ANNEX 8

JOINT EVALUATION REPORT ON
THE JAPANESE TECHNICAL COOPERATION
FOR
THE COAL MINING TECHNOLOGY ENHANCEMENT PROJECT
AT EDUCATION AND TRAINING UNIT FOR UNDERGROUNG MINING

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

EDUCATION AND TRAINING AGENCY OF ENERGY AND MINERAL RESOURCES
REPUBLIC OF INDONESIA

NOVEMBER 21, 2003

JAKARTA
PEPUBLIC OF INDONESIA

CONTENTS

I . INTRODUCTION

1. The Evaluation Team

The Japanese Evaluation Team (hereinafter referred to as "the Japanese Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Masami Fuwa, visited the Republic of Indonesia from November 11 to 21,2003, for the purpose of joint evaluation with the Indonesian Evaluation Team (hereinafter referred to as "the Indonesian Team") on the achievement of the Coal Mining Technology Enhancement Project at Ombilin Mines Training College in Republic of Indonesia (hereinafter referred to as "the Project") on the basis of the Record of Discussions (hereinafter referred to as "R/D") signed on October 19,2000.

Both teams discussed and studied together the efficiency, effectiveness, impact, relevance and sustainability of the Project in accordance with the JICA Project Cycle Management (hereinafter referred to as "JPCM") method.

Through careful studies and discussions, both sides summarized their findings and observations as described in this Joint Evaluation Report.

2. Schedule of Joint Evaluation

November 2002	11	Tue.	Arrival in Jakarta of two members in charge of cooperation planning and valuation analysis
	12	Wed.	· Move to Sawahlunto · Interview with mining Industries (AIC,UPO)
	13	Thu.	· Interview with counterparts and Japanese experts
	14	Fri..	· Interview with counterparts and Other Government office staff
	15	Sat..	· Move to Jakarta · Summarizing the results of interviews and meetings.
	16	Sun.	· Summarizing the results of interviews and meetings.
	17	Mon.	· Interview with BDTBT executive at P3TMB in Bandung · Arrival in Jakarta of three members of Japese Team - Visit to JICA office · Courtesy call on Education and Training Agency of Energy and Mineral Resources
	18	Tue.	· Meeting with Japanese experts · Meeting with Directorate General Geology and Mineral Resources
	19	Wed.	· Meeting with PT. Adaro · Meeting with Japanese experts · Meeting with Education and Training Agency of Energy and Mineral Resources
	20	Thu.	· Meeting with Directorate General Geology and Mineral Resources · Discussion on the Evaluation Report and M/M draft
	21	Fri.	· Discussion on the Evaluation Report and M/M draft · Signing of the Joint Evaluation Report and the M/M. · Report to the JICA office. · Departure from Jakarta

3. Members of Evaluation Team

3-1 The Japanese Team

Mr. Masami Fuwa	Leader Director, Second Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA
Mr. Tetsuji Tanaka	Mine Safety Policy Deputy Director, Coal Division, Natural Resources and Fuel Department Agency for Natural Resources and Energy, METI
Mr. Komao Hosaka	Underground Coal Mining Technology Executive Managing Director, Mitsi Mining Engineering Co., LTD
Mr. Yosuke Kusunoki	Cooperation Planning Staff, Second Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA
Mr. Kenichi Kumagai	Evaluation Analysis (Consultant) General Manager, International Cooperation Department, Industrial Services International Co., Ltd.

3-2 The Indonesian Team

Ir. Nursaleh Adiwinata	Leader, Head of Education and Training Center for Mineral and Coal Technology
Dr. Ir. Irwan Bahar	Project Coordinator
Ir. Mulyono Hadiprayitno Msc	Head of Training Division
Drs. Tasman Sihombing	Head of Education and Training Unit for Underground
Mr. Wawan Supriatna	Head of Planning Sub-division

3-3 JICA Jakarta Office

Hiroshi Takeuchi	Assistant Resident Representative
Ms. Sulisiyo Wardani	National Staff

3-4 The Experts

Mr. Hiroaki Tastuno	Leader
Mr. Mamoru Izumi	Coordinator
Mr. Katsuhiko Seo	Expert of Mining
Mr Koji Hisadomi	Expert of Electric
Mr. Yoshharu Murase	Expert of Machine

II. METHODOLOGY OF EVALUATION

1. Method of Evaluation

The Project evaluation was conducted in accordance with the JPCM method.

