*	*100%*
Total	Northeastern region	21	20	14	6	61	14	10	8	48	80
		34.4%	*32.8%*	*23.0%*	*9.8%*	*100%*	*17.5%*	*12.5%*	*10.0%*	*60.0%*	*100%*
	Bangkok	21	79	43	4	147	1	9	7	0	17
		14.3%	*53.7%*	*29.3%*	*2.7%*	*100%*	*5.9%*	*52.9%*	*41.2%*	*0.0%*	*100%*
	Total	42	99	57	10	208	15	19	15	48	97
		20.2%	*47.6%*	*27.4%*	*4.8%*	*100%*	*15.5%*	*19.6%*	*15.5%*	*49.5%*	*100%*

Table 6-10 Evaluation on Impact (Pre-Employment Training)

	Total N=190		Northeastern Region N=59		Bangkok N=131		test
	Average	Standard Deviation	Average	Standard Deviation	Average	Standard Deviation	
(Personal Impact)							
Made morefriends	3.91	(0.88)	3.80	(0.89)	3.96	(0.87)	
Became to observe rules and regulations	3.89	(0.82)	3.83	(0.85)	3.92	(0.80)	
Acquiredskillsneededforjob	3.89	(0.87)	3.92	(0.88)	3.89	(0.87)	
Acquiredknowledge neededforjob	3.88	(0.87)	3.95	(0.82)	3.85	(0.90)	
Was able togetagoodjob	3.81	(0.87)	3.71	(0.83)	3.85	(0.89)	
Was able tofindajobquickly	3.77	(0.98)	3.75	(0.99)	3.79	(0.98)	
Was givenimportantworktodo	3.72	(0.87)	3.71	(0.89)	3.73	(0.86)	
Developed a more positive approach to work	3.72	(0.88)	3.80	(0.94)	3.69	(0.85)	
Was able to adapttonewmachinery	3.61	(0.93)	3.73	(1.01)	3.55	(0.89)	
Feltlessthreatoflosingjob	3.32	(0.95)	3.59	(0.97)	3.20	(0.92)	**
Was able to earnhighwages	3.10	(1.06)	3.31	(1.13)	3.01	(1.01)	+
Have a better chance ofreachinga highposition	3.07	(1.02)	3.29	(1.00)	2.97	(1.02)	*
(SocialImpact)							
Saw efficiency in my work place improve	3.76	(0.83)	3.95	(0.99)	3.67	(0.74)	*
Raised morale among co-workers or subordinates	3.65	(0.86)	3.75	(0.98)	3.60	(0.80)	
Contributedtothe growth ofmy company	3.53	(0.96)	3.76	(1.04)	3.42	(0.90)	*
Was abletoteachmyskillsto co-workersorsubordinates	3.50	(0.98)	3.73	(0.91)	3.40	(1.00)	*
(Third-PartyEvaluation)							
Receivedhighmarksfrommy supervisors	3.23	(0.95)	3.37	(0.93)	3.16	(0.96)	
Was evaluatedhighlyby co-workers orsubordinates	3.23	(0.97)	3.39	(1.02)	3.15	(0.95)	

find employment asskilledlaborers are being achieved. Other items that had alsobeenfoundto have had impacts are "observing rules and the discipline of the working place", "has enabled you to get a good job", and "has enabled you to get a job quickly". Also, it has been demonstrated that the training has helped ex-trainees expand their circle of friends, although such impact is secondary.

The items indicated to have minor impact are those on status and wages. In actuality, however, there are some companies, mostly small-sized companies, who offer higher starting salaries to ex-trainees of ISD, or take into consideration the training received at ISD in the promotion process. In other words, training at ISDs does have an impact on wages. Incidentally, evaluation of wages and status by the ex-trainees employed in the BMA is significantly lower than that bythose employed in the Northeastern Region with the riskof10% and 5%, respectively. However, the wages of those who are employed in the BMA are higher than thoseoftheex-trainees in the Ubon area. Thus, the reason that the ex-trainees in the BMA tend not to consider that the training enabled them to receive higher wages seems to be that

wages are higher in general, thus making theex-traineesdissatisfied with theirs. However, it is considered that it is thanks to the experiences with ISDs that they were able to find full-time employment in the BMA. Thailand is scholastically oriented, and based upon the interview survey, ex-trainees of ISD can be promoted up to a site supervisor at most. Furthermore, training at ISD does not have a great impact on wage increase because the minimum wages are set at a high level. The reason that the value of status and wages is low is that the actual impactsaresmaller than the ex-trainees'expectation.

Turning to social impacts, although it has been found that the training was effective, the points on the items in this category are relatively low, and the results of the interview of the supervisors agrees with these figures. It seems to be because the training at ISDs has little impact on the other laborers because ex-trainees do not have skills or knowledge which are outstandingly compared with other workers at the time of employment. A comparison of the data by area reveals that the training is evaluated lower in this respect in the BMA, and the values for "your enterprise's growth" and "enable you to teach colleagues your skills and knowledge" are significantly low at 5%. This implies that the relative statusoftheex-traineesin their work place is higher for those in the Northeastern Region than in the BMA. This is supportedbythelowfiguresforimpactonone'sstandingsincommunity. These figures reflect the fact that ISDs do not produce laborersheadand shoulders above the restinthelabormarket, that the competitiveness of the ex-trainees vary depending on the labor market they belong to, and that their status within companies vary accordingly. This applies to the item "less risk of losing job", whichisaprivateimpact.

These results include both dataofKISDandUBISD,andthereisnosignificantdifference in their data. As for UBISD, the training has been found slightly less effective compared with the results of the last survey.

* Factors determining the satisfaction of ex-trainees

Next we clarify the factors determining the satisfaction of ex-trainees through covariance structural analysis. In covariance structural analysis "structural concepts", which cannot be directly observed, aregraspedthrough multiple observer variables, and causal relationships of the structural conceptsareexaminedbaseduponsuppositions.

First we used the question items prepared for the survey on ex-trainees (Table 6-11) to construct a causal model as shown in Figure 6-3. Based upon the results of the survey conducted in 1995 we supposed three groups of "reasons for receiving training", "impact of having receivedthetraining",and "degree of satisfaction", and we further supposed that"reasons for receiving training" influences "impact of having received the training", which then influences "degreeofsatisfaction" of the ex-trainees. As for "reasons forreceivingtraining", wedistilled three factors, namely <economic standing> toreceivehigh wages and high social status, <skills and knowledge> toobtainskills and knowledge necessary in work, <unemployment> to not to be able to gotoupperschoolsand not to have a job, andtook them as structural concepts. Likewise, as for "impacts of having received training" we supposed 4 factors as structural

Table6-11 Survey itemsUsedinModelAnalysis

<Reasons for participating in training>
Structural Concept 1 Economic Standings
R1: To earn high wages R2: Togetahighposition R3: To get a good job
Structural Concept 2 Skills and Knowledge
R4: To acquire knowledge needed forjob
R5: To acquire skills needed for job
Structural Concept 3 Unemployment
R6: Was unable to go to school of the next level R7: Was unable to find a job

<Impact of training>
Structural Concept 4 Good Job
I1: Was able to earnhighwages I2: Was able to find a good job
I3: Came tohave a betterchance of reachingahighposition
Structural Concept 5 GrowthofCompany
I4: Sawefficiencyinmyworkplaceimprove
I5: Was able to teach my skills to co-workersorsubordinates
I6: Was able to contribute to the growth of my company
Structural Concept 6 Skills and Knowledge
I7: Acquired skills needed forjob I8: Acquiredknowledge needed for job
Structural Concept 7 Third-Party Evaluation
I9: Was evaluated highly by co-workersorsubordinates
I10:Received high marks from my supervisors

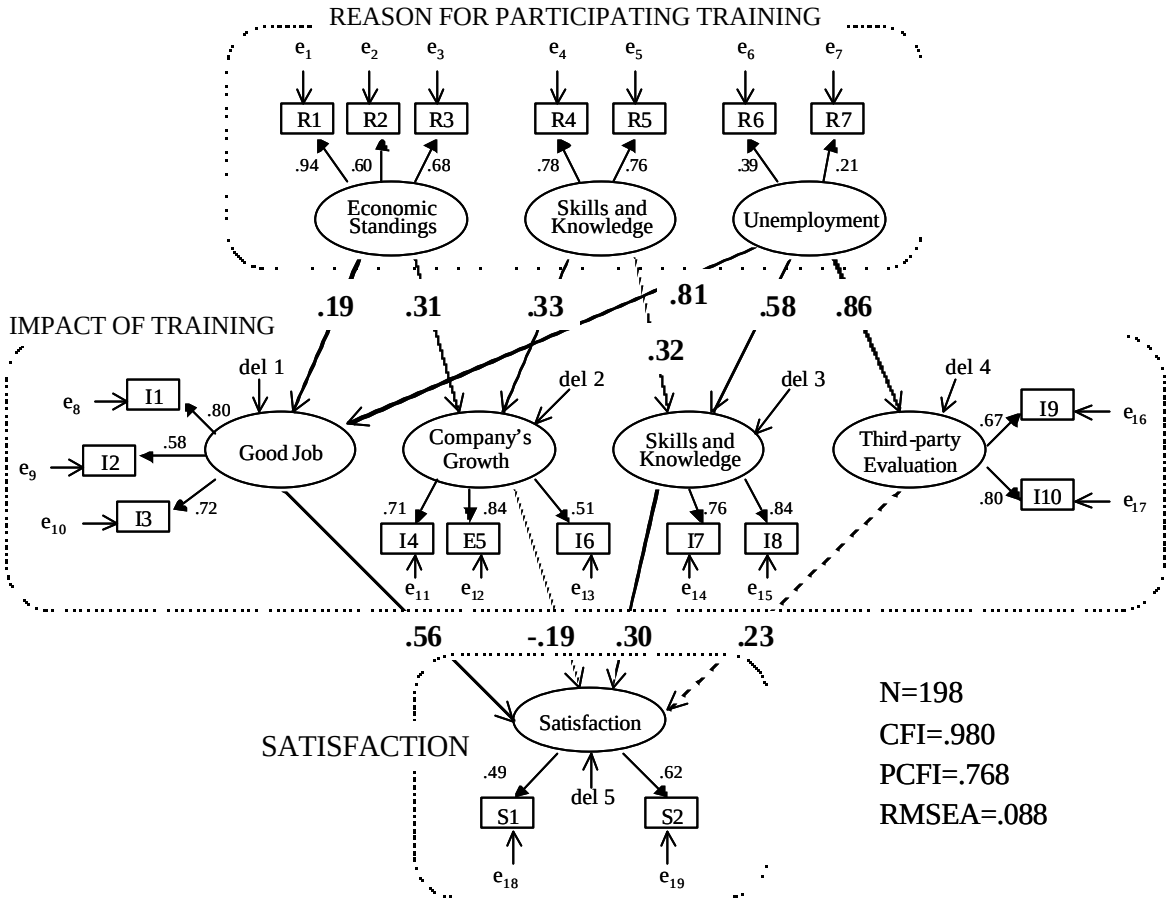
<Satisfaction>
Structural Concept 8 Satisfaction
S1: Would like to recommend KISD/UBISD training to others
S2: Satisfied with the current conditions I have thanks to training

concepts, namely <good job> to express that one got a good job and obtained high wages, < company's growth> to express improvement of productivity in the work place and transfer of skills and knowledge to one's colleagues and subordinates, <skills and knowledge> to express whether onehasobtainedskillsand knowledge, and <standing in the community> to express that one is highly recognized by his supervisor, colleagues and subordinates. Then we developed a causal model (Figure 6-3) to examine the causal relations of these structural concepts. The results of the covariance structural analysisareshowninthepathdiaminthe figure.

Next it is necessary to evaluate the model to determine if the constructed model agrees with the data. There are several indexes for the overall evaluation of a model such as CFI, PCFI, and root mean square error of approximation (RMSEA)(47). The values for CFI, PCFI, and RMSEA are .980, 768, and .088, respectively. CFI and PCFI are meanttorangefrom0.00 to 1.00, and it is considered that the closer the value is to 1.00, the better the modelis. As to RMSEA, it is traditionally considered that a model well agrees with the data when the value for this index is below 0.05, and it does not agree with them when the value is over 0.1 (48). These values show that this model agrees fairly well with the data, in other words this model more or less explains the variance co-variance matrix.

Then we examined the indexes on the influence that structural concepts have on observed

Figure 6-3 Causal Model on Satisfaction o f Ex-Trainees



variables. Apart from the influence index for R7 (.21), all the influence indexes for the other observer variables are above .39. Furthermore, these indexes are all significant, and it can be saidthatthestructural conceptsandobservervariablesare adequately corresponding.

Based upon the model, those who chose to receive training because of reasons related to < unemployment> tend to consider that training helped them get a <good job> (.81), and this factor has the most impact on their level of satisfaction (.56). Also <economic standing> has an influence on <good job> (.19) and this has led to deep <satisfaction>. It seems that the reason that the path coefficient between <economic standing> and <good job> is small (.19) is that the coefficient between <unemployment> and <good job> isaslargeas0.81.

It hasalso been made clear that those who chose to receive training for reasons related to < unemployment> (.58) and <skills and knowledge> consider that the effect of receiving the training is to have acquired <skills and knowledge>, and their degree of satisfaction is second largest (.30).

Based upon the above it can be said that those who received training for serious reasons such as unemployment or being unable to continue to study feel that they became able to get a good job and learned skills and knowledge thanks to the training, and as a result they are satisfied with the training. This analysis is based upon the data obtained through the survey of

the ex-trainees ofpre-employment courses, and we did not conduct similar analysis on those who received skills up-grading training. Thus, we cannot compare the conditions of these two types of ex-trainees; however, at least for ex-trainees who took pre-employment courses, training has more impact and more satisfaction to those who received the training for more serious reasons. This is suggested by such comment as they "would not have been able to get a job without having received the training". Likewise, those who chose to receive the training for reasons related to <economic standing> tend to recognize the effect of getting a good job, and be satisfied with the training. Companies' growth has a negative correlation with satisfaction. We must take into consideration the influence of other factors, but it is possible to infer that those who think that the training they have received has influence on their companies' growth tend to be employed by small-scaled companies, and they are not satisfied with wages and such other working conditions. Finally, those who have received training to obtain skills and knowledge tend to feel that they were able to achieve such objectives through the training, and are satisfied with their current conditions. This suggests that the fundamental objectives o f KISD and UBISD are being achieved.

6.4.3 Survey of ex-trainees' supervisors

The above analyses of non-financial effects are based upon the data obtained through the survey on ex-trainees, and therefore, reflects their subjective evaluation. Thus, we considered it necessary to obtain objective evaluation through a questionnaire survey of the supervisors of the ex-trainees. We asked the supervisors if the ex-trainees excel compared to other workers in an attempt to assess the impact of the training through comparisonbetweentheex-trainees of KISD and UBISD andother workers. However, it should be noted that such evaluation is relativeand that the qualities of the other workers have impact on the judgment.

It is favorable that, as shown in Table 6-12, the values for the vast majority of the 26 question items are over 3. The item given the highest scores is "obedience to an order". Not only in the Northeastern Region but also in the BMA, it iswidelyconsidered that the strength of the ex-trainees is their obedience. "Obedience" is followed by such other items as "cooperative" and "observing formal/informal rules of the working place". As to the items related to techniques and skills, which are fundamental for technical/skilled staff, the values for "basic technical skills" and "basic knowledge" are slightly above average, and those for "advanced knowledge" and "advanced technical skills" were below the benchmark. Inparticular, thevalues for ex-trainees of KISD with companies in the Northeastern Region are on the 2 point mark, which is below the benchmark. Likewise, favorable comments were rare in the interviews we had with the supervisors in the Kohn Kaen area. For example, at a company in the business of the sales of motor cycle parts and repair, the levels of skill and knowledge of ex-trainees of KISD was lower than those of upper secondary school graduates. It seems the educational background of technical/skilled laborers in Kohn Kaen has changed, and the labor market that ex-trainees belong to is in competition withgraduatesofothertypesof institutes,

Table6-12 Managers' Evaluation of Ex-Trainees

Region	NortheasternRegion			Bangkok			Total			Test
ISD / SurveyItem	KISD (N=17)	UBISD (N=16)	Total (N=33)	KISD (N=8)	UBISD (N=7)	Total (N=15)	KISD (N=25)	UBISD (N=23)	Total (N=48)	(*1)
Obedient	3.82 (1.01)	3.94 (0.77)	3.88 (0.89)	4.13 (0.83)	3.43 (0.53)	3.80 (0.77)	3.92 (0.95)	3.78 (0.74)	3.85 (0.85)	
Cooperative	3.65 (0.93)	3.81 (0.66)	3.73 (0.80)	4.00 (0.76)	3.29 (0.49)	3.67 (0.72)	3.76 (0.88)	3.65 (0.65)	3.71 (0.77)	
Observes workplace rules andregulations	3.47 (1.07)	3.94 (0.68)	3.70 (0.92)	4.13 (0.35)	3.00 (0.58)	3.60 (0.74)	3.68 (0.95)	3.65 (0.78)	3.67 (0.86)	Interaction**
Is abletolearnskillsneeded forjobquickly	3.35 (1.00)	3.94 (0.57)	3.64 (0.86)	4.00 (0.00)	3.29 (0.49)	3.67 (0.49)	3.56 (0.87)	3.74 (0.62)	3.65 (0.76)	Interaction**
Contributes to thegrowthof company	3.41 (0.71)	3.94 (0.77)	3.67 (0.78)	4.00 (0.76)	3.14 (0.69)	3.60 (0.83)	3.60 (0.76)	3.70 (0.82)	3.65 (0.79)	Interaction**
Haspositiveattitudetowards work	3.35 (0.86)	3.94 (0.44)	3.64 (0.74)	4.00 (0.53)	3.14 (0.38)	3.60 (0.63)	3.56 (0.82)	3.70 (0.56)	3.63 (0.70)	Interaction**
Has good understanding of assignmentsingeneral	3.41 (0.80)	3.88 (0.72)	3.64 (0.78)	4.00 (0.53)	3.14 (0.38)	3.60 (0.63)	3.60 (0.76)	3.65 (0.71)	3.63 (0.73)	Interaction**
Is notabsentfromorlatefor workwithoutreporting	3.59 (1.12)	3.81 (0.75)	3.70 (0.95)	3.88 (0.83)	2.86 (0.69)	3.40 (0.91)	3.68 (1.03)	3.52 (0.85)	3.60 (0.94)	Interaction*
Followsworkschedule	3.41 (1.12)	3.88 (0.34)	3.64 (0.86)	3.38 (0.74)	3.57 (0.53)	3.47 (0.64)	3.40 (1.00)	3.78 (0.42)	3.58 (0.79)	
Diligent	3.59 (1.12)	3.50 (0.73)	3.55 (0.94)	3.88 (0.83)	3.29 (0.76)	3.60 (0.83)	3.68 (1.03)	3.43 (0.73)	3.56 (0.90)	
Isabletocompleteimportant work	3.29 (0.85)	3.63 (0.72)	3.45 (0.79)	4.00 (0.00)	3.43 (0.53)	3.73 (0.46)	3.52 (0.77)	3.57 (0.66)	3.54 (0.71)	Interaction*
Isabletoconcentrate	3.25 (1.00)	3.63 (0.81)	3.44 (0.91)	3.88 (0.35)	3.29 (0.49)	3.60 (0.51)	3.46 (0.88)	3.52 (0.73)	3.49 (0.80)	
Has keensenseof responsibility	3.29 (0.92)	3.81 (0.66)	3.55 (0.83)	3.50 (0.76)	3.14 (0.38)	3.33 (0.62)	3.36 (0.86)	3.61 (0.66)	3.48 (0.77)	
Isabletokeepupwith technological advances	3.06 (1.09)	3.88 (0.62)	3.45 (0.97)	3.75 (0.89)	3.29 (0.49)	3.53 (0.74)	3.28 (1.06)	3.70 (0.63)	3.48 (0.90)	Interaction*
Raises level of morale an discipline amongco-workers	3.24 (0.90)	3.69 (0.48)	3.45 (0.75)	3.88 (0.64)	3.00 (0.00)	3.47 (0.64)	3.44 (0.87)	3.48 (0.51)	3.46 (0.71)	Interaction**
Has acquiredbasic knowledge	2.82 (0.95)	3.88 (0.50)	3.33 (0.92)	3.75 (0.71)	3.71 (0.76)	3.73 (0.70)	3.12 (0.97)	3.83 (0.58)	3.46 (0.87)	ISD* Interaction*
Has acquiredbasicskills	2.88 (1.05)	3.94 (0.77)	3.39 (1.06)	3.75 (0.89)	3.43 (0.53)	3.60 (0.74)	3.16 (1.07)	3.78 (0.74)	3.46 (0.97)	Interaction*
Isabletocopewith unexpectedcircumstances	2.94 (1.09)	4.00 (0.82)	3.45 (1.09)	3.38 (0.74)	3.29 (0.49)	3.33 (0.62)	3.08 (1.00)	3.78 (0.80)	3.42 (0.96)	Interaction*
Isabletomanagehimself	3.12 (0.86)	3.88 (0.62)	3.48 (0.83)	3.38 (1.06)	2.86 (0.69)	3.13 (0.92)	3.20 (0.91)	3.57 (0.79)	3.38 (0.87)	Interaction*
Oftenteachesskillsto co-workers	3.18 (0.95)	3.94 (0.57)	3.55 (0.87)	3.13 (0.83)	2.86 (0.90)	3.00 (0.85)	3.16 (0.90)	3.61 (0.84)	3.38 (0.89)	Region* Interaction*
Hasleadership	3.06 (0.75)	3.88 (0.50)	3.45 (0.75)	3.13 (0.64)	3.00 (0.58)	3.07 (0.59)	3.08 (0.70)	3.61 (0.66)	3.33 (0.72)	Region* Interaction*
Hasimprovedproductivityat workplace	3.00 (0.87)	3.81 (0.75)	3.39 (0.90)	3.50 (0.93)	2.71 (0.49)	3.13 (0.83)	3.16 (0.90)	3.48 (0.85)	3.31 (0.88)	Interaction**
Isabletomakedecisions	2.94 (0.97)	3.69 (0.79)	3.30 (0.95)	3.13 (0.83)	2.86 (0.38)	3.00 (0.65)	3.00 (0.91)	3.43 (0.79)	3.21 (0.87)	
Isabletomanageothers	2.82 (0.81)	3.88 (0.50)	3.33 (0.85)	3.00 (0.76)	2.57 (0.53)	2.80 (0.68)	2.88 (0.78)	3.48 (0.79)	3.17 (0.83)	Region** Interaction**
Has acquired sophisticated skills	2.47 (1.18)	3.94 (1.00)	3.18 (1.31)	2.88 (0.99)	3.14 (0.38)	3.00 (0.76)	2.60 (1.12)	3.70 (0.93)	3.13 (1.16)	ISD*
Has acquired sophisticated knowledge	2.53 (1.18)	3.63 (0.62)	3.06 (1.09)	3.13 (1.25)	3.14 (0.69)	3.13 (0.99)	2.72 (1.21)	3.48 (0.67)	3.08 (1.05)	

(*1) **-- The gap between the average values for companies in the northeastern Region and the Bangkok area was a statistically significant 1%.
*Thegapbetweentheaveragevaluesforforcompaniesin theNortheasternRegionandtheBangkokareawasastatistically significant5%.

thus lowering the relative status of ex-trainees. In particular, many of the supervisors of the ex-trainees of KISDcommented in interviews that the training period should be extended tohelp the trainee fully acquire basic skills and also let them have more experience through OJT. Companies in the Kohn Kaen area are aware of the fact that the training period is shorter at KISD than at the other institutes, and this seems to have influenced their evaluation of the institute.

Ex-trainees are valued for being equipped with the right temperament for workers rather than superior skills or knowledge. In other words, from the viewpoint of the supervisors the training has more impact on the acquisition of thetemperament that workers should be equipped with than on skills and knowledge. Generally speaking young people who have experience working as farmers have not experienced the kinds of rules of discipline enforced in companies, and therefore, it is advantageous for them to learn to obey rules through training. However, having such a temperament is a basic requisite for laborers, and it does not count as a strength from the viewpointofsupervisors.

The above are the evaluations of the ex-trainees by their supervisors. As shown in Tables 6-13 and 6-14, the results of the questions over all evaluations of the ex-trainees and the scores given to the questionnaire items are favorable in general. In the interviews the supervisors commented that certain educational levels are required for workers whose job responsibility requires certain levels of skills and knowledge, but educational levels are irrelevant to unskilled laborers. As companies must pay higher wages to those with higher educational background, there are some cases where companies avoid hiring graduates of upper secondary schools and hire graduates of lower secondary schools or ex-trainees of ISD instead.

Table 6-13 Managers' EvaluationofEx-Trainees
"Are you satisfied with ex-trainees in general?"

Northeastern Region			Bangkok			Total		
KISD	UBISD	Total	KISD	UBISD	Total	KISD	UBISD	Total
4.00 (0.35) N=17	4.21 (0.63) N=19	4.11 (0.52) N=36	4.50 (0.53) N= 8	3.88 (0.35) N= 8	4.19 (0.54) N=16	4.16 (0.47) N=25	4.11 (0.58) N=27	4.13 (0.53) N=52

Table 6-14 Managers' EvaluationofEx-Trainees
"Give points to ex-trainees in general out of 100"

Northeastern Region			Bangkok			Total		
KISD	UBISD	Total	KISD	UBISD	Total	KISD	UBISD	Total
65.4 (17.6) N=14	69.4 (13.6) N=17	67.6 (15.4) N=31	76.0 (6.45) N= 7	73.3 (9.83) N= 6	74.8 (7.90) N=13	68.9 (15.5) N=21	70.4 (12.6) N=23	69.7 (13.9) N=44

6.5 Results of Cost-Benefit Analysis

6.5.1 Significance of cost-benefit analysis

In 3.1 above we mentioned that we measure the inputs, outputs and outcomes of ISDs and evaluate systems through their efficiency. The efficiency of a system can be expressed in terms of the comparison between outputs and inputs, or outcomes and inputs. Typical of the former is a cost-efficiency analysis. Indexes for this types of analysis include cost per trainee, cost per ex-trainee, and cost per course, which is basic information in making decisions in education as well as for other considerations (49).

However, as outputs do not deal with the aspect of quality, it is necessary that the quality of the outputs is on the same level in judging investment in terms of cost-efficiency. On the other hand, another type is cost-benefit analysis and cost-effectiveness analysis. In these methods inputs of a project are all converted in terms of financial values and are compared with the outcomes. Cost-benefit analysis is an analysis method employing outcomes which can be measured in terms of financial values, and cost-effectiveness analysis is an analysis method employing outcomes which cannot be expressed in terms of financial values. In this chapter we first introduce costs per trainee, which is cost-efficiency, and then measure the cost benefit of the project where the improvement of production of trainees is regarded as outcomes of the project evaluation.

To conduct cost-benefit analysis it is necessary to measure the costs of the activities of ISD, the number of trainees, and the financial impact, which is the outcome. Therefore, this chapter first discusses the methods of cost-benefit analysis, and then explains the methods for measuring costs and effects, and evaluates systems through cost-benefit analysis.

Here it should be noted that only the UBISD has been subject to such evaluation because information in a time series was not available for KISD. If the sizes and effects of KISD and UBISD are the same, it is reasonable to apply the results found for UBISD to KISD. The budgets for the fiscal year 2000 at KISD and UBISD are 33.02 million Bt (22.53 million Bt excluding the costs of construction, facilities, and equipment) and 25.78 million Bt (23.49 Bt excluding the costs of construction, facilities, and equipments), respectively. Additionally the numbers of trainees in pre-employment courses at KISD and UBISD are 923 and 689, respectively. Thus, taking into consideration the fact that the length of training period is longer at UBISD, the current sizes of KISD and UBISD are about the same.

6.5.2 Methods of cost-benefit analysis

There are several methods of cost-benefit analysis such as present value method, internal rate of return method, profitability index method and payout period method. Among these, the internal rate of return method and profitability index method enable the expression of cost-benefit of educational projects in terms of percentage and ratio, respectively, taking into consideration the time value of cash flow (50). This study employs internal rate of return method because

most of the other studies on the cost-benefit of educational projects on a macro level have used this method. Another reason is that we want to compare the results of the current analysis with those of the analysis of 1995 (51), in which this methodhadbeenemployed.

The internal rate of return (IRR) isdefinedas the discount rate that causesthenetpresent value (PV) to equal zero, and the larger the discount rate, the more beneficial the investment is considered. That is to say, r iscalledinternalrateofreturnwhen it satisfies

$$PV = \sum_{i=0} \{CFi \diagup (1+r)^{i}\} = 0$$

where cash flow in phase i is CFi and the discount rate is r (52). For example, educational enterprise is producing benefit exceeding the investment when its rate of return is better than the interest rates offered by financial institutions. Incidentally the present value method compares PV at a certain discountrate (r).

In the evaluationofordinary project costs, the financial effects of a project are traced in a time series, and cost-benefit analysis of the project is conducted taking into consideration the futurecash flow upuntil the time that the project is completed (for example when the buildings are totally depreciated. However, in the field of education it has been considered that the main constituent of education are students, and that the question is whether it is beneficial from their viewpoint. Inother words it was considered a secondary issue whether an educational project is cost-beneficial as an investment. Likewise education was considered to be investment in laborers from the viewpoint of educational investment in the development theory, thus evaluating the cost-benefit of investment in individuals. In such circumstances, we first find cost-benefit from the viewpoint of individual trainees, and then conduct cost-benefit analysis of the projects by converting the investment into the project over years into annual amounts. Here, the rate of return concerning investment and the benefit for individuals is called the private rate of return, and that concerning investment and benefit for the society as a whole is called the social rate of return. The social rate of return is mainly used in educational planning, and the private rate of return ismainlyused in explaining social (private) educational needs (53).

However, it is also necessary to conduct an ordinary project analysis, and therefore, we conduct cost-benefit analysisbyordinary methods. In thisanalysisthepaybackperiodmethodis also employed to determine the life of a project, or to determine up until when we should trace the project. The payback period method is a method for evaluating a project based upon the length of period necessary to recover the inputs. Thismethodhas various shortcomings in that it does not involve specific indexes on thebenefit of a project such as ratio or percentage, that it is not concerned with the time value of cash flow, and thatitcannot cope with the case where the fruits of a project are produced at a time and in a large scale toward its end. However, this method has been widely employed in Japan because in this method it is possible to avoid the costs of the intricate process of estimating the cash flow in the future and can disregard the uncertainty of cash flow in the future (54). Also, this method offers effective indexes for judgment astodevelopingcountries, whereexternal conditions are volatile.

6.5.3 Costs

(1) Number of traineesequivalent to pre-employment course trainees

KISD and UBISD offer a variety of training courses. Because the number of training hours varies depending on the course, the trainee receives different "services" depending on which course the student takes. Therefore, in our analysis we were not able to treat trainees in the various courses as if they were the same, and we needed to apply some kindofmechanismto convert all trainees to those in pre-employment courses. To do this, we multiplied the number of trainees by the number of hours in each course (55) for each fiscal year and divided the result by 1,600 (56), thenumber of hours in a 10-monthpre-employment course. This gave us the number of trainees expressed as pre-employment trainees. To adjust for trainees who withdrew from a course before completing it, we averaged the number of enrollees and that of ex-trainees. Because the pre-employment course spans two UBISD fiscal years, we allocated the "number of trainees X number of traininghours" for both periods.

Table 6-15 shows the number of trainees expressed as pre-employment course trainees, by type of budget (normal or other) and training facility (UBISD or other). The figures were taken from activity reportssubmitted by UBISD each fiscal year.

Table6-15 Number of trainees equivalent to pre-employment course trainees bybudget and location

year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	143	372	444	408	414	696	893	1292	1468	1672	1228	1208
(detail) recurrent budget	143	361	362	347	380	399	649	951	1413	1168	952	844
otherbudget	0	11	80	61	34	297	244	341	55	504	276	363
(detail) UBISD	138	331	340	337	366	378	587	610	730	837	777	673
others	4	40	104	71	47	318	307	681	738	345	451	534

(2) Categories of costs

Educational costs areclassified as direct or indirect costs. We defineddirect costs as were those needed directly for education, and indirect costs as those incurred as an indirect consequence of receiving education.

1) Direct costs

Direct costs are divided into consumption-type outlays and capital outlays. Consumption-type outlays apply to the cost of items that are used within the year in which they are purchased; capital outlays are for items expected to provide service over a longer period of time.

When figuring annual expenses for year-by-year analysis, consumption-type outlays for eachyearcanbeusedasis;capitaloutlayfigures must be adjusted to take into account the fact that purchases of facilities or equipment will provide services for decades. We calculated

essential yearly capital outlays as follows: we considered each fiscal year's budget for capital outlays to be the initial assessed value of capital assets purchased in that year, adjusted for the cost of losing access to the funds invested in those assets (opportunity cost), and distributed this amount evenly over the assets' life span (depreciation period) (57).

Most other studies use a discount rate of 5% or 10%. In this analysis, we set the discount rate at 5% in light of interest rates offered recently by financial institutions in Japan and Thailand, and due to the fact that we have already adjusted for inflation by using the consumer price index. We used 40 years as the life span of facilities and 10 years as the life span of all machinery and other equipments, based in accounting standards used by Japanese educational institutions (58). In reality, however, we expect that most of the equipment can be used for more than 10 years, so the estimates of annual capital outlays may be slightly high.

2) Indirect costs

In addition to direct costs, we must consider indirect costs that accompany the opportunity to receive education. Indirect costs consist of school-related expenses borne by trainees, such as the cost of work clothes and transportation expenses, and the loss of potential income (opportunity cost) incurred when trainees give up the opportunity to work while receiving training.

(3) Calculation of costs

As a rule, it is necessary to use figures from year-end accounts to obtain accurate information on inputs. But due to restriction of the data available to the study team, we used year-end account figures only for items for which they were available, and we used budget figures for the rest. Because budgets often overestimate actual expenses, we may suppose that the figures below lean to the high side. In order to factor out the influence of inflation, all expenses were adjusted to FY2000 real prices according to Thailand's nationwide comprehensive consumer price index.

1) Calculating direct costs

<Japanese investments>

Japanese investment figures were mainly taken from reports of several studies conducted by JICA, or from operating data released by JICA each fiscal year. We included expenses for dispatching on-site experts, study teams or counterpart training in calculating technical cooperation costs.

The largest portion of the costs paid by Japan consisted of a grant of 2.337 billion yen allocated as the initial investment in the project. This amount includes costs and expenses related to constructing buildings and purchasing materials. The details of how this money was spent are unknown, so we made an assumption that 75% was allotted for construction of facilities and a 25% was allotted for purchasing of equipment. All of these expenses fall under the category of capital outlays. As explained above, we calculated the discounted annual cost and

distributed it among the number of years in the life span. We handled the cost of donated equipment and materials in the same way.

We decided that it would be appropriate to also treat expenses associated with the dispatch of experts, study teams and counterpart training as capital outlays, since those activities could be expected to provide long-term service. We distributed these costs to each year over a depreciation period of 10 years. As support has also been extended to NISD as to some of the items, we assumed that the amount spent for NISD and UBISD are 25 % and 75% of the amount of such items, respectively, based upon the numbers of experts dispatched to these institutes on a long-term basis. To convert yen to baht, we used an average exchange rate for each fiscal year, which was calculated by averaging the 12 monthly average exchange rates for each year.

<Thai investments>

Labor costs represented slightly over 50% of consumption-type outlays paid from Thailand's regular budget. The budget also included purchase of consumables and administrative costs such as public utility expenses, as well as materials costs. Capital outlays listed as facilities/equipment costs were high until FY 1991 due to construction of staff housing, but after that, Thailand's only capital outlays were for purchasing equipment and amounted to only 2-10% of the consumption-type outlays.

We do not have information about expenses related to training conducted by Thailand outside of the regular budget. This poses no problem when calculating consumption-type outlays if we simply exclude trainees of these courses from our analysis. But because those trainees used UBISD facilities and equipment, we need to subtract the amount that they used from our estimate of capital outlays. To do this, we calculated the percentage of trainees in courses covered by special budgets within "trainees X training hours," and subtracted a corresponding proportion from the overall capital outlays.

2) Calculating indirect costs

In order to determine indirect costs, we asked ex-trainees about study-related expenses on the questionnaires. By adding reported expenses for meals, work clothes and transportation during training, we found that expenses averaged 15,000 baht per student. To estimate the cost of lost potential income, we used the same method described for estimating the income of non-UBISD workers, which we will discuss later: we multiplied the minimum daily wage for Northeastern Region by the average number of days worked per month and adjusted for the yearly average employment rate. We found that each student gave up an estimated average gross income of 32,833 baht during the training period.

By the above method, we found that indirect costs totaled 47,833 baht.

5.3.4 Cost per trainee

Now that we have detailed calculations of the various costs associated with UBISD training

Table 6-16 Total Direct CostsandPer-TraineeDirect Costs atUBISD (In baht, adjustedto FY 2000 real price)

Item ＼ FiscalYear	1989(*1)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Thai Investments												
Salaries	2,394	6,800	7,802	9,254	10,389	9,960	10,661	10,871	11,164	9,831	10,008	9,700
Allowances andgeneralexpenses such as those on materials	1,400	6,165	6,491	6,031	5,537	5,895	14,956	15,401	18,711	14,345	9,246	8,302
Utility (water, electricity and gas)			1,337	1,585	341	295	279	260	251	297	168	363
Maintenance and managementexpenses					259	375	952	2,360	2,555	2,471	1,357	2,360
Subtotal of consumption-type outlays	**3,794**	**12,965**	**15,630**	**16,871**	**16,526**	**16,525**	**26,849**	**28,892**	**32,680**	**26,943**	**20,780**	**20,725**
Construction costs	801	1,854	1,768	1,836	1,983	1,238	1,570	1,590	2,079	1,654	1,835	1,655
Equipment costs			158	306	458	348	489	495	662	534	627	773
Subtotal of capital outlays(*2)	**801**	**1,854**	**1,926**	**2,142**	**2,441**	**1,586**	**2,059**	**2,085**	**2,741**	**2,188**	**2,463**	**2,428**
Total of Thaiinvestments	**4,595**	**14,820**	**17,556**	**19,013**	**18,967**	**18,110**	**28,908**	**30,977**	**35,422**	**29,131**	**23,243**	**23,153**
Otherproject budget (reference)								*5,828*	*1,105*	*1,547*	*1,895*	*2,767*
Japanese Investments (Capital outlays)												
Construction costs	17,518	34,013	28,682	29,773	32,160	20,083	25,467	25,784	33,719	24,468	27,158	24,491
Equipment costs	15,943	31,914	27,971	30,059	32,596	20,356	25,812	26,134	34,176	5,337	2,809	1,844
Surveyexpenses	668	1,454	1,340	1,593	1,826	1,140	1,446	1,024	717	511	506	343
Human resources	3,313	9,999	12,256	16,588	19,771	12,346	15,656	15,661	20,334	13,442	11,559	7,856
Costs of counterparttraining	231	583	634	811	989	618	783	793	1,037	566	478	334
Total of Japanese investments(*2)	**37,672**	**77,963**	**70,884**	**78,824**	**87,342**	**54,543**	**69,164**	**69,396**	**89,983**	**44,324**	**42,511**	**34,868**
Total of direct costs	**42,267**	**92,782**	**88,440**	**97,836**	**106,309**	**72,654**	**98,071**	**100,373**	**125,405**	**73,455**	**65,753**	**58,021**
Number of studentsexpressedas pre-employment coursetrainees	142.9	360.7	362.3	346.7	379.6	398.7	649.2	951.0	1412.9	1167.7	951.8	844.1
Directcostspertrainee	**295.9**	**257.2**	**244.1**	**282.2**	**280.0**	**182.2**	**151.1**	**105.5**	**88.8**	**62.9**	**69.1**	**68.7**

(*1) As training did not begin at the start of the fiscal year in 1989, the figures were converted to reflect expenses from the period during which students were accepted.
(*2) Capital outlays have been reduced toreflect the useof UBISD facilities and equipment by trainees incoursescoveredby special budgets.
(*3) Due to rounding off, the subtotal andtotal figures do not necessarily matchtheexacttotal of theindividual items.

courses, we can calculate total costs for each fiscal year. Table 6-16 shows UBISD's annual direct costs, calculated by the methods described above. It also shows direct costs per trainee, determined by dividing annual costs by the number of trainees (expressed as a number of pre-employment course trainees). Capital outlays increased or decreased as the years passed because we figured effective capital outlays to be equivalent to the service provided by capital goods each year and allocated to each year in the depreciation period.

As we see form the table, Thailand consistently provided funds for consumption-related expenses. Education and training projects in developing countries often suffer from delays in allocating an operation budget, but in Thailand, funding for UBISD tended to increase. As shown in Figure 6-4, the number of trainees increased and direct cost per trainee declined markedly since the reorganization of courses in 1994. If the country receiving assistance fails to conduct training, it will not incur related variable expenses like material costs required for training activities, but will incur fixed expenses like basic salaries of instructors, maintenance and management expenses and the cost of the initial capital investment, which are incurred regardless of whether or not training is conducted. In this regard, UBISD is doing well because the buildings and equipment invested at the project's inception were being well-utilized.

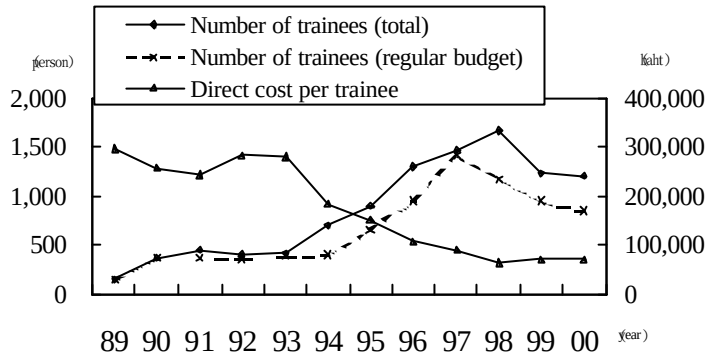


Figure 6-4 Trends in the Number of Trainees and direct Cost per Trainee

6.5.4 Economic impact

The main objective of the ISD vocational training is the cultivation of skilled workers, but the number of such workers produced, or the "quantity," is not the only indicator available for expressing ISD's impact. There must also be an indicator that expresses "quality," or the skill level of those workers produced. For this purpose we define "human resources" as "people with a high degree of productivity." Then in order to quantify impact, we simply measure the extent to which productivity was increased through vocational training. The trainees' combined "productivity increase" becomes the impact of the vocational training center. This allows one indicator to measure both "quantity" and "quality".

However, productivity in itself is an intangible concept. While there are several methods for making tangible, quantitative measurements of productivity, we employ a method which uses income as the parameter to represent productivity, based on the assumption that highly productive people earn higher wages. We chose this method because it enables us to quantitatively measure improvements in productivity through increase in income, and to easily compare income increases with expenses. Another reason is that we believe that wages, i.e., the price of labor,

represent the most appropriate indicator of productivity.

The problem with the concept that income increases equal improvements in productivity is that income does not necessarily reflect productivity. For this reason the impact of the minimum wages must betakeninto consideration in theexaminationofthelabormarketsforex-traineesof ISDs. That is, all workers are assured the minimum wage, even if their productivity levels are lower than those presupposed by the minimum wage. So it is not advisable for business managers to employ workers with productivity that is lower than that corresponding to the minimum wage level. This fact may be the reason behind the policy of some Ubon-area companies to hire "only workers who have been trained" or "only workers with experience." Since ex-trainees of UBSID have been hired by companies with this policy, we can assume that their productivity is at least equal to minimum wage level and that the minimum wage system is probably not affecting ex-trainees wages. Differences in minimum wages and income levels between the BMA and other areas can be attributed to differences in the work environment and levels of capital investment bybusinesses. Since the samples used in this study include workers both in the BMAandother areas, we need to consider thosegapswhenanalyzingour findings.

Even apart from such factors, we must consider the impactthat the minimum wage system has on the labor market, and the limitations of using wages as an indicator of productivity when we look at the results of our analysis. Nevertheless, despite individual differences, there is no doubt that traininghelpspeopleacquireskills and increase their productivity and wages.

However,because this study focused primarilyonpre-employment training and most of the subjects had never previously worked, we were not able to measure the increase in each individual's income before and after education. Therefore, we used questionnaires to ask ex-trainees about their current income, and in order to supplement their answers we interviewed managers and supervisors at companies who employed them. We used statistical references to access information about the incomes of those who didnotreceivetraining.

The figures for individuals are those at the time of the survey, and as such it is necessary to create income profiles by integrating the figures. The moving average method was employed in the study of 1995 because the number of subjects was small; however, we used a regression line to create income profile in this study because we were able to obtain responses from sufficient number of individuals. It should be noted that we excluded the data of those engaged in the lapidary of diamonds from the analysis because their wages are relatively high and their number isaslarge as 26, while the total number of valid responses was 135 (59). We supposed that the factors having an impact on income are age, years of experience, labor market (Northeastern Region=0, BMA=1), and years of education, then developed a formula for estimating income where these factors are independent variables.

Monthly income= 69.16+123.11X(age)+175.56

X(years of experience)+1030.96X(labormarket) +56.17X(years of education)

R2 = 0.379, Adjusted R2= 0.354

Each coefficient is significant at 5% except that of education. That is to say, the increase of oneyearinagecorresponds to an increase of monthly income by 123.11 baht, and an increase

of one year in experience leads to the increaseof175.56baht. Likewise, finding employment in the BMA, and an increase of one year in education lead to the increase of income by 1030.96 baht and 56.17 baht, respectively. The coefficient for education is lower than those for age of years of experience, and thus, increase in the years of education has less impact than age or experience. This suggests that the estimated figure for years of education may be slightly low; however, this is a reasonable model as a whole. ISD (KISD/ UBISD), sex, and the length of training period are not taken into consideration in this analysis because their impact on income has yet tobedetermined. One of the reasons why the length of training was excluded is that it was difficult to gather correct data on this point through questionnaires and the size of the sample would beverysmall.

Generally speaking, income tax must be taken into consideration when discussing income. Although the Thai government imposes income tax on individuals, the tax exemptionpoint has been lowered to 50,000 baht as part of the current stimulant measures (60). This, combined with a variety of tax-deductible items, makes the issue of income tax irrelevant to the survey subjects, and therefore, we did not take it into consideration in our analysis.

Next, in order to measure economic impact, we estimated the incomeofpeople not trained at UBISD. In response to a question about what theyguessedtheir average income would be if they had not received training at UBISD, most respondents gave figures close to the minimum wage in the BMA or the Northeastern Region. Also, it has been found through the interviews with business managers that starting pay for technical laborers was at or near minimum wage level. In fact, according to the statistics on wage, income and working hours (61), the national average of daily pay for laborers was 160.57baht (Bangkok: 174.75 bahts, Northeastern Region: 140.25 bahts). Those working for wages lower than the minimum wage accounted for 6.38%, and inparticular the ratio is as high as 22.4% in the Northeastern Region (4.23% in the BMA). Therefore, we assumed that people withnotrainingwere working for the minimum wage.

To calculate the monthly income of people receiving the minimum wage, we multiplied the minimum daily wage by 26, the average number of working days per month. We then multiplied the employment rate by this monthly income. We calculated the employment rate by looking at labor statistics for graduates of lower secondary schoolsintheNortheasternRegion. Thai employment rates, especially in the Northeastern Region, fluctuate greatlydepending on the season because a largenumber of people in farming villages areemployed during theagricultural busy seasons,butareidleatothertimes. Since labor surveys are conducted four times a year in the country, we used labor statistics from four consecutive surveys (February, May, August and November 2000) (62) and found the average of the results. We came up with 80.95% as the estimated annual averageemployment rate for workers in the Northeastern Region.

As explained above, we estimated the monthly income of workers not trained at UBISDas

130 baht X 26 days X 80.95%= 2,736 baht.

The difference between theincome of trained workers and untrained workers, as estimated above, represents the economic impact. We assumed that the impact of training continues to exist for 10 years, as it is unreasonable to consider that it lasts forever. Although estimated

income continues to rise along with age andyears of experience, because the estimation formula is a linear regression equation, we believe that this does not create large gaps in estimation and actual values because the impact of training is assumed to last only for 10 years as mentioned above. We assumed that ex-trainees find employment at age 19 based upon the results of questionnaire surveysoftrainees.

Table 6-17 shows the economic impact measured through the above-mentioned process. Economic impact differs depending on the educational background of workers and the area in which they find employment because it is assumed that one would get a job in the Northeastern Region for minimum wage even without UBISD training. Also, it should be noted that these figures are the total of all the economic impacts produced over 10 years, and it is assumed that the impact is the smallest right after the completion of training and becomes larger in the course of time.

6.5.5 Rates of return

(1) Social rate of return

Because the level of activity varied greatly from year to year, we analyzed the social rate of return of all activities from the establishment of UBISD through 2000, using average yearly figures forenrollment and costs. This means considering the average cost and economic impact per student for all activities; and therefore, in order to simply findings from this point on, we shall use per-student values as we proceed with the analysis (63). Since all values were converted into real 2000 prices, this rateofreturnwas not affectedbyinflation.

Table 6-17 shows the costs and economic impact of the project for an average trainee, as seen from the standpoint of society ingeneral.

We first found the social rate of return by educational background and labor market. In other words we assumed various cases where ex-trainees with certain educational backgrounds found employment in different labor markets and found the social rate of return for each case. As we had to find the ratio of ex-trainees who work in the BMA and Northeastern Region in order to find the social rate of return for ex-trainees by educational background, weassumed that the ratio is 1:1 based on the responses in the interviews at the IDS and the areas in which in-planttraining wasconducted.

Finally, the social rate of return by the labor market and the social rate of return for the society as a whole are demonstrated at the bottom of the table. The ratios of ex-trainees with different educational levels (elementary school graduates: 10, lower secondary school graduates: 55, upper secondary school graduates: 35) were assumed from the results of the questionnaire survey of trainees.

The social rates of return for graduates of elementary, lower secondary, and upper secondary schools are 3.7%, 5.2%, and 6.6%, respectively, assuming that half of the ex-trainees were hired in the BMA. The reasons behind such differences would be that ex-trainees with better educational background have higher potential ability and that educational background itself hasanimpactonwagesasa"hallmark".

Table6-17EconomicImpact by Educational Background and Labor Market andSocialRateofReturn

Costs	DirectCosts	Thai Investments Total		**33,120.1**
		breakdown	consumption-type outlays	30,018.2
			(breakdown) Salaries	13,659.2
			Allowances andgeneral expenses suchasthoseonmaterials	14,116.8
			Utility (water,electricityandgas)	649.7
			Maintenance and managementexpenses	1,592.6
			capitaloutlays	3,101.8
			(breakdown) Construction costs	2,493.0
			Equipment costs	608.8
		Japanese Investments Total		**95,066.9**
			Capital outlays	95,066.9
			(breakdown) Construction costs	40,577.9
			Equipment costs	31,997.4
			Surveyexpenses	1,577.4
			Humanresources	19,928.2
	Total		Costsofcounterparttraining	985.9
				128,187.0
	indirect costs (borne bytrainees)			
			(breakdown) study expenses	15,000.0
			foregoneincome	32,833.3
	Total			**47,833.3**
Total				**176,020.3**

(In baht)

	Educational Background	Labor Market	Economic Impact		Rateof Return
Effect	Elementary school graduates	NortheasternRegion	162,381.0	→	− 1.1%
		Bangkok	286,096.2	→	8.1%
		Total (Northeastern50：Bangkok50)	224,238.6	→	**3.7%**
	Lower secondary school graduates	NortheasternRegion	182,602.2	→	0.5%
		Bangkok	306,317.4	→	9.5%
		Total (Northeastern50：Bangkok50)	244,459.8	→	**5.2%**
	Upper secondary school graduates	NortheasternRegion	202,823.4	→	2.1%
		Bangkok	326,538.6	→	10.8%
		Total (Northeastern50：Bangkok50)	264,681.0	→	**6.6%**
	Total(Elem. 10：Lowersec. 55：Upper sec. 35)	NortheasternRegion	187,657.5	→	0.9%
		Bangkok	311,372.7	→	9.8%
		Total (Northeastern50：Bangkok50)	249,515.1	→	**5.5%**

(*1) Due to rounding off, the subtotal and total figures do not necessarily match the exact total of the individualitems.

The social rate of return for workers in the Northeastern Region and the BMA are 0.9% and 9.8%, respectively. While it is possible to attribute the difference in labor markets to differences in the quality of workers, however, it is more reasonable to consider to assume that it was caused by differences in working conditions such as the size of investments in equipment by companies. Possibly the educational background of ex-trainees influenced which labor market they belong to, but such factors were not taken into consideration in this analysis due to lack of information on this point.

Finally we found the social rate of return for the whole society to be 5.5%. Although this rate cannot be strictly compared with the estimation based upon data for 1995 because methods employed for analysis such as that for estimating impact are different, the social rate of return can be said to have somewhat declined as it was 9.60% in the previous study. We might say that the social rate of return has been restrained by the large size of the investment in facilities and equipment. Nonetheless, if we look at UBISD as an investment and compare it with other investment opportunities, we can see that it is a meaningful project.

The above analysis is based upon the costs of 10-month pre-employment training. However, in actuality UBISD is offering a variety of 6-month or even shorter courses. Furthermore, a majority of pre-employment courses offered by KISD run for 2-6 month. While we developed the formula for estimating income based upon the information obtained through the questionnaire survey on ex-trainees, we did not take into consideration the influence that the length of training period would have on the income, as we were not able to ascertain such influence. Thus, for reference, we calculated the rate of return on the assumption that 6-month courses produce the same impact as demonstrated in Table 6-18.

The rate of return naturally rose, as costs decreased while impact remained the same, and it is over 5% for all cases. This may lead to the conclusion that the rate of return is higher for KISD, which is offering shorter pre-employment training courses than UBISD. However, some managers mentioned that workers who received shorter training programs demonstrate less productivity, although we were not able to obtain data on this matter. It would be necessary to shorten training period while instilling into the trainees basic skills and knowledge in so far as the characteristics of the subject matter of the courses allow. Even apart from

Table 6-18 Social Rate of Return with 6-month Pre-Employment Training

Characteristics		Rate of Return	
Educational Background	Labor Market	Duration of Course 10 months	6 months
Elementary school graduates	Northeastern Region	− 1.1%	5.9%
	Bangkok	8.1%	17.9%
	Total	**3.7%**	**12.1%**
Lower secondary school graduates	Northeastern Region	0.5%	7.9%
	Bangkok	9.5%	19.8%
	Total	**5.2%**	**14.0%**
Upper secondary school graduates	Northeastern Region	2.1%	10.0%
	Bangkok	10.8%	21.7%
	Total	**6.6%**	**15.9%**
Total	Northeastern Region	0.9%	8.5%
	Bangkok	9.8%	20.3%
	Total	**5.5%**	**14.5%**

such factors, the rate of return would be somewhere between these two types of values.

Table 6-19 Private Rateof Return

Characteristics		RateofReturn
Educational Background	Labor Market	
Elementary school graduates	Northeastern Region	19.5%
	Bangkok	40.6%
	Total	**29.9%**
Lower secondary school graduates	Northeastern Region	22.9%
	Bangkok	44.1%
	Total	**33.4%**
Upper secondary school graduates	Northeastern Region	26.3%
	Bangkok	47.7%
	Total	**36.9%**
Total	Northeastern Region	23.8%
	Bangkok	45.0%
	Total	**34.3%**

(2) Rate of return from the viewpoint of individual trainees

When we evaluate a system of education and training the result will be different depending on the extenttowhichitisviewedasasinglesystem. Therefore, next we consider the rate of return from the viewpoint of individual trainees. From the point of viewofindividuals,whatmattersis the private impact of training at ISD rather than the social cost-benefit: Therefore, it is necessary to calculate the private rate of return inorder to come up with incentives for potential trainees. For this purpose the cost is only the indirect cost consisting of study expensesandforegoneincomeafter tax.

Table 6-19 demonstrates the private rate of return where the length of training period is assumed to be 10 months. Although indirect cost was 47,833baht, which is relatively high, the economic impact exceeded the cost, and the private rate of return was found to be 34.3%. This means that if the problem of indirect cost to be borne by trainees is solved, training would bring about economic effects exceeding the costs.

Leaving the discussion aside for a moment, let us turn to the size of this economic impact from the viewpoint of household income in the Northeastern Region. While economic impact vary depending upon educational background and years of experience, the average amount at which monthly income increases for workers in the Northeastern Region and the BMAs are 1,560 baht and 2,590 baht, respectively. The average income of workers in the Northeastern Region was 8,546baht according to the survey conducted in 1998; however, income levels vary greatly by social status. For instance, the income of households where the main members who generate income are professional/ technical/ managerial workers, self-employed workers, production laborers, landed farmers,andagricultural laborers are 21,540 baht, 14,953 baht, 7,336 baht, 6,115 baht, and 4,406baht, respectively (64). Furthermore, the percentage of families where monthly incomeperfamilymember is less than 1,500 baht is as high as 50.3%. In such circumstances it is significant to find employment as a production laborer in the Northeastern Region and to be paid 1,560 baht more than those who areuntrained.

(3) Rate of return from the viewpointoftheNortheastern Region

Finally we analyzed rate of return from the viewpoint of the Northeastern Region. It is a loss for the Northeastern Region that those workers who would otherwise work in the region

migrate to the BMA after obtaining skills and knowledge through training. This decreases the effect of the training to half. However, those who migrate to the Metropolitan area contribute to the development of the Northeastern Region to some extent through sending money to their families in the region. We found through the questionnaire surveyonex-traineesthat those who have found employment in the Bangkok were sending 1/3 of their incometotheirfamilies (65). Using the formula for estimating income, we estimated the average amount that an ex-trainee sends to his family during the 10 yearssincethecompletionof the training to be1,820baht. As touched upon in the previous section, the impact that such an amount has on a family budget is significant. Certainly ex-trainees would make a greater contribution to the Northeastern Region if they were able to find a job in it. However, given that the industries and labor market in the region are not large enough to absorb all the ex-trainees, it is beneficial for the region that ex-trainees find employment in the BMA, rather than remaining in the Northeastern Region as unemployed or seasonal workers. This is because those who work in the Metropolitan area send money to the region, thus contributing to increase demands in the region even though such impact is indirect bynature.

Therefore, we assumed two caseswhereex-traineesemployed in the Bangkok donotsend money to the Northeastern Region and where they send 1/3 of their income back home. Here the impact of the money sent to the Northeastern Regionis1/3oftheeconomicimpact, which is considered to represent the minimum impact to the region. It is possible to consider that the economic impact is realized only in the Northeastern Region if ex-trainees keep for themselves the minimumamount of money that they need to make a living in the BMAand send the rest to their families (thus sending 1/3 of income on average). As to costs, it is not necessary to take into consideration the investment made by Japan because Japanese assistance was not granted in the expectation of reaping profits.

On the other hand as to Thai investment, it maybenecessarytofindwhoissupporting the government funds and also to determine the amount borne by the Northeastern Region. However, because such procedures would be intricate and time consuming, we used the total of Thai investments for the analysis. As such, the costs we dealt with are the part of direct costs borne by Thai investments and indirect costs. Courses are supposed to last 10 month as in the previousanalysis.

Table 6-20 shows the rate of return from the viewpoint of the Northeastern Region. The rate did not increase even though Japanese investments were excluded, thus decreasing direct costs to 1/4, because the effect was also reduced to about a half. Yet, it must be noted that the rate of return is relativelyhigh, taking into consideration the money sent from the workers in the BMA.

As another point of reference, we made the following scenario based upon trainees' plans for the future discussed in 4.1: a half of ex-trainees migrate to Bangkok to work and send1/3of their income to the Northeastern Region for 5 years, and then they return to the Northeastern Region to find employment there. The rate of return in this scenario rose from 9.38% to 12.7% in the table. Those who find a job in the BMA tend togobacktotheNortheastern Region after

Table6-20 Social RateofReturnfortheNortheasternRegion

Characteristics	Rate of Return			
	(a) Half of the ex-trainees migratetoother areas (donot send money back home)	(b) Half of the ex-trainees migratetoother areas (send1/3 oftheincome backhome)	(c) (b)+ Ex-traineesgo back to the region after havingworked inotherareasfor 5years	(d) Allofthe ex-trainees find employmentin the Northeastern Region
Elementary school graduates	0.0%	7.1%	10.2%	10.3%
Lower secondary school graduates	1.7%	8.9%	12.2%	12.8%
Upper secondary school graduates	3.3%	10.8%	14.1%	15.2%
Total	**2.1%**	**9.4%**	**12.7%**	**13.4%**

having worked in the BMA for a while, and thusweconsider this value reasonable.

(4) Sensitivity analysis of ratesofreturn

In the above cost-benefit analysis, economic impact was estimated from the income of ex-trainees found from the responses to survey questions, and therefore, there may be some degree of error in the results. Furthermore, the results are based upon some assumptions we came up with, looking at thecurrent conditions, and rates of return to fluctuate asoutside factors such as labor market conditions fluctuate. In particular, income and employment rate are sensitive to changes inthelabormarket. Also, it should be noted that employment was assumed at 100% for the purpose of the above calculation because the actual rate was not available; however, it is certain that the employment rate is lower than this figure. Therefore, we conducted sensitivity analysis. The purpose of sensitivity analysis is to change some of the elements to observe how much the results respond to such changes. Wedidnotconductanalysis involving the elements on investments because costs (at least Japanese investments) are fixed elements (66).

First of all, the employment rate is expressed in terms of the possibility for ex-trainees to get a job and to receive income. It is also possible to consider that the lower employment rate means lower income. (To be precise, itispossible to assume that they would receive minimum wage even in the worst case.) In terms of cases where employment rate declined, the rate returns for society as a whole, individual trainees, and the Northeastern Region are shown in Tables 6-21,6-22, and 6-23, respectively.

Social rate of return turns negative when the employment rate is below 90% when the workers educational background is disregarded. According to information gathered through interviews at UBISD, ex-trainees find employment one way or another; however, the percentage of those who are hired by the companies where in-plant training was conducted is about 50%.

Table 6-21 Sensitivity Analysis (Social Rate of Return)

Characteristics	Rate of Return Ex-Trainees' Employment rate				
Educational Background	**100%**	95%	90%	85%	80%
Elementary school graduates	**3.7%**	1.6%	− 0.6%	− 2.9%	− 5.5%
Lower secondary school graduates	**5.2%**	3.1%	0.9%	− 1.5%	− 4.0%
Upper secondary school graduates	**6.6%**	4.5%	2.3%	0.0%	− 2.6%
Total	**5.5%**	**3.4%**	**1.3%**	**− 1.1%**	**− 3.6%**

Table6-22 Sensitivity Analysis (Private RateofReturn)

Characteristics	Rate of Return Ex-Trainees' Employment rate				
Educational Background	**100%**	90%	80%	70%	60%
Elementary school graduates	**29.9%**	21.5%	12.5%	2.2%	− 11.1%
Lower secondary school graduates	**33.4%**	24.7%	15.5%	5.1%	− 7.9%
Upper secondary school graduates	**36.9%**	27.9%	18.4%	7.9%	− 4.8%
Total	**34.3%**	**25.5%**	**16.2%**	**5.8%**	**− 7.1%**

Table 6-23 Sensitivity Analysis (Social Rate of Return for Northeastern Region)

	Rate of Return Ex-Trainees' Employmentrate					
assumption	**100%**	95%	90%	85%	80%	75%
(a) Half of the ex-trainees migrate to otherareas (donotsendmoneyback home)	**2.1%**	0.0%	-2.3%	-4.8%	-7.5%	-10.6%
(b) Half of the ex-trainees migrate to other areas (send 1/3 of the incomebackhome)	**9.4%**	7.0%	4.4%	1.6%	-1.4%	-4.7%
(c)(b)+ Ex-trainees go back to the region after having worked in other areas for5years	**12.7%**	10.2%	7.5%	4.6%	1.4%	-2.1%
(d) All of the ex-trainees find employment in the Northeastern Region	**13.4%**	10.5%	7.4%	4.1%	0.5%	-3.4%

On the other hand, the national average of employment rate is 80% according to labor statistics, and therefore, we must say that a target rateof90%isachievable but a loftygoal. According to sensitivity analysis from the viewpoint of ex-trainees, the rate of return is positive when the employment rate is70%orabove.

From the viewpoint of the Northeastern Region,therateofreturn is acceptable, taking into consideration the money sent by ex-trainees working in the BMA, with an employment rate of 80-85%. We must say that even with a slightly lower employment rate, UBISD is a meaningful

investment for the Northeastern Region. It should be noted that a comparison between case (c) where those who migrate to the BMA return to the Northeastern Region and case (d) whereall the ex-trainees remain in the regions, reveals that case (c) is more beneficial to the Northeastern Region when the employment rate is below 90%. Migration to Bangkok brings about the best benefit from the viewpoint of ex-trainees, and, interestingly, this is the most beneficial for the development of the Northeastern Region as well if only ex-trainees return to the region later.

These results indicate that some measures should be taken when employment rate drops below 90%, such as improving employment rate, or increase the efficiency of training by improving the effects, or increasing the number of ex-trainees, thus reducing cost per trainee. The easiest would be to increase thenumber of trainees. However,anincreasein the numberof trainees does not necessarily improve cost-effectiveness. Excessive increase in the number of trainees while thenumber of instructorsand the facilities remain the same would have a negative impact on the quality of ex-trainees, thus decreasing cost-effectiveness. Even with the current conditions, trainees and ex-trainees commented that they wanted to receive more instructions from the instructors. Anincreaseinthenumber of enrollees also means a decrease in the quality of trainees, which may decrease the rate of those who complete training. Some of the ex-trainees of UBISD commented that trainees should be screened by written examorinterviews depending on courses and that some of the trainees were not able to understand the instructions anddisturbed the class. Therefore, we should consider various factorsbefore making conditions; however, it is one of the measures to improve cost-efficiency to increase the number of trainees.

6.5.6 Cash flowinatimeseries

Table 6-24 shows the cash flow of the UBISD project as a time series. The top, middle andbottom show cost byparty to bear, economic impact and cash flow for the respective period, and cumulative cash flow are presented, respectively. We supposed that half of the ex-trainees work in the Northeastern Region and the rest migrate to the BMA, that the educational background of ex-trainees was the same as that for the former group, that all of the ex-trainees find employment, and the effect of the training lasts only 10 years. Other conditions remain the same. The length of the project is supposed to be 40 years (the life of the buildings), and values for FY2000 were used for costs, number of ex-trainees, and economic impact in making projections for the future. In other words we supposed that UBISD's activities will remain the same in the future. All expenses were adjusted to FY2000 real prices, and the influence of inflationhasbeenfactoredoutfromthe rateofreturn.

The table shows that Japanese investmentswere significant at thebeginning,and only Thai investments were made in the following periods. Although the impact increases along with the increase of the number of ex-trainees, cumulative cash flow showednegative growth as theeffect was small at the beginning. After the assistance from Japan ended, the costs decreased and the cash flow finally turned positive in the 20th year (2008). The period up to 2008 is the collection period,andthismeans thatittakes20years to recover the invested capital.

The rate of returnoftheprojectbasedupon this cash flow is 5.8%. The rate of return we

Table6-24 CashFlows of the UBISD Project (1,000baht,adjustedto2000realprice)

FiscalYear	1988	1989	1990	1991	1992	1993	1994	1995	---	1999	2000	---	2007	2008	---
Phase	0	1	2	3	4	5	6	7	---	11	12	---	19	20	---
ThaiInvestments															
Consumption -type outlays		-7,587	-12,965	-15,630	-16,871	-16,526	-16,525	-26,849	---	-20,780	-20,725	---	-20,725	-20,725	---
Capital outlays		-27,494	-5,283	-5,778	-1,296	-1,069	-830	-511	---	-344	-2,286	---	-2,286	-2,286	---
Total		-35,081	-18,248	-21,407	-18,167	-17,595	-17,355	-27,360	---	-21,124	-23,011	---	-23,011	-23,011	---
Japanese Investments															
Grantaid	-801,563														
Donation of equipments and materials	-14,811	-29,083	-6,420	-8,476	-8,388	-558									
Localcosts		-1,937	-1,199	-1,519	-912	-512									
Survey expenses	-109	-605	-1,251	-1,072	-1,835	-884									
Dispaching specialists	-14,522	-33,477	-28,365	-36,076	-35,129	-15,582									
Costs of counterpart training	-2,066	-1,498	-1,070	-1,346	-1,388	-954									
Total	-833,072	-66,600	-38,305	-48,489	-47,651	-18,490									
Costs borne by trainees															
Foregone income		-4,691	-11,843	-11,896	-11,383	-12,465	-13,092	-21,317		-31,251	-27,716		-27,716	-27,716	
Study expenses		-2,143	-5,410	-5,435	-5,200	-5,695	-5,981	-9,739		-14,277	-12,662		-12,662	-12,662	
Total		-6,834	-17,253	-17,330	-16,583	-18,160	-19,073	-31,056		-45,528	-40,378		-40,378	-40,378	
Totalofthecosts	**-833,072**	**-108,514**	**-73,806**	**-87,227**	**-82,401**	**-54,244**	**-36,428**	**-58,416**	---	**-66,653**	**-63,390**	---	**-63,390**	**-63,390**	---
1st yearcompletion			1,261	1,773	2,285	2,797	3,309	3,821	---	5,869					
2ndyearcompletion				3,182	4,475	5,768	7,061	8,353	---	13,524	14,817				
3rdyearcompletion					3,197	4,495	5,794	7,092	---	12,286	13,585	---			
4thyearcompletion						3,059	4,301	5,544	---	10,514	11,756	---			
5thyearcompletion							3,350	4,710	---	10,153	11,514	---			
6thyearcompletion								3,518	---	9,234	10,664	---			
7thyearcompletion									---	12,709	15,036	---			
8thyearcompletion									---	15,208	18,616	---			
9thyearcompletion									---	17,531	22,595	---	58,043		
10thyearcompletion										10,303	14,488	---	43,785	47,970	
11thyearcompletion											8,398	---	32,278	35,689	---
12thyearcompletion												---	25,601	28,626	---
13thyearcompletion												---	22,576	25,601	---
14thyearcompletion												---	19,550	22,576	---
15thyearcompletion												---	16,525	19,550	---
⋮													⋮	⋮	⋮
Total of the economicimpact			**1,261**	**4,955**	**9,957**	**16,119**	**23,814**	**33,039**	---	**117,332**	**141,469**	---	**217,043**	**238,609**	---
Cash flow for eachphase	**-833,072**	**-108,514**	**-72,545**	**-82,272**	**-72,444**	**-38,126**	**-12,613**	**-25,377**	---	**50,679**	**78,080**	---	**186,388**	**164,568**	---
Cumulative cash flow	-833,072	-941,586	-1,014,131	-1,096,403	-1,168,848	-1,206,973	-1,219,587	-1,244,964	---	-1,257,255	-1,179,175	---	-136,928	**27,640**	---
Accumulation (discountrate:5%)	-833,072	-936,419	-1,002,219	-1,073,289	-1,132,889	-1,162,762	-1,172,174	-1,190,209	---	-1,202,152	-1,158,675	---	-689,487	-627,463	---

(*1) Duetoroundingoff,thesubtotalandtotalfiguresdonotnecessarilymatchtheexacttotaloftheindividualitems.

found in the previoussectionunder the same conditions was 5.5%, which is about the same. It can be said that although it takes time to recover the invested amount, the project will produce benefit corresponding to the costs. However, the length of period is rather long to maintain this rate of return. One of the problems with the pay back period method is that it disregards the time value. Supposing that the discount rate for future cash flow is 5% (which is about the same as the rate of return), the end of the collection period will be the 38th year (2026). In other words, the projectmust last 38yearstorealizea rateofreturnaround5%.

As another point of interest, we supposed 3 cases where direct costs alone were analyzed (disregarding indirect costs borne by trainees), where Japanese investments alone were analyzed (disregarding Thai investments), and where Thai investments alone were analyzed (disregarding Japanese investments). The rate o f return and the collectionperiod were7.7%and17years (up to 2005), respectively, when only direct costs were taken into consideration. The rate of return and thecollectionperiod was 9.1% and 15 years (up to2005), respectively, whenonly Japanese investments were taken into consideration. And the rate of return and the collection period were 29.8% and 10years (upto1998), respectively.

Based upon the above it can be said that Japanese investments are significant from the viewpoint of society as a whole and are producing certain cost-benefit; however, it takes a long time to recover the invested amount. By nature assistance from Japan is associated with investment in terms of personnel expenditures of Japanese engineers and technical fees, which are costly by the Thai standard. Of course it should not be forgotten that the transfer of skills from Japanese experts to the Thai counterparts enhanced the contents of training. Therefore, to some extent, the costs of Japanese assistance are unavoidable even though it decreased cost-benefit. For these reasons, under the given conditions, it is necessary for the project to continue to exist for a long period to make Japanese investments meaningful to the society as a whole.

We should also examine the results from theviewpoint of the partner country, Thailand. Asof2001, Thai investments have realized effectscorresponding to themselves, and the invested amounts have been collected. In a sense they have more than enough reasons to finish the project whenever they deem appropriate. This suggests problems associated with common cases where projects were terminated because of the circumstances intheassisted countries.

Even apart from such factors,educational projects do not produce effects unlessex-trainees are produced and theyutilize theacquired skillsandknowledgein the labor market,andthusitis a time consuming project. It should be able to cope with the changes in the social circumstances, but there is a risk of not being able to do so. Therefore, it is necessary to develop an assistant project with minimal initial investment to shorten the pay back period.

6.5.7 Impact on alleviating theregional gap

Now we should examine how such economic impacts contribute to the correction of the regional gap. There are a vast variety of factors concerning regional development,andthusitis not really meaningful to measure the contribution in terms of improvement of productivity of

workers. Besides, it is difficult to measure the degree to which improvement of productivity contributed to the minimization of the regional gap. Nonetheless we considered it meaningful to estimate the impact that improvement of productivity would have on regional gap.

We estimated the average annual increase of gross production for the Northeastern Region by linear regression at 32.8 billion baht based upon the gross production for the region for the years from 1986 to 1997 adjusted to FY2000 values (67). Here, based upon the recent tendency we supposed that both ISDs have 850 pre-employment-course-trainees equivalent each, and that they produce skilled laborers every year. We further supposed that half of the ex-trainees find employment in the Northeastern Region, in other words 850 ex-trainees with 1 to 10 years of experience are employed in the Northeastern Region to utilize their skills and knowledge obtained through training, or, improvement in their productivity is reflected in the increase in the gross regional production. The portion thus increased is some 80 million baht, which accounts for 0.24% of the increase of the gross regional production, and is the estimated contribution made by ISDs.

Needless to say, increase in GRP cannot be measured by the improvement of productivity alone; also, there would be increase in many industries. For example, the ratios of the major industries, namely, manufacturing, construction, whole sale and retail, services, and agriculture to the increase of GRP during the three consecutive periods from 1993 to 1996, are in the neighborhood of 22%, 20%, 15%, 10%, and 6%, respectively (68). If ISD training contributes to the increase of production in manufacturing alone, the contribution of the training would be some 1% of the increase of production in manufacturing.

Although this value is minimal, it is within the scope of our expectation because we are dealing with the impact of training offered by only two ISDs. Currently each prefecture in the Northeastern Region has a PCSD, and we believe that as a whole they are making significant contributions even though they are faced with the problem of labor migration. We think that the effect of the KISD and UBISD projects will be spread if they continue to play the role of the center of a network and if their experiences are utilized in the operation of PCSD activities. However, from the viewpoint of the minimization of regional gap, the project cannot be said to be effective unless they contribute to the growth rate in excess of that of Bangkok or the central area. The effect of cooperation in education and training cannot be realized unless the labor market in the Northeastern Region expands. As such, we must conclude that the projects have a long way to go on the issue of regional gap.

6.6. Changes in the Circumstances Surrounding the Projects and Future Prospects

6.6.1 Slow down in labor market

The Thai economy continued to grow at high rates since 1960s; however, it slipped into slow down just after the currency crisis in 1997, and real GDP growth rate for 1997 and 1998 was as low as 0.6% and -5.5%, respectively. Although the growth rate turned positive in 1999, the influence of the currency crisis is still lingering. As fuller discussion on the stagnant

economy will be presented in another chapter, we deal with the labor market, which is directly related to the ISDs at issue.

First of all Figure 6-5 shows unemployment ratebyregionin a time series (WK: Thailand, BKK: Bangkok Metropolitan Area,andNE:Northeastern Region). Anumber of workers in the Thai labor market are employed only during the agricultural busy seasons and are seasonally inactive. Usually such seasonally inactive workers are not counted as those unemployed when calculating the unemploymentrate; however, wealso calculated theunemployment rate wherethe number is included in that of those unemployedbecause they wereunemployed at the time of the survey. Those indicated with "+" such as "WK+" in Figure 6-5 represent unemployment rates found in this manner. Unemployment rate includingthoseseasonallyinactive was not calculated for Bangkok since1993 because they did not exist in the area after 1993, according to statistics. Numbers 1 to 4 as in 00-1, 00-2, 00-3, 00-4 stand for the agricultural off-season (Round 1: January-March), time when new ex-trainees join the labor market (Round 2: April- June), agricultural busy season (Round 3: July-September), and (Round4:October-December), respectively. The survey was conducted in the middle month of eachperiodin general. In the past, surveys were conducted during round 1 and 3 every year, and also in round 2 in even numbered years; however, labor statistics have been taken for every quarter since the currency crisis. Thevalues for round 2 for yearsbefore 1997 are not shown in the table.

As shown in the table, unemployment rates have been on the increase since 1997 although such a trend is not necessarily obvious. The unemployment rate for Thailand, which was 2% even in agricultural off-seasons in the periodbetween1995 and 1997, jumped to 5% in 1998 and 1999. Those for Bangkok and the Northeastern Region rose to about 5% and 8%, respectively during the period. The reason that the rates for agricultural busy seasonsandoff-seasons differ a great deal for the Northeastern Region is that the ratio of seasonal workers in farming is high in the region. However, that unemployment rates remain high even in agricultural busy seasons and that the unemployment-rate plus is as high as 22% in the Northeastern Region suggest that those who were not able to find employment were not absorbed in the agricultural sector. An increase of employment rate by 1% represents the existence of a substantial number of unemployed workers,anditsimpactislargerthanwhatisimpliedbythepercentage.