- The Project Design Matrix (PDM) was agreed by both sides as a basis of the evaluation.
- Achievement of the Project was studied by collecting data of the Verifiable Indicators set in the PDM.
- The Project was evaluated on five aspects described below.

2. Aspect of Evaluation

The Project was evaluated on the following five aspects:

(1) Efficiency: Evaluate how the results stood in relation to the efforts and resources, how economically the resources were converted into output, and whether the results could have been achieved by other better methods.

(2) Effectiveness: Evaluate the extent to which the purpose has been achieved or not, and whether the project purpose can be expected to happen on the basis of the outputs of the Project.

(3) Impact: Foreseeable or unforeseeable, and favorable or adverse effect of the Project upon the target groups and persons possibly affected by the Project.

(4) Relevance: Evaluate the degree to which the Project can still be justified in relation to the national and regional priority levels given to the theme.

(5) Sustainability: Evaluate the extent to which the positive effects as a result of the Project will still continue after external assistance has been concluded.

3. Information for Evaluation

Following sources of information were used in this study.

- Documents agreed by both sides prior to and/or in the course of the Project implementation;
  - Record of Discussion (R/D)
  - Minutes of the Meeting (M/M)
  - Tentative Schedule of Implementation (TSI)
  - Detailed Plan of Operations (DPO)

(2) The Project Design Matrix (Annex-1)

(3) Record of inputs from both sides and activities of the Project.

(4) Statistics.

(5) Interviews with and questionnaires to counterparts, Japanese experts and persons interested.

Ⅲ . Project Summary

1. The background of the Project and Dispatch of Survey Team

Although almost Indonesian coal mines are operating with the opencut mining methods, the underground operations are forecast to increase in future. Based on this forecast, JICA carried out "The Investigation into the Master Plan for The Human Resource Development for Coal Production Increase in Republic of Indonesia" from1996 to 1997. According to the result of the Investigation (henceforth, 1997 Master Plan), it is estimated that the coal production from the underground mines will increase gradually, and underground manpower will increase inevitably. In respond to the investigation result, the Indonesian Government requested the project-type technical cooperation for Coal Mining Enhancement Project from Japan. In April 2001, JICA started "The Coal Mining Technology Enhancement Project at BDTBT in the Republic of Indonesia" (henceforth, the Project) which has been managed for five years. After the beginning of the project the Japanese consultation Team was dispatched in September 2002. Due to the result of the review of the Team, two short-term experts were dispatched to investigate the forecast of underground coal mining and the needs of the Project in March, 2003. And the Japanese project Consultation Team were dispatched in June, 2003 in order to review the activities being conducted under the project and to formulate a plan of further development of the Project.

2. Purpose of the Project

The overall goal and the project purpose were stipulated in the R/D as follows

- Overall goal

Underground coal mining technology is enhanced in the Republic of Indonesia.

- Project Purpose

BDTBT is able to train underground mining supervisors.

IV. Result of Evaluation

Summary of JPCM Evaluation Report

The C/Ps from Ombilin Mine (UPO) left the Project caused by the rationalization of the company, and the C/Ps from the P3TMB had been absent for the long time, these instabilities of the C/P exerted bad influences upon the Project. But the influences controlled by means of the employment of young persons with high morale and ex-UPO staffs with underground- mining-experience; and talking about the Introductory Courses, it is estimated that the Project Purpose will be achieved within the Project period. However the increase of the underground mines is less than the original plan and the trainings of the staffs of the local government and mine inspectors has been urgent business, because the authority to manage the mineral and coal mining industry was decentralized from the central to the local government. Indonesian Government strengthen the national standardization activities in qualification and standard. Also the Ministry of Energy and Mineral Resources set up the national standardization activities in qualification and standard related to the ministry. The Education and Training Agency of Energy and Mineral Resources (Hereinafter refer to as ' the Agency') intend to appoint the P3TMB and also the BDTBT as the training organization of the mining qualification (But there are some barriers such as review of regulations, the issue of the stakeholders and a small number of existing underground coal mines to approve the appointment immediately).

It is required to BDTBT to modify the Input, Activities, Output and Project Purpose to cope with the change of coal mining circumstance and diversification into coal mining training. The needs survey clarifying the content and size of the training has to be carried out for the purpose of reviewing the above mentioned item of Project Design Matrix (PDM) and preparing the concrete financial plan to raise the sustainability as UPT.

1. Detail

1-1 Efficiency

The efficiency of basic courses is high.