Let us turn to the unemployment rate of those whose educational background is at the lower secondary school level. Figures 6-5 and 6-6 demonstrate unemployment rates of such workers by region. Figures 6-6 and 6-7 show general unemployment rates and unemployment-rate plus, respectively. As well as the unemployment rates in general, discussed above, the ratios for workers in this category have risen sharply since 1997. In particular the rate for the Northeastern Region rose drastically to 11.9% in 1999 from 4.1% in 1996. This seems to be because of the decline in economy in the region caused by the economic crisis and the migration of workers from the Bangkok area. The improvement in the productivity of ex-trainees cannot be utilized in the development of society if KISD/ UBISD ex-trainees cannot find employment, even though the existence of ex-trainees itself is meaningful as potential workforce in the region. Therefore, itmust be said that thevisibleeffects of the projects are

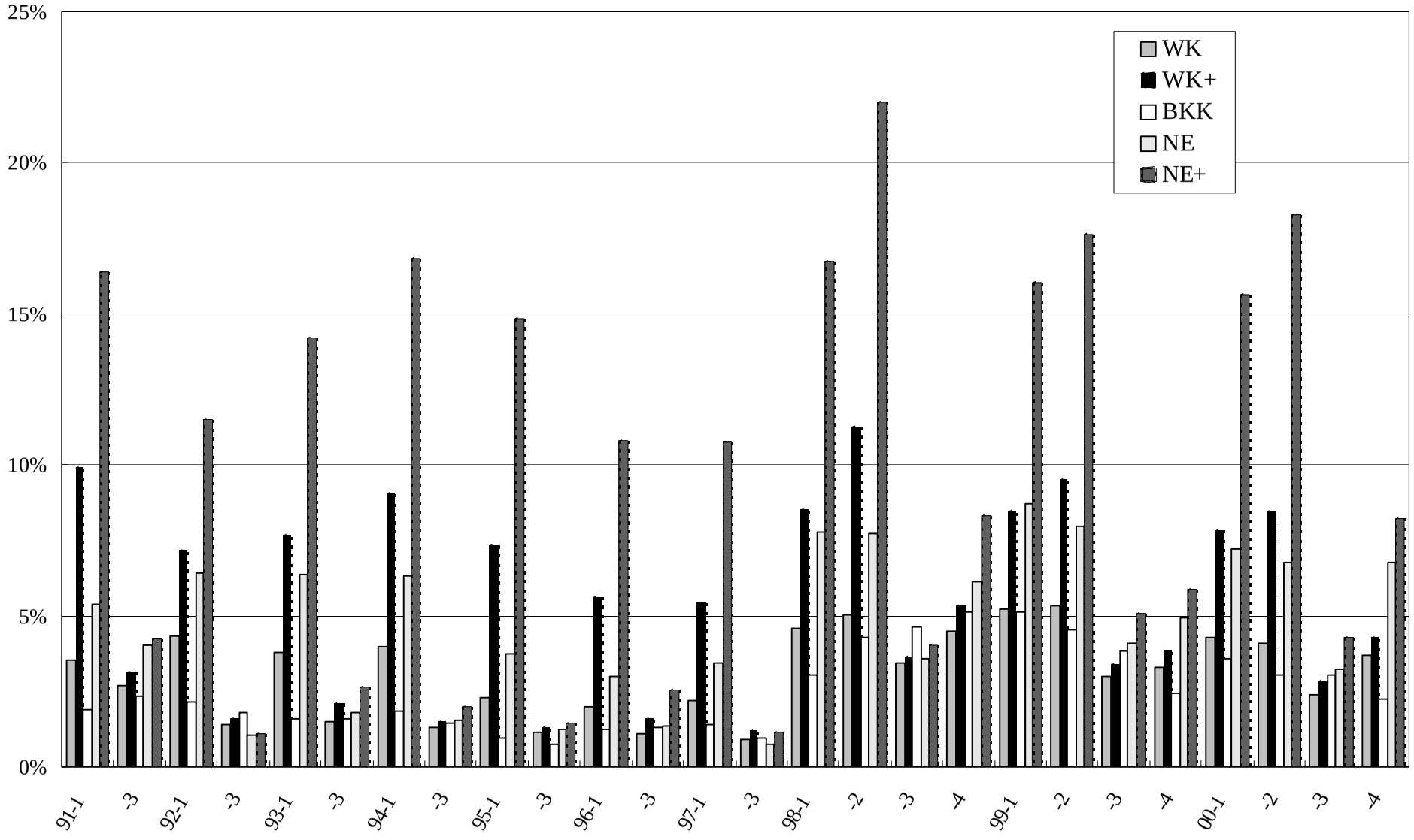


Figure 6-5 Unemployment Rates in a Time Series by Region (Whole Kingdom, Bangkok, and Northeastern Region)

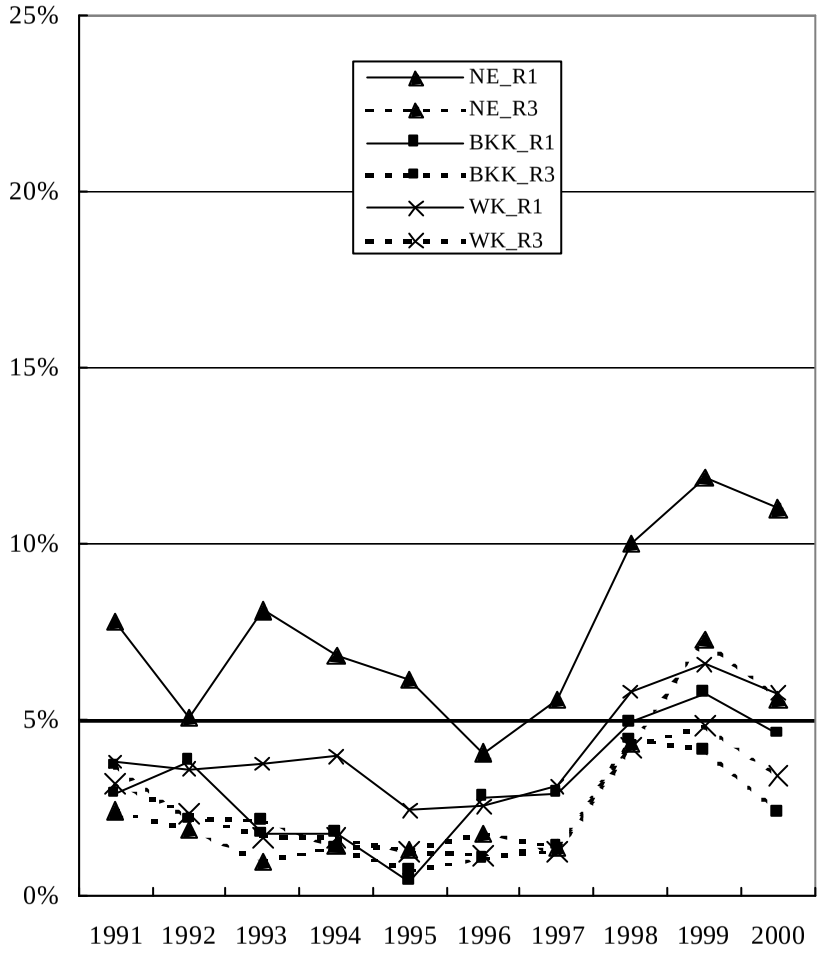


Figure 6-6 Unemployment Rate of Lower Secondary School Graduates

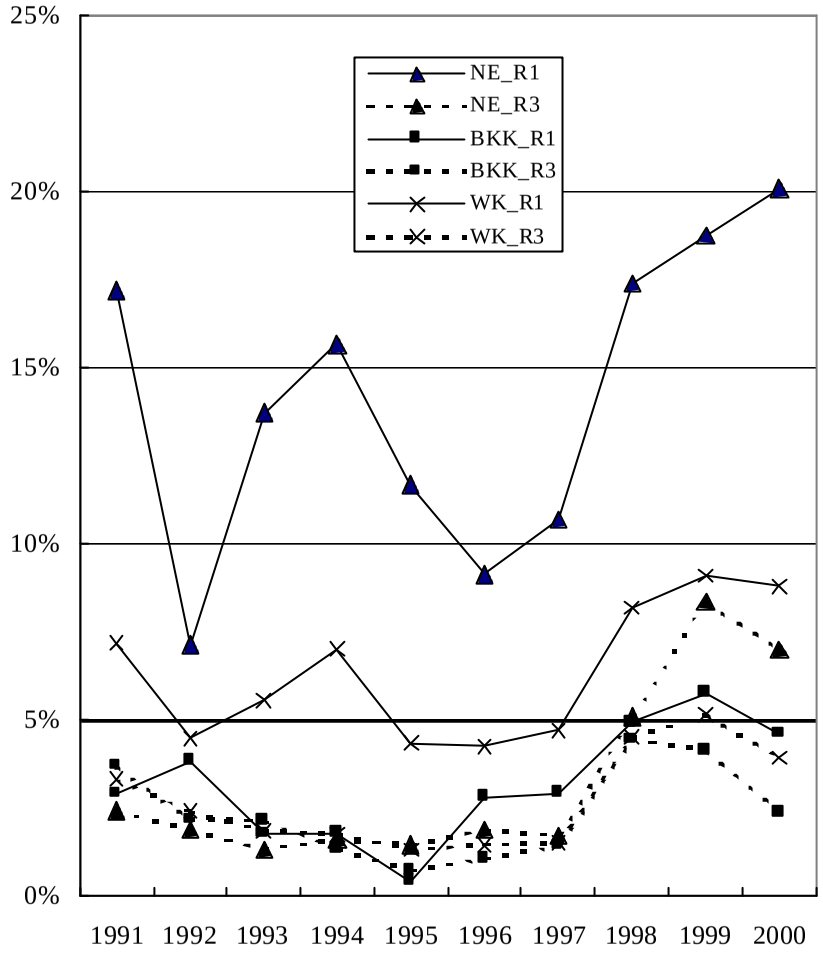


Figure 6-7 Unemployment Rate of Lower Secondary School Graduates (including seasonally idle workers)

(*1) Both are developed by the author based upon the Labor Statistics for each year, except FY2000 (round 3), for which draft printing was used.

decreasing.

Table 6-25 demonstrates the situations concerning employment placement in Thailand (69). Such information serves only as reference material, as public employment services do not play a major role in employment placement; however, it is still valuable in that it helps us grasp the general tendency. Based upon the data for the period between 1996 and 1999 in a time series we demonstrated in the table the number of new applicants, number of open positions, number of those fining employment, and employment rate. As shown in the table, the number of job applicants has bulged since 1997. Neither the number of those who found employment nor employment rate increased because there have not been enough job openings to absorb the job applicants.

Table 6-25 Employment Placement

	Number of Applicants	JobOpening	Number of Those Who Found Employment	Employment Rate
1996	145,175	431,508	108,147	74.5%
1997	174,841	571,678	117,012	66.9%
1998	273,686	484,212	144,133	52.7%
1999	295,023	407,135	137,065	46.5%
Bangkok	64,883	79,052	47,809	73.7%
Central Region	97,356	174,415	37,513	38.5%
Northern Region	46,914	58,535	17,153	36.6%
Northeastern Region	52,936	50,048	21,820	41.2%
Southern Region	32,934	45,085	12,770	38.8%
Below Elementary School	9,163	30,960	3,564	38.9%
ElementarySchool Graduates	56,421	86,109	30,832	54.6%
Lower Secondary School Graduates	45,530	71,921	24,866	54.6%
Upper Secondary School (Regular Course) Graduates	39,210	35,262	18,083	46.1%
Ex-Trainees of Short-Term Vocational Training	840	177	119	14.2%
Upper Secondary School (Vocational Course) Graduates	30,389	42,911	14,932	49.1%
Those Receiving Higher Education (PWT)	1,435	230	466	32.5%
Those Receiving Higher Education (PWS)	53,679	31,871	20,634	38.4%
College Graduates	57,845	36,973	23,569	40.7%
Others	511	70,721		

According to the data for 1999, employment rate is outstandingly high for Bangkok. It was because workers who had migrated from Bangkok to rural areas after the economic crisis went back to the Metropolitan area to find employment. Employment rates for other regions do not show significant differences; however, the gap between thenumber of job applicants and job openings was noticeably wide in the Northeastern Region. It seems that it was difficult to find a job in Northeastern Region asof1999.

It should alsobenotedthattheunemployment rate for junior college graduates isaslowas

14.2%. However, it is necessary to examine the data for other years to determine if this is a chronic status. Another point of consideration is that those who received short-term vocational training are sure to have two lines of educational and work history; that is to say, those who had registered, when applying for a job, as an ex-trainee of a short-term training program can be registered and get a job for workers with another category of background. If we disregard such possibilities, we can state that the data suggest it is harder for those who have received short-term training because companies can hire workers with better educational background for the same wage. In any case it is necessary to study further on this point.

6.6.2 Expansion of educational opportunity and improvement of educational background of workers

The most important aspect of ISD governed by the Ministry of Social Welfare and PCSD controlled by prefectures is pre-employment training offered within the institutes. This is because the course runs for a long period of 6 to 10 months, and the degree of mastery of the skills instilled in trainees is considered to be best. Additionally the investments made in this training and the forgone incomes of trainees are the largest among the courses offered by the institutes. Yet another reason is that such training is significant from the viewpoint of social welfare in that it contributes to the expansion of employment opportunities of those who do not have much access to education and training.

Pre-employment courses are offered to elementary school graduates except some advanced courses, which are offered to those who have completed three years of lower secondary education. However, such requirements vary among institutes, and the DSD plans to set national standards for requirements to be observed by all the institutes.

The fact that ISDs require applicants of pre-employment courses to have a certain educational background suggests that the relationship between ISD, social circumstances and the labor market is determined by the status of educational opportunities at various stages. As discussed in Section 2, educational opportunities have under gone various changes since the 1970s, when ISDs were first established. Here, we discuss educational opportunities in three periods, namely, when KISD and UBISD were established, in FY2000, when the survey was conducted, and the changes from then to analyze the social role of pre-employment training.

As demonstrated in Figure 6-2 in section 6.2.1, the percentage of school attendance and that of those who continue to study at the lower secondary education level have undergone interesting courses. The school enrollment rates in this table were found by dividing the figure for lower secondary school enrollment for each academic year by the number of children in the appropriate age group, in other words the gross school attendance rate. (The Thai government does not calculate net enrollment rate. The ratios of those continuing to study were found by dividing the figure for lower secondary school enrollment for an academic year by the number of elementary school graduates for the previous academic year. The academic years in this figure represent the phases in the national economic and social development plan and national educational development plans, both of which were 5-year plans. In other words, the periods

1972-76, 1977-81, 1982-86, 1987-91, 1992-96, and 1997-2001 are phases 3, 4, 5, 6, 7, and 8, respectively. It was in 1979, during phase 3, that KISD was established, and it is reasonable to infer that the situations in the period were reflected in the plan for the establishment of the ISD. Likewise, UBISDwasestablishedin1989, duringphase 5, andthesituations in theperiod must have been reflected in theplanfortheestablishment oftheISD.

Let us first look at the ratios of students continuing to study during phase 3 (1972-76). It started with a high level of 89% in 1972 and gradually declined to 81% i n 1976. On the other hand,enrollment rate started from a significantly low 23% and slightly increased to 31% in 1976. The wide gaps in the percentages are caused by the fact that different numbers are used as the denominator. That is to say, the percentage of those who continue to study at the lower secondary school level accounts for 80% of the elementary school graduates; however, their percentage in the appropriate age group is about 30%, demonstrating that the number of those who do not finish elementary school is significant. The educational system during phase 3 consisted of 4 years of lower elementary education and 3 years of upper elementary education, followed by 3 years of lower secondary education. And there were a vast number of children who did not receive upper elementary education after having graduated from lower elementary school. In particular a majority of elementary schools in farming villages offered only lower secondary education, and according to the statistics of 1973, 77% of the elementary schools in farming villages remained 4-year schools. Furthermore, the ratios of those who remain in the same class for another year and dropouts were high, and thus the ratio of those who receive upper elementary education was quite low. Not only that, there were also a number of children who did not receive any formal education at all in those days. While a small portion of elementary schools were run by the national government, a vast majority of elementary schools established by prefectures and the Municipality (Theetsabaan) were controlled by the Home Office in those days. Although the Home Office had intended to offer at least 7 years of compulsory education free of charge according to the Karachi plan adopted by the World Assembly of the UNESCO in 1960, the ministryhadnotbeenabletorealizetheplanyet (70).

Therefore, it can be said that graduates of upper elementary schools at the time were those from wealthy families or those equipped with favorable scholastic ability. Yet 20% of the graduates did not continue their studies at lower secondary school, suggesting that there were a number of students who gave up schooling at that stage because of poverty or for cultural reasons, even though they the had the scholastic ability to pursue secondary education. It is reasonable to consider that a short-term pre-employment training would make such children excellent workers. It is quite significant that, apart from the Ministry of Education who had controlled secondary education, the Home Office attempted to establish institutes for skill development for the graduates of elementary schools, which wereunder itscontrol.

However, situations changed greatly within several years after the establishment of KISD in 1979. First of all, in 1977, the National Board of Education reported from the king the "National education plan of 1977", which was issued as an imperial command. This plan was made to remedy the situation where the objective based upon the Karachi Plan seemed

impossible to realized. According to the plan, 6 years of compulsory elementary education was to be offered instead of 7 years, thus shortening the period for compulsory education by 1 year, starting from 1978. This led to a radical curriculum reform. Although thenewcurriculum was revised in 1990, its basic structure remained the same up until today. Furthermore, in 1980 the national government established the national board of elementary education to improve the administration and operation of elementary education, and the secretariat of the board wasplaced under the Ministry of Education. This converted all the schools established by prefectures to national schools under thecontrol of the Secretariat of the Board of Elementary education within the Ministry of Education. However, schools established by the Municipality (Theetsabaan) remained under the jurisdiction of the Home Office. Furthermore, administrative reform of elementary education was implemented to establish boards of elementary education at the prefecture level, under which were placed education offices of counties and schools. In practice, such reform meant elementary schools in farming villages had to expand their 4-year programs to 6-year programs. The number of those who completed the 6-year program soared due to this education reform which enlarged the denominator for calculating the rate of those pursuing secondary education while the school attendance rate remained around 30%, thus causing a sharp decline in the percentage of elementary school graduates continuing to study. As shown in the figure, the percentage took a nose dive from 78% in 1977 to48%in1980,and it continued to decline until it reached bottom in 1986 at 37%. Turning to school attendance rate, it temporarily rose to 36-38% during the period between 1978 and 1980; however, this was because those who completed the 7 years elementary education under the old system and those whograduated from the new6-year elementary school enrolled at upper secondary schools at the same time. The apparent increase has been caused because those percentages are raw figures where no adjustment was made to reflect such circumstances. That is to say, in reality, the percentage of elementary school graduates pursuing secondary education remained around 30% just asitwasintheyearsbeforeandafterthisperiod.

Due to such changes, elementary school graduates werenolongerelitesinfarmingvillages after the educational reform in 1978, and a vast majority of the group, who would have completed the 4 year program in the old system, became able to graduate from elementary school, except for a small percentage of dropouts. In such circumstances KISD attempted to increase the quota for its pre-employment training course; however, shortened elementary education and a wider range of elementary school graduates had a negative effect on the quality of potential enrollees to KISD. Yet it was still possible for the institute to be selective and accept only those equipped with qualities equivalent to that of trainees in the past. This was because the rate of those pursuing secondary education remained at the samelevel. Furthermore, KISDwasnotdirectlylinked with elementary education because the training wastobeofferedto those aged 15 or over. Thus, there was a time lag until the changes in the characteristics of elementary school graduates had an influence on thoseofKISDtrainees.

Turning to phase 5 (1982-1986), which was just before the establishment of UBISD, the percentage of those who pursued secondary education was on a moderate decrease as discussed

earlier and reached 37% in 1986. School attendance rate, on the other hand, slightly rose to 34% in the year. The gap between these values narrowed to 3%, suggesting that almost all the children were able to complete 6 years of elementary education. Therefore, it can be said that expansion of opportunities for elementary education was realized by 1986 although the length of the elementary program was shortened from the original 7 years to 6 years, and thus, it was not implemented according to the original objective based on the Karachi Plan. At this stage the circumstances surrounding UBISD were the same as those which existed when the KISD was established.

Thus, judging from the statistics for the period until 1986, expansion of educational opportunities was only achieved at the elementary school level at the time, and obviously it was necessary to take employment measures for those elementary school graduates who did not have access to secondary education. It is a well known fact that rapid economic growth causes a number of paid laborers to work in factories newly built in a village, which in turn causes elementary school graduates to cover the shortage in agricultural workers or house holdlaborers instead of continuing to study at secondary school. That is to say, Thailand was in an ironic situation where secondary education declined because of economic growth. On the other hand, it was naturally expected that the expansion of educational opportunities of secondary education would follow that of elementary education, and the necessity for improving the educational level of workers had been recognized in Thailand. The national board of education and such other organizations had been discussing measures for the expansionofsecondary education. It was in 1987 that the Common Education Bureau, of the Ministry of Education, implemented measures for the expansion of lowersecondary education in 38prefectureswhich were behind the others in terms of economic development. Furthermore, the World Bank warned Thailand that although the Thai economy had developed, it would reach a plateau because the percentage of people receiving secondary education was very low (71), and as such there were domestic and international pressures for the expansion of secondary education.

As discussed earlier in Section2,thepercentage of those continuing to study at secondary school and school attendance rate rose sharply after the project for the expansion of educational opportunities was implemented, and secondary education came to be offered at elementary schools under the jurisdiction of the national board of elementary education, the Ministry of Education, and elementary schools established by the Municipality (Theetsabaan), Bangkok, controlled by the Home Office. It was the first time since 1972 that the rate of those pursuing secondary education started a positively sloped curve and school attendance rate continued to increase in Thailand.

As an inevitable consequence of such changes, the relative status of elementary schools and lower secondary school graduates (potential trainees for KISD and UBISD) in the labor market has been lowered. Because there are no statistics available on the workers produced by the new education system, we analyzed the distribution of work force by educational background and found that the ratio of those who have received secondary or higher education has been on the increase, as demonstrated in Figure 6-8. In particular the rate of increase is significant for

the Northeastern Region (NE), even though the ratio of workers who have completed secondary or highereducation is smaller than thatofBangkok.

Supposing that the ratios of workers with better educational backgrounds increased while the demand forlabor remained on the samelevel, the increase in thenumber of job applicantsmakes it difficult to find job openings on the M (middle) level, which used to absorb graduates of lower secondary school. Available options for graduates of lower secondary schools are either finding employment on the L (low) level, whichusedtobeforelementaryschools, or receiving more education. If a number of lower secondary school graduates chose to continue to study, upper secondary education will expand to make it difficult to find employment at the H (high) level, which used to be for upper secondary school graduates, and jobs on the M level become the target for the graduates of upper secondary education. As such, those changes in the relationshipbetweenthetypes of jobs and workers'educational background have a domino effect throughout the educational system. Additionally, labor demand has decreased since the economic crisis since 1997. We found through interviews at technical colleges in Khon Kaen and Ubon Raatchataani (upper secondary schools and institutes of vocational education and training at the diploma level controlled by the Department of Vocational Training, Ministry of Education) that the above mentioned phenomenon has been taking place. That is to say, many of those who have received PWC (upper secondary level) continued to study to receive PWS (diploma level) because they were not able to find employment just with PWC, and got a job whichusedtobeforthosewithPWCandwithworkingconditionsequivalentto those for upper secondary school graduates. The expansion of educational opportunities at the upper secondary or highereducation level has been asoutlined asabove.

We may consider that the objective of ISD is to develop the abilities of those who are at the L level above to be able to find M-level employment; however, expansion of educational opportunities at the upper secondary level would lower the relative status of ISD ex-trainees and make it extremely difficult to be employed for an M-level job.

Additionally, training experiences at ISD are not counted as educational background, and therefore, ex-trainees cannot go to

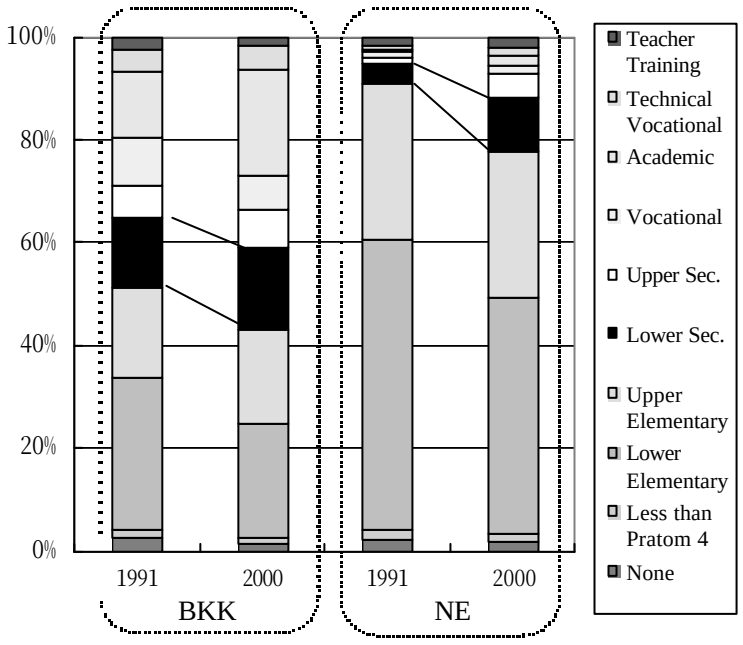


Figure 6-8 Changes in the Labor Structure by Region and Educational Background

upper level schools. Although it is possible for elementary school graduates to receive pre-employment training at ISD and then go to lower secondary school, training at ISD does not count as academic background, and it is as if the time spent on the training was a waste. In actuality there are more and more cases where graduates of lower secondary schools receive pre-employment training, which was originally designed for elementary school graduates, to find employment at the M level, or where graduates of upper secondary school receive pre-employment training to get a job.

Furthermore, Article 43 of the Constitution of the Thai Kingdom of 1997 provides for the right to receive a minimum of 12 years of free basic education of high quality. Pursuant to this provision, article 10 of the National Education Act of 1999 reconfirms this right under article 43 of the Constitution, and article 16 of the law defines basic education as education consisting of no less than 12 years at levels below the higher education level. In other words, basic education offered by the government free of charge has been defined to be elementary through upper secondary education. Additionally, 6 years of compulsory education provided by Elementary Education Law was extended to a 9- year education to be offered to those aged between 7 and 16 by article 17 of the Law. It is stipulated by article 72 of the Transition Provisions that 12 years of free basic education and the extension of the period of compulsory education to 9 years shall be put in to practice within 5 years of the enforcement of the Constitution, which is by 2002 (72).

This is expected to further expand educational opportunities at the lower secondary and upper secondary levels, and as a result, social standing of workers with less educational background will be even lower. As changes in relative status in the labor market are reflected in wages, it is necessary to take into consideration the impact of expansion of educational opportunities in the future when projecting the status of KISD and UBISD ex-trainees in the labor market.

It is reasonable to doubt whether quantitative expansion of upper secondary education would take place just as in the case of lower secondary education. Indeed economic crisis may cause children of disadvantaged families to give up education or lead to decreases in educational spending by the national government. However, rapid expansion of upper secondary education is also foreseeable. The largest reason is that people came to give increased attention to the right to receive education in the drafting process of the National Education Act of 1999, in connection with the plan to offer 12 years of basic education free of charge. In 1990, when the policy on the expansion of educational opportunities at the lower secondary school level had just come to be implemented, major impediments to access to education were not only poverty but also little understanding of the significance of education by children and their parents and geographical conditions, in that schools were not within commutable distance from homes (73).

The measure of offering lower secondary education at elementary schools was chosen to overcome geographical problems; however, it also served to make children and their parents aware of the importance of education through having elementary school teachers encourage pupils to continue studies and also teach lower secondary school classes. For example,

according to the survey conducted by Minoura and Nozu in Yasothon prefecture in the Northeastern Region, the direct cause of the increase in the percentage of those receiving secondary education was the development of the notion that "everyone should go to lower secondary school" rather than changes in the job structure brought about by industrialization (74). We consider that upper secondary education will expand at a considerable speed because quantitativeexpansion has already started to take place. As discussed in the section on outlines, increased attention is being given to the issue,thegovernment plans to free secondary education, and upper secondary education invarious forms (such as upper secondary schools established in elementary schools run by the Municipality (Theetsabaan) are being promoted based upon the Education Act.

As demonstrated in the above analysis of the relationship between educational expansion and thecircumstancessurroundingpre-employment training offered by ISD, therehavebeen,and are expected to be, various changes in the social environments surrounding KISD. Although DSD should take measures to cope with such changes, it has not done so yet. First of all, it would be necessary to reconsider the requirements for pre-employment training trainees to cope with the fact that current elementary school graduates who do not continue their studies no longer have the standings equivalent to those of their seniors. In the light of the National Education Act of 1999, ISD's attempts to screen candidates and the fact that lower secondary education has been made compulsory are in conflict. However, as the school attendance rate at the lower secondary schoollevel is less than100%, it is a fact thatthere are some people who do not receive lower secondary education. Screening standards, which deprive them of training opportunities, in other words demanding higher credentials, would result in neglecting the needs of the socially disadvantaged.

Furthermore, the fact that the gap between the percentageofthosewhopursuesecondary education and school attendance rate remains the same suggests that there are a number of elementary school and lower secondary school dropouts even today. In particular, situations concerning those who do not finish elementary school are becoming more and more difficult because the educational backgroundofworkers is being improved due to expansion of education opportunities. Even today, ISDs are not accepting such elementary school dropouts to regular courses. More attention would be given to this issue as moreemphasis is placed on ISD's social welfare aspect astheprovideroftrainingfor those who do not haveaccessto education.

Yet another problem is the significance of receiving pre-employment training at ISD from the viewpoint of the life history of individual children in rural areas. It has been found through previous studies that elementary school graduates tend to continue their education at secondary schools controlled by the Department of General Education or opportunity expansion schools controlled by the secretariat of the National Board of Elementary Education, depending on the socio-economic status of the families and academic and geographical conditions of the elementary school they graduated from. Those who went to opportunity expansion schools tend not to pursue upper secondary education and instead receive vocational education (75). The question here is about the characteristics of those who are elementary school or lower secondary

school graduateswhodonot,orcannot,receive more school education.

In the 1970s, those who had completed upper elementary education, in other words the target group for ISD, were of wealthy family in farming villages or had favorable scholastic ability, and they are equivalent to the group who receive upper secondary education or more today. The current measure of the expansion of educational opportunities is that it offers compulsory elementary and lower secondary education and to guaranteeaccess to education up to the upper secondary level to those who desire to receive education. Therefore, people who do not receive upper secondary education from now on are those who chose not to do so by their own their volition, and it is anticipated that people in this group will be limited to graduates of opportunity expansion schools controlled by the secretariat of the National Board of Elementary Education. Those who do not enroll at or drop out from lower secondary school are graduates of elementary schools which are not opportunity expansion schools who live away from secondary schools controlled by the Department of General Education, or those who cannot adjust to school life in terms o f study andbehavioral patters. In other words, those whodon'tgo to upper secondary schools are determined by the geographical conditions of the area that children live in and theirscholasticaptitudeandcharacters.

It would be helpful to disadvantaged young people if ISD offered vocational training to help them become able to make a living; however, that possibly means diversion from the original objective of ISD to develop human resources desired by the region and industry. Another problem is that ISD may createdisadvantageouspreconceptions about ex-traineesorlead to the reproduction of social classes in farming areas if ISD has come to be recognized as a provider of training courses for disadvantagedpeopleinruralareas.

Therefore, for the reasons mentioned above, we consider that ISD should shift its focus from educational opportunities for those having little access to formal education to pre-employment training for upper secondary school graduates or those who have completed higher education, and skill-development training for those who have already found employment.

6.6.3 Competition with other institutes for vocational education and training

Institutes forvocational training controlled by the MinistryofLaborandSocialWelfare are being established in various places in the country. As of 1999 there are 12 ISD to serve as centers for regions (Bangkok (NISD), Ratchaburi, Suphamburi, Chonburi, Ubon Raatchataanii、Khon Kaen, Nakhon Ratchasima, Nakhon Sawan, Lampang, Phitsanulok, Songkhla, Surat Thani) and 50 PCSD. As for the Northeastern Region, there are 3 ISDs in Ubon Raatchataanii, KhonKaen, Nakhon Ratchasima, and 17 PCSDs in Amnat Charoen, Mukdahan, Yasothon, Nakhon Phanom, Roi Et, Sri Saket, Nong Bua Lamphu, Udon Thani, Loei, Nong Khai, Sakon Nakhon, Kalasin, Nakhon Nayok, Mahasarakham, Buriram, Surin, Chaiyaphum (76). The Northeastern Region, ISDsorPCSDshavebeen established in all prefectures.

Along with the increase in the number of institutes in the country, the number of trainees has been on the increase; for instance, it has increased 8 fold from 35,199 in 1993 to277,399in 1999. In particular, the number of trainees receiving pre-employment training offered within the

institutes has increased to 21,603 in 1999, which is 3.7 times that of 5,851 in 1993. Including the number of those receiving pre-employment training offered outside the institutes (former mobile training) the number of trainees receiving pre-employment training was 73,474 in 1999.

The numbers of trainees receiving pre-employment training within the institutes, pre-employment training offered outside the institutes, and skill up-grading training in the Northeastern Region are 7,898, 16,327, and 45,120, respectively. 35 % of the trainees receiving pre-employment training within the institutes are enrolled at 3 ISDs in Ubon Raatchataanii, Khon Kaen, and Nakhon Ratchasima. Because 100% of the trainees in this category were enrolled at KISD in 1979, when the institute was established, the above-mentioned figure suggests an increase in the significance of PCSD. As such, the role of ISDs changed since the earlier days when each of them were in charge of several prefectures since PCSDs came to be established in all prefectures. One of the roles of ISD is to function as the leader for the respective region, and the other is to offer courses in the areas not covered by PCSD because of small demand for labor in the area of expensive machinery and materials necessary for training.

In this survey we visited one of the PCSD in Roi Et prefecture and interviewed the director to make a comparison between ISD and PCSD. Roi Et prefecture lies half way between Khon Kaen and Ubon Raatchataanii along the highway connecting these two cities. It does not have access to railways or airports, and it depends solely on overland roads as the means of transportation. According to the statistics by DSD, Roi Et PCSD accepted 4,212 trainees in total, of which 3,674 graduated. The number of trainees in the pre-employment training course offered within the center, and those who completed the course were 226 and 168, respectively. The numbers of trainees in the pre-employment training course offered outside the center, and those who completed the course were 1,378 and 1,123, respectively. Likewise, the numbers of those in the skills up-grading training course and those who completed the course were 2,608 and 2,383, respectively. The size of the pre-employment training course offered within the center is 1/5 of those offered at KISD and UBISD; however, the number of trainees in the pre-employment training course offered outside the center is larger than that at UBISD. The number of those receiving skill up-grading training does not compare with those for KISD or UBISD, but it is large compared with those of most of the other PCSD. The center offers training courses only in areas such as motorcycle repair, welding, household appliance repair, crafts, and dressmaking, unlike KISD and UBISD. A four-story building to house lecture rooms and training rooms equipped with computers is under construction, and Introduction to Tabulation is offered to servicemen in the computer rooms on the 4th floor.

The largest problem at the Roi Et PCSD is that there are only a very small number of companies available for in-plant pre-employment training in the prefecture. We were told that the number of businesses available for skill development was only 4. Therefore, the center has to send a number of trainees to the Metropolitan area for in-plant training, and this means that the trainees must seek employment in the area. One of the major concerns of the director is that the center is not contributing to the development of the prefecture in that the more people they train, the more people migrate, especially to the Metropolitan area. Yet, it is not guaranteed that

those who received training can find employment in the Metropolitan area. In the Metropolitan area the center is in competition with ex-trainees of other institutes for vocational training, and the most formidable competitors are ISDs, which have advantages over the center in long history, size, and the quality of facilities and instructors. In other words, PCSDs are in keen rivalry with ISDs and other PCSDs in a niche in the labor market of providing laborers equipped with basic skills even though their academic background is limited, who work for minimum wages. In turn this means that PCSDs are competitors for KISD and UBISD.

In addition to ISD and PCSD controlled by the Ministry of Labor and Social Welfare there are also other institutes for vocational training available for graduates of lower secondary schools. Principal institutes are those under the control of the Ministry of Education. As discussed in the section on the outlines, the main part of the vocational training by the Ministry of Education consists of systematic vocational education at the upper secondary to university level controlled by the Department of Vocational Education. Furthermore, there are a number of private vocational schools controlled by the Secretariat of the Board of Private Education, which offer short-term training courses in addition to regular courses. Additionally, courses toward PWC, which is at the upper secondary level, and other short-term courses are offered under the supervision of the Department of the Non-formal Education, Ministry of Education. The merit of receiving vocational education controlled by the Ministry of Education is not only in the acquisition of skills and knowledge but also in receiving a teaching certificate issued by the ministry. This bears significance in the labor market because those who have obtained teaching certificates are favored over those with the same levels of skills and knowledge in terms of employment and working conditions. Furthermore, there are also institutes controlled by the Ministry of University Affairs, the Home Office, the Ministry of Industry, the Ministry of Agriculture and Cooperation, and the Ministry of Transportation that issue certificates and diplomas equivalent to those of the Ministry of Education. In such circumstances, skill development and vocational training controlled by the Ministry of Labor and Social Welfare is never considered equivalent to such certificates and diplomas, and the national skill assessment test is the only means for objective evaluation of the ex-trainees.

Currently the number of people receiving vocational education (excluding that in non-formal education) under the Ministry of Education is over one million, and the number continues to grow. In such circumstances it would be very difficult for the national government to make substantial investments for the maintenance of small-scale vocational training, where the number of trainees is some 20,000 per annum, under the Ministry of Labor and Social Welfare. From the viewpoint of efficiency, the Ministry of Labor and Social Welfare and the Ministry of Education should operate vocational training in cooperation. If we were to take the logic to the extreme, it is only reasonable for the government to consider the transfer of the Department of Skill Development from the Ministry of Labor and Social Welfare to the Ministry of Education, Religion, and Culture, which is to be established by August 2000 by uniting the ministries of education, university affairs, and the Secretariat of the National Board of Education pursuant to the National Education Act of 1999. However, cooperative relationships between Labor and

Education administrations barely exist basedupon the information wegatheredatthe Ministryof Labor and Social Welfare, Secretariat of National Board of Education and, the Secretariat of Educational Reform. ISD and PCSD are used for practical training within the courses toward PWC controlled by the Department of Non-Formal Education, and, for example, six ISDs or PCSD accepted 140 trainees in such courses in 1999. However, there have been no other types of cooperation between the ministries.

As discussed in the chapter on the outlines above, the Ministry of Education, the Secretariat of Educational Reform and other agencies concerned, have been deliberating the bill on vocational training that the Department of Vocational Training submitted to the Minister of Education. The bill includes a clause providing for the relationship between PWS (upper secondary school level) and levels under the National Skill Standard. According to the bill, a person bearing PWS is equivalent to another who passed level 2 in the national skill assessment test and has 5 years or more of work experience in the respective area. This has been based solely upon the views of the Department of Vocational Training, and probably it is rather difficult for the Ministry of Labor and Social Welfare to approve it.

The reason is that it takes 10 months of training at ISD and 2 months of in-plant training to be able to pass level 1 exam, and it is very difficult to pass level 2 exam only through receiving training, while PWC is awarded to all students who have earned enough credits to graduate. The Ministry of Labor and Social Welfare does not think that everybody who has earned PWS is able to pass the level 2 exam. Therefore, it will be necessary to examine the reasonableness of the bill in the deliberation process. However, articles on the equivalency between teaching certificates widely recognized in society such as PWC, PWS and levels in the national standardtestoperated by the Ministry of Labor and Social Welfare will be quite helpful toinstitutesfor vocational training controlled by the ministry. This is because, even if thebillis passed as is, those who passed the level 2 exam and have 5 years of experience in their fields may be able to receiveeducation atthePWSlevel (university level).

The reason why the Ministry of Labor and Social Welfare is reluctant about cooperating with education administration seems that the vocational training offered under their control aims at the development of human resources, which is a matter of labor administration and not of education administration, where the emphasis is on the growth and development of children. Also, there is a widespread notion that the vocational training controlled by the Ministry of Education is centered around knowledge and logic, or theory-oriented, and is not for the acquisition of practical skills and knowledge useful in work, while education and training controlled by theMinistryof Labor and Social Welfare focuses on practical skills. In particular, it has been considered that the vocational education controlled by the Ministry of Labor and Social Welfare is advantageous in that it is directly connected to the labor market, for instance throughthein-plant training offered in companies.

Yet asalready discussed in the section onoutlines,thesystemof Dual Vocational Training (DVT) has beenoperated nationwide at the PWC and PWS levels (upper secondary and higher education levels) since 1995. This made vocational education also connected to the labor

market. That is to say it isnotonlyISDandPCSDthatincludespracticaltrainingatcompanies. In fact there were businesses in Khon Kaen where both KISD trainees and DVT trainees of Khon Kaen Technical College were receiving training at the same time. Furthermore, once education up to upper secondary education comes to be offered free of charge, there will be no difference in the cost of receiving training at ISD and secondary education except boarding fees, and the only merit of the ISD training wouldbeinthattraineeswouldincurnoopportunity cost because the lengthoftheprogramisshort. In sum, it is considered that the merit of vocational trainingunder thecontrol of the Ministry of Labor and Social Welfare isdecreasing.

In this survey we visited Khon Kaen Technical College (Witthayaalai Theknik Khon Kaen) and Ubon Raatchataanii Technical College (Witthayaalai Theknik Ubon Raatchataanii) to investigate the actual state of DVT. Khon Kaen Technical College started the operation of DVT with 136 students at the PWC level in 1995, and later it came to offer DVT also to the PWS students. Currently 507 students are in the DVT program. Thenumber of companiesand businesses in the program has increased from 10 in 1995 to 99 in 2000. We were not able to obtain data in a time series on Ubon Raatchataanii Technical College; however, as of 2000, 705 students are receiving DVT training and the number of companies and businesses concerned is 134. In either case, the size of the program is equivalent to that of KISD or UBISD. Additionally, those colleges have advantages over these ISDs in that their students are able to obtain knowledge and study theories and receive a teaching certificate. According to the instructors at thecolleges, graduates who received DVT are more competitive in the labor market than those who didnot.

These colleges are within a 10-minute-of drive from KISD or UBISD. The instructors at these colleges and KISD and UBISD are well aware of each other because they are all government officials working in cities. The impediments to a close relationship seemed to be the pet rivalry between ministries. That was the reason behind uniting three education related ministries as the Ministry of Education, Religion, and Culture. Furthermore, it is not only in vocational education and training that changes at the local levels do not take place unless the central government makes changes, because centralized administration has been deeply rooted in Thailand. Both KISD and UBISD may be able to cope with the needs in labor market; however, they do not have the structure, authority, or ability to conduct research or plan on anything beyond that level by themselves. Decentralization of education is to be realized pursuant to National Education Act of 1999 to decide the future of schools and ISD. The merits of decentralization have yet to be determined; however, it does not seem to be politic to adhere to the traditional organization-oriented principle in Thailand which is faced with globalization at the timeofstructurereforminfluenced by new liberalism.

6.6.4 Evaluation from theperspective of five items

The following summarizes theevaluation of these projectsconcerning the 5 items, from the viewpoint of the minimizationofregional gap. Based upon the cost-benefit analysis, theprojects have been satisfactory in terms of "Efficiency" even though investments made into them were

slightly larger than they should havebeen.

However, there are questions as to the achievement of the objective. The higher objective of the minimization of regional gap is a lofty goal, which cannot be achieved through the activities of only two ISD. Even the small contributions madebythe2institutesdonotlead to the expansion of the labor market due to the slow development of local industries, and ex-trainees of the institutes are migrating to the Bangkok area. Indeed ISD trainingisindirectly contributing to the Northeastern Region partly because of the money sent by ex-trainees to the region from the Metropolitan area; however, from the viewpoint of the improvement of productivity, ISD is only providing training to unemployed people in the Northeastern Region to improve the productivity in the Bangkok area. The situation is better than that where people migrate to the Bangkok area as untrained workers; however, to achieve the goal of minimizing the regional gap, it is necessary to expand the labor market in the Northeastern Region so that the fruit of the training willcontribute to the development of the region.

Therefore, as to "effect", the higher objective will not be achieved through education and vocational training because of the structural problem. However, it is essential for the achievement of the objective that the productivity in the region is improved. Also, there are a number of ex-trainees whoonce migrated to the Bangkok areabutlatercomebackto the region. In that sense these 2 institutes are making a contribution as tooneoftheelementsnecessary for the minimization of regional gap because they are contributing to the development of potential workers for the region. Furthermore, KISD and UBISD are expected to function as the role modes for PCSDestablished in eachprefecture in the Northeastern Region.

The promotion of education and training itself is "appropriate" in the light of policies on national development,ashumanresourcedevelopment is the primaryobjective in the 8thnational economic and social development plan. However, as discussed in chapter 6, it will be difficult for ISD to contribute to the minimization of regional gap according to the original framework because of drastic changes taking place in the labor market and the educational system. Rather, ISD may come close to disappearing altogether. It would be necessary to change the target group to those with better educational background or those who have already obtained employment in order to produce technical laborers. Furthermore, it will be necessary to make the skill standard compatible with the education system of the Ministry of Education, or to enhance the recognition of skill standard in the labormarket.

There is little problem concerning independence in the light of the budget of, or administration by, the Thai government. However, as vocational training is a costlyproject, it is necessary to tighten the cooperative relationship with the companies who participate in the project from the viewpoint of effective use of resources and securing better access to the labor market.

6.7 Conclusions

6.7.1 Summary of theevaluations

We set the higher-level objective of the minimization of regional gap and evaluated the KISDand UBISD projects in light of this objective. As for utility, such as sense of satisfaction, we found through the questionnaire survey and interviews that both ex-trainees and their supervisors were satisfied with the current conditions to some extent. In particular, ex-trainees who received training because they had "not been able to find a job" were "satisfied" with their status because they "learned skills and knowledge" or "became able to find employment" thanks to the training. However, they were satisfied with having beenhired as semi-skilled or technical staff whose wages are at or near minimum wage level. Likewise, the managers were satisfied because they found ex-trainees satisfactory only as semi-skilled or technical workers. Yet, the original objective of KISD and UBISD was to instill into the idle youth in the Northeastern Region basic skills necessary to find employment, and in that sense the objective has been achieved. In fact the social rate of return for the project is 5% on the condition that the employment rate of ex-trainees is around 100%. Private rate of return is as high as 30%, and social rateofreturn for the Northeastern Region is some10%, which is relatively high. In other words, KISD and UBISD projects have both direct and indirect impacts on the development of the region even is half of theex-trainees migrates to Bangkok,partlybecause they send money to the Northeastern Region.

However, would that be sufficient to minimize regional gap? From the viewpoint of education and training, whether the Northeastern Region develops depends greatly on the creation of a labor market to offer employment opportunities in the Northeastern Region. Existence of a quality labor force in the region would make companies interested in setting up offices or factories in the region. However, in order to invite companies to the region just with human resources, there must be cheaper labor, or excellent workers who are worth substantial investments, who are not available to the companies unless they open operations in the region.
A number of Japanese companies have advanced into other parts of Asia to take advantage of cheaper labor, but they maintain in Japan production processes requiring highly skilled quality labor force. Companies in Lapidary who train workers at UBISD do not move to the Northeastern Regionbecause there is no need to do so,anditisbeneficial to bring workers from the region to the Bangkok area.

Needless to say, labor force migrates. It is only natural for laborers to migrate to seek better working conditions,anditisimpossibletostopmigration of workers within the country.
It is unavoidable that skills and knowledge instilled into ex-trainees drain to other labor markets unless the above mentioned conditions are met. Development of the Northeastern Region cannot be realized only through education and training, and therefore, we would have to expect the region to develop through the development ofotheraspectsofsocietyas well.

Returning to our main subject, the largest issue for this analysis was how to grasp the premise whether the project output of human resource development brings about regional development. Through our analysis we were able to express the premise by including in the

conditions wage, which represents the status of ex-trainees inthelabormarket, employment rate, area in which ex-trainees find employment, and educational background. There is the influence of external conditions in every step in the process in which human resource development contributes to regional development. Little attention has been paid to the influence of such premises whendeveloping educational or vocational training plans in Japan probablybecause the country was successful in achieving economic development through emphasizing education and training. That is to say, there was no scenario describing how education and training would lead to economic development even at the planning stage of the project. If several scenarios were supposed, taking into consideration external conditions, it would be possible to determine when the project diverted from its courseandtopushthingsalong in the right direction. It would also be possible to change plans with circumstances. Likewise, the framework of the fruits of a project cannot be successful unless the project manager is abletocopewithchangesinaflexible manner. Changes in the project evaluation have been expressed through sensitiveanalysis. This enables us to assess how much the project maydivert from the scenario.

It has been proven through history that human resource development is one of the processes that a country must go through tobecome a developed country. In a sense this means that existing facilities and curriculum become useless or obsolete in the course of time. Even during the time when certain training is called for, it is necessary to continually up-date the contents of the training. Assistance in education and training in the future may have to be planned on the premise that projects keep changing and no project exists forever. This is the reason behind including the collection period, as well as cost-benefit, in our analysis. We believe that the above-mentioned issues should be taken into consideration in project planning and evaluation in the future.

6.7.2 Policy implications

When making suggestions on the future activities of KISD and UBISD we cannot ignore the changes in thecircumstances surrounding the ISDs such as changes in labor market following the currency crisis in 1997, expansion of educational opportunities, and competition with other institutes for vocational training. It is because the fruit of education and training is to be realized outside the system for education and training, such as in labor market, and therefore, such activities may become meaningless depending on changes in circumstances (external conditions). For example, a decrease in employment rate alone can cause the decrease in the fruit of the project. In orderfortheprojecttocontributetoeconomicdevelopment,while coping with the changes in the circumstances surrounding it, it is necessary to provide the right training to the right people, and to make sure that ex-trainees receive the recognition they deserve in the labor market.

The major change in the circumstances is the expansion of educational opportunities. Elementary school graduates or graduates of lower secondary schools have had scarcity value in the labor market, but that will not be the case in the future, and even the relative status of upper secondary school graduates is declining. It is necessary to offer education and training to help

people find employment, as discussed in section 6.2 above. In other words, programs to train people at the L (low) level so that they can find a job at the M (middle) level, or to train people who would otherwise remain unemployed so that they can find a job at the L level, are necessary. However, the current system is problematic in that people can never become able to find a position at a higher level through such training. The system should be modified so that pre-employment training at ISD would not be a waste of time for those who seek a position at the M or H level.

One of the measures is to upgrade the level of the target. There will be no problem if vocational training is given at the end of trainees' educational and training history. It is because they can receivevocational training after having obtained credentials to find employment at the H level, for example, at schools accredited by the Ministry of Education. Or, it would also be effective to promote and expand the skill up-grading training offered to those who have already obtained a job. The time spent on training does not cause much of a problem if the trainees have already obtained a job. It will not be effective in the future to offer long-term training using sophisticated facilities for elementary school graduates or graduates of lower secondary schools.

Secondly, it would also be helpful that the Ministry of Education issue certificates to ex-trainees, or establish a system where that is compatible with certificates from the Ministry. If vocational trainingoffered by ISD is recognized as credits towards PWC or PWS, ISDwouldnot be a dead end for trainees, and ex-trainees could enjoy some merit in building the educational background necessary to find employment at the H level. Furthermore,iftheresultsofreceiving skill up-grading training give incentive to ex-trainees togoontoschoolsofthehigherlevel,that may contribute totheexpansionoflife-longeducation.

Thirdly, it would be beneficial to establish a system in which licenses issued by the Ministry of Education and the levels in the national skill standard exams administered by the Ministry of Labor and Social Welfare are compatible. As discussed earlier, there is a bill containing a section providing that a person with PWC is equivalent to another who has passed the level 2 examination in the national skill standard test and worked in the respective area no less than 5 years. The merit of this measure is that it offers more opportunities than the other measures, above, to continue to receive education and training not only to ISD ex-trainees but also to those who have completed school education and are already employed. This measure is expected to beeffective in improving the statusofthenationalskillstandard, which hasnotbeen highly recognized in the labormarket.

As for the future operation of ISD, it is necessary to change its roles in the light of competition with other institutes for vocational training. The DVT system has come to be operated nationwide at upper secondary schools and PWC and PWS programs (which are equivalent to higher education) controlled by the Department of Vocational Education, thus making vocationaltraining directly connected to the labor market. Furthermore, the measure to offer free education up to upper secondary level will be implemented, thus making the only financial merit of ISD to be the fact that trainees incur no opportunity cost because the training

period is short. Yet it does not change the most significant merit of ISD which is that it has a direct tie with the labor market.

Vocational training is a costly project requiring continual updatingoffacilities. Therefore, it is impossible to cope with the vast variety of needs in the labor market, with technological innovation taking place at a high speed. In order for ISD to make a larger contribution to the achievement of thehigher objectiveofeconomicdevelopment of the region, it should function as the moderator of vocational training in the region in cooperation with private enterprises and their training facilities, taking advantage of the fact that it is an agent of the Ministry of Labor and Social Welfare. In that sense the system to offer training to the unemployed that ISD is operatingonatrialbasisincooperationwith local employment agencies is reasonable.

Furthermore, cooperation with private enterprises is effective not only for efficient use of resources but also for building close ties with the labor market. Interviews at companies revealed that there are some companies who let KISD use their machinery for training; and furthermore a Bangkok based company (SND Development Co., Ltd.) showed interest in developing a course in cooperation with KISD and offered it to both its employees and KISD trainees. Currently, some skill up-grading courses are offered in cooperation with companies, and we believe that this type of cooperation should bepromoted.

To that enditisnecessaryforISDto develop its own programs to some extent. Currently DSDhasbeenmakingsurethroughthe ADB loan that all the ISDs canoffer the same training. This may be a necessary measure for making national skill standard a nationally recognized standard. Each training consists of small modules, and each ISD may put emphasis on some aspects of the training as it deems appropriate through combining the modules. However, this system maybeimpededbytheindependentdevelopment of each ISDbecause the administration in Thailand is highly centralized and ISDs are unlikely to make their owndecisions. ISDs are likely to endupwithastandardized curriculum. An independently developed curriculum would be better incopingwiththeneeds of a local labor market. Furthermore, as ittakes time to meet needs and to develop human resources, ISD not onlyhastograspthecurrentconditionsbutalso to forecast future trends in order for vocational trainingbyISDtobeabletocopewithchanging demands. Control of training by the centralized administration is inherently limited. Each ISD should develop and expand its system for research, planning, and implementation of the plans to better cope with thechanging demands in the labor market.

Note

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(8)Office oftheNationalEducationCommission,op.cit.,1999,pp.122-123.

(9) Morishita,op.cit.,2000,p.196.

(10) Ibid.pp.199-200.

(11) Krom Aachiwa Suksaa, Krasuang Suksaathikaan, Sathit Aachiwa Suksaa Pii Kaansuksaa 2542,Bangkok, 2000. (Department of VocationalEducation, *VocationalEducationStatistics in1999*,2000.)

(12) Office of the National Education Commission, op. cit., 1999. pp. 59-72. Wevisited a school established by a TheetsabaaninYalaPrefectureinAugust,2000. RongrianTheetsabaan2 (BaanMalayuBangkok), KhuumuuNakrian Chan Matthayomsuksaa Pii Thii 4 Pii Kaansuksaa 2543, Yala, 2000. (Theetsabaan 2 school, *Hand Book for 4th Graders intheSecondaryschool*,2000.) (in Thai)

(13) NationalStatistics Office, *Report ofEducationStatistics:Academic year 1998,*1999,p.40.

(14) Samnakgaan Khana Kammakaan Kaansuksaa Haeng Chaat, Praraachabanyat Kaansuksaa Haeng Chaat Pho. So. 2542,Bangkok,1999.(OfficeoftheNational Education Commission, *The National Education ActofB.E.2542*,1999.) (inThai)

(15) Minoru Morishita and Toshifumi Hirata, 'Chapter 5 Thailand', Kengo Mochida ed., *Comparative Study on Internationalization of Education in Asian Countries*, Graduate School of Human-Environment Studies, Kyushu University,2001,pp.93-114. (inJapanese)

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(22) Krom Phattanaa Fiimuu Raenggaan, Krasuang Raenggaan lae Sawasdikaan Sangkhom, Phraraachabanyat SongsermKaanfukAachiipPho.So. 2537,Bangkok,1997. (DepartmentofSkillDevelopment,MinistryofLaborand SocialWelfare, *VocationalTrainingPromotionActof B.E.2537,* 1997.) (inThai)

(23) KromPhattanaa Fiimuu Raenggaan,op.cit.,1999,p.9.

(24) Literally,thismeans“ vocationaltraininginruralareas. ”

(25) This has been changed to pre-employment training (outside the institute), (Kaan Fuk Triam Khao Thamgaan (Nook Sathaaban) in Thai. We asked for the reason behind this change because we were told that there was no changeinthecontentsoftraining;however,neitherISDnorDSDfullyexplainedtousonthismatter.

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Sangkhom,SathitKaanPhattanaaFiimuuRaenggaanPiiGoppramaan2542,Bangkok,2000,p.1,p.10,p.11. (Research and Planning Division, Department of Skill Development, MinistryofLaborandSocialWelfare, *Skill Development Statistics,FY1999,* 2000.)

(27) Ibid.,p.1,p.11.

(28) Khana KammakaanMaatrathaan Fiimuu Raenggaan Haeng Chaat,Maatrathaan Fiimuu Raenggaan Haeng Chaat Chabap Thii 48 Saakhaa Chaang Thorakhommaakom(Rabop Suusaan Khomun), Bangkok, 1997, pp. 1-4. (National CommitteeonSkillStandard, *NationalSkill Standard, Version48,Telecommunications.*)

(29) KoongWichaakaanlaePhaengaan,op.cit.,2000,p.56.

(30) Ibid.,p.2.

(31) NationalStatistical Office, *The2000PopulationandHousingCensus,Advance Report,*2001.

(32) NationalStatistical Office, *Report oftheLaborForceSurveyinWholeKingdomRound2:2000,*2000.

(33) CSN Research Group & the World Bank, *Skill Competitiveness: Lessons for Education from Thai Establishments,* 2000.

(34) TechnicalandPlanning Division, Department of Employment, *YearBookofEmploymentStatistics 1999,* 2000.

(35) Toshio Tasaka, *Study onthebrokenapartoffarmers'classinThai,* OchanomizuShobou,1991, pp.41-176. (in Japanese)

(36) Kou Akagi, Jun Kitahara, and Takao Takeuchied. *Structure and Change of Thai villages, Revisited, 15 years' Track,*KeisoShobo,2000,pp.51-83. (inJapanese)

(37) JICA, *Northeaster Thai Vocational Training Center, Evaluation Team Report,* 1982; *Northeaster Vocational Training Center, Final report*, 1982; *Thai Kingdom North Eastern Thai vocational Training After Care Mission Report,* 1985; *NortheasternThai VocationalTrainingCenter ProjectTechnicalCooperationActivitiesseries,*1985. (in Japanese)

(38) Attention had been paid to this point from the beginning of the project. For example, it was stated in the Feasibility Study Report of JICA, 1978, pp. 75-76, that "Although 90% of the students at Khon Kaen Technical CollegearefromtheNortheasternRegion,90%ofthegraduatesmigratedtootherregionsincludingtheBMA.

(39) Itisconsideredthatthenumbersoftraineesinotherprojectsareincludedinthesenumbers.

(40) JICA, *Northeastern Thai Vocational Training Center Evaluation Team Report*, 1982; *Northeastern Vocational Training Center Final Report*, 1982; T*hai, Ubon Institute for Skill Development Evaluation Report*, 1983. (in Japanese)

(41) Institute for International Cooperation, JICA, *Ubon Vocational Training Center (Project Type Technical CooperationActivitiesSeries78)*,1995. (inJapanese)

(42) Tatsuya Ono and Yukiko Tabuchi, *Handbook of Public Sector Evaluation*, Toyo Keizai Shinposha, 2001, pp. 99-112. (inJapanese)

(43) Windham, D. M. and Chapman, D. W., *The Evaluation of Educational Efficiency: Constraints, Issues, and Policies*. JAI Press,1990,pp.59-76.

(44) In the outcome oriented management, they set objectives in terms of outcomes and do not focus on inputs, activities, or outputs (pp. 130-133.) This method for project management has been employed as "Outcome Framework" in USAID (pp. 159-161.) (Yoshiaki Ryu and Ryo Sasaki, *Evaluation Theories and Techniques*, Taga Shuppan,2000.) (inJapanese)

(45) In the plan expressions such as "semi-skilled laborers to meet the needs in industry" or "training to instill minimum skills and knowledge necessary tofindemployment" are used rather thanskilled worker. Eg.,JICA, *Thai UbonInstituteforSkillDevelopmentFeasibilityStudyTeamReport*,1986. (inJapanese)

(46) OnoandTabuchi,op.cit.,2001.

(47) Basicallythereareoverall evaluationandpartial evaluation. The objectiveof the overallevaluation is toassess the degree at which an equation ofstructure model agreeswith data, and that ofthepartialevaluation istoassessto the degreeatwhich specificequation, parameters, and observation variables agree with data. (Toyoda, *Covariance Structure Analysis:Introduction*, AsakuraShoten,1998,pp.170-182.) (inJapanese)

(48) Ibid.,1998

(49) Psacharopoulos, G.,'Economicsofeducation:Aresearchagenda', *Economics ofEducation Review*,15(4),1996, pp.339-344.

(50) Time value of funds referstothevalueinwhichtheopportunitycostofmaintainingtheamountis taken into consideration. For example,the values of one million yen that one owns todayisdifferent fromthatofonemillion yen that he will have inoneyear. People generally chose to have one millionyentoday. The one million yen will be 1,010 thousandyeninoneyearwiththeannualinterestrateof1%. To the contrary,toreceive one millionyen, you need tohave990,100yen today. Theamountyouneedtoowntodaytoreceiveonemillionyeninoneyearat the interestrate of 1 % (990,100yen) is its currentvalue.

(51) Institute for International Cooperation, Japan International Cooperation Agency, *The Impact Analysis of TechnicalAssistanceonHumanResourcesDevelopment*,1996.

(52) Koichi Furukawa and Tadaaki Fukugawa, *Management Accounting*, Asakura Shoten, 1992, pp. 145-151. (in Japanese)

(53) Psacharopoulos, G.,'Thecost-benefit model',in:G.Psacharopoulosed., *Economics of Education:Research and Studies*, PergamonPress,1987,pp.342-346.

(54) FurukawaandFukugawa,op.cit.,1992.

(55) The numbers of hours areasfollows;Regular pre-employmentcourse (10-month course offered at institute): 1,600 hours; Regular pre-employment course (6-month course offered at institute): 840 hours; Non-regular pre-employment course offeredat institute, pre-employment training offered outside institute, skill up-gradingtraining offered in and outside institute, and former mobile training: 60 hours; Skill standard exam: 15 hours Skill competition: 8 hours Trainingcourse inspecialproject (withspecialbudget): 60hours.

(56) Itwasestimatedat1,400hoursinthepreviousstudy.

(57) Capital expenditure for each fiscal year can be found by multiplying initial values of capital goods by capital recoveryfactor. Inotherwords,capitalexpenditureforeachyearC(r,n) isexpressedinthefollowingequation:

$$C(r,n) = A\left[\, r(1+r)^{n} \,/\, \{(1+r)^{n} - 1\}\right]$$

whereA,r,andnareinitialvaluesofcapitalgoods,discountrate,andlifeofthegoods.

(58) According to accounting rules for Japaneseeducational institutions, the life span of a piece ofequipment is 10 years. Both vocational training centers have a wide variety of machinery, from things such as lathes and milling machines thatcan be expected to last more than20 years,toitemswithrelatively short life spans, suchascomputers or cuttingtools. Because it would bedifficult toclassify them and determinetheir specific costs,weusedauniform 10-yearlifespanformachineryinouranalysis.

(59) The equation for estimating income is as follows when dummy variable for workers in lapidary is taken into consideration. There arenosignificant differences in the structures of the models.

$$\begin{aligned}(\text{monthly income}) = {} & 46.86 + 123.54 \times (\text{age}) + 174.62 \times (\text{yearsofexperience}) \\ & + 1031.35 \times (\text{location}) + 57.66 \times (\text{yearsofeducation})\end{aligned}$$

$R2 = .514$ Adjusted $R2 = .495$

(60) Tokio Motoda, 'Accounting system and major taxes in Thai; outlineandrecent trend', *JICA Journal*, 47(11), 2000,pp.16-27. (inJapanese)

(61) Labor Studies and Planning Division, Department of Labor Protection and Welfare, Ministry of Labor and SocialWelfare, *ReportoftheSurveyonWage,EarningsandWorkingHoursin1998*,1999.

(62) National Statistical Office, *Report of the Labor Force Survey in Whole Kingdom Round 1: 2000 - Round 4: 2000*, 2000.

(63) Generally, cost-effectiveness of a project is foundby analyzing costs andeffectsinatimeseriesfromtheinitial stage of the project. However,we focused ontheimpactontrainees, and assuchwefoundaveragecostandimpact per student. Thecollectionperiod andsuchothermatterstobedeterminedinatime-seriesanalysisarenotdealtwith inthisstudy.

(64) National StatisticalOffice, *Report of the 1998HouseholdSocio-Economic Survey,NortheasternRegion*, 2000. Althoughthepricesarenominal,theydonotdifferfromactualpricesfor2000somuch.

(65) We found that most of those workinginBangkok Metropolitanare sending part oftheir incometotheirfamily. Thereareanumberofthosewhodidnotrespondonthismatter,butweconsider that those working in Bangkok Metropolitanaresendingonaverage 1/3oftheirincometotheNortheasternRegion.

Table Theratioofamountsenttofamilytotheincome (Thosewhoreceived pre-employmenttrainingandareworkinginBMA)

Ratio	0%	~10%	~20%	~30%	~40%	~50%	~60%	~70%	~80%	~90%	Total
Number	13	1	7	11	25	15	4	2	3	2	83
Cumulative	15.7	16.9	25.3	38.6	68.7	86.7	91.6	94.0	97.6	100.0	%

Average 33.1%,S.D.2.30,Noresponse29

(66) Sensitivity analysis is discussed in detail in the *Impact of Technical Cooperation on Human Resources Development–UbonInstituteforSkillDevelopment (UBISD) inThailand*,1996.

(67) GRP for the Northeastern Region in 1986 and 1997 are 152.4 (292.1) billion baht and 557.1 (613.5) billion baht, respectively based upon the material offered by the National Statistical Office. (Figures in parentheses are FY2000values.)

(68) NationalStatistical Office, *StatisticalReport ofRegion,NortheasternRegion2000*,2000,pp.211.

(69) TechnicalandPlanning Division, Department of Employment, *YearBookofEmploymentStatistics 1999*, 2000, and *Year Book ofEmployment Statistics 1998*,1999.

(70) Toru Umakoshied., *Modern Asian Education -TraditionandInnovation-*,Toshindo,1989;IkuoArai,'Secondary Education -Structure of Educational population and Importance of Comprehensive Secondary Schools-', *Developing Economies*, 13(4), 1972, pp. 17-31; Yokuo Murata, 'The Features and Problems of the Primary Educational Administrationin Thailand: A SurveyofFiveProvinces', *Educational Studiesat TsukubaUniversity*,10(1),1985,pp. 55-92. (inJapanese)

(71) WorldBankGroup, *TheEastAsianMiracle:Economic GrowthandPublicPolicy (World BankPolicyResearch Reports)*,OxfordUniversityPress,WorldBank,1993,p.47,p.180.

(72) Morishita andHirata,op.cit.,2001,pp.96-99.

(73) Minoru Morishita, 'AnAnalysison the Expansionof Educational Opportunity attheLevelofLowerSecondary EducationinThailand', *BulletinofKagoshimaWomen'sJuniorCollege*,No.33,1998,pp.169-191. (inJapanese.)

(74) Yasuko Minoura and Takashi Notsu, 'Kayaioka Schools and the Expansion of Secondary Education in Rural Northeastern Thailand: With Special Reference to the Mechanism for the Rapid Rise in Attendance, *SoutheastAsian Studies*, TheCenterForSoutheastAsianStudies,KyotoUniversity,36(2), 1998,pp.131-148. (inJapanese)

(75) Morishita,op.cit.,2000.

(76) NakhonNayok Prefecturehasbeen includedintheNortheasternRegion,according tothematerialdeveloped by DSD. Generallythisprefectureisconsidered tobepartoftheNortheasternRegionbecauseitislocated in the region coveredbytheNakhonRachasimaISD.

Chapter 7

Evaluation of the Public Health Projects: with regard to the sustainability of institutions and service provision

Chapter 7

Evaluation of the Public Health Projects: with regard to the sustainability of institutions and service provision

7.1 Background

7.1.1 Overall Objectives of the Evaluation Study

This study was conducted as part of the evaluation of the impact of JICA projects on the alleviation of socio-economic disparities between the BMA and the Northeastern Region, in Thailand. The alleviation of socio-economic disparities as measured in the health sector, however, can be an extremely indirect outcome taking into account numerous mediating variables. Therefore, this study focuses on a process management of the institutions that the original projects were centered on, in the light of policy developments and improvements in health indicators.

7.1.2 Objectives of the Health Sector Evaluation

The aims of the evaluation work was to assess the following Japan-assisted public health projects, (1) "the ASEAN Training Center for Primary Health Care (ATC/PHC)"[1] including Regional PHC Centers (RTA/PHCs) and (2) "Community Health Project" in Khon Kaen province. However, some evaluation studies had already been completed for these two different projects. These evaluation studies had already been completed for these two different projects. These evaluation studies made professional assessments in terms of the efficiency, effectiveness and impact, and project relevance. Based on an examination of these performance measures, these evaluation studies both arrived at positive conclusions with some suggestions for further reforms. In practice, ATC/PHC （currently the ASEAN Institute for Health Development/AIHD） and RTC/PHCs are now well established institutions in the Thai health sector that have established high national and international reputations. The outcome from the Community Health Project is already well accepted by the Government of Thailand (GoT) in formulating the health policy.

Therefore, excessive repetition must be avoided in the present evaluation work. It has thus focused on the project impact and relevance to the present sector issues and the health policy.

7.2 Policy Environments

7.2.1 Policy Developments

The leading policy instrument in the Thai health sector has been a five-year National Health Plan. Unlike some other developing countries where national development plans are regularly drawn up as a mere shell of a state's political message, GoT can be highly recommended for having translated its national health plan into various sub-plans and strategies that have actually been, or are being, implemented.

Over the last two decades, policy priority has been shifting from the development of health

infrastructure and primary health care to the management of the health system, which includes efficient resource mobilization and a stronger mechanism for health financing. Now, the Ministry of Public Health (MoPH) has launched a National Health Care Reform.

Among the projects evaluated, the project for ATC/PHC and RTC/PHCs related rather to the early stage of policy development. The policy targets at this stage were mostly achieved, particularly in terms of health infrastructure and health personnel (aside from a geographical imbalance).

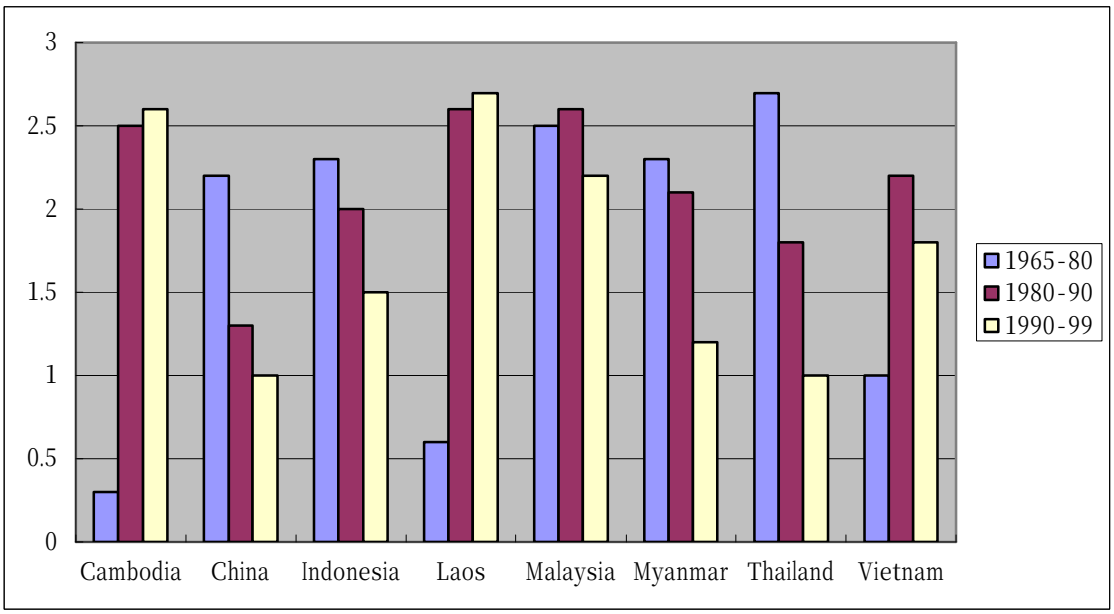
The Community Health Project was launched in 1991, and was expected to influence the Eighth National Health Development Plan (1997-2001), in which MoPH is taking on more visibly the challenge of integrating development in the health sector. MoPH plans to strengthen the co-ordination mechanism and referral system so that the population can receive appropriate, complete, and quick services by the nearest health care facility. The plan emphasizes community participation for better quality of life.

7.2.2 Health Status

Thailand has achieved remarkable economic growth in the past two decades. The GDP increased by about 7-9% annually during the late 1980s and 1990s, up to the downturn in 1996. The economic growth of Thailand is second only to Malaysia in this group. This is also true of demographic trends and major health indicators. (Figures 7-1,2,3,4). Overall, the indicators of the general health status of the population have shown considerable improvement over the past decades. The health status is far better than that of the neighboring countries, with the exception of Malaysia.

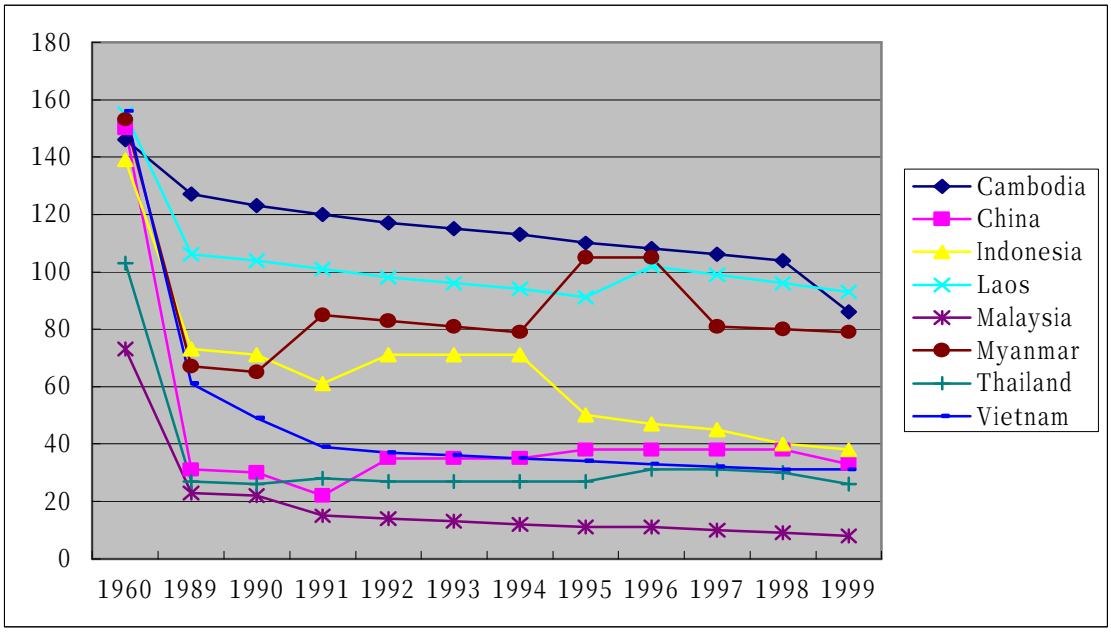
Thailand is now undergoing epidemiological and demographic transition. While the incidence of infectious diseases has been falling, chronic diseases are now the leading cause of death. (Table 7-1) The causes of death in order of their frequency are cardiovascular, accidents, malignancies. Reflecting this transition, and to reduce the burden of unexpected and expensive health care, more efficient sector management (including a stronger mechanism of health financing) is now required. MoPH has now launched the National Health Care Reform.

Figure 7-1: Population growth rates in Asian countries



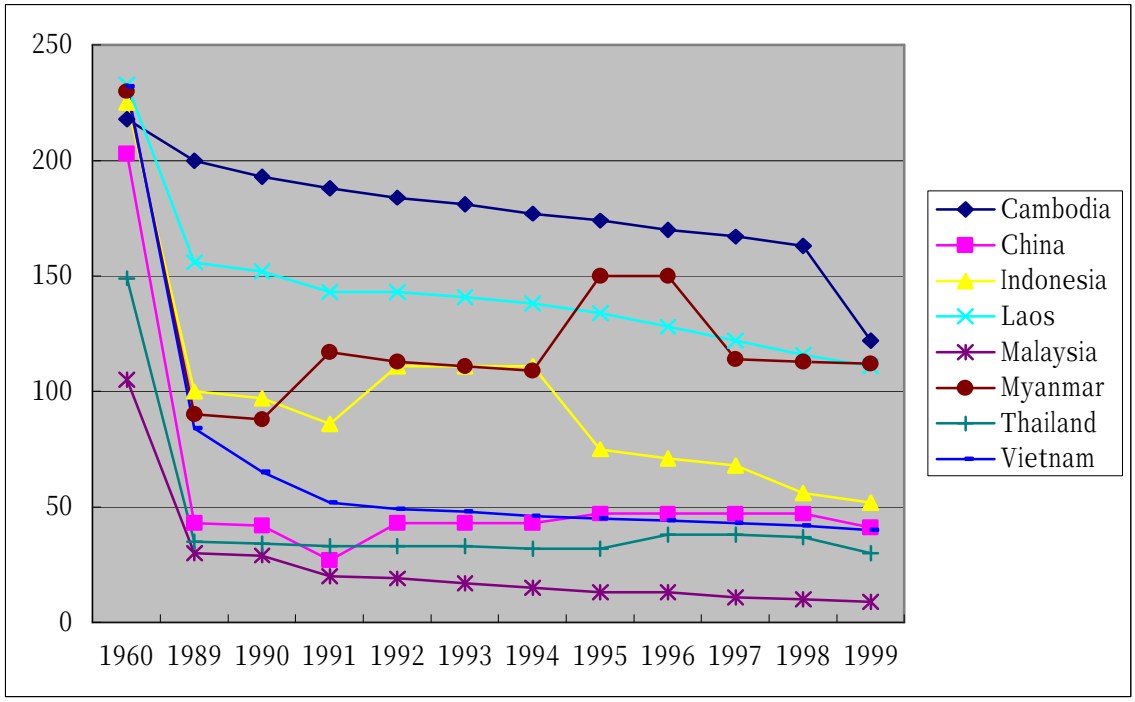
Source: UNICEF Annual report 1991-2001

Figure 7-2: Infant mortality rate (per 1,000 live births) in Asian countries



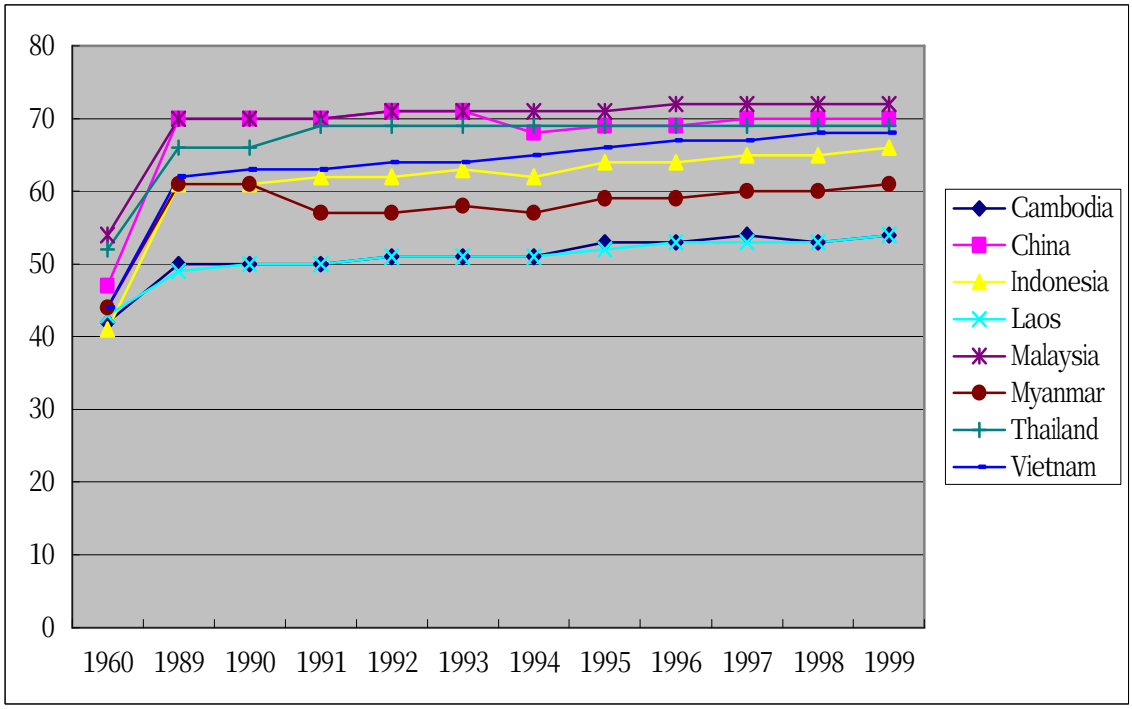
Source: UNICEF Annual report 1991-2001

Figure 7-3: Under age 5 year mortality rates (per 1,000 live births)



Source: UNICEF Annual report 1991-2001

Figure 7-4: Life expectancy at birth in Asian countries



Source: UNICEF Annual report 1991-2001

Table 7-1: Leading causes of death in Thailand

Causes of Death	1996	1997	1998	1999
Heart diseases	83.5	110.45	137.73	84.96
Cancer	70.3	69.09	61.91	75.7
Motor accident	47.2	44.77	41.87	34.28
Others accidents	24.3	23.34		
Respiratory diseases (except upper respiratory tract)	24	24.9	19.11	
Leaver related diseases	22	19.35	17.09	17.37
Respiratory failure	19.4	15.77		
Cardiovascular failure	18.3	25.65	30	
Diabetes mellitus	15.3	15.77	17.38	18.92
Systematic infection	14.4	15.02	16.33	17.31
Hypertension and cardiovascular failure		16.46		
Kidney and kidney related diseases			15.75	20.71
Immune deficiency				16.62
Pneumonia				14.73

Source: Report of the 2000 survey of Fertility in Thailand, National Statistical Office

7.3 Project Evaluation of the ASEAN Training Center for Primary Health Care (ATC/PHC) in Mahidol University and Regional Training Centers

7.3.1 Design Framework

The ASEAN Training Center for Primary Health Care Center (ATC/PHC) and four Regional Training Centers (RTCs) were established through grand aid cooperation. Thereafter, project-type technical cooperation was provided between October 1982 and September 1989. ATC/PHC was established at the Salaya Campus of the Mahidol University (Appendix 7-1). Four RTCs were established at Khon Kaen, Chon Buri, Nakhon Sawan, Nakhon Si Thammarat.

ATC/PHC was founded as an international institution (to serve an area beyond the boundary of Thailand) for improving the quality of human resources, particularly in the field of public health.

It was guided by the following objectives:

1) To facilitate training, research and models for primary health care development in both rural and urban settings,
2) To develop facilities, technologies materials, methods and programs to meet the training needs of targeted group in both Thailand and other ASEAN countries and to conduct training programs for strengthening the implementation strategies of primary care and
3) To establish national and international networks in primary health care in order to share and/or exchange resources, experiences and information with a view to promoting the development of primary health care in Thailand and other ASEAN member countries.

RTCs are technical and cooperative centers, under the Office of Primary Health Care, MoPH. Their roles and functions are like as follows:

1) Conducting studies and research on model development for health care in the area, suited to rural socio-economic status
2) Developing educational technology, including curriculum, teaching media and logistic support in connection with primary health care
3) Conducting training courses in primary health care and community development for administrators, technical staff, primary health care personnel and community leaders as well
4) Collecting and exchanging information on primary health care
5) Acting as a coordinator and technical supporter for primary health care activities within the region

7.3.2 Institutional Performance

ATC/PHC was promoted to become the ASEAN Institute for Health Development (AIHD) within Mahidol University in October 1988. Since then, AIHD has grown to be a full-fledged institution, providing various training courses (national and international) and master's programs (e.g. Master of Primary health Management)(Appendix 7-2). Its development has already gone beyond its original plan. It can be safely said that the performance of AIHD is evidently positive.

AIHD and RTCs (at Khon Kean and other places) have become more widely known. The original objectives set up in the project design were aimed at AIHD's (the former ATC/PHC) serving the ASEAN countries, while the RTCs were expected to do mainly Thailand. However, nearly 20 years after the hand-over, the organizations have developed further than was originally expected. AIHD has now accepted trainees/students from and outside the ASEAN region, where the number of countries has grown to be about 40 or so.

Among the numerous training courses, AIHD is now strengthening AIDS programs, which can be highly evaluated for the rich contents and quality.

In addition of the training and education, AIHD has been promoting dissemination of health knowledge and PHC experiences through the newsletters and numerous publications, such as master's thesis abstracts, research reports, booklets. Moreover, research findings and technical innovations are introduced through **'the Journal of Primary Health Care and Development'** published by AIHD twice a year. AIHD now serves as one of World Health Organization (WHO)/SEARO Information Research Centers as well as a clearinghouse for Asia and Pacific Academic Consortium for Public Health.

As for RTCs (in particularly RTC in Khon Kaen), they perform well in their training and research functions. They cooperate closely with local organizations, in both the public and private sector, especially NGOs, in implementing public health tasks. Moreover RTC in Khon Kaen provides some international programs; for example, they receive trainees from neighboring countries such as Laos, with the support of United Nations Development Programme (UNDP).

For information dissemination, the RTC at Khon Kaen is also doing well. They publish **the Primary Health Care Journal: Northeastern Edition**. Furthermore they publish some research reports, technical documents and several media document for health education, such as booklets, brochures and posters. They have been promoting a notable impact to PHC development as well as rural development at

the community level. It is noteworthy how RTC will be integrated further into functions of provincial offices along with the development of the health sector reform.

AIHD and RTCs receive recognition for their activities from both international and local partner institutions, as well as ex-students, which must be a good surrogate indicator of their effective performance.

7.3.3 Sustainability

Sustainability should, first of all, imply 'financial sustainability'. In this sense, AIHD is perhaps unique among the various institutions assisted by Japan's grand aid, for which the counterpart's likely recurrent financial difficulties have often been under-estimated. AIHD is an autonomous agency within Mahidol University. At its inception it introduced schemes for income generation, through the ASEAN HOUSE started at the inception its self-generated sources of income from the ASEAN HOUSE (student dormitory), printing and other services, in addition to regular budget from GoT. AIHD also receives some other supports to its programs from JICA, EU, Canadian International Development Agency (CIDA), WHO and so on.

RTCs will continue to be subsidized by the GoT, in support of their well-established roles and capacities.

Although it is unclear as to what extent the original project design considered its financial sustainability, the founding members of AIHD thought out a unique mechanism to ensure self-generated sources of income. This effort is highly important. This unique financial set-up ensures AIHD the capacity for further development. As seen in Table 7-2, AIHD's activities (based on the provision of training, printing services, dormitory charges, etc.), as well as the support of international agencies for training and research, are major self-generated sources of income. This income is 4-5 times larger than the government subsidy.

AIHD is an excellent example of self-sustainable institutions. It should be noted that government sectors in developed and developing economies are undergoing a process of transformational change, thereby more and more state-owned institutions are expected to be self-sustainable through self-generated sources of income in addition to limited amounts of government subsidy.

Table 7-2: Revenue and expenditure of AIHD (1982-1995)

	1982	1990	1991	1992	1993	1994	1995
Royal Thai Government		5,280,365	5,575,234	6,373,208	7,310,682	7,722,800	8,779,500
AIHD Activities	368,729	6,945,066	8,136,441	9,831,441	14,270,313	15,502,389	16,776,181
International Agency Project Support	5,165,078	20,026,669	23,761,952	22,218,234	21,462,818	24,156,662	20,063,505
Previous Balance		1,986,040	2,799,461	2,454,418	3,497,332	6,338,728	6,388,728
Total Revenue	5,533,807	32,252,100	40,273,088	40,877,301	46,541,145	53,770,579	52,007,914
Total Expenditure	N.A.	17,584,024	23,597,363	23,155,909	24,428,720	33,026,216	27,574,608
Balance	N.A.	14,668,076	16,675,725	17,721,392	22,112,425	20,744,363	22,652,127

Source: AIHD Annual financial report

7.3.4 Suggestions

As they have demonstrated notable success in the training and dissemination of information and knowledge in the public health area, AIHD and RTCs are valuable assets for the ASEAN and beyond, as

trainees come not only from Asia but also from Africa and other regions. It is particularly commendable for the autonomous AIHD to maintain financial self-support. Japan may regard AIHD as a strategically valuable base for public health training programs. It is worth considering the continuation of supporting their short-term training and degree courses. This support will complement AIHD's self-generated sources of income. It can be concluded that AIHD is a top-rated institution and an ideal implementation base for JICA's third country training scheme.

7.4 Project Evaluation of the Community Health Project in Khon Kaen Province

7.4.1 Design Framework

This unique Project is composed of five sub-projects (Rural Community Health Services, Dental Health Care in Rural Community, Urban Community Health Services, Trauma Prevention Project which is still ongoing, and System Research about Health Insurance). Moreover, human resource development was promoted as a cross-cutting intervention in all sub-projects. (Figure 7-5).

The general objective of the Project was to develop a health service system model in the province that formed the project site and to disseminate the experience into other provinces, thus contributing to the national health policy and to further development of primary health care in Thailand.

This Project used a cross-cutting method applied to the sub-projects as "Participatory Action Research (PAR)", to build up people's awareness of a range of activities designed to improve their access to health care (Figure 7-6). PAR aimed at promoting agreement, cooperation and interaction among organizations, communities and people involved, and facilitating the achievement of objectives set forth in each of activities incorporated in the subprojects.

Furthermore, the findings from PAR were expected to help make a convincing proposal for formulating the National Health Policy, with particular references to the community health services system. Thus, how PAR was carried out was a crucial factor in determining a successful project implementation.

<u>The main targets of the Project were as follows;</u>

(1) Strengthening the quality of primary health care activities in the community
(2) Strengthening the existing district health service
(3) Strengthening management system of integrating specific programs such as prevalent communicable diseases control and family planning and maternal and child health into the district health service system
(4) Development of the program for the emerging health problems in urban area related to industrialization and urbanization
(5) Promotion of information, education, and communication activities at provincial and district level
(6) Conducting the above programs through participatory action research
(7) Promotion of education for personnel in the field of community health cares management
(8) Close coordination of these activities with the Family Planning and Maternal/Child health Project

Figure 7-5: Community Health Project : Organization and Functions

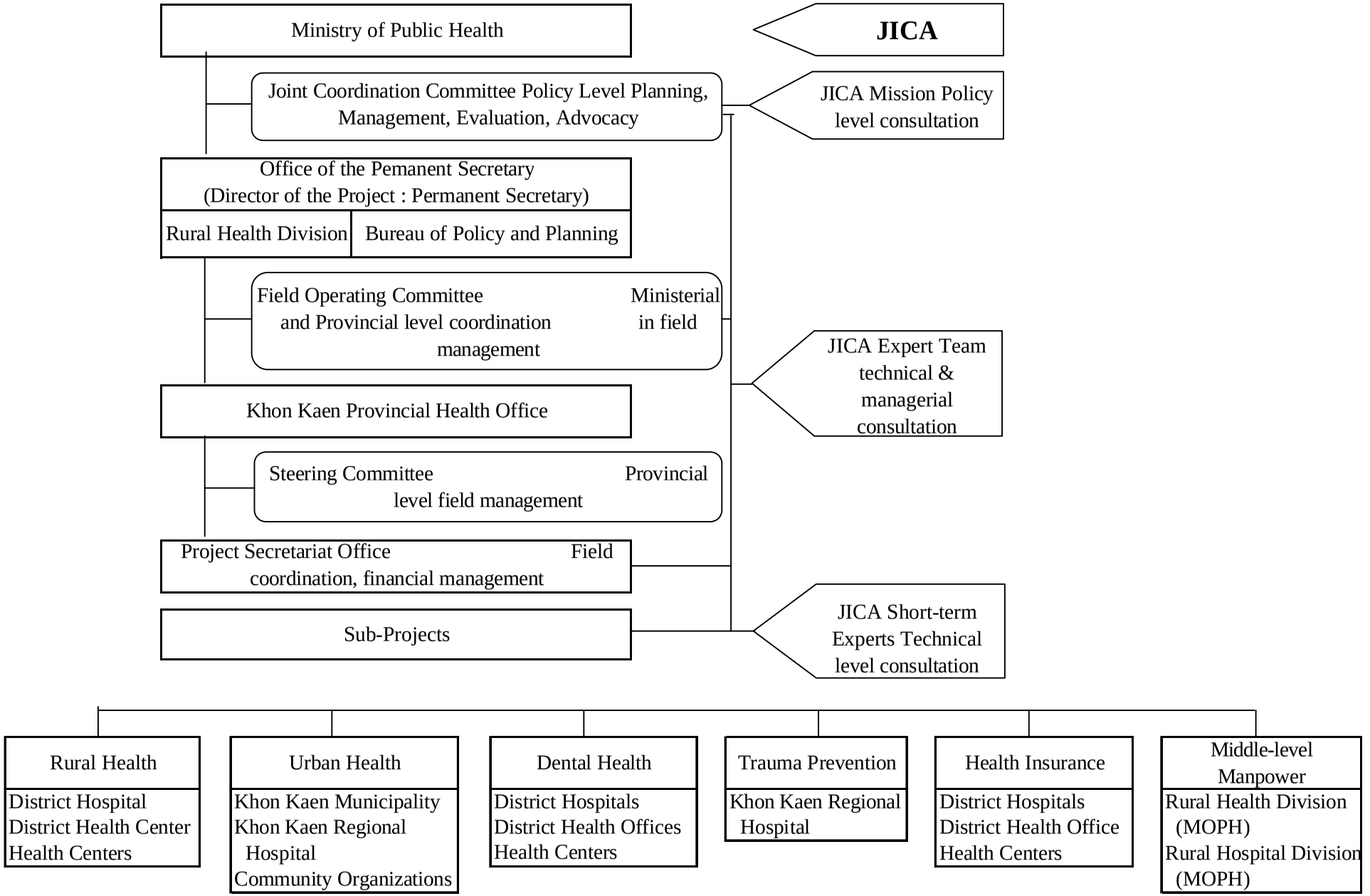
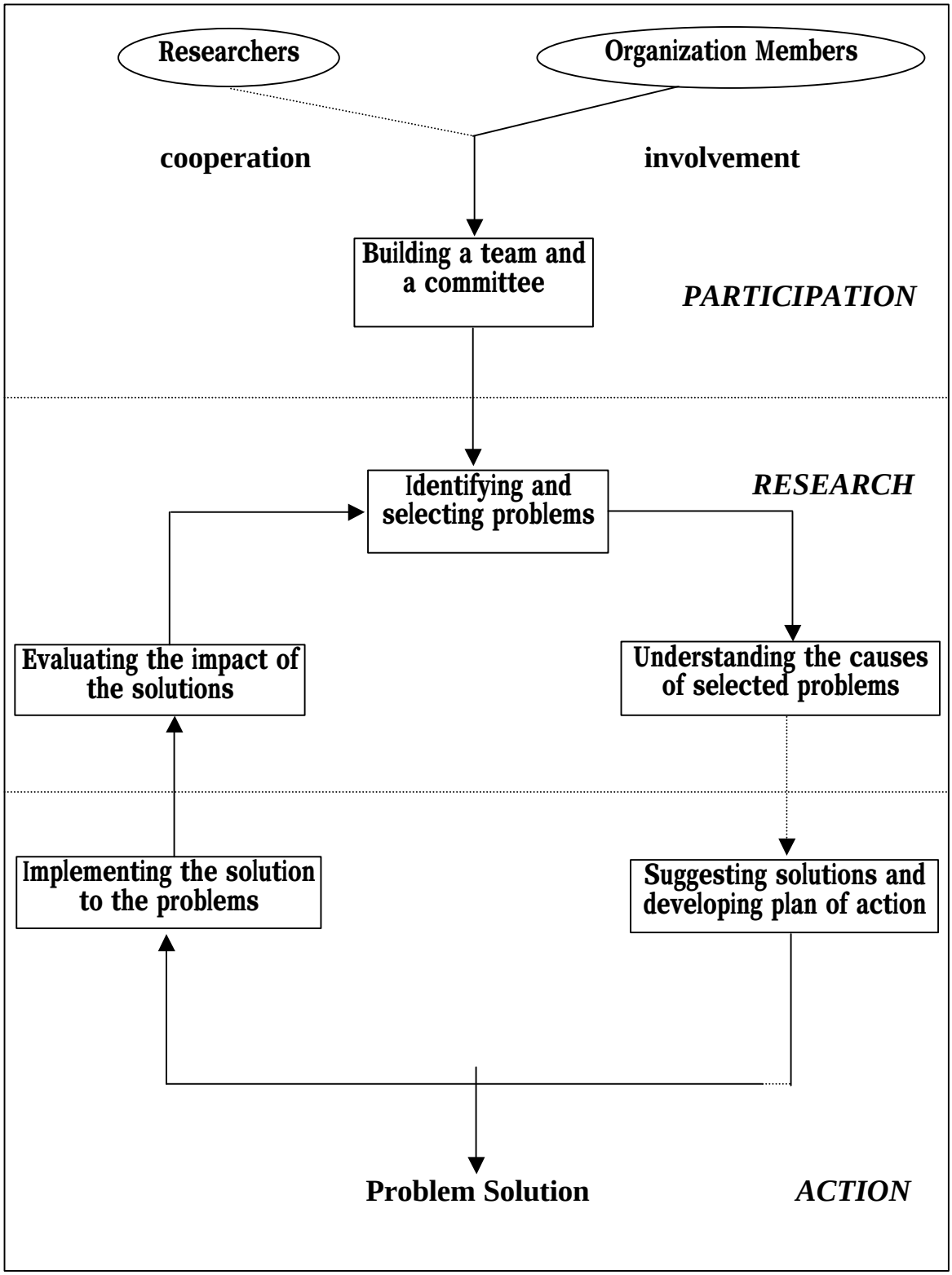


Figure 7-6: Community Health Project: Process of Participatory Action Research



Source: Abdullahi M. A., Ann. Ig. 1991;3: 299-303

The Project can be classified into two main parts, rural health activities and urban activities, and the trauma component is still under implementation. This mission's study looked at mainly these two sub-projects, Rural Community Health Services and Urban Community Health Services, considering the relationship with the ATC/PHC and the Khon Kaen PHC Center.

7.4.2 Health Status and Behavior

Along with the nation-wide epidemiological transition, the leading causes of death are now non-communicable diseases also in Khon Kaen Province (Table 7-3). The coverage of health services has improved and incidence of infectious diseases has been declining. The Table 7-4 shows that infant mortality rates and maternal mortality rates and child date rates are all much below the target rates in the 7th plan target.

The concept of PHC is gradually being modified, reflecting the epidemiological transition and some changes of receiving care. For example, most childbirth are now done in hospitals, although 77% in the northeastern region is lower than 87% in BMA. The roles of doctors and nurses are accordingly more important than before (Table 7-5, 7-6).

Table 7-3: Ten Leading Causes of Death, Khon kaen Province, 1996

No.	Causes	Number	Rate/100,000 Population
1	Heart disease	1,435	83.46
2	Cancer	1,209	70.32
3	Motor accident	811	47.17
4	Other accident	417	24.25
5	Respiratory (except upper respiratory) disea	412	23.96
6	Liver related diseases	378	21.98
7	Respiratory system failure	334	19.43
8	Blood circulation system failure	314	18.26
9	Diabetes mellitus	263	15.30
10	Blood circulation infection	248	14.42

Source: Death certificate between October 1, 1995 and September 30, 1996

Table 7-4: Vital Statistics, Khon Kaen Province, 1992-1996

	7th plan target	Year				
		1992	1993	1994	1995	1996
Birth rate / 1000 population		16.00	15.70	15.50	15.70	15.34
Death rate / 1000 Population		4.60	4.50	4.90	5.00	5.20
Increasing rate(%)	1.20	1.14	1.12	1.07	1.07	1.01
IMF / 1000 live birth	23.00	5.50	8.60	8.79	2.45	8.83
MMR / 1000 live birth	0.30	0.10	0.08	0.08	0.06	0.08
Children under 5 years death rate / 1000 live birth	35.00	6.60	5.80	3.72	11.70	15.43

Source: Birth & death certificate during October 1,1995 and September 30, 1996

Table 7-5: Maternal mortality ratio by region, 1990 and 1994 (per 100,000 live births)

	Whole Kingdom	Northern Region	Northeastern Region	Central Region	Sourhern Region
1990	36	45	34	24	32
1994	17	23	13	10	29

Source: department of Health, Safe Motherhood Project 1990-1994

Table 7-6: Percentage of ever-married women aged 15-49 years having lining children aged 0-2 years by place of delicery, birth attendant, region and area, Thailand 1996

Place of Delivery Birth	Whole Kingdom							
	Total	Municipal Area	Non-Municipal	Bangkok Metropolis	Central Region	Northern Region	Northeastern Region	Southern region
Place of delivery	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	2,730,778	503,437	2,227,341	307,380	577,016	498,381	989,217	358,784
Government Hospital	82.0	87.4	80.8	87.0	90.6	85.8	77.1	72.4
Health Centers	4.6	0.5	5.6	0.3	1.7	3.1	7.6	7.0
Maternal and Child Health Centers	1.4	0.8	1.6		1.3	3.0	1.3	0.9
Midwifery Centers	0.2	0.4	0.1	0.5		0.1	0.2	0.4
Clinic	1.0	0.8	1.0	0.3	1.5	0.4	1.1	0.8
Private Hospital	2.9	9.4	1.4	11.1	4.4	2.0	0.2	1.9
Home	7.8	0.7	9.4	0.8	0.5	5.4	12.4	16.5
Others	0.1		0.1			0.2	0.1	0.1
Birth Attendant	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	2,730,778	503,437	2,227,341	307,380	577,016	498,381	989,217	358,784
Physician	56.3	83.1	50.2	90.6	77.7	49.6	42.6	39.1
Nurse	30.0	14.8	33.5	7.6	19.9	41.6	35.5	34.6
Midwife	6.5	1.2	7.7	0.8	1.5	3.4	11.4	10.4
Traditional Birth Attendant	5.6	0.4	6.8	0.4	0.4	2.9	8.0	15.9
By Yourself	1.0	0.1	1.1	0.1	0.5	0.2	2.1	
Others	0.6	0.4	0.7	0.5		2.3	0.4	

Source: Report of the 1996 Survey of Fertility in Thailand, National Statistical Office

7.4.3 Performance and Benefits

Both the completion report (the Joint Evaluation in 1996) and Ex-post Evaluation Study also arrived at positive conclusion about the project performance. The completion report reads as follows;

(1) Most activities generally progressing very well towards the specified targets.
(2) The proposal for the National health Policy concerning the community health service system was submitted to the Government of Thailand and some of the project's suggestion was put into practice.
(3) Participatory action research was implemented as a strategy and it improved public health activities and promoted human resource development and
(4) Both parties, the Thai and Japanese, agreed that the fruits of the project should be taken into consideration by MoPH so that they could be applied nationwide.

The project performance was satisfactorily assessed at the time of the project completion. The ex-post evaluation study also expressed positive views, particularly in terms of the impact and sustainability.

Impact:

The ex-post study classified the impact into two aspects; one was policy formulation and the other human resources. The study assessed the contribution to higher-level policy formulation in terms of the dissemination of concepts, principles and experiences throughout the country. The study also recognized that human resource development at the province, district and sub-district level was achieved.

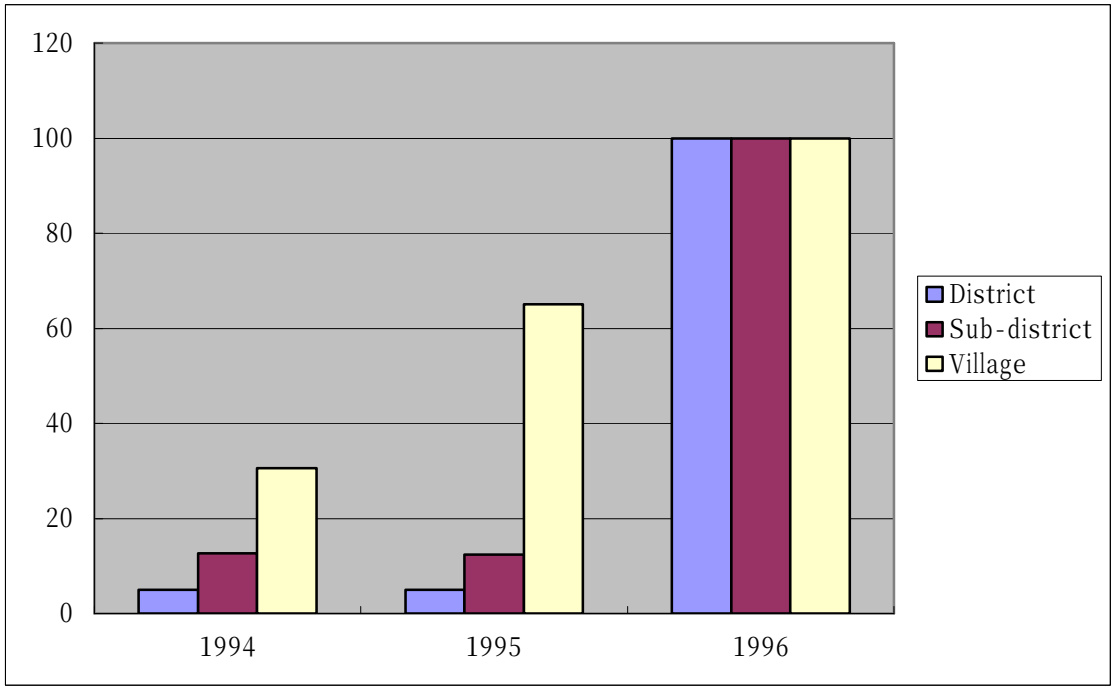
The Human resource development at the province, district and sub-district level showed a good achievement. For example, the number of Village Health Volunteers and the ratio to household improved between 1993 and 1996(Table 7-7). As a result of the development of the above two aspects, the coverage of health service has noticeably developed. The coverage of 'Health for All' implemented in Khon Kaen Province is now 100% for districts, sub-districts and villages (Figure7-7). The control level against AIDS and venereal diseases have been also fortified (Figure7-8).

Table 7-7: Number of Village Health Volunteers and Ratio to Households

Year	Number of households	Number of VHVs	Ratio to households
1993	259,844	17,204	1: 15.1
1994	333,742	17,204	1: 19.4
1995	339,403	20,580	1: 16.5
1996	382,416	20,580	1: 18.6

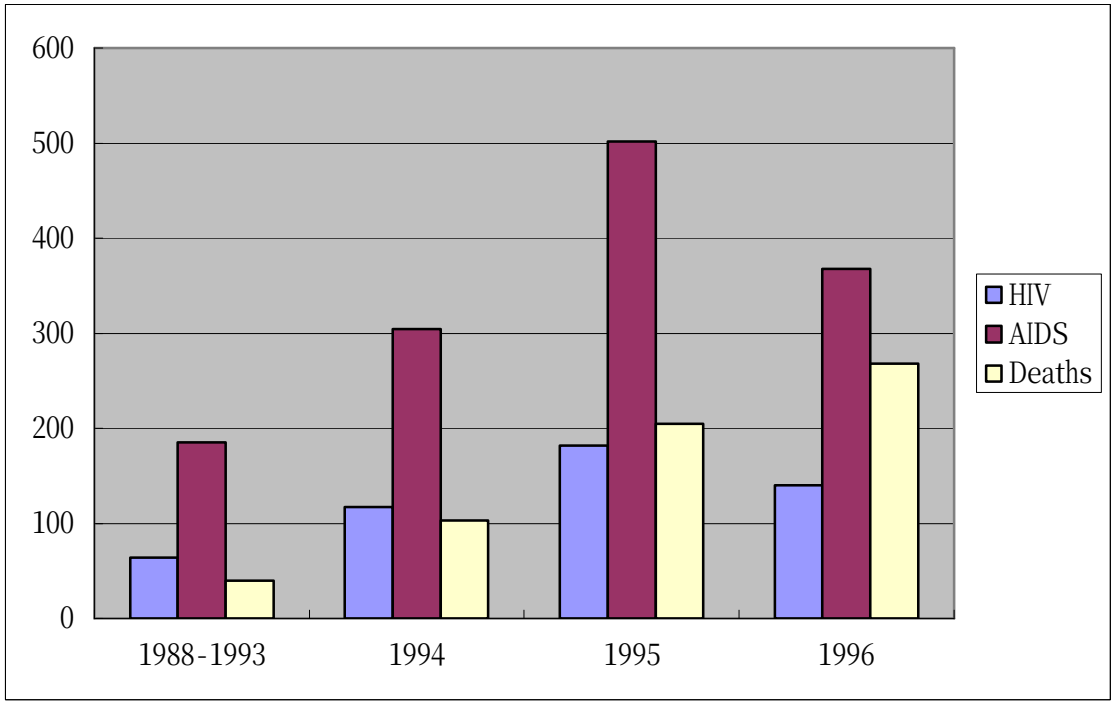
Source: Khon Kaen Provincial Health Office Annual report 1996

Figure 7-7: Coverage of 'Health for All' implemented in rural areas, 1994-1996 (Primary Health Care)



Source: Khon Kaen Provincial Health Office Annual report 1996

Figure 7-8: AIDS and venereal disease control, Khon Kaen Province



Source: Khon Kaen Provincial Health Office Annual report 1996

Development is found in several activities. The nutritional activities are sound and stable (Table 7-8). The performance of sanitation activities improved greatly, with all items, e.g. sanitary latrine, safe water; solid waste disposal surpassed the targets in the 7th National Health Plan (Table 7-9). The performance of the Expanded Program on Immunization (EPI) reached high coverage rates (Table 7-10). However, the performance of dental health showed mixed results, not necessarily well developed. (Table 7-11).

Along with the policy implementation, the numbers of PHC centers increased dramatically from 207 and 1,970 between 1992 and 1996(Table 7-12).

Table 7-8: Summary of Nutritional Activities, Khon Kaen Province, 1992

No.	Nutritional Indicators	Target(%	1992	1993	1994	1995	1996
1	Coverage rate of the village where children under 5years weighted	100	100.00	100.00	100.00	100.00	100.00
2	Coverage rate of children under 5years weighted	>90	93.48	94.14	94.96	95.44	95.53
3	2° and 3°malnutrition in children under 5 years	<1	1.52	1.73	1.65	1.45	0.99
4	years	<10	28.50	27.60	23.93	22.14	17.18
5	Goiter prevalence in school children in epidemic areas	<10	7.02	7.72	7.42	5.11	3.91
6	Anemia prevalence in pregnancy	<10	10.14	6.31	6.86	14.14	9.52
7	Anemia prevalence in school children	<10	27.94	19.91	20.80	17.57	12.96

Source: Khon Kaen Provincial Health Office Annual report 1996

Table 7-9: Performance of Sanitation Activities, Khon Kaen Province, 1992-1996

7th NHDP Target	1992	1993	1994	1995	1996
Sanitary latrine 95%	84.50	87.50	91.90	97.40	100.00
Safe water 95%	81.90	87.90	93.00	95.70	98.10
Solid waste disposal 75%	81.50	90.00	94.20	94.40	97.40

Source: Khon Kaen Provincial Health Office Annual report 1996

Table 7-10: Performance of EPI, Khon Kaen Province, 1996

< 1year			
-BCG	25,525	24,297	95.19
-DPT3	22,525	21,966	97.52
-OPV3	22,525	22,157	98.37
-Measles	22,525	20,464	90.85
-HEP.B1	22,525	21,393	95.00
1 1/2-2 year			
-DPT	22,249	19,464	87.48
-OPV	22,249	22,249	100.00
4-5year			
-DPT5	55,361	55,361	100.00
-OPV5	55,361	55,361	100.00
Primary School Children			
Grade 1			
-Rubella	22,701	22,701	100.00
-DT	22,701	22,701	100.00
Grade 6			
-DT	22,530	22,530	100.00
-Rubella (Female only)	11,119	11,119	100.00
Pregnant			
-T2+T3+Tetanus	25,525	25,525	100.00

Source: Khon Kaen Provincial Health Office Annual report 1996

EPI=Expanded Programme on Immunization

Table 7-11: Performance of dental Health, Khon Kaen Province at the end of 7th NHDP

Activities	7th NHDP	Performance by year (%)				
		1992	1993	1994	1995	1996
Oral check up for pregnant women	100%	100.00	97.45	87.55	100.00	94.99
Pre-school children owned tooth brush	100%	100.00	92.45	89.66	85.82	66.36
Primary school children owned tooth brush	100%	81.09	92.63	95.91	79.32	72.25
Primary school children relieved oral fluoride	100%	81.63	94.65	95.13	76.66	70.26
Primary school children relived oral check up	100%	99.90	100.00	100.00	98.98	100.00
5-14 years relieved oral check up	43%	26.00	35.06	58.13	47.20	32.99
People relieved oral check up (excludes children 5-14 years)	10%	7.50	8.95	9.24	10.55	8.70

Source: Khon Kaen Provincial Health Office Annual report 1996

Table 7-12: Number of Community PHC Centers Established in Khon Kaen Province

Fiscal Year	Number of Village	Number	%
1992	1,918	207	10.8
1993	1,936	414	21.4
1994	1,939	1,265	65.2
1995	1,944	1,944	100.0
1996	1,970	1,970	100.0

Source: Khon Kaen Provincial Helath Office Annual report 1996

As with the statistical indicators, the mission had almost the same positive impressions through interviews with the people involved in rural or urban health activities. Various gains are more tangible in urban communities in the Khon Kaen City than rural areas.

1) The people in the concerned communities, urban or rural think that they would be able to sustain the project-generated activities after having experienced PAR. More accurately, they though they had to sustain the necessary activities.
2) Health offices can now increase better quality services, reducing to a greater extent, bureaucratic procedures. In fact, time and expenditure for health care decreased.
3) The system of services introduced is now institutionalized into the present systems. The health systems are now practiced at the provincial levels. People feel that in general complicate bureaucratic procedures were streamlined and accountability was somewhat improved.
4) These developments have helped closer collaboration among organizations, which remains to be more improved. Trust and confidence of local organizations and people have been enhanced, which encourages people to promote innovative income generating projects among the urban poor. Therefore, access to health care for the urban and rural people are greatly improved.

Participatory Action Research (PAR)

PAR was only intellectually understood in MoPH before the project implementation (Appendix III-2). However, the actual experience gave firm confidence and contributions as prime movers among health officials and others involved in the province.

This PAR approach was obviously very innovative attempt; in practice, some issues remain to be solved. However, some of them are not an easy task, because they are geared with society-rooted problems (e.g. difficulty in sustaining and extending horizontal coordination), decentralized management, intersectoral development linkages and understaffing due to budget constraints.

1) Although PAR was successfully done, communication linkages among executive/committee members at provincial, district, sub-district levels or people's organization remains to be improved.
2) Integration of the project's outcome created by PAR could have with other community development activities, thereby enlarging overall public health effects. This is an important agenda.
3) The Ministry of Public Health is expected to provide more management support to staff in regions and districts to promote efficient decentralized management.

Sustainability:

In terms of sustainability, the Urban Health Activity sub-project was much more visible than its rural equivalent, with local networking and effective cooperation apparent among the local administration, NGOs and voluntary groups. This mission was not able to ascertain the extent of rural people's involvement in decision-making or the planning of activities; however, community hospitals and health centers were seen to be functioning well with good coordination, and this is expected to provide a long-lived participatory

linkage.

7.4.4 System Research about Health Insurance[2]

This sub-project is separately referred to due to the nature of the activity. The research period was between 1994 and 1995. A sample of one thousand households from target population was selected. The research examined the differing characteristics of card users and non-users, and also of card dropouts and continuing card users[3].

The study looked at health card purchase and pattern of utilization in Khon Kaen, and found that card purchase was influenced by these factors; proportion of employed persons to total family members, education and presence of illness. The last factor is related to the problem of adverse selection in the health card program. The research findings indicated that improvements to the existing health card program should require a number of policy change, such as revision of criteria for card use, restructuring of relationships with providers to provide an effective referral system. The study suggested that an alternative possibility of altering the program might be a community-based compulsory insurance scheme in rural areas.

7.4.5 Relevance with the Policy Formulation

PAR requires collective activities based on combining research, awareness building and action directly handled by people in communities. This was able to help people to participate in clarifying problems and issues, and to increase confidence, potential and sense of belonging of the people.

PAR also succeeded in modeling an effective vertical and horizontal coordination. This project must have contributed a lot to reinforcing the 'social capital' in the project sites and beyond.

This experimental attempt through PAR must have contributed a lot to formulating a policy for the Health Care Reform (HCR). The Government of Thailand has launched it (the first national reform committee meeting was held on AUGUST 2000), which presents a major challenge to Thai society since it compels a change in people's thinking process with regard to the notion of health. Thus, the policy for HCR understands that it requires a transformation of the existing health systems into the more desirable format that promises tangible good health for all.

Every Thai people can participate by learning and understanding more profoundly about health in order to synchronize his or her attitude with the standardized term. Their idea, imagination, recommendation, movement and dynamic force with respect to the sketching of the National Health Act seem well received. All these participatory actions are expected to move HCR to the direction where it should be heading.

7.5 Conclusion

The projects evaluated are (1) training/education and training program in the field of public health and (2) programs to develop a health service system model in the province. Needless to say, these projects have showed successful performance. Thus, it is possible to say that the projects have contributed to the general improvements in health status and access to health services in the province, which have created a basis for the alleviation of socio-economic disparities between the BMA and the Northeastern Region in Thailand.

In fact, the training and education activities have created a rich pool of human resources in the public health, and in term of people's access, the national health plans have generated steady achievement. The Province has now a regional university (the faculty of medicine), and several public health facilities: one regional hospitals, seven specialist centers, 19 community hospitals, 212 health centers and one municipal health center. Furthermore, there are many private clinics and hospitals.

7.6 Suggestions

The mission would like to make some suggestions for future cooperation with Thailand, which is undergoing epidemiological and demographic transition, and countries beyond.

(1) AIHD (the former ATC/PHC) is a valuable educational institution for ASEAN and beyond. This should continue to be supported from a long-term and wide perspective. Human capital development needs to be considered more strategically for the long term. More active support of its course programs, beyond conventional aid modality, is greatly recommended.

(2) Supporting research activities in developing countries tends not to be given high priority in a development assistance project. However, it needs to be better understood that research work in educational/training institutions is crucial to maintaining and improving education levels.

(3) Various government institutions, such as universities, hospitals, and research institutes are being transformed into something like independent agencies. Therefore, a mechanism for their financial sustainability needs to be well designed. In this sense, AIHD has built up a sound financial system. Grant aid projects cannot consider this issue too much.

(4) Policy priority in the Thai National Health Plan has been shifting towards more efficient resource utilization, together with a stronger financial mechanism. Supporting policy management and institutional management in the health sector is increasingly necessary. The conventional approach of provision of equipment, hardware-related training and service provisions of technical experts should be reconsidered, to allow more management support components to be included.

The management component is increasingly required in middle-income developing countries or emerging economies. In these income groups, even the concept of primary health care is being transformed into that of an integrated care; for example, a community hospital is taking more active role as a frontline facility, and a general hospital has an in-house primary health care unit[4].

(5) There is a need for better targeted study (that is more focused than the usual evaluation study) concerning the financial management of medical facilities (such as the case of the Sri Jaye Wardenepura

Hospital in Sri Lanka, financed by Japan's grand aid facility, which was transformed into an independent agency after the hand-over of the project, thereafter being well managed).

(6) The advantage of Japanese assistance remains its capacity for providing significant capital assets. Therefore, it will be increasingly important to design asset provision in harmony with resource allocation within the health sector, and work out self-help mechanisms to complement the capital assets provided, for long term effectiveness.

(7) Health sector assistance should not be narrowly confined to health care assistance. For example, it is appropriate that a component of the Community Health Project in Khon Kaen Province is involved not only with in-hospital services, but also road transportation management and road safety education. It will be possible to include a health component (prioritizing preventive health) in other sector projects or programs, such as road construction, for example. Japan's assistance, which is vast sector-wise, may be able to make a unique contribution in this way.

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[1] The ASEAN Training Center for Primary Health Care (ATC/PHC) was originally established by the grand-aid and technical cooperation from Japan in October1982. However, in October 1988, ATC/PHC was promoted to be the ASEAN Institute for Health Development within Mahidol University.

[2] The Health Card was first introduced in 1983, aimed at (i) promoting community development under the primary health care program, (ii) fostering the rational use of health services via a referral system and (iii) increasing health resources based on a community-financing concept.

[3] As for the research methodology, data analysis and results and discussion concerned, Dr. Siripen Supakakunti has published a thorough analytical paper (Health Planning and Policy; 15(1):85-94, 2000)

[4] The Hatyai Hospital holds the Department of Social Medicine, a PHC unit within the hospital, and some doctors are regularly dispatched from the Department to local health centers in the catchments area of the hospital. The hospital is involved in three main areas; direct support of primary health care, community health development activities and education of health personnel.

The ASEAN Institute for Health Development

BACKGROUND

The ASEAN Institute for Health Development (AIHD) was first established in 1982 as the ASEAN Training Center for Primary Health Care Development (ATC/PHC) with support from Japan, the Royal Thai Government and collaboration national and international agencies. On October 11, 1998, the ATC/PHC was upgraded to a full institute within Mahidol University.

In its capacity as a regional center, AIHD works closely with numerous ministries and agencies of the government, universities, and NGOs in Thailand and the ASEAN region. These include the Department of Technical and Economic Cooperation (DTEC), the Thai MOPH, the Japan International Cooperation Agency (JICA), WHO, UNICEF, UNDP, ESCAP, and Medical Information Center, CIDA, the University of Calgary, the Aga Khan Foundation, GTZ, CIDSE, World Vision International and the European Community Program on HIV/AIDS in developing countries. For a more complete listing.

PURPOSE

As an International institution, AIHD is responsible for improving the quality of human resources in the area of health and development with four primary functions; education, training, research and information management.

ACTIVITIES

To achieve these stated functions, AIHD offers a comprehensive menu of international and national training courses. These include a Master's degree course in PHC Management (MPHM) and programs in Health and development in Thailand, planning and management for PHC, community based development, family planning population studies, reproductive health and HIV/AIDS. The international programs focus on developing leadership and management capacities, exploring innovative techniques in PHC and quality of Life development, and promotion international health networks. AIHD also collaborates with international and national agencies in conducting specially designed symposiums, workshops and field study tours for groups requiring a particular content or training expertise. In addition to the institute's core professional staff, resource and training specialists are secured within and outside of Thailand, depending on client needs.

The institute also supports and operates research and model development in urban and rural setting AIHD also promote and supports research by field personnel, who are actually delivering PHC or are directly involved in PHC/Qol programs. AIHD's research section objectives are to collect, store, retrieve and disseminate information germane to the development of PHC/Qol on a national and regional basis.

Since 1985, AIHD has served as one of two PHC information resource Centers under the sponsorship of WHO/SEARO and also as a clearing-house for training and educational materials in PHC management development for the Asia-Pacific Consortium for Public Health.

Another area of success stems from the institute's ability to organize and facilitate a variety of intervention projects and facilitates a variety of intervention projects and capacity-building activities. For example, from 1997-1999, AIHD managed and coordinated between the European Commission and nine partner agencies to conduct AIDS intervention projects included attitudinal training, adolescent sex education, AIDS support groups and risk reduction for youth.

As AIHD has been a leader in Primary Health Care in Thailand for many years, this institute was awarded the Primary Health Care development Award in 1998 by the World Health Organization, Regional Office for South-East Asia (SEARO) on the occasion of their 50th Anniversary.

Appendix 7-2 AIHD INTERNATIONAL PROGRAM SERIES 1999-2000 Program Schedule

Course Title	Date	Length	Content
1. Primary Health Care and Health Servic Management	Mar 2-12, 1999 Feb 7-17, 2000	10 days	•PHC Concepts, Strategies and Health Promotion •Leadership Development and Community Involvement in Health Delivery System •Basic Minimum Needs Approach to Qul and HFA •Health Problem and Intervention •Integration of Health and Rural Development •Health service Management and Support, Technical and Supervision, Record and Report System Provincial, district, Subdistrict and Village Level •Community Primary Health Care
2. Study Seminar on Community-based Approaches and Intersectoral Collaboration in Safe Motherhood and Child Care	Mar 14-26, 1999 Mar 5-17, 2000	2 weeks	•Overview of Community-based Approach in Thailand •Maternal and Child Health Care •Referral System •Human Resource development for Community Programs •Family Planning Update •Child Nutrition and Intervention •Woman's Health and Status •Health Promotion in MCH •Family Health Activities
3. Management of Community-based Prevention of HIV/AIDS and Care for People with AIDS	May17-28, 1999 May 15-26, 2000	2 weeks	•Management of HIV/AIDS Care and Counseling in Thailand •Information Network on HIV/AIDS Care and Counseling in Thailand •Perspectives on HIV/AIDS Care and Counseling •Counseling Techniques on HIV/AIDS Problems •Role and Function of Anonymous Clinic with Focus on HIV/AIDS Counseling •Care for People with HIV/AIDS(PWA) and Family Involvement •Holistic Approach for PWAs •Availability of Health Resources in HIV/AIDS Care and Counseling •Community-based Care and Self-management of PWAs
4. Women's Health and Development: Prevention of HIV/ AIDS and Care for People with AIDS	Jun 14-25, 1999 Jun 12-23, 2000	2 weeks	•Safe Motherhood and Fertility Regulation •Adolescent Health •Sex Education, HIV/AIDS •Information, Education and Communication in Reproductive Health •Care of Children under Five: Nutrition Surveillance and Supplementary Feeding •Primary Heath Care Approach to Reproductive Health •Community development: Basic Minimum Needs Approach and Income Generation •Field Visits on Income Generation to Increase Health and Well-being, ante-natal Care, Family Planning, Baby Friendly Hospital Initiative, Model Mothers, Community PHC Center and the Production of Lodized Salt for IDD Problems

5. Integration of Health and Social Development: Thailand's Experience	Aug 1-11, 1999 Jul 29- Aug 8,2000	10 days	•Health and Social Problems: Thailand's Experience, Analysis and development •PHC in Rural and Urban Settings •Community Development, Basic Minimum Needs and Quality of Life Initiatives •A Practical Village Study
6. District Health System, based on PHC Approach	Aug 15-28, 1999 Aug 13-26, 2000	2 weeks	•Thailand's Health and Social-economic Profile •Primary Health Care Development in Thailand •The Roles of AIHD in Supporting PHC in Thailand and in the Region •Health System Structure, Principle and Concepts of Integrated Health Care •Human Resource development for PHC •District Health Management and Strategies for Strengthening integrated Health Care •Intersectoral Collaboration and Community Participation •Curative Care and Primary Rehabilitation for Chronic Diseases and HIV/AIDS •Health Promotion and Diseases Prevention for Elderly and Disabled Persons •Monitoring and Evaluation of PHC Activities
7. Primary Health Care Management Advancement Program(PHC-MAP)	Sep 6-24, 1999 Sep 4-22, 2000	3 weeks	•Assessing information Needs •Assessing Community Health Needs and Coverage •Planning and Assessing Health Worker Activities •Surveillance of Morbidity and Mortality •Monitoring and Evaluating Programs •Assessing the Quality of Service •Assessing the Quality of Management •Cost Analysis
8. Master of Primary Health Care Management Degree Program(MPHM)	Aug 1, 1999- May 31, 2000 Aug 1, 2000- May 31, 2001	10 months	•Health Service Administration •Health Economics •Socio-Economic and Cultural Perspectives in PHC •Management of Environmental Health Programs •Epidemiological Studies in Health Systems •Research methodology •Computer Application in Health Sciences •Health Manpower Planning and Leadership Development •Thesis Seminar •MPHM Thesis •Management of Training Programs •PHC and Quality of Life Development •Management of Health Information
Specialized Study Tours (as requested)			

References

1. Questionnaires and Survey Results
   - 1-1a Macro Economic Sector: Summary of the Comparative Analysis of Development Needs of Thai Intellectuals and Japanese Experts: Questionnaire Survey Regarding the Evaluation of JICA' s Projects for Alleviating Regional Disparities between the Bangkok Metropolitan Area and the Northeastern Region in Thailand
   - 1-1b Macro Economic Sector: Questionnaire
   - 1-2 Infrastructure Sector: Result of the interviews
   - 1-3 Agriculture and Forestry Sector: Questionnaire (in Thai)
   - 1-4a Vocational Training Sector: Questionnaire for Trainees
   - 1-4b Vocational Training Sector: Questionnaire for Ex-trainees
   - 1-4c Vocational Training Sector: Questionnaire for Supervisors

2. List of Contributors

Reference 1-1a: A Comparative Analysis of Development Needs

Summary of the Comparative Analysis of Development Needs of Thai Intellectuals and Japanese Experts: the Questionnaire Survey Regarding the Evaluation of JICA's Projects for Alleviating Regional Disparities between the Bangkok Metropolitan Area and the Northeastern Region in Thailand

1. Outline of the questionnaire survey

The questionnaire survey was originally planned for evaluating the JICA's projects provided in the Northeastern region of Thailand and to draw policy implications for further development. The survey was conducted during October 2000 and January 2001. At the same time the macro economy group decided to conduct an additional survey of Japanese scholars and experts who had rich experience of the Thai economy by utilizing the same questionnaire form. We consider the comparison of the results of two surveys which gave us a lot of suggestions.

(1) The respondents of Thai intellectuals

In case of the survey done of Thai intellectuals, the questionnaire was sent to100 people selected from university professors, governors, mayors , top executives of private companies , NGOs and others who have experience in Northeastern region covering 11 provinces; Nakorn Ratchasima, Konkaen, Udon Thani, Ubon Ratchathanee, Buri Ram, Surin, Nong Khai, Nakorn Panom, Mukdahan, Sakorn Nakhon, and Roiet.

A total number of 78 responses were received, which can be classified into 7 groups as follows;

1. 9 university professors and scholars, or 11.5 percent, consisting of Thammasat University, Ubon Ratchathanee University, IEAS Institute and otheruniversity professors and lecturers in 11 targeted provinces.

2. 35 government officials, or 44.9 percent of the total respondents, consisting of Governors, Heads of Agricultural Provincial Office, Heads of Industrial Provincial Office and Directors of Skill Development Institute.

3. 4 state enterprise staff, or 5.1 percent, consisting of Directors of 4 Regional Tourism Authorities of Thailand (TAT) in the Northeastern Region.

4. 13 representatives from the private sector, or 16.7 percent, consisting of the President and members of the Chamber of Commerce, the President of the Industrial Council, Directors of IFCT Northeastern Office and Directors of Regional BOI.

5. 8 local government officials, or 10.3 percent, consisting of Mayors and Municipal Councilors.

6. 6 non-governmental organizations (NGO) officials, or 7.7 percent, participated in outlining The Ninth National and Economic Development Plan's vision with the Northeastern Development Center

7. 3 others, or 3.8 percent

(2) Japanese respondents

The same questionnaire was sent to selected 17 Japanese scholars and JICA experts who had living experiences in Thailand more than one year. We got only 8 responses among them (response rate was 47.1percent). The sample size is too small and we do not consider that the answers are representative of Japanese scholars and experts. But we referred to those answers for the preliminary comparison purpose with some limitation.

(3) The objectives of the study on the survey results

The objectives of the survey will be summarized as follow: 1) To identify the opinions of respondents on the benefits of development projects supported by Japan, particularly JICA, in addressing income disparity between Bangkok and the Northeastern region and investigating the causes and solutions of these problems. 2) To define the development strategies for Northeastern region and the area of international cooperation, and 3) To identify the directions and their appropriate frameworks for Japan's development assistance, especially of JICA, to Thailand in the future.

2. Evaluation of Japanese ODA and JICA's projects

The following are the summary of the survey in which the answers both from Thai intellectuals and Japanese experts are compared.

2-1: Estimate of Japanese Official Development Aid (ODA) for Thailand (please refer to the included list of the "Achievements of Japan's ODA activities of Thailand")

(1) How do you estimate the activities of Japan's Official Development Aid (ODA) for Thailand?

	(Thai intellectuals)	(Japanese experts)
evaluate highly	4.1%	
fairly high	42.5	1person
good	32.9	
fairy low	17.8	6
low	2.7	1

About 80% of the Thai respondents evaluated Japan's ODA highly as totals of "evaluate highly", "fairy high" and "good" (totals are 79.5%). But we need to recognize that 20.5% of Thai respondents said "fairy low" or "low". The Japanese government and JICA should make a study of this. The evaluation of Japanese scholars and experts was not favorable.

(2) Please list 3 projects out of Japan's ODA activities for Thailand highly evaluated by you.

Thai respondents listed the following projects as evaluated highly: small scale industrial development project, agricultural credit program for rural development, industrial restructure and regional development master plan, community project, institute for skill development, distance education, reforestation and extension project in NE (Northeast) region, and others (in order of their preferences).

Japanese scholars and experts evaluated the following projects in random order: Eastern Seaboard Development project, Technical assistance to King Mongkut Institute of Technology, highway construction, construction of irrigation facilities for agriculture, the second international airport project, technical assistance to NESDB, education, medical care, agricultural production technologies and others.

(3) How do you estimate JICA activities like technological cooperation, support by gratis machine parts and so on?

	(Thai intellectuals)	(Japanese experts)
highly evaluate	3.1%	
fairly high	18.5%	
doing possibly well	36.9 %	2 persons
fairy low	33.8 %	4
low	7.7 %	1

The Thai respondents' evaluation of JICA projects are as follows: positive answers totaled 58.5% ,which is less than 20 points compared with the evaluation of total ODA above. On the other hand "fairy low" and "low" get, in total, 41.5%. JICA should study this and find a solution for it. Japanese scholars and experts gave a severe evaluation of JICA projects.

(4) Please list 3 projects out of the JICA activities until now highly appreciated by you.

Thai respondents gave high points on the Institute for skill development with highest point, and Agricultural cooperatives support, basic health care training center, community health and medical services project, regional economic and social plan phase 2, distance education, reforestation and extension project in NE region and others.

(5) Do you think that the JICA projects in the northeastern districts of Thailand contributed to the decrease of income disparities between the capital and the northeastern districts?

	(Thai intellectuals)	(Japanese experts)
very high	1.4%	2 persons
fairly high	5.7	1
not evidently	41.4	3
not highly	40.0	3
almost not at all	11.4	

Thai respondents evaluated very severely. Positive answers are only 7.1% . The remaining 92.8% gave a negative evaluation. This is a shocking result since we are actually proceeding with a project having the same title as this question. The Japanese scholars and experts have also evaluated negatively. These results might come from improper setting of the project. The regional disparity is a nation-wide problem and the JICA projects are small scale and individual micro ones.

(6) What are, according to your opinion, the reasons for the increase of the income disparities between the capital and the northeastern district?

	Thai	Japanese
Low employment in the region due to the concentration of industries and businesses in Bangkok	49.0%	7
Concentration of able personnel in Bangkok	19.7	6
Most foreign direct investment was concentrated in Bangkok	29.5	8
Disparity of infrastructure services	22.5	3

Unequal information access	14.1	3
Centralized political system and administration	31.2	4

(7) Income disparities between the capital and the northeastern districts showed a tendency to decrease after 1993. Please list some reasons for that.

Increasing decentralization of authority and budget	26.7%
Increasing industrial relocation	13.3%
Strong investment support in the region	13.3%
Increasing regional assistance	10.0%
More limitation in Bangkok	6.7%
Workers go to work in Bangkok and send money back to Northeastern districts	3.3%

Japanese scholars and experts answers to this question included "Bangkok's congestion, worsening of environmental conditions and spill-over from Bangkok" is the top of the answers, followed by "the improvement of infrastructures in each province such as roads", "income redistribution by sending money from emigrants", "effects of international trade with Lao and Cambodia" and others.

(8) What do you think is most necessary to decrease the income disparities mentioned above?

There are two answer groups: one is to request decentralization of government functions, education, and financial facilities to each region and the other is to promote local residents' efforts by upgrade their capabilities.

The first group includes:

- Decentralize government offices and educational institutions
  - More incentives to investors
  - School and university distribution
  - Promote central market, wholesale and retail markets in the region
  - Relocate production base in the region by offering more incentives
- Decentralize fiscal authority to the local community

The second group covers:

- Development of occupational training to improve labor skills
- Development of and investment in utilization of existing natural resources
- Support of cooperatives settlement
- Arrange meetings between Thai and foreign investors
- Agricultural plan in line with industrial production plan
- Low-cost production support
- Sufficient and efficient infrastructure service development
- Support off-farm employment
- Upgrade skills and efficiency of personnel and labor in both agricultural and industrial sectors to meet the market demand
- Provide financial support to cottage industries
- Promote rural employment
- Strengthen community development
- Reform local financial system
- Restructure agricultural production to focus on market competitiveness

(9) Do you think that the phenomena of income disparities among various areas and their adjustment are a domestic problem to be solved by Thailand alone and that foreign support is not necessary?

	(Thai)	Japanese
Thai government alone can solve the problem.	54.4%	1person
Thai government alone cannot solve the problem.	45.6	7

(10) If there would be certain activities, the Japanese government, especially JICA, should undertake to reduce the income disparities between the capital and the rural areas, please propose them.

- Human resources development 18.2%
- Infrastructure development 15.2%
- Provide assistance and education to rural population and the underprivileged 12.1%
- Develop local government personnel 9.1%
- Strengthen the community by providing development fund to set up pilot project by JICA 9.1%

2-2 Strategic areas and new business for future development of the Northeastern

(11) When we asked "Are there any promising projects contributing to the future development of the Northeastern Region? Do you have any proposal to foster such project?" There are many answers from the Thai side and Japanese side. The followings are some of them.

- agricultural development, especially water resources
- industrial development, especially agro-industrial and plastic product factory and SMEs
- upgrade cottage industries
- promote tourism services with neighboring countries
- promote garment industry for export
- prepare labor incentive project using local raw materials

Japanese scholars and experts listed up the following industries as strategically important for the future development of the Northeastern Region.

- agro processing: oils and fats, luxury goods, stockbreeding products and their exportable products
- machine, auto-parts, engineering

technology intensive light industries: plastic products, ornaments, handicrafts

local industries

design industries

sericulture, food processing, industrial use of rock salt and caustic potash soda

IT related industries

3. Strategic areas of Japan's ODA can contribute to Northeastern development

(1) What kind of future ODA activities by Japan for Thailand do you expect? Which sections should be the target and what kind of concept should be taken?

There are so many answers both from the Thai side and Japanese side. The followings are some of the important directions.

Thai respondents: human resources development focusing on education, public health and quality of life

- infrastructure development

- focus in people rather than hardware
- science and technology development
- agriculture that focuses on agricultural workers rather than government official
- information system development
- education network development
- environment protection program

Japanese respondents: strengthening the system and organization of the financial and trade sector including software

- development statistical improvement
- the promotion of cooperation with Indo-China countries
- dispatch long-term experts to planning agencies in strategically important countries and send
- sort-term task force experts (Should these two sentences be combined, and 'sort' may be 'short'
- establishment of cultural exchanges and human networks
- industrial strengthening in cooperation of Japanese affiliated companies

(2) What kind of future support by JICA for Thailand do you expect?

Thai respondents: Human resources, quality of life and education

- Skill development
- Academic cooperation focussing on human resource development and community strenthening
- Environment protection
- Monetary and human resource support in high technology transfer
- Research and development to upgrade cottage industry and industrial development
- Industrial relocation and technology transfer to build up competitiveness capability
- Focus on activities which enhance community participation

Japanese: Human exchange from policy to grass-roots

Selective and strategic cooperation measures rather than all-round ones

Support NGO and NPO activities

Inter-Ministerial linkages and utilization of local government

(3) What kinds of projects of human resource development and education projects are effective? Please write down your opinion as concretely as possible.

Thai respondents: Human resources, especially labor skills, medical care and distance education

- community development and on-the-job training including training in Japan as trainee
- water resources
- agricultural cooperatives support
- social development and infrastructure construction fund project in rural area
- agricultural produce market and agro-industrial processing for export
- land reform
- tourism

Japanese: upgrade managerial capabilities of local administrators

- local industries, agro-industries and the organization of local residents

- higher education support
- health and medical care
- support the south-south cooperation
- utilize silver (old age) volunteers

(4) Are there any useful projects that JICA should carry out to modernize the rural districts?

Thai respondents: managerial development of SMEs in agro-processing industries

Strengthening local administration

tourism development and local cultural exchange

- water resource development
- Medical and public health
- Production and marketing information and local cultural center
- Develop language skill
- Community Cooperatives support

Japanese: Upgrade program of administrative capabilities for local government officials

- vocational training school (agricultural products and food processing, store, and marketing)
- decentralize university education system and extension service
- information network of regional and local activities

(5) Are there any projects or topics Japan and Thailand could carry out together to help the development of Indochina and Myanmar?

Thai respondents: Mekong River development (water resources development, agriculture, international trade, tourism etc.)

- trade, industry and tourism focus on regional culture, energy, infrastructure and public health
- rail road network and all infrastructure supporting trade
- environment protection
- human resources development : set up medical project to prevent epidemic diseases
- develop education to meet the standards
- jointly develop fishery and forestry
- information technology
- management and administrative skill development including production and marketing
- drug abuse problem

Japanese: joint survey, planning, implementation of transportation, telecommunication, and water resource development projects

- strategic industrial selection for international division of labor
- transfer of successful projects in Thailand to which Japan provided aids in agriculture, agro-
- industries, forest preservation, animal breeding, public health, road, telecommunication, waterworks, and others

* This questionnaire survey was mainly been conducted in the Northeastern provinces. We are heavily indebted to the staff of the Regional Development Center of NESDB in Khon Kaen. We would like to express heartfelt thanks to those who helped to our project.

Questionnaire to Thai Intellectuals on the JICA's cooperation in Thailand

(November, 2000: JASID)

Could you fill your name and position ? (If you don't want to mention your name, just leave it in blank)

Your name:( )

Your position:( )

Date:( )

Could you answer the following questions ?

1. Estimate of Japans Official Development Aid (ODA) for Thailand (please confer to the included list of the "Achievements of Japans ODA activities for Thailand")

(1) How do you estimate the activities of Japans Official Development Aid (ODA) for Thailand? Mark your answer with ○.

Answer: 5 = very high, 4 = fairly high, 3 = ODA is doing passably well, 2 = low, 1 = very low

(2) Please list up 3 projects out of Japans ODA activities for Thailand highly appreciated by you.

Answer: 1. ( )
2. ( )
3. ( )
4. none (reason:)

(3) How do you estimate JICA activities like technological cooperation, support by gratis machine parts and so on?

Answer: 5 = very high, 4 = fairly high, 3 = JICA is doing passably well, 2 = low, 1 = very low

(4) Please list up 3 projects out of the JICA activities until now highly appreciated by you.

Answer: 1. ( )
2. ( )
3. ( )
4. none (reason:)

(5) JICA carried into effect cooperative projects as listed up separately in the northeastern districts of Thailand. List up 3 projects you know. Mark the project you specially appreciate with ◎. If you know none of these projects, mark answer 4 with ○.

Answer: 1. ( )
2. ( )
3. ( )
4. I know none of them (reason:)

(6) Do you think that the JICA cooperative activities in the northeastern districts of Thailand contributed to the decrease of the earning differentials between the capitol and the northeastern districts?
Answer: 5 = very highly, 4 = fairly highly, 3 = not evidently, 2 = not highly,
1 = almost not

(7) As how big to you consider the present earning differential between the capitol and the northeastern districts? Assuming the income of one person in the northeastern districts as "1", how much higher is the income in the capitol of Bangkok compared with "1"?
Answer: 1) twice as much, 2) 5 times as much, 3) 8 times as much, 4) 10 times as much, 5) 15 times as much

(8) What are according to your opinion the reasons for the increase of the earning differentials between the capitol and the northeastern districts? Rank the main reason as No.1, the second important reason as No.2 and so on.
( ) Concentration of business and industry in Bangkok.
( ) Concentration of talented persons in Bangkok.
( ) Concentration of foreign investments in Bangkok (including the problem of an environment easy to settle down for foreigners)
( ) Discrepancy between economical fundaments like quality of roads and communication lines
( ) Discrepancy of information
( ) Center orientated politic of the government with lack of contribution to the needs of the provinces
( ) others ( )

(9) Earning differentials between the capitol and the northeastern districts were continuously growing until 1993 and showed a tendency to decrease after then.
Please list up some reasons for that.

(10)What do you think is mostly necessary to decrease the earning differentials mentioned above. (free answer)

(11)Do you think that the phenomena of earning differentials between various areas and their adjustment is a domestic problem to be solved by Thailand alone and that foreign support is not necessary?
Answer: ( ) yes, ( ) no (continue to question 12), ( ) no opinion

(12)If there would be certain activities, the Japanese government, specially JICA, should take to diminish the earning differentials between the capitol and the rural districts, please propose them. (free answer)

Achievements of Japan's ODA activities for Thailand
(Attached to the questionnaire)

1, Japan's ODA Disbursements to Thailand

($ million)

Year	Grants			Loan Aid		Total
	Grant Aid	Technical Cooperation	Total	Gross	Net	
1994	27.36	137.36	164.72	425.34	217.83	382.55
1995	14.75	147.46	162.21	744.90	505.16	667.37
1996	1.86	135.41	137.27	722.91	526.73	664.00
1997	1.58	127.07	128.65	530.20	339.61	468.26
1998	18.57	121.74	140.31	624.30	418.12	558.43
Total	897.20	1,726.89	2,624.09	6,931.60	4,953.76	7,577.85

Source: Japan's Official Development Assistance Annual Report 1999, Ministry of Foreign Affairs, Japan

2, Amount of DAC Countries' ODA Disbursements to Thailand

($ million)

Year	1		2		3		4		5		Total
1995	Japan	667.4	Australia	25.3	Austria	22.3	Germany	18.2	Denmark	15.3	826.7
1996	Japan	664.0	Germany	23.2	Australia	20.5	Sweden	19.0	Denmark	19.0	802.6
1997	Japan	468.3	Germany	35.3	Denmark	28.9	Australia	13.9	Canada	9.9	600.8

Source: Japan's Official Development Assistance Annual Report 1999, Ministry of Foreign Affairs, Japan

3, JICA's cooperation to Thailand in 1998

(person)

Field	Personal Cooperation				Amount	
	Acceptance of technical trainee	Dispatch of technical specialist	Dispatch of research group	Dispatch of JOCV*1	(\ 100million)	%
Planning, Administration	2,809	67	41	13	10.84	10.6
Public Enterprise	155	134	131	1	23.62	23.0
Agriculture, Forestry & Fisheries	123	109	79	22	17.84	17.4
Mining & Industry	74	79	72	5	11.63	11.3
Energy	19	6	1		0.78	0.8
Commercial & Tourism	236	1	8		2.70	2.6
Human Resource	194	55	11	20	7.01	6.8
Health & Mecical Care	141	41	20	12	8.57	8.4
Social Welfare	1,801	13	4		16.34	15.9
Others	20	8	59		3.19	3.1
TOTAL	5,572	513	426	73	102.52	100.0

Source: "JICA Annual Report", Japan International Cooperation Agency, 1999
*1: Japan Overseas Cooperation Volunteers

4, Japan's ODA to Thailand: by Type and Project

(\100 million)

Fiscal Year	Loan Aid	Grant Aid	Technical Cooperation
1995	* Third Stage Expressway Construction Project (138.83) * Wat Nakorn-In Bridge and Connecting Road Construction Project (72.26) * Regional Road Improvement Project(II) (133.74) * Pasak Irrigation Project (30.38) * Thailand-Japan Technology Transfer Project (73.08) * Rural Development Project(III) (Loan for the Bank for Agriculture and Agricultural Co-operatives (BAAC)) (83.50) * Transmission System and Substation Development Project (Fifth Stage) (84.74) (Total 616.53)	* Musical Instruments and Audio-Visual Equipment to the Thammasaat university (0.50) * Emergency Relief (0.20) * Grassroots Project(22 projects) (1.18) (Total 1.87)	(Total 79.78)
1996	* Track Rehabilitation Project(III) (79.73) * Second Bangkok International Airport Development Project (III) (312.23) * Third Stage Expressway Construction Project(II) (166.12) * MRTA Initial System Project (II) (265.86) * Wat Nakorn-In Bridge and Connecting Road Construction Project(II) (100.00) * Agricultural Credit for Rural Development Project (IV)(BAAC Loan) (42.28) * Distribution System Rehabilitation Improvement Project (168.00) * Rural Health Infrastructure Strengthening Project (49.59) (Total 1,183.81)	* Supply of Equipment for Special Education for Disabled People to the Office of Rajabhat Institute Council (0.46) * Supply of TV and Video Programs to Non-Formal Education Departments, Ministry of Education (0.49) * Grassroots Project(21 projects) (1.60) (Total 2.56)	(Total 95.07)
1997	* Metropolitan Power Distribution Project (143.04) * Second Bangkok International Airport Development Project (II) (9.64) * MRTA Initial System Project(Blue line) (II) (326.59) * Industrial Ring Road Construction Project (148.87) * Pak Kret Bridge and Connecting Road Construction Project (68.07) * Agricultural Credit Program for Rural Development (V) (123.00) * Transmission System and Substation Development Project (155.18) * Small Industry Development Project (35.08) * Environmental Protection Promotion Program (II) (50.00) (Total 1,059.47)	* Support of the Students Studying in Japan under the Thai Governmental Scholarship (1.02) * Supply of Audio-Visual Equipment to the National Science Center for Education (0.50) * Grassroots Project(22 projects) (1.35) (Total 2.87)	(Total 89.05)
1998	* Social Investment Project (134.12) * MRTA Initial System Project(Blue line) (I)(II) (297.92) * Regional Road Improvement Project(II) (16.00) * Transmission System and Substation Development Project(4) (4.77) * Power Distribution Reinforcement Project (5-5) (15.65) * Track Rehabilitation Project(1)(2)(3) (29.79) * MRTA Initial System Project(Blue line) (III) (233.43) * Regional Development Program(II) (36.02) * Traffic planning and Management Project * Project for Human Resource Development Centers for Industries (25.73) * Project for Revitalization of the Deteriorated Environment in the Land Reform Areas through Integrated Development (36.17) * Agricultural Credit Program for Rural Development and Job Creation (183.60) * Industrial Sector Strength (120.94) * Economic Recovery and Social Sector Program Loan (300.00) (Total 1,475.62)	* Non-Project Grant Aid (20.00) * Grassroots Project(23 projects) (2.12) * Audio-Visual and Lighting Equipment to Silpakom University (0.47) (Total 22.59)	(Total 102.52)
Accumulated Total from 1967	16,654.12	1,614.28 * Acceptance of technical trainee: * Dispatch of technical specialist: * Dispatch of research group: * Dispatch of JOCV: * Provide of facilities: * Technology cooperation project: * Development research:	1,618.49 18,968 people 6,213 people 10,760 people 341 people \33,217.8 million 83 cases 194 cases

Source: Japan's Official Development Assistance Annual Report 1999, Ministry of Foreign Affairs, Japan

5, JICA Project in Northeast Thailand

Projects	Terms	Counterpart Agency
Regional Development Plan for the Lower Northeast and the Upper East Regions in the Kingdom of Thailand	1991-93	National Economic & Social Development Board (NESDB)
Agricultural Cooperative Promotion	1980-81	Cooperatives Promotion Dept., Min. of Agriculture and Cooperatives
Construction Project for the Agricultural Regional Cooperative Training Center	1984-85	
Agricultural Cooperative Promotion Project	1984-91	
Project for the Establishment of Large-Scale Nursery Centers in the Northeast Thailand	1991-92	Royal Forestry Dept. Min. of Agriculture and Cooperatives
Reforestation and Extension Project in the Northeast of Thailand	1992-96	
Institute for Skill Development in the Northeast of Thailand Project	1977-81	Former Dept. of Labor, Min. of Interior
Establishment of the Ubon Institute for Skill Development	1987-88	(Dept. of Skill Dev.,
The Ubon Institute for Skill Development Project	1988-93	Min. of Labor and Social Welfare)
Establishment of Public Health Care(PHC) Training Center	1982-84	Min. of Public Health
The ASEAN Training Center for Primary Health Care (ATC/PHC)	1982-89	Mahidol Univ.
Community Health Project	1991-96	Health Planning Div./Rural Health Div., Office of Permanent Secretary, Min. of Public Health
The Project for Bridge Construction in Rural Region in Northeast Thailand	1989-90	Public Works Dept., Min. of Interior
Road Development in the Northeastern Region	1981-82	Dept., of Highways,
Road Development in the Northeastern Region (PhaseII)	1984-85	Min. of Communications

Source: JICA Documents

［**Reference 1-2　Infrastructure Sector**］

Executive Summary

1. It was revealed that the construction of road sections that JICA suggested brought about greater use of a variety of farm inputs such as fertilizer and insecticide. Few cases were reported in which new crop species started to be used following road construction. It is generally the case that the access to market has been improved. Many villages visited had no access to market until the roads were constructed.
2. The construction of the suggested road has failed to bring about the degree and extent of change expected in the Feasibility Study because a variety of bottlenecks were not resolved. Such bottlenecks include, lack of knowledge, water supply, farm size, product variety, and distance to market. Except where such bottlenecks have been resolved by additional intervention, farm production has failed to develop beyond the level attained as the initial impact.
3. Road development has yet to bring about a sustained industrial development either, except where additional intervention was attempted. Besides rice mills, few factory set-ups have been identified in the provinces visited. Again, several bottlenecks have hampered firm set-ups, such as short supply of general infrastructure, distance from/to market, lack of expertise, weak local demand and lack of finance for local entrepreneurs. Also contributing is the comparative advantage of the region in rice-mill industry which distracts local entrepreneurs investing in other types of business.
4. Tourism is one of the most promising industries in the region, of which the development has been hampered by adverse policies. With favorable factors, tourism is expected to develop in the region if adverse policy is lifted, to which the road constructed would contribute significantly.
5. Emigration of labor has decreased in villages where double cropping that started following road construction has both stabilized and increased farm income. However, where double cropping and the subsequent increase of farm income have failed to occur, which presumably applies to the majority of villages in the region, emigration rather increased. Emigration is found to play a positive role in stabilizing the otherwise tenuous rural life, as farmers are able to count on their sons and daughters in the city to cope with emergencies.
6. General life conditions were found to have improved in villages visited, and villagers appreciated that. Especially highly valued is the improved access to medical institutions and a variety of utilities that has become available following road construction.
7. Land speculation is found to be a factor that has prohibited the maximization of the potential benefit of road construction. As farmers have sold their land to speculators and the land is now in the hand of financial institutions as bad debt, much land was found to remain idle instead of being exploited for productive purposes. Land along the highway was speculated and prohibits villagers along the road from embarking on businesses targeting road users. Though road construction is not directly responsible for land speculation, policy makers are responsible for their lack of taking preventive measures.

8. Given the above analyses, it is fair to say that the Feasibility Study failed to assess the 'social impact benefit' correctly. The construction of road sections that the Study recommended indeed brought about positive change, such as improved accessibility to medical institutions. That the suggested road construction failed to initiate sustained expansion of farm production as pointed out above, however, indicates the over-evaluation of expected benefits based on which the project was justified both economically and financially. Such mis-estimation of benefits results from uncritical and ungrounded assumptions employed about the response of 'beneficiaries'.
9. It is crucial for the sake of an appropriate assessment of social impacts to explore the felt needs of categories of 'beneficiaries', and the risks and benefits facing each of them. This is because whether or not a project brings about expected change to the local economy depends on the reaction of 'beneficiaries', whose behaviors are hard to predict for anyone not familiar with the local ideological/material environment. It is also because such assessment reveals the dynamics within the local society, which on the one hand may prohibit expected change, while on the other hand can work as resources to exploit for the successful achievement of project goals.

Methodology

A total of 5 villages were visited, four in Nakon Ratchasima, two in Khon Kaen and one in Surin. Two villages in Nakon Ratchasima were located along the section of Highway 24 which JICA suggested for improvement. The other two were located near route 2160. A tarmac road had already been constructed by the Department of Accelerated Rural Development in 1989 near one of the two villages, but another village had only a rough earth road nearby which became impassable during the rainy season, until the road which JICA suggested was built. The two villages visited in Khon Kaen are along route 2199 and 2183 respectively. The village visited in Surin was along 2261.

Due to the limitation of time, focus group discussion (FGD) was not conducted in the 7 villages. They were conducted in three villages, all in Nakon Ratchasima, and two in Khon Kaen. In the other two villages, villagers were interviewed and asked similar questions to those asked during FGD. Both FGD and group interviews were held near the house of village leaders under their collaboration. Poor villagers were called individually in their particular houses for interview.

Three officers of Surin Province, namely, an industrial officer, tourism officer and agricultural officer, as well as an industrial officer of Buri Rum Province, were interviewed. Interviews were also conducted with both district officers of four districts of Nakon Ratchasima namely Chok Chai, Pak Ton Chai, Si Kiu and Khong; and district officers of Chom Phra and Sikhorapum in Surin.

Businesspersons of private firms were also interviewed, such as managers of Takahashi Co., Thai Tech, and one rice mill manager of Surin. The former two companies are located near the cross-section of Highway 24 and 340, while the rice mill is along the route 2261. A representative of the Non Governmental Organization “NET” which has been organizing local residents of the Surin province, to conduct long-distance trade of handicrafts, was also called for interview in the HQ near Surin town. The directing manager of a para-statal rubber production promotion organization, Rubber Replanting Aid Fund, was also interviewed in its HQ in Buri Ram town. Interviews with staff of four gas stands were also conducted along Highway 24.

A village survey was conducted in 5 villages for both 1988 and 1998. Two of them referred to villages in Khon Kaen, namely, Ta Kraserm and Non Soong. The other three villages about which village surveys were available are: Nong Bua Kong; Non Ya Kao; and Kok, all of which are in Nakon Ratchasima. All in all, the analyses below are based on the group discussions and group interviews with villagers of seven villages, and private talks with villagers on the street or in shops, as well as interviews with the relevant officers in charge and the private sector businesspersons mentioned above.

Research Findings

1. Agricultural input

It is the general assumption employed in both the Feasibility Study (F/S) and Masterplan Study (M/S) that the construction of the inter-regional highway (e.g. Route 24) and that of provincial roads should mutually reinforce the positive impact and boost farm production of the Region. It is considered that the development of road networks should both make cheap fertilizer/insecticide available to local farmers, and allow their products to reach market outside the locality, hence boosting farm production. Road construction has actually increased farm production in some villages visited as expected.

A case in point is sugarcane production which started in many villages visited after road construction. According to villagers, they changed from cassava to sugarcane when the road constructed enabled them to transport sugarcane to nearby sugarcane processing plants (which themselves were set up along the roads JICA suggested), because the latter fetched greater profit. Application of fertilizer also increased the yield, at least for the time being. Although some paddy fields were transformed into sugarcane, it was the right decision given the erratic rainfall of the region in general, which makes rice cultivation not very secure. (in a village of Nakon Ratchasima, rice production had been less than half the usual for 3 to 4 times over the last ten years due to rain failure)

Another interesting finding is the recent development of rubber plantation in this region. Since the early 1990s, rubber plantations have been tried in the Northeastern region with the aid of government subsidy. According to the manager of the para-statal organization, Rubber Replanting Aid Fund, about 600,000 rai of land is now under rubber plantation in the region. The development of roads that JICA suggested contributes little to the development, as most of the rubber produced are transported to the Eastern seaboard through route 340 instead of taking the road section of Highway 24 that JICA suggested for up-grading. It is expected, however, that the linkage of local rubber plantation and local factories manufacturing goods from rubber tree wood will be strengthened in the future. Currently, rubber tree wood for manufacturing is transported from the Southern region because the rubber trees of the plantations in the Northeastern region are still young and used only to produce rubber. They will be cut down and used as raw materials for the manufacturing industry once they reach maturity. Road development, including that suggested by JICA, should serve for the development of the rubber-related industry by effectively connecting rubber plantations, factories of rubber products and the market.

2. **Bottlenecks to further increase of farm production**: because several bottlenecks other than poor road conditions remain to be solved, however, the road construction has failed to bring about the degree and extent of changes expected in F/S to both local and regional farm production.

i) Bottleneck of knowledge

As many farmers, especially the elder population do not know appropriate usage of

fertilizer/insecticide, they tend to apply such inputs too much, and the yield has recently started to decline, according to villagers.

ii) Bottleneck of water supply

Water supply is the single most crucial determinant of farm production, according to farmers, and road construction has only limited impacts in increasing output. Farmers interviewed mentioned that they could not produce rice in the dry season even though they might profit from doing so unless an irrigation system was used. Hence the increase of output, even when it is there, is limited to that of wet season cultivation, of which a further increase is not possible unless appropriate and reliable water supply is available even in the dry season so that farmers are able to invest in dry-season farming with confidence. The critical role that irrigation plays is illustrated in the village of Khon Kaen, where an irrigation system was introduced which brought about a considerable change showing a stark contrast with other un-irrigated villages, as will be mentioned later in the emigration section. As irrigation systems require massive investment which is usually beyond the capacity of individual farmers, on the other hand, external intervention should be required if only to organize farmers.

iii) Bottleneck of farm size

The majority of farmers in the villages visited, and in Northeastern Thailand in general, are small peasants whose farmlands are too small to rotate crops among seasons. As a result, the soil condition is easy to deteriorate, especially when sugarcane is produced in the same yard over a long period of time, even without the excessive application of fertilizer. Moreover, they cannot afford various initial investments such as tracks for the transportation of sugarcane. Many farmers interviewed mentioned that the quality of their products often deteriorated, as they could not transport them in an appropriate time. Being small-scale producers, the majority of farmers in this region have been prohibited from tapping the potential benefits that road construction opened to them.

This is exemplified by the fact that only in one village visited in Nakon Ratchasima was a group of progressive farmers found who did not miss the opportunity opened by road construction and started sugarcane plantation in a large and sustainable scale. Soon after the road had been constructed and transportation of large vehicles to and from the villages made possible, they started or expanded sugarcane plantation by either purchasing/renting the land of smallholders, and/or confiscating the land when smallholders to whom they lent money failed to repay the debt. They bought tracks for transportation to nearby sugarcane plants, so as not to damage their products. They inter-crop sugarcane with other kinds of products, and prevent soil deterioration. As such, they are managing promising plantations on a sustained basis, and form an exceptionally rich class of farmers within the locality who own not only tracks but also satellite TV.

As villagers pointed out, however, the process of capital accumulation that has led to the present prosperity would not have materialized unless they had long served as local

moneylenders and already confiscated large tracts of land from smallholders. That is, the exceptional 'success' of a handful of farmers in this village would have been difficult unless they had already accumulated a degree of capital when the road was constructed. It follows, moreover, that the spontaneous development of indigenous planters who can afford to tap the benefit of road development on their own initiative is difficult unless a degree of polarization is already underway. As not many villages in Northeastern region have seen such polarization (no villagers in all the villages visited except this village pointed out the presence of a considerable disparity between the rich and the poor), the government initiatives to nurture such progressive farmers should be important with a view to local agricultural development. A case in point is a group of rather small-scale farmers in Surin and Buri Rum provinces (and Si Saket province also, according to agricultural officer of Surin province) who have tried organic farming under the initiative of the local government, which will be reported below. Such government initiative is quite important, moreover, because capital accumulation of a class of rich farmers, if unchecked, may well result in the impoverishment of the poor segment of villagers that constitute the majority of the rural population.

iv) Bottleneck in the variety of products

Farmers in the villages visited produce few varieties, and traders are found not to pay a visit to their villages even after the road (both provincial and regional) was constructed and their access to such villages was improved. This is because traders are able to buy the same kind of products in villages much closer to them. Unless the particular products found in a particular village are demanded in the market to a degree that convinces traders to bear the transportation cost, few of them would visit distant villages, even if good roads were available.

Many traders are found to travel all the way from Bangkok to Surin province to buy organic food that does not use synthesized fertilizer/insecticide, neglecting all the other villages in between, like those along the recently upgraded Route 24 in Nakon Ratchasima. This is because, according to the agricultural officer of Surin Province, there is a good degree of demand for organic farm products, enough to convince traders to travel all the way to Surin. While no financial subsidy was provided to farmers who engage in organic farming, the Provincial Governor is active in proliferating knowledge and skills of the 'integrated method' in which organic farming using farmyards plays a key role. A number of farmers are also found to have applied to the provincial government for financial assistance for starting organic farming as a group. Without such government initiative, limited financial capacity and lack of knowledge will continue to prohibit small-scale farmers engaging in the production of alternative methods/items even though they are attractive and profitable enough for outside traders. Opportunities opened by road construction, then, will fail to bring about the expected impact on the agricultural sector.

v) Bottleneck of outlet

Small-scale farmers cannot sell their paddy wholesale directly to the market but sell them to

nearby rice mills. And rice mill owners interviewed insisted they bought only jasmine rice and no other kind, because the former fetched greater profit. As such, farmers are reluctant to try rice varieties that are more resistant against drought. Farmers do not mix the production of jasmine rice with that of other varieties even though it will protect them from the devastating effect of drought, because they cannot sell the latter kinds to rice-mill. As a result, complete crop failure is not unknown, according to villagers of Kong District of Nakon Ratchasima.

Unless such bottlenecks are overcome, increased farm production that resulted from easy access to markets following road construction will not only fail to expand but may also decline unless action is taken, especially against excessive use of fertilizer/insecticide in a small plot of farmland. Unless the prospect is high that these bottlenecks are resolved, farmers will continue to invest in such measures as migratory work in Bangkok or Taiwan or even luxury goods like TV or vehicles, rather than in farming, because the latter continues to be both risky and not very profitable.

Surin province, moreover, is found to stand in a weaker position compared with Nakon Ratchasima and Khon Kaen. Both the latter provinces enjoy higher infrastructure supply and proximity to Bangkok, both of which are absent in Surin. The high growth rate in the two provinces compared with Surin, even though the latter province has seen a higher degree of road development than that of Khon Kaen simply means that road conditions are not very relevant to sustained economic growth, at least in contemporary Northeastern Thailand: road construction does not automatically fuel sustained economic growth unless other bottlenecks such as the above have been resolved. Otherwise, road construction brings about only limited impact on agricultural production, which will not expand further without initiatives to create such changes.

3. **Industrial development**: road development has failed to boost industrial development, at least when this survey was conducted. Not only was a handful of factories set up along highway 24, few if any factories were established in Surin province, except rice mills. Again, this is because several important bottlenecks have yet to be overcome.

i) Bottleneck of general infrastructure supply

Managers of two factories visited near Highway 24 mentioned that unreliable water supply was the greatest reason that discouraged factory set-ups in the area. They invariably pointed out the advantage of running a factory in nearby industrial zones where all the necessary infrastructures, from power/water supply to easy access of air travel, were available. Even when transportation costs to and out of markets are considerably decreased following road construction, entrepreneurs will not set up their factories if other factor prices remain expensive. The importance of infrastructure in the choice of sites for factory set-up is demonstrated by the fact that most of the places where a gathering of factories was found along Highway 24 were where water was abundantly available.

ii) Bottleneck of distance: Officers in charge of industrial development in Surin and Buri Rum provinces mentioned that their provinces were weak against Nakon Ratchasima in industrial development. This is because, according to them, their provinces are still quite far from major strategic places like Bangkok and the Eastern Seaboard even when a good road network is established. Idle land and cheap labor are still abundantly available in Nakon Ratchasima. (Quite a lot of migrant workers stop in this province and in Khon Kaen to find jobs, according to the director of one factory visited, instead of going all the way out to Bangkok.) Entrepreneurs, then, have no reason to set up their factories in further provinces, except when, say, they are from the locality orignially and/or for some reason find it meaningful to start their business there. Such reasons include: raw materials are available from within the locality, and some sort of concession or subsidy is available from the local government. While road construction, especially that of highways, reduces inter-provincial transportation cost, it does not necessarily bring about factory set-ups in places distant from market, until areas closer to strategically important places are fully occupied and/or incentives are offered to entrepreneurs to set up business there.

iii) Bottleneck of knowledge/experiences

While major capital investors in Bangkok or multinational firms find few if any reason (except one very important reason, that is, affiliation with local politicians) to open factories in provinces deep inside the Northeastern region, local entrepreneurs lack experience and skills in running modern businesses. This factor was underlined by industrial officers of both the provinces of Surin and Nakon Ratchasima, and was also agreed by a rice mill owner in Surin. To note is that local entrepreneurs are not without business opportunities, which expanded following road development. While local entrepreneurs may surely lack in knowledge and confidence about how to do well against Bangkok-based establishments, they are able to invest in rice mills. As highly demanded varieties of rice are locally produced and so cheaply available, it makes sense that local entrepreneurs choose to invest in rice mills instead of other kinds of business except those which serve a purely local market (such as a car garage). Hence the majority of large firms recently founded (more than two thirds of them, according to the industrial officer) in Surin are rice mills.

iv) Bottleneck of local finance

Knowledge and experience that are abundantly available in the Northeastern region are about handicrafts. Hand-woven textiles and other kinds of handicrafts, however, are produced by small-scale farmers in a highly traditional way. As a result, their products are rarely transported out to major markets. Again due partly to the distance, Bangkok handicraft dealers do not come all the way to Surin and Buri Rum because products of similar but more sophisticated quality are available near Bangkok, according to the industrial officer of Surin. Unorganized, small-scale producers cannot bring their products to major handicraft markets in Bangkok. Under the initiative of several NGOs, however, handicrafts started to be brought to

markets in Bangkok, and the skill level of producers has picked up since then to some degree. Dealers visit villages from Surin town nowadays to buy handicrafts, which they then transport to Bangkok where they sell them to retailers. Despite the recent development, such handicrafts are still produced in an extremely small scale, and the issue of the weak financial base of producers continues to constrain the production.

v) Bottleneck of local demand

It is also important to note that local demand for manufactured goods is low, compared with that of Bangkok and international markets. While Bangkok-based retail chain shops are found in several places in the Region and sell sophisticated commodities to local consumers, they are not many yet. For example, there is no such chain store in Surin town, though two are in neighboring Ubon Ratchatani. While part of the reason is that the local retailing industry still maintains its monopoly, it is also true, as industrial officers of Surin mentioned, that effective demand for sophisticated goods is not very high. Consumers in Nakon Ratchasima along 2160 mentioned they had started to purchase a variety of commodities which had not been available before the road construction, like TV sets. They, however, find it hard to purchase such commodities without the assistance of their children out on migrant labor, which indicates the general weakness of the purchasing power of consumers in the area. Under such conditions, not only development of commerce is necessarily held back, entrepreneurs will also find it unwise to invest in businesses within the locality, as local demand is low while distance to major market is considerable.

Given these bottlenecks, it is not surprising that the construction of both provincial and inter-provincial roads fails to boost spontaneous industrial development in both Nakon Ratchasima and Surin provinces, except the rice mill industry. This does not mean that rice mill set-ups are insignificant for the betterment of local economy. Farmers are now able to sell their paddy more easily, and the impact is significant for those who reside in villages where no rice mill had been found nearby before road construction. As they are now able to sell their paddy from among a number of rice-mills, their bargaining power and hence their income has increased. When it comes to industrial development in general, though, road development alone is not enough.

The few set-ups of major factories reported in Surin, Buri Rum provinces and areas along Route 24 between Chok Chai and Si Kiu in Nakon Ratchasima were politically induced, in that they were set up either because of personal affiliation of the owner with influential politicians or following the call of local government. Unless the above bottlenecks are solved, spontaneous development of manufacturing industry is difficult to achieve, unless some sort of induction move, like the one pursued by NGOs for handicraft production, is taken. As the above mentioned bottlenecks also apply to other provinces in the Northeastern region in general, moreover, few factory set-ups should be identified in other areas except where either active induction efforts are made and/or the above bottlenecks are more or less overcome or irrelevant

for some reason (like in the industrial zone in Nakon Ratchasima where few if any of the bottlenecks are applicable). Unless, again, when the time becomes ripe or when efforts are intentionally made to induce change, road development will only pave the way for the future industrial development, the articulation of which may take time.

4. **Tourism**: development of roads especially highways is expected to boost tourism, which is one of the major industries in several provinces in Northeastern Thailand. Surin, together with its neighboring Buri Rum and Si Saket, is one such province. There are several points worth mentioning here about the impact of road construction and development of tourism in this region.

i) Development of the hotel industry in Surin

According to the officer in charge of tourism in Surin, the hotel industry has been developing since the Highway 24 was improved. This is not just because Surin is famous for tourism the development of which had been hampered by poor road conditions from major cities (together with the influence of the Cambodian civil war which subsided only in the last 10 - 15 years). This is also because Surin had a relatively better initial condition compared with its neighboring provinces: there was no luxurious hotel in the neighboring provinces, and tourists found it convenient to stay at hotels in Surin town from which to visit tourist spots in neighboring provinces. According to the officer in charge of tourism, several hotels were closed down in Buri Rum and Si Saket provinces recently as the hotel industry in Surin won out.

ii) Adverse central government policy

This development of the hotel industry and tourism in general in Surin, which both the industrial officer and tourism officer of the province said were the most promising engines of the development of this province, has failed to develop further because of adverse central government policy. Great tourist spots, including casinos, are located on the Cambodian side of the border and a visa is needed even for a Thai tourist to visit there. When casinos were opened last year, a large number of tourists came to Surin from all over Thailand and crossed the border to play. The Thai central government, when quite a large sum of Thai currency was found to have been flowing out to Cambodia, banned the free crossing of the border without a visa, against the previous agreement between the Thai and Cambodian government. Instead, a new policy was introduced that requires anyone who wishes to apply for a visa to cross the border to be a resident of the border district for more than 6 months, a de facto prohibition of tourism. This move, according to the tourism officer, had a devastating effect on the tourism development of the province, and the number of tourists who visit the province decreased as before. He hopes for the reversal of the policy and once it is attained, the development of tourism, which is one of the few promising industries of the province, will come about.

As physical distance is not overcome and the development of infrastructure cannot be attained

overnight, tourism is one promising area of investment throughout the region. Its development has yet to materialize, which is one of the reasons why such provinces as Surin and Buri Rum, of which the potential for agricultural and manufacturing development is far weaker compared with Khon Kaen and Nakon Ratchasima but that for tourism is not necessarily weak, have seen far lower economic growth so far.

5. Migration

The overall assumption employed in both M/S and F/S, though not so clearly stated, is that the development of road networks will stimulate local industry by allowing people in the influenced area to start/expand income generating activities in their own locality. It is therefore assumed that the disparity between Bangkok metropolitan area and the provinces will be subsequently narrowed. Whether things turn out as expected, however, depends on whether 'beneficiaries' actually act as expected.

What happened in the studied villages is by no means straightforward: emigration jumped in some places; it has increased only a bit in other places; it has even decreased in another village. In a village called Kok, Nakon Ratchasima, the number of villagers who had migrated out to other districts increased from 20 in 1988 against the total number of resident villages of 673, to 180 in 1988 against 753. Here, the ratio of out-migrants vis-à-vis village residents increased from 3.0% to 23.9%. In another village called Ta Kaserm in Khon Kaen, on the other hand, the ratio actually decreased from 3.3% to 1.5%. As the ratio of out-migrants was almost the same in the two villages in 1988, structural change that occurred since then should be responsible for the difference.

i) Creation of job opportunities within the locality

Comparing the features of emigration among villages illuminates interesting points. On the one hand, we have villages like Ta Kasern where emigration has subsided recently. Villagers of Ta Kasern indeed mentioned during FGD that emigration had been decreasing since road construction. This is due to the relative increase of income from farming: according to villagers, income has increased by 25 to 30% during last 6-7 years. This in turn results because rice is now produced twice instead of once a year, and improved transportation now allows farmers to bring their products to market/rice mill on their own and hence sell at a higher price than before. As the income from farming increased, not many villagers now migrate for jobs.

On the other hand, we have villages like Nong Ya Kao of Nakon Ratchasima, where the ratio of migrants against total villagers jumped from 4.8% to 19.3%. Emigration has increased despite the fact that many villagers are now employed by a few factories nearby. Villagers are also able to find employment within their village since sugarcane production started. In this village, creation of job opportunities did not necessarily curb emigration.

What contrasts the two villages is that, while the former village saw an increase of farm

income, the latter saw an increase of job opportunities. Increased job opportunities may well have also resulted in the increase of income level in the latter village. Being unskilled laborers whose job security depends heavily on conditions that are beyond their control, such as general economic trends and weather, however, villagers would find such local job opportunities unreliable. It is especially so when compared with job opportunities available in Bangkok where, given the size of the economy, even unskilled workers can far more easily find alternative jobs. Unlike those farmers who have seen their income increase out of double cropping, farmers facing increased, yet still unreliable, local job opportunities will find it more rational to migrate out instead of relying on the local job market.

Coupled with this is the demographic/personal pattern of migration. Villagers interviewed mentioned that younger members of households with education tended to go out for migrant work while elder members remained in the village and engaged in cultivation. This is by no means surprising. Many younger villagers are found to migrate out to try their fate, without regard to income level and local job opportunities. Uneducated others who should constitute the majority of villagers, especially those who have reached middle-age, on the other hand, have good a reason to remain within their villages and do the farming, if the income from farming is deemed as both sufficient and reliable enough. Fundamental here is income stability rather than mere job opportunities or absolute income level, which may or may not be increased following road construction depending on a variety of factors such as those argued in preceding chapters.

iii) Income from migrant workers plays an important role for the survival of villagers

To say that emigration in search of jobs has subsided in villages where income from farming has increased on a sustained basis should not mean that emigration is disappearing even in such villages. Emigration does and will continue to play an important role in the local economy, because the well being of villagers depends quite a lot on migrant labor. In addition, as many villagers mentioned, they buy a number of commodities like TV sets with the assistance of their children out for migrant labor, and they count on migrant workers for emergency assistance. In good months, landless people are able to raise more than enough money to survive (the daily wage of farm labor is B. 100 in all the villages visited, and the landless farmers interviewed invariably mentioned that they were able to find employment almost everyday in good months). In bad months like when they are sick, however, they may not be able to get even a single baht. They mentioned, however, that their children working in Bangkok, if informed of the emergency, usually raise money and send it to them. Road construction, therefore, works to stabilize the lives of the poor. As the opportunities to gain cash are not abundantly available locally, even villagers who have seen the general increase of farm income would find it important that they can count on somebody out on migration who is able to raise money.

The role of emigrants as reliable security against emergency should be far more significant in villages where relative income level has not been so increasing. Villagers in Nong Bua Kong of Nakon Ratchasima maintained that the relative income of agricultural labor was almost

the same as 10 years ago, if increased daily expenditure was taken into account. Agricultural job opportunities, also, are as unreliable and fluctuating as they were about 10 years ago. That their children are out for migratory labor nowadays means their life is far more secure because they can count on their children for emergencies even if they may not send money often. Road construction has resulted in the stabilization of their otherwise tenuous lives, either through increasing farm income directly, and/or by facilitating emigration.

6. General life condition

Not only is life more secured following road construction, many different kinds of utilities have become available, such as water supply and electric power supply. Though this results in the increase of expenditure for a variety of goods like electric appliances, it is by no means a negative change, unless they use more than they earn and become indebted, which actually happened to many villagers. No village visited was not supplied with power or tapped water.

Medical institutions become closer, though in one village a small health center that had long served the villagers was closed when the road was constructed and villagers now went to the better-equipped hospital which they could not go to before due to poor roads. In another village, many children died before road construction as they were taken to distant hospitals on the back of their parents who walked over poor roads. Such misery ceased to occur, according to villagers, since the road was constructed.

Villagers did not attribute general nutritional improvement of children to road construction, and instead they argued the government campaign for better nutrition is responsible. As medical/health staff come to visit their villages far more often than before, which villagers agree, road construction should also be responsible by preparing a better environment.

Not much change seems to have been initiated in the educational area, according to villagers, except in terms of the shortening of time to go to school.

Villagers invariably argued that road construction resulted in the betterment of their life for a variety of reasons such as those mentioned above, and we should not under-estimate their evaluation.

7. Land speculation

While general life standard seems improving and villagers are correct to consider such improvement *is* development, many development opportunities that could have been exploited were rather closed off since road construction. Road construction is not directly responsible for this, but it is partially irresponsible.

Many villagers had sold their land to speculators who became bankrupt after the economic crisis, and the land they purchased is now in the hands of commercial banks as bad debts. As a result, the majority of such land is not utilized effectively, except in growing eucalyptus for firewood. In one village where villagers started sugarcane, they could not expand their

sugarcane plantation because the land was in the hand of commercial banks and the prices were beyond their budget. Thus they continue to produce sugarcane on a small-scale, only to decrease the yield.

Moreover, the land along the newly constructed roads is held in the hand of commercial banks and villagers cannot use the area for commercial purposes. One village representative of District Development Committee of Chok Chai District mentioned that they had been failing to open a cooperative shop along Highway 24 because the land is in the hand of commercial banks and the price is too high. Road construction is partially responsible for land speculation because the area would not have been speculated if road construction had not raised the market value of the land. Policy makers should have expected the land speculation following the road construction and could have taken some preventive action.

It is unfortunate that villagers sold their land which led to the decrease of farmland and prohibited the maximization of farm production which would have been possible with now available inputs and market. It is more unfortunate that villagers bought many utilities and used up almost all the proceeds they got from selling their land. In a village in Chok Chai District of Nakon Ratchasima, all but one woman who sold land to speculators have reportedly used up the money just to build houses and buy cars, and now many of them are already indebted for other expenditure.

Road development was expected to raise the living standard of the rural population and narrow the disparity between provinces and the Bangkok metropolitan areas. In many villages, however, the income of villagers was raised not through the expansion of output but through the selling of land to speculators. Those who owned plots of land large enough to call attention to speculators may be happy even if they have used up the proceeds. The majority of villagers who did not own large enough land have lost many opportunities. Sugarcane plantation, for example, should have been widened and offerred many job opportunities to villagers if the now idle land had been used for sugarcane production.

Land speculation did not occur in all the places. If the area is under a forest preservation zone, commercial banks refuse to accept such land as collateral, and speculators were not interested in such land. Such villages were not hit by land speculation and see far less idle land now. It is impossible to determine the real magnitude of the negative consequence of land speculation on farm production. It holds true, however, that many development opportunities remain to be exploited, until banks dispose of the land they hold as bad debt and the land is used for productive purposes.

8. Mis-assessment of 'social impact benefit'

It is clearly mentioned that, "The less-advanced economy of the Region has originated basically from low productivity in the agricultural sector, of which main reasons are due to (*sic.*) unfavorable soil conditions, insufficient irrigation facilities and unstable precipitation (M/S 1-1)". Yet both F/S and M/S argue, without any supporting evidence, that "Development of

road networks in the agricultural areas will contribute to a rise in living standard of local people in the Region by enabling expeditious transportation of agricultural products to markets and stimulating the production increase (M/S 1-1)".

It is without doubt that, "Lack of well connected road systems between agricultural areas and arteries where major markets locate is also responsible (M/S 1-1)" for the lack of agricultural development of the region. Neither M/S nor F/S argue, however, if the solution of transportation bottlenecks would lead to solving other bottlenecks alone and thus bring about sustained economic development without any additional intervention. As has been argued above, natural bottlenecks (including physical distance from BKK) have yet to be solved even after a couple of years since road construction, except when some sort of additional intervention was attempted, such as local politicians giving incentives to factory set-ups. Interviews with farmers and relevant government officials clearly indicate the blandness of the assumption used in M/S and F/S. In some villages visited, farmers mentioned that the farmland under cultivation decreased following road construction. While farm production increased in several villages visited, as farmers started to use a variety of farm inputs now cheaply available, the negative impact of the excessive application of such inputs has already been felt.

This implies that the 'social impact benefit' (e.g. farm production increase), with reference to which priority roads were selected and the project was (both economically and financially) justified, was wrongly expected. While road construction obviously had positive consequences such as improved accessibility to medical institutions, it is fair to say that F/S failed to correctly assess the internal rate of return of the project by over-emphasizing the benefits.

It is striking that, while intensive study and detailed analysis were made of technological issues such as soil conditions, bland speculation and ungrounded inference were too often used when it comes to non-technological aspects. For example, after pointing out that the production of upland crops such as cassava, sugarcane, cotton and beans had increased despite the adverse natural conditions which had held back paddy production, F/S speculates that it is "possibly due to the improvement of the road network in the Region (F/S 2-17)" without any supporting information. It is clear from the interview with villagers that they often do not increase paddy production beyond the level sufficient for domestic consumption and instead try upland crops, because the latter crop is less vulnerable to drought. Good transportation networks are crucial to the production of such up-land crops, as otherwise the products cannot be transported to processing plants. Evidence from our village survey clearly indicates, however, that road improvement alone is far from enough to boost production, unless other conditions are also fulfilled. Farmers of such up-land crops should not only have reliable access to means of transportation but also own sufficiently wide tracts of land for inter-cropping to prevent soil deterioration. The majority of farmers in the Region, however, have found it quite difficult to fulfill such conditions.

Such failure of prediction results not so much from wrong parameters used. It is assumed

in F/S that development benefits are represented by the expected impact in the agricultural sector given the predominant role this sector plays in the Regional economy. The impact is obtained from the following parameters, namely, increase in planted area and newly developed land; increase in crop yield; increase in farm gate price; and diversification of crop pattern into a commercially oriented one (F/S 3-26). While by no means exhaustive, such parameters, if appropriately grounded and evaluated against local production structure, would allow the best possible prediction to be obtained in a limited time.

The problem is that such parameters were simply projected in considering the impact of the project without subjecting them to a risk/benefit structure facing farmers. It was simply assumed that farmers would increase, say, the planted area of a particular crop following road development. Whether the road development would actually bring about the increase, at least, on increases at the assumed rate, depends on the evaluation of the changed investment environment on the part of particular farmers. As is clear from the analyses in preceding sections, farmers in the studied villages considered it rational both to restrict farm production to a level reasonably safe given the presence of other bottlenecks, and invest in other sources of income, such as migrant labor.

9. Some suggestions about social impact assessment

It is crucial for the sake of an appropriate impact assessment to explore the perceived needs of 'beneficiaries' and the risk/benefit structure facing them, because it depends on their reaction to whether or not the project brings about expected change to the local economy. It is also because outsiders tend to take many issues for granted. Every human being is a sociologist of a sort with his/her own understanding about what usually follows a particular event. And because we do not usually take this fact seriously, we tend to assume that people living under different ideological/social settings would react to a particular change as we would. As we have seen, when the road was constructed and the value of their land was raised, many farmers in the village visited rather chose to sell their land to speculators instead of increasing their farm production as was assumed and hoped for in F/S. If the viewpoint of farmers was studied more seriously, it would have been possible to predict the reaction.

It is by no means unusual these days to integrate participatory methods so as to capture the felt need of 'beneficiaries' and the risk/interest structure facing them. Hence criticizing the concerned M/S and F/S for the lack of exploration of farmers' point of view does not hold now. It is important, however, to understand that there is no such thing as "farmers' point of view". 'Farmers' are the collectivity of individuals who face different risk/interest structures which may well mutually contradict one another. Farmers were found to have reacted differently to road construction in the villages visited. Some rich farmers expanded their sugarcane plantation and started capital accumulation; some sold land to speculators; some wished to do so but failed because of having too small land to attract speculators; some sold all their land and became employees; some sold part of their land but retained minimum holding enough for their

survival.

There was found no unitary reaction even within a single village. For the sake of practical undertaking of research, it is crucial to disaggregate 'beneficiaries' into categories of actors who share more or less similar risk/interest structure, and assess their ideological/material conditions so as to predict their reaction to a particular intervention. Mere 'participatory research' that seeks to obtain 'farmer's point of view' would fail to capture the dynamics inherent in any seemingly inert society.

Capturing the dynamics is more than important because it allows researchers even with a prescribed research agenda to explore supplementary intervention to be pursued alongside the given mission. Not many 'development researchers', even those that purportedly explore the appropriate development strategy of a particular region/state, are completely free from a prearranged agenda that binds them to study certain areas/points of intervention instead of others. The studies under consideration are case in point: it was programmed to explore the means to alleviate regional disparity particularly through road network development among others and specifically through road construction/repair.

With such a prescribed and prearranged research program, many possibly promising development strategies are quite often not explored at all. Hence in the concerned studies, such suggestions as water resource development, community plantation of upland crops, and alternative farming methods, which may have greater impacts in alleviating regional disparity than road development as our village survey revealed, were from the beginning out of scope.

While such rigidity of research scope is by no means desirable, a degree of initial programming (which is more or less politically induced) is both unavoidable and not necessarily wrong, if supplementary points of intervention are also explored so the desired ends could actually be obtained. For example, our road development project could have brought about the goal of boosting local industry and narrowing regional disparity, if it was accompanied and/or followed by proper supplementary intervention. Such intervention includes the encouragement of farmers to form groups and try collective production of up-land crops or organic farming or curio production with appropriate incentives.

Such supplementary points of intervention will most likely be revealed through exploring the dynamics inherent among 'beneficiaries'. This is because it allows understanding of the felt needs and risk/interest structure facing each category of actors, so a variety of bottlenecks are revealed. It is also because mutual contradiction among 'beneficiaries' is also revealed, which quite often plays a far more determining role than mere financial/technical constraints as to why a 'spontaneous' development has yet to be obtained in a particular place.

เลขที่แบบสอบถาม .....

แบบสอบถาม
การติดตามผลโครงการส่งเสริมสหกรณ์การเกษตรในประเทศไทย
ความร่วมมือทางวิชาการระหว่างรัฐบาลไทย - ญี่ปุ่น

โดย

ศูนย์วิจัยเศรษฐศาสตร์ประยุกต์ มหาวิทยาลัยเกษตรศาสตร์

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ชื่อผู้ให้สัมภาษณ์ ..... บ้านเลขที่ ..... หมู่ที่.....

ชื่อหมู่บ้าน .....ตำบล ..... อำเภอ.....จังหวัด นครราชสีมา

ชื่อพนักงานสำรวจ.....

ชื่อผู้ตรวจแบบสอบถาม.....

วันที่สำรวจ.....เดือน ธันวาคม 2543

ความคิดเห็นของผู้ตรวจแบบสอบถาม

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ช่วงระยะเวลาของข้อมูลที่เก็บ คือ ปี 2543

ส่วนที่ 1 ข้อมูลสมาชิกในครัวเรือน

1.1 สมาชิกในครัวเรือนที่มีชื่อในทะเบียนบ้าน ที่อาศัยอยู่ที่บ้านในปัจจุบัน (ช่วงที่สำรวจ)

ชื่อ - นามสกุล	ความสัมพันธ์ 1/	เพศ 2/	อายุ (ปี)	การศึกษา 3/	อาชีพ 4/

รวม ..... คน

รหัส :

1/ ความสัมพันธ์ : 1. หัวหน้าครอบครัว 2. ภรรยาหรือสามี 3. บุตร-ธิดา 4. เขย-สะใภ้ 5. หลาน 6. อื่นๆ

2/ เพศ : 1. เพศชาย 2. เพศหญิง

3/ การศึกษา : 1. ต่ำกว่า ป.4 2. ป.4 3. ป.5-7 4. มัธยมต้น 5. อาชีวศึกษา, มัธยมปลาย
6. มหาวิทยาลัย/วิทยาลัย 7. ไม่ได้เรียน (ผู้ใหญ่) 8. อายุน้อย ยังไม่เข้าโรงเรียน 9. อื่นๆ

4/ อาชีพหลัก : 1. การเกษตร 2. รับจ้าง (ใช้แรงงาน) 3. ค้าขาย 4. รับราชการ/ทำงานมีเงินเดือนประจำ
5. บริการ (ตัดผม, ตัดเสื้อ, ซ่อมรถ, ฯลฯ) 6. เรียนหนังสือ 7. เด็ก 8. คนชรา
9. คนพิการ 10. ไม่มีงานทำ (ตกงานเพราะวิกฤตเศรษฐกิจ)
11. ไม่มีงานทำ (ตกงาน:กลับมาจากต่างประทศ) 12. เรียนจบยังหางานทำไม่ได้ 13. อื่นๆ.....

1.2 สมาชิกในครอบครัวที่ไม่ได้อาศัยอยู่ที่บ้านในช่วงที่สำรวจ (ชื่ออยู่ในทะเบียนแต่ตัวไม่อยู่มากกว่า 3 เดือนติดต่อกันใน 1 ปี)

ชื่อ - นามสกุล	ความสัมพันธ์ 1/	เพศ 2/	อายุ (ปี)	การศึกษา 3/	อาชีพ 4/	ที่อยู่ 5/

หมายเหตุ 1/, 2/, 3/, 4/ ดูข้อ 1.1 ข้างบน

5/ ที่อยู่ : 1. ในอำเภอนี้ 2. อำเภออื่น จังหวัดนี้ 3. จังหวัดอื่นในภาคนี้
4. กรุงเทพฯ 5. ภาคอื่น 6. ต่างประเทศ

คำถามต่อไปนี้ ให้กาเครื่องหมาย X ใน ( ) ที่เป็นคำตอบ

1.3 ท่านเป็นสมาชิกสหกรณ์การเกษตรนี้ (ปักธงชัย/พิมาย) มานานเท่าใด

( ) ไม่ถึง 1 ปี ( ) 1 ปี ถึง 5 ปี ( ) กว่า 5 ปี ถึง 10 ปี

( ) กว่า 10 ปี ถึง 15 ปี ( ) เกินกว่า 15 ปี

( ) ไม่ได้เป็น ... *ถ้าตอบข้อนี้ไม่ต้องถามข้อ 1.4*

1.4 เหตุผลในการตัดสินใจเข้าเป็นสมาชิกสหกรณ์การเกษตร (ในครั้งแรก) -ตอบได้มากกว่า 1 ข้อ

( ) ต้องการเงินกู้ ( ) ต้องการแหล่งขายผลิตผลการเกษตร

( ) ต้องการแหล่งซื้อปุ๋ย/ยา ( ) เข้าเป็นตามคำชักชวนของเพื่อนบ้าน

( ) เข้าเป็นตามคนอื่น ๆ โดยไม่มีจุดหมายที่ชัดเจน

( ) อื่น ๆ (ระบุ).....

1.5 ปัจจุบันท่านใช้บริการของสหกรณ์การเกษตร (พิมาย/ปักธงชัย) ในเรื่องใดบ้าง

( ) กู้เงิน ( ) ขายผลิตผลการเกษตร

( ) ซื้อปุ๋ย/วัสดุการเกษตร ( ) สวัสดิการ (สมาคมฌาปนกิจสงเคราะห์)

( ) ซื้ออาหารสัตว์ ( ) บริการด้านการเลี้ยงสัตว์(สุกร)

( ) บริการเครื่องทุ่นแรง/เครื่องจักรกล ( ) อื่น ๆ -ระบุ.....

( ) ไม่ค่อยได้ใช้ /ไม่ใช้เลย

เพราะ.....

1.6 ในช่วง 10 ปีที่ผ่านมา ท่านทำธุรกิจซื้อขายกับสหกรณ์เพิ่มขึ้นมากน้อยเพียงใด

( ) เพิ่มขึ้น ในเรื่องใด.....

( ) ไม่เพิ่มขึ้นเลย ในเรื่องใด.....

( ) ลดลง ในเรื่องใด.....

1.7 ท่านหรือสมาชิกในครอบครัวของท่านเป็นสมาชิกของสถาบันเกษตรกร/กลุ่มอื่น ๆ ต่อไปนี้ด้วยหรือไม่ (ตอบได้มากกว่า 1 ข้อ)

( ) สหกรณ์การเกษตรอื่น ( ) สหกรณ์เครดิตยูเนี่ยน

( ) สหกรณ์ออมทรัพย์ ( ) กลุ่มเกษตรกร

( ) กลุ่มออมทรัพย์เพื่อการผลิต ( ) กลุ่มลูกค้า ธ.ก.ส.

( ) อื่น ๆ (ระบุ) ..... ( ) ไม่เป็น

ส่วนที่ 2 ข้อมูลเกี่ยวกับที่ดิน

2.1 ที่ดินของตนเอง

แปลงที่	ขนาด (ไร่)	การใช้ที่ดิน 1/	พื้นที่ดินอยู่ในเขตหรือนอกเขตชลประทาน (ในเขต ใช้ 1 นอกเขต ใช้ 2)
ใช้ประโยชน์เอง			
ที่บ้าน →			XXX
ให้เช่า			
ให้คนอื่นใช้ฟรี			

2.2 ที่ดินของผู้อื่นที่ท่านใช้ประโยชน์อยู่

แปลงที่	ขนาด (ไร่)	การใช้ที่ดิน 1/	พื้นที่ดินอยู่ในเขตหรือนอกเขตชลประทาน (ในเขต ใช้ 1 นอกเขต ใช้ 2)	อัตราค่าเช่า	
				เงินสด (บาท)	สิ่งของ (ระบุหน่วย)
ที่เช่า					
ที่ได้ใช้ฟรี					

1/ การใช้ที่ดิน : 1. ที่บ้าน 2. ที่นา 3. ที่ไร่ 4. ที่สวนไม้ผล
5. สวนยาง, ปาล์ม, มะพร้าว 6. ที่ปลูกผัก
7. ที่เลี้ยงสัตว์ 8. ที่ว่างเปล่า 9. ไม้ยืนต้น (ไม่ใช่ไม้ผล)
10. บ่อปลา 11. อื่น ๆ .....

ส่วนที่ 3. การปลูกพืช

ในรอบปีนี้ (2543) ท่านปลูกพืชอะไรบ้าง ในที่ดินแต่ละแปลง ระบุช่วงเวลาที่ปลูกจนเก็บเกี่ยว

ที่ดินแปลงที่	พืชที่ปลูก

3.1 **การปลูกไม้ล้มลุก** เช่น ข้าว ข้าวโพด พืชผัก แตง แคนตาลูบ อ้อย ฯลฯ ปี 2543

(ในกรณีที่เป็นพืชผักหลาย ๆ ชนิดปลูกรวมกัน ไม่ต้องถามแยกรายชนิด ให้ถามรวม ๆ กันเลย)

ชนิดพืชที่ปลูก (ระบุ)					
แปลงที่					
พื้นที่เพาะปลูก (ไร่)					
ผลผลิตทั้งหมดของปีที่สำรวจ (กก.)					
ผลผลิตต่อไร่ (กก./ไร่)					
ผลผลิตในปีปกติ (กก./ไร่)					
จำนวนที่ขาย (กก.) รวมทั้งปี					
ราคาขาย (บาท/กก.)					
มูลค่าของสินค้าที่ขาย (บาท)					
เงินสดที่ได้รับจริง (บาท)					
***ส่วนที่หักชำระหนี้ (บาท)**					
จำนวนที่เก็บไว้					
บริโภค (กก.)					
เก็บไว้ทำพันธุ์ (กก.)					
จำนวนที่ให้ผู้อื่น (กก.)					
จำนวนที่สูญหาย (กก.)					
จำนวนที่ให้เป็นค่าเช่า (กก.)					

* หมายถึง กรณีที่กู้เงินหรือสิ่งของจากแหล่งนอกระบบ และขายผลผลิตให้แก่ผู้ให้กู้ ในการจ่ายเงินค่าผลผลิตผู้ให้กู้จะหักเงินส่วนหนึ่งไว้เพื่อชำระหนี้

ค่าใช้จ่าย (บาท) ชื่อพืช--	พืชชนิดที่ 1 ระบุ.....	พืชชนิดที่ 2 ระบุ.....	พืชชนิดที่ 3 ระบุ.....	พืชชนิดที่ 4 ระบุ.....	พืชชนิดที่ 5 ระบุ.....
แรงงานจ้าง					
เพาะปลูก					
ดูแลรักษา					
เก็บเกี่ยว					
อื่น ๆ					
ค่าวัสดุ					
เมล็ดพันธุ์ :					
พันธุ์ของตัวเอง					
พันธุ์ที่ซื้อ					
ยาฆ่าแมลง					
ยาฆ่าหญ้า					
ปุ๋ยเคมี					
ปุ๋ยคอก/ปุ๋ยหมัก					
ปูนขาว					
สารเร่ง (ฮอร์โมน)					
สารเคมีอื่น ๆ					
น้ำมัน (เบนซิน, ดีเซล, หล่อลื่น, อื่น ๆ)					
ค่าจ้างสัตว์					
เตรียมดิน					
ขน/รวบรวมก่อนขาย					
นวด/สี					
ค่าจ้างเครื่องจักร					
เตรียมดิน					
ยกร่อง					
เก็บเกี่ยว					
ตัด/ตายหญ้า					
ขน/รวบรวมก่อนขาย					
นวด/สี					
ค่าอาหารแรงงานแลกเปลี่ยน					
เพาะปลูก					
เก็บเกี่ยว					
ค่าน้ำชลประทาน					
ค่าใช้จ่ายในการขาย					
ค่าใช้จ่ายอื่น ๆ (ระบุ)					
ปัญหาในการเพาะปลูก					

การจำหน่ายผลิตผล : **ข้าวเปลือก**

1. ปกติท่านจำหน่ายผลผลิตข้าวเปลือกให้ใคร (เฉพาะส่วนที่ขาย)

( ) ขายให้สหกรณ์ทั้งหมด เพราะ.....

( ) ขายที่ตลาดกลางของสหกรณ์(ขายให้พ่อค้าที่มารับซื้อ) ( ) ผลผลิตทั้งหมด ( ) ผลผลิตบางส่วน.....%

( ) ขายที่บ้าน-ไร่นา (ขายให้พ่อค้าท้องถิ่นทั้งหมด) เพราะ.....

( ) ขายให้สหกรณ์เพียงบางส่วน ประมาณกี่ % ของผลผลิตทั้งหมด

ประมาณ .....% เพราะ.....

( ) อื่น ๆ ระบุ .....

2. ก่อนหน้าที่สหกรณ์จะดำเนินธุรกิจโรงสีข้าว หรือรวบรวมข้าว หรือมีตลาดกลาง ท่านจำหน่ายข้าวเปลือกให้ใคร (เฉพาะส่วนที่ขาย)

( ) ขายให้สหกรณ์ทั้งหมด เพราะ.....

( ) ขายให้พ่อค้าท้องถิ่นทั้งหมด เพราะ.....

( ) ขายให้สหกรณ์เพียงบางส่วน (.....%) เพราะ.....

( ) .....

3. ปัจจุบันท่านมีความสะดวกในการจำหน่ายข้าวเปลือกให้สหกรณ์ หรือใช้บริการตลาดกลางข้าวเปลือกของสหกรณ์ หรือไม่

( ) สะดวก

( ) ไม่สะดวก เพราะ.....

4. ท่านคิดว่าการที่สหกรณ์ดำเนินกิจการโรงสี /การรวบรวมข้าว / ตลาดกลางข้าว มีส่วนช่วยในการขายข้าวเปลือกของท่านอย่างไร

( ) ช่วยให้ได้ราคาที่เป็นธรรมมากขึ้น ไม่ถูกกดราคา

( ) ไม่ถูกโกงในการชั่ง ตวง

( ) ไม่ถูกเอาเปรียบในการหักความชื้น

( ) ช่วยให้ได้ราคาที่ดีขึ้น เพราะสหกรณ์รับซื้อแล้วสีเป็นข้าวสารจำหน่ายได้ราคาดี

( ) ไม่มีส่วนช่วยในการขายข้าวเปลือกแต่อย่างใด

5. ท่านคิดว่าสหกรณ์ควรปรับปรุงธุรกิจโรงสีข้าว การรวบรวมข้าวเปลือก และตลาดกลางข้าวเปลือก อย่างไร

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.....

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6. ท่านคิดว่าการให้บริการของสหกรณ์เกี่ยวกับเรื่องข้าว (โรงสี รับซื้อ ตลาดกลาง) มีส่วนทำให้รายได้ของท่านเพิ่มขึ้นเท่าใด?

( ) ไม่เพิ่ม ( ) เพิ่มขึ้น ประมาณ .....%

7. ท่านคิดว่าการให้บริการของสหกรณ์เกี่ยวกับเรื่องข้าว (โรงสี รับซื้อ ตลาดกลาง)
ทำให้ระบบการตลาดข้าวในท้องถิ่นเปลี่ยนแปลงไปหรือไม่ อย่างไร?

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.....

การจำหน่ายผลิตผล : ข้าวโพด

1. ปกติท่านจำหน่ายผลผลิตข้าวโพดให้ใคร (เฉพาะส่วนที่ขาย)

( ) ขายให้สหกรณ์ทั้งหมด เพราะ.....

( ) ขายที่ตลาดกลางของสหกรณ์(ขายให้พ่อค้าที่มารับซื้อ) ( ) ผลผลิตทั้งหมด ( ) ผลผลิตบางส่วน.....%

( ) ขายที่บ้าน-ไร่นา (ขายให้พ่อค้าท้องถิ่นทั้งหมด) เพราะ.....

( ) ขายให้สหกรณ์เพียงบางส่วน ประมาณกี่ % ของผลผลิตทั้งหมด

ประมาณ .....% เพราะ.....

( ) อื่น ๆ ระบุ .....

2. ก่อนหน้าที่สหกรณ์จะดำเนินธุรกิจรวบรวมข้าวโพด หรือมีตลาดกลาง ท่านจำหน่ายข้าวโพดให้ใคร

( ) ขายให้สหกรณ์ทั้งหมด เพราะ.....

( ) ขายให้พ่อค้าท้องถิ่นทั้งหมด เพราะ.....

( ) ขายให้สหกรณ์เพียงบางส่วน (.....%) เพราะ.....

( ) .....

3. ปัจจุบันท่านมีความสะดวกในการจำหน่ายข้าวโพดให้สหกรณ์ หรือใช้บริการที่ตลาดกลางของสหกรณ์ หรือไม่

( ) สะดวก

( ) ไม่สะดวก เพราะ.....

4. ท่านคิดว่าการที่สหกรณ์ดำเนินกิจกรรมการรวบรวมข้าวโพด / ตลาดกลาง มีส่วนช่วยในการขายข้าวโพดของท่านอย่างไร

( ) ช่วยให้ได้ราคาที่เป็นธรรมมากขึ้น ไม่ถูกกดราคา

( ) ไม่ถูกโกงในการชั่ง ตวง ( ) ไม่ถูกเอาเปรียบในการหักความชื้น

( ) มีบริการครบถ้วน (สี / ตาก/ อบแห้ง) ทำให้สะดวกในการจำหน่ายมากขึ้น

( ) ช่วยให้ได้ราคาที่ดีขึ้น เพราะสหกรณ์รับซื้อแล้วนำไปบดทำให้จำหน่ายได้ราคาดี

( ) ไม่มีส่วนช่วยในการขายข้าวโพดแต่อย่างใด

5. ท่านคิดว่าสหกรณ์ควรปรับปรุงธุรกิจการรวบรวมข้าวโพด และตลาดกลาง อย่างไร

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6. ท่านคิดว่าการให้บริการของสหกรณ์เกี่ยวกับเรื่องข้าวโพด (รับซื้อ ตลาดกลาง) มีส่วนทำให้รายได้ของท่านเพิ่มขึ้นเท่าใด?

( ) ไม่เพิ่ม ( ) เพิ่มขึ้น ประมาณ .....%

7. ท่านคิดว่าการให้บริการของสหกรณ์เกี่ยวกับเรื่องข้าวโพด (รับซื้อ ตลาดกลาง)
ทำให้ระบบการตลาดข้าวโพดในท้องถิ่นเปลี่ยนแปลงไปหรือไม่ อย่างไร?

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.....

ส่วนที่ 4. การเลี้ยงสัตว์ในรอบปีที่ผ่านมา

4.1 รายละเอียดเกี่ยวกับการผลิต

รายการ	ประเภทของสัตว์ที่เลี้ยง						
	สุกร			ไก่		สัตว์อื่น (ระบุ)	
	พ่อพันธุ์-แม่พันธุ์	ลูกสุกร	สุกรขุน	ไก่เนื้อ/ไก่กระทง	ไก่ไข่		
ประสบการณ์ในการเลี้ยง(ปี)							
จำนวนที่เลี้ยงในปัจจุบัน							
จำนวนรอบ/รุ่น ที่เลี้ยงในระยะเวลา 1 ปี							

จำนวนที่ขาย (ตัว)							
ราคาเฉลี่ยต่อตัว							
มูลค่าที่ขายได้							
เงินสดที่ได้รับจริง							
ส่วนที่หักชำระหนี้							

ค่าใช้จ่ายในปีที่ผ่านมา							
ค่าพันธุ์							
ค่าอาหาร							
ค่ายา / วัคซีน							
ค่าจ้างแรงงาน							
ค่าน้ำ							
ค่าไฟฟ้า							
ค่าผสมพันธุ์/ผสมเทียม							
ค่าวัสดุสิ้นเปลือง							
ค่าใช้จ่ายในการขาย							
ค่าใช้จ่ายอื่น							
รวมค่าใช้จ่าย							

4.2 ในการซื้อปัจจัยการผลิตต่อไปนี้ ท่านซื้อจากแหล่งใด เป็นสัดส่วนเท่าใด? (พิจารณาตามจำนวนเงิน)

รายการ	% ที่ไม่ต้องซื้อ	% ที่ซื้อจากพ่อค้า	% ที่ซื้อจากสหกรณ์	ส่วนที่ซื้อจากสหกรณ์ เพิ่มหรือลด เมื่อเทียบกับ 5 ปีที่แล้ว	
				เพิ่ม	ลด
เมล็ดพันธุ์(พืช)					
ปุ๋ยทุกชนิด					
ยาฆ่าแมลง/ศัตรูพืช					
สารเคมีต่าง ๆ					
พันธุ์สัตว์ (สุกร /ไก่ ฯลฯ)					
อาหารสัตว์					
ยารักษาโรค/วัคซีน					

ส่วนที่ 5. รายได้จากกิจกรรมอื่น ๆ (นอกเหนือจากส่วนที่ 3 และ 4) ในรอบปีที่ผ่านมา

กิจกรรม	จำนวนเงิน (บาท)	บันทึกรายละเอียดที่จำเป็น
รายได้จากไม้ผล / ไม้ยืนต้น		
รายได้จากการขาย		
ค่าใช้จ่าย		
รับจ้างแรงงาน		
งานเกษตร/ทั่วไป		
งานราชการ		
งานโรงงาน		
อื่น ๆ		
นำเครื่องจักรไปรับจ้าง(สุทธิ)		
นำสัตว์ไปรับจ้าง(สุทธิ)		
จักสาน		
รับ/ขาย		
จ่าย/ซื้อวัสดุต่าง ๆ		
ทอผ้า		
รับ		
จ่าย		
ค้าขาย (สุทธิ)		
บริการ (สุทธิ)		
(เช่น จากบริการตัดผม/เสริมสวย , ตัดเสื้อผ้า, ซ่อมรถยนต์ รถเครื่อง, เดินรถโดยสาร, รถเครื่อง(รับจ้าง) ฯลฯ)		
เงินที่ลูก/คนในครอบครัวให้/ส่งมาให้		
อื่น ๆ (สุทธิ)		
รวม (สุทธิ)		

ส่วนที่ 6. ค่าใช้จ่ายในครอบครัว ในรอบปี (หนึ่งปี)

รายการ	จำนวนเงิน (บาท)	บันทึกรายละเอียด (ถ้ามี)
ค่าอาหาร		
ค่าเสื้อผ้า		
ค่ารักษาพยาบาล		
ค่าใช้จ่ายทางสังคม		
ค่าใช้จ่ายเดินทาง(ไปทำงาน, ไปธุระ)		
ค่าเล่าเรียน(รวมทุกอย่าง)		
อื่น ๆ (พักผ่อน, หวย)		
รวมค่าใช้จ่ายในครอบครัว		

ส่วนที่ 6. หนี้สิน

(แยกเป็นหนี้สินที่มีอยู่เดิมต้นปี 2543 กับหนี้สินที่กู้ในระหว่างปี 2543)

รายการ	สหกรณ์	ธ.ก.ส.	ธนาคารพาณิชย์	กลุ่มเกษตรกร	หน่วยราชการ	แหล่งนอกระบบ (ระบุ)	
หนี้สินที่มีอยู่เดิมในวันต้นปี 2543 (1)							
การชำระคืนระหว่างปีที่ผ่านมา							
เงินต้น (บาท) (2)							
ดอกเบี้ย (บาท)							
หนี้คงเหลือปัจจุบัน(ธ.ค. 43) (1-2)							

หนี้สินที่กู้ใหม่ในระหว่างปี 2543 (แยกเป็นกู้เป็นเงิน กับ กู้เป็นสิ่งของ)

กู้เป็นเงินสด							
ยอดเงินกู้ (บาท) (4)							
อัตราดอกเบี้ย (%)							
วัตถุประสงค์ (บาท)							
ซื้อวัสดุการเกษตรและจ้างแรงงาน							
ซื้อที่ดิน							
ซื้อรถแทรกเตอร์, รถบรรทุก, รถพ่วง							
ซื้อเครื่องจักร, เครื่องมือ, อุปกรณ์							
ซื้อสัตว์							
สร้าง ซ่อมโรงเรือน							
ปรับปรุงที่ดิน							
บริโภค							
ใช้คืนหนี้เก่า							
อื่น ๆ (ระบุ).....							
หลักทรัพย์ค้ำประกัน 1/							
ระยะเวลาชำระคืน 2/							
ชำระคืนแล้ว (จำนวนเงิน-บาท) (5)							
หนี้สินคงเหลือปัจจุบัน (ธ.ค.43) (4-5)							
กู้เป็นสิ่งของ							
สิ่งของที่กู้คืออะไร							
ยอดวงเงินที่กู้ (บาท) (7)							
อัตราดอกเบี้ย (%) หรือเงื่อนไขอื่น**							
หลักทรัพย์ค้ำประกัน 1/							
ระยะเวลาชำระคืน 2/							
ชำระคืนแล้ว (จำนวนเงิน-บาท) (8)							
หนี้ค้ำสิ่งของคงเหลือปัจจุบัน(ธ.ค.43)(7-8)							

** เงื่อนไขอื่นเช่น ชำระคืนเป็นผลผลิต จำนวนเท่าใด หรือกำหนดจำนวนชำระคืนรวมไว้เลย

หมายเหตุ 1/ 1. ไม่มี 2. บุคคล 3. กลุ่มบุคคล 4. ที่ดิน (ระบุแปลง)..... 5. อื่น ๆ (ระบุ).....

2/ 1. 1 ปี หรือน้อยกว่า 2. มากกว่า 1 ปี -ไม่เกิน5 ปี 3. 5 ปี ขึ้นไป

ส่วนที่ 7. ทรัพย์สินที่มีในปัจจุบัน (เช็ค / ในรายการที่มี)

7.1 ทรัพย์สินที่ใช้ในการผลิต

รายการ	รายการที่มีในปัจจุบัน
แทรกเตอร์ 4 ล้อ ขนาดใหญ่และอุปกรณ์	
แทรกเตอร์ 4 ล้อ ขนาดเล็กและอุปกรณ์	
รถไถเดินตามและอุปกรณ์เตรียมดิน	
ปั๊มน้ำ (เครื่องสูบน้ำ)	
เครื่องพ่นยา	
เครื่องตัดหญ้า	
เครื่องเกี่ยว / combine	
เครื่องนวด / สี	
รถพ่วง / รถเข็น	
รถมอเตอร์ไซด์	
รถปิคอัพ	
รถบรรทุก	
บ่อหรือสระน้ำเพื่อการเกษตร	
ระบบส่งน้ำ (สายยาง ท่อน้ำ สปริงเกอร์)	
ยุ้งฉาง/โรงเรือนเก็บวัสดุอุปกรณ์และผลผลิต	
คอกสัตว์ (ไก่ ,เป็ด, หมู, วัวเนื้อ, วัวนม)	
บ่อปลา / กุ้ง	
เครื่องมือที่ใช้เลี้ยงสัตว์	
เครื่องมือที่ใช้เลี้ยงปลา / กุ้ง	
สัตว์ใช้งาน (วัว-ควาย)	
ทรัพย์สินฟาร์มอื่น ๆ (ระบุ)	
ผลผลิตและสินค้าคงคลัง	
วัสดุ/วัตถุดิบ/ปัจจัยการผลิตสินค้าคงคลัง	
โรงสี	
ร้านค้า	
เครื่องมือ / อุปกรณ์ / เครื่องจักร ทำหัตถกรรมหรือกิจกรรมนอกฟาร์ม	

7.2 ทรัพย์สินที่ไม่เกี่ยวข้องกับการผลิตโดยตรง

รายการ	รายการที่มีในปัจจุบัน
วิทยุ/เทป	
ตู้เย็น	
TV สี	
TV ขาวดำ	
VDO	
ห้องน้ำ/ห้องส้วม	
จักรเย็บผ้า	
พัดลม	
หม้อหุงข้าวไฟฟ้า	
เตาอบ	
เตาไมโครเวฟ	
รถจักรยาน	
โทรศัพท์มือถือ	
โทรศัพท์	
เครื่องซักผ้า	
เครื่องปรับอากาศ	
อื่น ๆ (ระบุ)	
มูลค่าบ้าน (บาท)	
ขนาดพื้นที่บริเวณตัวบ้าน (ตร.วา)	

ส่วนที่ 8. หนี้สิน

8.1 ในปัจจุบันท่านมีหนี้สินจากแหล่งใดบ้าง เป็นจำนวนเท่าใด (หนี้คงเหลือในปัจจุบัน)

(ให้ถามว่าเป็นหนี้ใครบ้างก่อน แล้วค่อยถามว่าเป็นหนี้อยู่เท่าใด กู้มาเป็นเงิน หรือซื้อของเชื่อ)

	หนี้ที่กู้เป็นเงิน		**เป็นหนี้สิ่งของ**	
	จำนวนเงิน (บาท)	อัตราดอกเบี้ย	จำนวนเงิน (บาท)	อัตราดอกเบี้ย
1) หนี้กับสหสกรณ์การเกษตร				
2) หนี้กับ ธ.ก.ส.				
3) หนี้กับธนาคารพาณิชย์				
4) หนี้กับกลุ่มเกษตรกร				
5) หนี้กับส่วนราชการ				
6) หนี้กับสหกรณ์เครดิตยูเนียน				
7) หนี้กับกลุ่มออมทรัพย์ในหมู่บ้าน				
8) หนี้กับพ่อค้า				
9) หนี้กับเพื่อนบ้าน ญาติพี่น้อง				
10) อื่น ๆ ระบุ.....				
รวม				

8.2 ในการเป็นหนี้(กู้ยืมเงิน /ซื้อสิ่งของเชื่อ) มีเงื่อนไขต้องขายผลผลิตให้แก่ผู้ให้กู้(เจ้าหนี้) หรือไม่

( ) มี เงื่อนไขอย่างไร.....

.....

( ) ไม่มี

ส่วนที่ 9. คำถามสำหรับผู้เข้าร่วมโครงการ

9.1. ลักษณะการเข้าร่วมโครงการ

( ) เข้าร่วมแต่แรก ( ) เข้าร่วมในภายหลัง

เข้าเมื่อปี พ.ศ.....

9.2. ข้อมูลขณะเข้าร่วมโครงการ

	ข้อมูลขณะเมื่อเข้าร่วมโครงการ
จำนวนคนทั้งหมดในครอบครัว (คน)	
จำนวนคนที่ทำงานได้ (คน)	
ขนาดพื้นที่เพาะปลูกรวม (ไร่)	
รายได้สุทธิโดยประมาณ (บาท)	
พืชที่ปลูก	
ข้าว	( )ปลูก ( )ไม่ได้ปลูก
ข้าวโพด	( )ปลูก ( )ไม่ได้ปลูก
มันสำปะหลัง	( )ปลูก ( )ไม่ได้ปลูก
ระบุ.....	( )ปลูก ( )ไม่ได้ปลูก
ระบุ.....	( )ปลูก ( )ไม่ได้ปลูก
สัตว์ที่เลี้ยง (ระบุจำนวนที่เลี้ยง--ตัว)	
สุกรพ่อพันธุ์-แม่พันธุ์	
ลูกสุกร	
สุกรขุน	
ไก่เนื้อ/ไก่กระทง	
ไก่ไข่	
วัว/ควาย	
อื่น ๆ	
งานนอกการเกษตรที่ทำอยู่ขณะนั้น(ระบุ)	1)
	2)
	3)
	4)

9.3 ก่อนเข้าร่วมโครงการ ท่านเลี้ยงสุกรมาก่อนหรือไม่ ?

( ) เลี้ยง ( ) ไม่ได้เลี้ยง

9.4 เหตุใดท่านจึงเข้าร่วมโครงการ

( ) เพื่อนชวน ( ) เจ้าหน้าที่สหกรณ์ชักชวน

( ) ผู้เชี่ยวชาญชักชวน ( ) เห็นคนอื่นเลี้ยงแล้วได้ผลดี

( ) คาดว่าจะมีรายได้ดีขึ้น

( ) อื่น ๆ (ระบุ).....

9.5 ตั้งแต่เข้าร่วมโครงการเป็นต้นมา ท่านเลี้ยงสุกรติดต่อกันมาโดยตลอดหรือไม่ (ตอบข้อเดียว)

( ) เลี้ยงติดต่อกันมา

จำนวนที่เลี้ยง ( )เพิ่มขึ้น ( )ลดลง ( )เท่า ๆ เดิม

สาเหตุเพราะ.....

( ) เลี้ยง แต่ไม่ติดต่อกัน คือ หยุดเลี้ยงเป็นพัก ๆ

สาเหตุที่หยุดเลี้ยงเพราะ.....

สาเหตุที่กลับมาเลี้ยงใหม่ เพราะ.....

( ) เลิกเลี้ยงแล้ว คือ หยุด-ไม่เลี้ยงอีกแล้ว

สาเหตุเพราะ.....

9.6 การเลี้ยงสุกรตามคำแนะนำของสหกรณ์ (ในโครงการ) ทำให้รายได้ของท่านเพิ่มขึ้นมากน้อยเท่าใด ?

ตอบข้อเดียวตามกรณี

ก. (ถ้าท่านเคยเลี้ยงสุกรมาก่อน) ท่านมีรายได้เพิ่มขึ้น .....%

ข. (ถ้าท่านไม่ได้เลี้ยงหมูมาก่อน) รายได้สุทธิเพิ่มขึ้น ปีละ.....บาท

9.7 ในปัจจุบันถ้าท่านไม่ได้ซื้อลูกสุกรจากสหสกรณ์ เป็นเพราะอะไร (ซื้อหรือไม่ ดูที่ข้อ 4.2 หน้า 9)

เพราะ.....

9.8 ในปัจจุบันถ้าท่านไม่ซื้ออาหารสัตว์(สุกร) จากสหกรณ์ เป็นเพราะอะไร (ซื้อหรือไม่ ดูที่ข้อ 4.2 หน้า 9)

เพราะ.....

9.9 ท่านขายสุกรให้ใคร อย่างไร

.....

.....

9.10 สมาชิกผู้เลี้ยงสุกรในกลุ่มของท่านมีจำนวนเพิ่มขึ้น หรือ ลดลง อย่างไร? เพราะเหตุใด?

( ) เพิ่มขึ้น เพราะ.....

( ) ลดลง เพราะ.....

( ) ไม่เปลี่ยนแปลง เพราะ.....

9.11 ในเรื่องที่เกี่ยวกับสุกร ท่านได้รับบริการอะไรจากสหกรณ์อีกบ้าง

.....

.....

9.12 การดำเนินงานของสหกรณ์ในเรื่องเกี่ยวกับสุกร ควรปรับปรุงอย่างไร หรือในอนาคตสหกรณ์ควรจะทำอะไร

.....

.....

9.13 ท่านคิดว่าโครงการส่งเสริมการเลี้ยงสุกรของผู้เชี่ยวชาญญี่ปุ่น เป็นประโยชน์หรือไม่

.....

.....

.....

Questionnaire for Trainees of the KISD/UBISD

Part 1. Regarding the KISD/UBISD training curriculum in which you have participated

1. Which training course of KISD/UBISD have you participated in?

☐ 1. Pre-employment training course (inside the institute)
☐ 2. Pre-employment training course (outside the institute / in rural area)
☐ 3. Up-grading training course (inside the institute)
☐ 4. Up-grading training course (outside the institute / in rural area)
☐ 5. Special training course (inside the institute)
☐ 6. Special training course (outside the institute)
☐ 7. Other training course (Please specify.) _____.

2. When did you take the course, and how long is it? Please specify.

From 25 ___ , _____ for _____ months
(year) (month) /or _____ days

3. Which subject is the training course about?

☐ 1. Machine-related
☐ 2. Automobile-related
☐ 3. Electricity & Electronics-related
☐ 4. Construction / Ceramics-related
☐ 5. Others (Please specify.) _____.

4. What subject is the training course about? Please specify.
(ex. Auto-mechanic, Cabinet making, etc.)

(_____)

5. How much do you or your family spend to participate in the training of KISD/UBISD per month, such as purchasing books, paying for transportation, dormitory, food etc.

_____ bahts

6. Where do you stay while attending of the training of KISD/UBISD?

☐ 1. Home ☐ 2. Dormitory ☐ 3. House of Relatives or Friends
☐ 4. The house where you rented ☐ 5. Others (Please specify.) _____.

Part 2. Reason for participating in the training course of KISD/UBISD

1. Please indicate to what extent you were motivated by the following factors to participate in the training course of KISD/UBISD? In answering questions, please read 1 through 5 below firstly, then circle (◯) an appropriate number next to each item/ factor.

Not motivated at all	------ 1
Motivated just a little	------ 2
Motivated to a half extent	------ 3
Motivated very much	------ 4
Most strongly motivated	------ 5

(1) To get a good job	1 --- 2 --- 3 --- 4 --- 5
(2) To obtain a high salary	1 --- 2 --- 3 --- 4 --- 5
(3) To obtain a high post	1 --- 2 --- 3 --- 4 --- 5
(4) To improve social standings	1 --- 2 --- 3 --- 4 --- 5
(5) To obtain knowledge necessary for job	1 --- 2 --- 3 --- 4 --- 5
(6) To obtain technical skills necessary for job	1 --- 2 --- 3 --- 4 --- 5
(7) Because I had no job at that time	1 --- 2 --- 3 --- 4 --- 5
(8) Because I could not go to upper school	1 --- 2 --- 3 --- 4 --- 5
(9) Because family / relatives encouraged me to go to KISD/UBISD	1 --- 2 --- 3 --- 4 --- 5
(10) Because school teacher encouraged me to go to KISD/UBISD	1 --- 2 --- 3 --- 4 --- 5
(11) Because supervisors / managers of company encouraged me to go to KISD/UBISD	1 --- 2 --- 3 --- 4 --- 5

Part 3. Training of KISD/UBISD

1. How would you rate the training methods of KISD/UBISD in terms of the following factors? In answering questions, please read 1 through 5 below firstly, then circle (◯) an appropriate number next to each item/ factor.

Strongly disagree	----- 1
Disagree	----- 2
Hard to tell	----- 3
Agree	----- 4
Strongly agree	----- 5

(1) The lecture in classroom was easy to follow.	1 --- 2 --- 3 --- 4 --- 5
(2) The practical training was easy to follow.	1 --- 2 --- 3 --- 4 --- 5
(3) The teaching methods of instructors were good.	1 --- 2 --- 3 --- 4 --- 5
(4) The teaching material / textbooks were easy to understand.	1 --- 2 --- 3 --- 4 --- 5
(5) KISD/UBISD was adequately furnished with equipment.	1 --- 2 --- 3 --- 4 --- 5
(6) The lecture at KISD/UBISD is useful for present job.	1 --- 2 --- 3 --- 4 --- 5
(7) The practical training at KISD/UBISD is useful for present job.	1 --- 2 --- 3 --- 4 --- 5
(8) The in-plant training at private companies is useful for present job.	1 --- 2 --- 3 --- 4 --- 5
(9) You would recommend this program to others.	1 --- 2 --- 3 --- 4 --- 5

Part 4. Your present status and future plan

1. Do you think what you would be doing if you had not taken the training in KISD/UBISD?

☐ 1. Working
☐ 2. No regular job
☐ 3. Going to the other school or educational organization
☐ 4. Others (Please specify) _____.

2. What type of activities do you plan after you graduate the KISD/UBISD?

After graduation:
☐ 1. Work in the Northeastern region
☐ 2. Work around Bangkok area
☐ 3. Work in the other area in the country
☐ 4. Work abroad
☐ 5. Not get a regular job
☐ 6. Go to upper school or educational organization
☐ 7. Others (please specify) _____ .

5 years later after you graduate:
☐ 1. Work in the Northeastern region
☐ 2. Work around Bangkok area
☐ 3. Work in the other area in the country
☐ 4. Work abroad
☐ 5. Not get a regular job
☐ 6. Go to upper school or educational organization
☐ 7. Others (please specify) _____ .

10 years later after you graduate:
☐ 1. Work in the Northeastern region
☐ 2. Work around Bangkok area
☐ 3. Work in the other area in the country
☐ 4. Work abroad
☐ 5. Not get a regular job
☐ 6. Go to upper school or educational organization
☐ 7. Others (please specify) _____ .

3. Do you plan to establish your own company?

☐ 1. Yes, in the Northeastern region
☐ 2. Yes, around Bangkok area
☐ 3. Yes, in the other area in the country
☐ 4. No, I do not plan to do that

Part 5. Personal information

1. Sex ☐ 1. Male ☐ 2. Female

2. Age _____ years old

3. Your educational experience before training in the KISD/UBISD

3.1 At the level of primary education

☐ 1. graduated P.6 of the school under the jurisdiction of Office of National Primary Education Commission(ONPEC)
☐ 2. graduated P.6 of the school under the jurisdiction of Teetsabaan (municipal government)
☐ 3. graduated P.6 of the private school
☐ 4. graduated P.6 of the school under the jurisdiction of government other than ONPEC and Teetsabaan
☐ 5. graduated P.6 of the non-formal education
☐ 6. dropped out
☐ 7. had not ever entered the school at the level of primary education

3.2 At the level of lower secondary education

☐ 1. graduated M.3 of the school under the jurisdiction of Department of General Education (DGE)
☐ 2. graduated M.3 of the opportunity expansion school under the jurisdiction of ONPEC and Teetsabaan
☐ 3. graduated M.3 of the private school
☐ 4. graduated M.3 of the school under the jurisdiction of government other than DGE,ONPEC and Teetsabaan
☐ 5. graduated M.3 of the non-formal education
☐ 6. dropped out
☐ 7. had not ever entered the school at the level of M.1
☐ 8. others (Please specify.) _____.

3.3 At the level of upper secondary education

☐ 1.graduated M.6 of the school under the jurisdiction of Department of General Education (DGE)
☐ 2.graduated M.6 of the school under the jurisdiction of Department of Vocational Education (DOVE)
☐ 3.graduated M.6 of the private school.
☐ 4.graduated M.6 of the school under the jurisdiction of government other than DGE and DOVE.
☐ 5.graduated M.6 of the non-formal education.
☐ 6.dropped out.
☐ 7.had not ever entered the school at the level of M.4.
☐ 8. others (Please specify.) _____.

3.4 At the level of higher education

☐ 1.graduated the level of bachelor degree or upper level.
☐ 2.graduated the level of Diploma in Vocational Education or Higher Diploma in Technology.
☐ 3.graduated the level of sub-degree.
☐ 4.dropped out.
☐ 5.had not ever entered the level of higher education

3.5 After the training in the KISD/UBISD, did you transit to the another school?

☐ 1.yes
☐ 2.no

3.6 If you transited to the another school after the training in the KISD/UBISD, please
specify _____.

4. In which province did you live before the training in KISD/UBISD?

1. Northeastern Region

☐ 1.1. Kalasin	☐ 1.2. Khon Kaen	☐ 1.3. Chaiyaphum
☐ 1.4. Nakhon Phanom	☐ 1.5. Nakhon Ratchasima	☐ 1.6. Buri Ram
☐ 1.7. Maha Sarakham	☐ 1.8. Mukdahan	☐ 1.9. Yasothon
☐ 1.10. Roi et	☐ 1.11. Loei	☐ 1.12. Si Sa Ket
☐ 1.13. Sakhon Nakhon	☐ 1.14. Surin	☐ 1.15. Nong Khai
☐ 1.16. Nongbualampoo	☐ 1.17. Amnatcarun	☐ 1.18. Udon Thani
☐ 1.19. Ubon Ratchathani		

2. Other Regions

☐ 2.1. Bangkok
☐ 2.2. Vicinity of Bangkok (Nakhon Pathom, Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon)
☐ 2.3. Central Region
☐ 2.4. Western Region
☐ 2.5. Northern Region
☐ 2.6. Southern Region

Part 6. Finally, please state your own opinions about the following:

Q.1 What are the strong points of KISD/UBISD?

Q.2. What areas of KISD/UBISD need to be improved, and how can they be improved?

Thank you very much for your cooperation.

Questionnaire for Ex-trainees of the KISD/UBISD

Part 1. Regarding the KISD/UBISD training course in which you have participated

1. Which institute's training have you participated in?

☐ 1. Khon Kaen Institute for Skill Development (KISD)
☐ 2. Ubon Institute for Skill Development (UBISD)

2. Which training course of KISD/UBISD have you participated in?
Please answer all that apply.

☐ 1. Pre-employment training course (inside the institute)
☐ 2. Pre-employment training course (outside the institute / in rural area)
☐ 3. Up-grading training course (inside the institute)
☐ 4. Up-grading training course (outside the institute / in rural area)
☐ 5. Special training course (inside the institute)
☐ 6. Special training course (outside the institute)
☐ 7. Other training course (Please specify.) _____.

2.1 If you checked "Pre-employment training course",
please answer the following questions about <u>the pre-employment training course.</u>

2.2 If you did not check "Pre-employment training course",
please answer the following questions about <u>the training course you participated most recently</u>

3. When did you take the course, and how long was it? Please specify.

From 25 ___ , _____ for _____ months
(year) (month) /or _____ days

4. Which subject was the training course about?

☐ 1. Machine-related
☐ 2. Automobile-related
☐ 3. Electricity & Electronics-related
☐ 4. Construction / Ceramics-related
☐ 5. Others (Please specify.) _____.

5. What subject was the training course about? Please specify.
(ex. Auto-mechanic, Cabinet making, etc.)

(_____)

6 What was <u>the total amount of money</u> you or your family spent to participate in the training of KISD/UBISD, such as purchasing books, paying for transportation, dormitory , food etc. Please indicate the amount spent at that time, and do not convert to current rates.

_____ bahts

7 Where did you stay while attending of the training of KISD/UBISD?

☐ 1. Home ☐ 2. Dormitory ☐ 3. House of Relatives or Friends
☐ 4. The house where you rented ☐ 5. Others (Please specify.) _____.

Part 2. Reason for participating in the training course of KISD/UBISD

1. Please indicate to what extent you were motivated by the following factors to participate in the training course of KISD/UBISD? In answering questions, please read 1 through 5 below firstly, then circle (◯) an appropriate number next to each item/ factor.

Not motivated at all	------ 1
Motivated just a little	------ 2
Motivated to a half extent	------ 3
Motivated very much	------ 4
Most strongly motivated	------ 5

(1) To get a good job	1 --- 2 --- 3 --- 4 --- 5
(2) To obtain a high salary	1 --- 2 --- 3 --- 4 --- 5
(3) To obtain a high post	1 --- 2 --- 3 --- 4 --- 5
(4) To improve social standings	1 --- 2 --- 3 --- 4 --- 5
(5) To obtain knowledge necessary for job	1 --- 2 --- 3 --- 4 --- 5
(6) To obtain technical skills necessary for job	1 --- 2 --- 3 --- 4 --- 5
(7) Because I had no job at that time	1 --- 2 --- 3 --- 4 --- 5
(8) Because I could not go to upper school	1 --- 2 --- 3 --- 4 --- 5
(9) Because family / relatives encouraged me to go to KISD/UBISD	1 --- 2 --- 3 --- 4 --- 5
(10) Because school teacher encouraged me to go to KISD/UBISD	1 --- 2 --- 3 --- 4 --- 5
(11) Because supervisors / managers of company encouraged me to go to KISD/UBISD	1 --- 2 --- 3 --- 4 --- 5

Part 3. Training of KISD/UBISD

1 How would you rate the training methods of KISD/UBISD in terms of the following factors? In answering questions, please read 1 through 5 below firstly, then circle (◯) an appropriate number next to each item/ factor from (1) to (3).

Very short	----- 1
Rather short	----- 2
Appropriate	----- 3
Rather long	----- 4
Very long	----- 5

(1) Duration of the devoted time to lecture in classroom	1 --- 2 --- 3 --- 4 --- 5
(2) Duration of the devoted time to practical training at KISD/UBISD	1 --- 2 --- 3 --- 4 --- 5
(3) Duration of the in-plant training at private companies	1 --- 2 --- 3 --- 4 --- 5

2. How would you rate the training methods of KISD/UBISD in terms of the following factors? In answering questions, please read 1 through 5 below firstly, then circle (◯) an appropriate number next to each item / factor from (1) to (9).

Strongly disagree	----- 1
Disagree	----- 2
Hard to tell	----- 3
Agree	----- 4
Strongly agree	----- 5

(1) The lecture in classroom was easy to follow.	1 --- 2 --- 3 --- 4 --- 5
(2) The practical training was easy to follow.	1 --- 2 --- 3 --- 4 --- 5
(3) The teaching methods of instructors were good.	1 --- 2 --- 3 --- 4 --- 5
(4) The teaching material / textbooks were easy to understand.	1 --- 2 --- 3 --- 4 --- 5
(5) KISD/UBISD was adequately furnished with equipment.	1 --- 2 --- 3 --- 4 --- 5
(6) The lecture at KISD/UBISD is useful for present job.	1 --- 2 --- 3 --- 4 --- 5
(7) The practical training at KISD/UBISD is useful for present job.	1 --- 2 --- 3 --- 4 --- 5
(8) The in-plant training at private companies is useful for present job.	1 --- 2 --- 3 --- 4 --- 5
(9) You would recommend this program to others.	1 --- 2 --- 3 --- 4 --- 5

3. About the level of training received at KISD/UBISD, how many points you evaluate on the following items about the method of training of KISD/UBISD? In answering questions, please read 1 through 5 below firstly, then circle (◯) an appropriate number next to each item/ factor.

Very Low	----- 1
Low	----- 2
About the same	----- 3
High	----- 4
Very High	----- 5

(1) The level of training was higher / lower than <u>your expectation before the training</u>.
1 --- 2 --- 3 --- 4 --- 5

(2) The level of training was higher / lower than <u>the technical skills required by your current job</u>.
1 --- 2 --- 3 --- 4 --- 5

(3) The level of training was higher / lower than <u>the technical skills of your colleagues who are in the same line of duty</u>
1 --- 2 --- 3 --- 4 --- 5

Part 4. The impact of KISD/UBISD training on you

1. Looking back on your personal experience, to what degree was the KISD/UBISD training useful for you in terms of the following factors (1) ~ (18) ? In answering questions, please read 1 through 5 below firstly, then circle (◯) an appropriate number next to each item/ factor.

Not useful at all	----- 1
Useful just a little	----- 2
Useful to a half extent	----- 3
Useful very much	----- 4
Most useful	----- 5

(1) higher salary	1 --- 2 --- 3 --- 4 --- 5
(2) future promotion	1 --- 2 --- 3 --- 4 --- 5
(3) less risk of losing job	1 --- 2 --- 3 --- 4 --- 5
(4) evaluation from supervisors	1 --- 2 --- 3 --- 4 --- 5
(5) evaluation from colleagues / subordinates	1 --- 2 --- 3 --- 4 --- 5
(6) getting knowledge necessary for job	1 --- 2 --- 3 --- 4 --- 5
(7) getting skills necessary for job	1 --- 2 --- 3 --- 4 --- 5
(8) ability to use new machines / equipments	1 --- 2 --- 3 --- 4 --- 5
(9) more responsible work	1 --- 2 --- 3 --- 4 --- 5
(10) more positive approach to work of you	1 --- 2 --- 3 --- 4 --- 5
(11) observing rules and discipline of working place	1 --- 2 --- 3 --- 4 --- 5
(12) has raised positive approach to work of colleagues / subordinates	1 --- 2 --- 3 --- 4 --- 5
(13) enabled you to teach colleagues / subordinates your skills and knowledge	1 --- 2 --- 3 --- 4 --- 5
(14) increased productivity at your working place	1 --- 2 --- 3 --- 4 --- 5
(15) your enterprise's growth	1 --- 2 --- 3 --- 4 --- 5
(16) has helped you expand your circle of friends	1 --- 2 --- 3 --- 4 --- 5
(17) has enabled you to get a good job	1 --- 2 --- 3 --- 4 --- 5
(18) has enabled you to get a job quickly	1 --- 2 --- 3 --- 4 --- 5

Q 2. Are you satisfied with the present situation caused by the training you participated in?

- ☐ 1. Not satisfied at all
- ☐ 2. Not satisfied so much
- ☐ 3. Hard to tell
- ☐ 4. Rather satisfied
- ☐ 5. Satisfied very much

Part 5. Your personal status

1. What is your average monthly salary before tax?
   (an annual income including tax, over time, bonus and allowances divided by 12)
   _____ bahts

2. What will be your average monthly salary after five years from now ?
   (an annual income including tax, over time, bonus and allowances divided by 12)
   _____ bahts

3. How much money per month do you send to your family or relations who live in the Northeastern region? Please do not count the money sent to those who live in the other regions.

_____ bahts

4. How long do you go back to the Northeastern region to work for your family or relations in the harvesting season?

☐ 1. Not at all ☐ 2. Less than one week ☐ 3. A couple of weeks
☐ 4. Almost one months ☐ 5. A couple of months

5. What kind of job you would be doing if you had not taken the training?

☐ 1. Better job compared to present job
☐ 2. The same job as present job
☐ 3. Worse job compared to present job
☐ 4. No regular job
☐ 5. Others (Please specify.) _____.

6. What would be your average monthly salary if you had not taken the training of KISD/UBISD? (an annual income including tax, bonus and allowances divided by 12)

_____ bahts

7 How many ex-trainees of KISD/UBISD do you know, who have the following job history and movement after graduation?
Please provide the number of those by the type of job history and movement.

(1) He/she found a job in the Northeastern region
just after graduation, and is still in the Northeastern region.
persons

(2) He/she found a job in the Northeastern region
just after graduation, but is around Bangkok now.
persons

(3) He/she found a job in the Northeastern region
just after graduation, but is abroad now.
persons

(4) He/she found a job around Bangkok just after graduation,
and is still around Bangkok.
persons

(5) He/she found a job around Bangkok just after graduation,
but is in the Northeastern region now.
persons

(6) He/she found a job around Bangkok just after graduation,
but is abroad now.
persons

If you know the other types of your alumni's job history and movement,
please write the cases concretely.

- ( ) _____ persons
- ( ) _____ persons
- ( ) _____ persons

8. Please select one question to answer from the following questions.

(1) **<u>If you are working in the Northeastern region</u>**, do you think that you will be around Bangkok in the future?

☐ 1. I do not want to go to Bangkok for working at all.
☐ 2. I do not want to go to Bangkok for working so much.
☐ 3. Hard to tell
☐ 4. I want to go to Bangkok for working to some extent.
☐ 5. I want to go to Bangkok for working very much.

(2) **<u>If you are working around Bangkok</u>,** do you think that you will go back to the Northeastern region in the future?

☐ 1. I do not want to go back there at all
☐ 2. I do not want to go back there so much
☐ 3. Hard to tell
☐ 4. I want to go back there to some extent
☐ 5. I want to go back there very much

Part 6. Personal information

1. Sex ☐ 1. Male ☐ 2. Female

2. Age _____ years old

3. Your educational experience before training in the KISD/UBISD

3.1 At the level of primary education
☐ 1. graduated P.6 of the school under the jurisdiction of Office of National Primary Education Commission(ONPEC)
☐ 2. graduated P.6 of the school under the jurisdiction of Teetsabaan (municipal government)
☐ 3. graduated P.6 of the private school
☐ 4. graduated P.6 of the school under the jurisdiction of government other than ONPEC and Teetsabaan
☐ 5. graduated P.6 of the non-formal education
☐ 6. dropped out
☐ 7. had not ever entered the school at the level of primary education

3.2 At the level of lower secondary education
☐ 1. graduated M.3 of the school under the jurisdiction of Department of General Education (DGE)
☐ 2. graduated M.3 of the opportunity expansion school under the jurisdiction of ONPEC and Teetsabaan
☐ 3. graduated M.3 of the private school
☐ 4. graduated M.3 of the school under the jurisdiction of government other than DGE,ONPEC and Teetsabaan
☐ 5. graduated M.3 of the non-formal education
☐ 6. dropped out
☐ 7. had not ever entered the school at the level of M.1
☐ 8. others (Please specify.) _____.

3.3 At the level of upper secondary education

☐ 1.graduated M.6 of the school under the jurisdiction of Department of General Education (DGE)
☐ 2.graduated M.6 of the school under the jurisdiction of Department of Vocational Education (DOVE)
☐ 3.graduated M.6 of the private school.
☐ 4.graduated M.6 of the school under the jurisdiction of government other than DGE and DOVE.
☐ 5.graduated M.6 of the non-formal education.
☐ 6.dropped out.
☐ 7.had not ever entered the school at the level of M.4.
☐ 8. others (Please specify.) _____.

3.4 At the level of higher education

☐ 1.graduated the level of bachelor degree or upper level.
☐ 2.graduated the level of Diploma in Vocational Education or Higher Diploma in Technology.
☐ 3.graduated the level of sub-degree.
☐ 4.dropped out.
☐ 5.had not ever entered the level of higher education

3.5 After the training in the KISD/UBISD, did you transit to the another school?

☐ 1.yes
☐ 2.no

3.6 If you transited to the another school after the training in the KISD/UBISD, please specify _____.

4. In which province did you live before the training in KISD/UBISD?

1. Northeastern Region

☐ 1.1. Kalasin	☐ 1.2. Khon Kaen	☐ 1.3. Chaiyaphum
☐ 1.4. Nakhon Phanom	☐ 1.5. Nakhon Ratchasima	☐ 1.6. Buri Ram
☐ 1.7. Maha Sarakham	☐ 1.8. Mukdahan	☐ 1.9. Yasothon
☐ 1.10. Roi et	☐ 1.11. Loei	☐ 1.12. Si Sa Ket
☐ 1.13. Sakhon Nakhon	☐ 1.14. Surin	☐ 1.15. Nong Khai
☐ 1.16. Nongbualampoo	☐ 1.17. Amnatcarun	☐ 1.18. Udon Thani
☐ 1.19. Ubon Ratchathani		

2. Other Regions

☐ 2.1. Bangkok
☐ 2.2. Vicinity of Bangkok (Nakhon Pathom, Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon)
☐ 2.3. Central Region
☐ 2.4. Western Region
☐ 2.5. Northern Region
☐ 2.6. Southern Region

5. Type of enterprises that you are working

☐ 1. Manufacturing ☐ 2. Repair / Maintenance ☐ 3. Sales
☐ 4. Installation of facilities ☐ 5. Construction ☐ 6. Other Service
☐ 7. Others (Please specify: _____)

6. Type of job that you are working

☐ 1. Motor vehicles, parts and accessories ☐ 2. Electrical machinery and equipments
☐ 3. Electricity, gas and water ☐ 4. Metalwork and Steel work
☐ 5. Woodwork ☐ 6. Ceramics
☐ 7. Painting ☐ 8. Transport, storage and communication
☐ 9. Others (Please specify: _____)

7. In which province is the enterprise that you are working?

1. Northeastern Region
   ☐ 1.1. Kalasin ☐ 1.2. Khon Kaen ☐ 1.3. Chaiyaphum
   ☐ 1.4. Nakhon Phanom ☐ 1.5. Nakhon Ratchasima ☐ 1.6. Buri Ram
   ☐ 1.7. Maha Sarakham ☐ 1.8. Mukdahan ☐ 1.9. Yasothon
   ☐ 1.10. Roi et ☐ 1.11. Loei ☐ 1.12. Si Sa Ket
   ☐ 1.13. Sakhon Nakhon ☐ 1.14. Surin ☐ 1.15. Nong Khai
   ☐ 1.16. Nongbualampoo ☐ 1.17. Amnatcarun ☐ 1.18. Udon Thani
   ☐ 1.19. Ubon Ratchathani
2. Other Regions
   ☐ 2.1. Bangkok
   ☐ 2.2. Vicinity of Bangkok (Nakhon Pathom, Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon)
   ☐ 2.3. Central Region
   ☐ 2.4. Western Region
   ☐ 2.5. Northern Region
   ☐ 2.6. Southern Region

8. Number of workers

☐ 1. 1 ~ 5 ☐ 2. 6 ~ 10 ☐ 3. 11 ~ 50 ☐ 4. 51 ~ 100
☐ 5. 101 ~ 500 ☐ 6. 501 ~ 1000 ☐ 7. more than 1000

9. Your title or position in the enterprise that you are working

☐ 1. Regular Worker ☐ 2. Skilled Worker ☐ 3. Engineer / Technician
☐ 4. Supervisor / Foreman ☐ 5. Head of Division ☐ 6. High-ranked manager
☐ 7. Manager of Your Own Company
☐ 8. Others (Please specify: _____)

10. Your employment status?

☐ 1. Permanent ☐ 2. Temporary

11. Number of years of experience on your principle job

_____ years _____ months

12. What is the highest level of the National Trade Standard do you have?

☐ 1. Level 1 ☐ 2. Level 2 ☐ 3. Level 3

13. Have you been doing the same kind of work as you have been trained for?

☐ 1. Yes ☐ 2. No

Part 7. Finally, please state your own opinions about the following:

Q.1 What are the strong points of KISD/UBISD?

Q.2. What areas of KISD/UBISD need to be improved, and how can they be improved?

Thank you very much for your cooperation.

[Reference 1-4c Vocational Training Sector]

Evaluation Sheet for Supervisors

The ex-trainees of KISD/UBISD comparing with other workers

In answering questions, please read 1 through 5 below firstly, then circle (○) an appropriate number next to each item/ factor.

KISD/UBISD ex-trainees are much inferior to other workers	----- 5
KISD/UBISD ex-trainees are rather inferior to other workers	----- 4
Cannot say one way or other	----- 3
KISD/UBISD ex-trainees are rather superior to other workers	----- 2
KISD/UBISD ex-trainees are much superior to other workers	----- 1

(1) basic knowledge	1 -- 2 -- 3 -- 4 -- 5
(2) advanced knowledge	1 -- 2 -- 3 -- 4 -- 5
(3) basic technical skills	1 -- 2 -- 3 -- 4 -- 5
(4) advanced technical skills	1 -- 2 -- 3 -- 4 -- 5
(5) ability to catch up with recent technical advancement	1 -- 2 -- 3 -- 4 -- 5
(6) ability to complete responsible work	1 -- 2 -- 3 -- 4 -- 5
(7) ability to quickly master the required work	1 -- 2 -- 3 -- 4 -- 5
(8) level of overall understanding towards their working assignment	1 -- 2 -- 3 -- 4 -- 5
(9) positive approach toward work	1 -- 2 -- 3 -- 4 -- 5
(10) observing formal/informal rules of working place	1 -- 2 -- 3 -- 4 -- 5
(11) ability to observe work schedule	1 -- 2 -- 3 -- 4 -- 5
(12) strong sense of responsibility	1 -- 2 -- 3 -- 4 -- 5
(13) ability to concentrate on work	1 -- 2 -- 3 -- 4 -- 5
(14) hard-working	1 -- 2 -- 3 -- 4 -- 5
(15) spirit of cooperation	1 -- 2 -- 3 -- 4 -- 5
(16) obedience to an order	1 -- 2 -- 3 -- 4 -- 5
(17) quickness of decision making	1 -- 2 -- 3 -- 4 -- 5
(18) tactfulness or quick wit	1 -- 2 -- 3 -- 4 -- 5
(19) diligency such as no absenteeism, late coming to office	1 -- 2 -- 3 -- 4 -- 5
(20) leadership	1 -- 2 -- 3 -- 4 -- 5
(21) ability of self control and management	1 -- 2 -- 3 -- 4 -- 5
(22) ability of managing and supervising others	1 -- 2 -- 3 -- 4 -- 5
(23) ability to raise the "positive approach toward work" of colleagues and subordinates	1 -- 2 -- 3 -- 4 -- 5
(24) instruction and guidance of skills to colleagues and subordinates	1 -- 2 -- 3 -- 4 -- 5
(25) ability to raise the productivity of working place	1 -- 2 -- 3 -- 4 -- 5
(26) contribution to growth of the company	1 -- 2 -- 3 -- 4 -- 5

- Are you satisfied with the ex-trainees of KISD/UBISD as a whole?

1. Not at all ---------- ☐ 2. Not so much ---------- ☐ 3. Hard to tell ---------- ☐
4. Rather ---------- ☐ 5. Very much ---------- ☐

- Please put a score (0-100) on the ex-trainees of KISD/UBISD as a whole. _____

Reference 2　List of Contributors

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(as of March 31, 2001)