With the Input, personnel, equipment and facilities, which have been timely arranged and functioned effectively, appropriate Outputs have been produced at the basic courses that are executed recently in the Introductory Courses, except the following;

- The achievement of the Outputs has been delayed at a training course due to the shortage of the C/P activities that were generated by the external condition.
- The change of activity (training courses) caused by the delay of budget execution.

- Three months delay of experimental tunnels construction was due to the significant difference between the budget and the quotation in unit price.

The textbooks is compiled as one of the training materials for introductory courses, they are made from practical basic of operation and/or safely to the high level of knowledge and skill; therefore the C/P was required especially to acquire so many field experience thorough the OJT provided at domestic mines also at foreign mines to achieve the technology transfer in the Introductory Courses. If the target group are still supposed to be the middle class engineers at the mine site, it is evaluated that the efficiency is low because of the low degree of mine experience of C/Ps. If the target group is supposed to be mining inspector/ government staff, the legal training has to be added, the present Inputs are sufficient for the training, therefore it can say the efficiency is high.

And if the BDTBT acts as the training organization for the mining qualifications, and the cooperation and mutual reinforcement with P3TMB are conducted, the trainings are possible, so it can be say the training for the qualification is efficient.

1-2 Effectiveness

The effectiveness of the basic courses is high.

As mentioned before, the achievement of the Outputs were delayed due to the external conditions, and target group changed to mine inspectors and coal mining engineers. On account of these matters, the Project Purpose is changed, and the evaluation of the effectiveness is complicated.

At first, administrative system of the project established within one year after the project started, and operation and maintenance of the equipment and machineries have been carried out by almost C/Ps.

And the curriculums and textbooks were prepared JFY2002, except the Environment Course that was started JFY 2003. The Regularly Courses training were held in 2002, and in 2003. Number of the courses were 17 in total and all trainees participated were 327. And Special Courses were held twice. Many of the C/Ps are capable to plan and manage the training with in the field of transferred technology.

Therefore it can say that the effectiveness is high at the basic courses that are executed recently in the Introductory Courses. In regard to the inspector training, the high level of the field experience were not required to the C/Ps. So the effectiveness of the inspector training is high. From the similar point of view, the efficiency of the training for the qualification is high. As for the training of middle class mining engineer, judging from the original plan, the C/P training shall be carried out fully five 5 years, but the many C/Ps (especially new graduates) did not receive the sufficient OJT before joining the Project, it can not evaluate that the most of C/Ps experienced half of skill that were required for the

technology transfer at present; therefore the effectiveness is low.

1-3 Impact

The following positive Impact occurred.

Two universities sent short-term student apprentice, it is expected that this activities trigger the research and development of underground coal mining technology in Indonesia.

In the Suwahlunto area the two Japanese Coorperations, namely JICA and NEDO, are tied up some area of technical transfer, it will be strengthen the coal technology in Indonesia.

It is important for the Project to review the content of the training thoroughly to cope with the actual demand, and to create the positive impact

1-4 Relevance

There is no change of the importance of coal in the government strategy of energy and economy. Because of the coal circumstances, sluggish the investment to coal caused by social, economical, financial instability in Indonesia the development of the underground delayed; however the results of the needs survey on March, 2003 done by JICA, the number of underground coal mines and production from the underground will increase gradually. And the great stock of experienced underground mining technology is transferred. Therefore the Project has relevance. If the technology transfers, which consider the cost effectiveness more, the relevance of the technological support become more higher.

1-5 Sustainability

After the Project completion, BDTBT shall be maintained and be succeeded as the one of the division of P3TMB. The Agency has reviewed the concept plan of financing, such as the local cost will be born by the government, and the training fees will be born by the organization who sent the trainee to the BDTBT.

However to guarantee the sustainability, concrete financial Plan shall be established immediately, and how the unique position, namely the UPT, of BDTBT will be treated by the government shall be analyzed its sensibilities. For the purpose, the needs survey shall be continue to grasp the training needs and content of the related organizations; then review the training courses and size of the training.

V. CONCLUSION

From the point of view that the technology transfer has been carried out toward the basic courses, it is evaluated that the both of the efficiency and effectiveness are high. However as the forecast of in future, the review of the Project is required to create a Project that have a lot of actual demand, and the efficiency and the effetivity are higher and affect a lot of positive impact., cope with the diversification of target group. So the more enhanced training needs survey is required. And after the survey, its results will be utilize to prepare the concrete financial plan . Then the sustainability of BDTBT will be secured.

VI. RECOMMENDATIONS

It is the most important to design the development plan of the BDTBT in self-sufficient manner.

Recognizing the fact that underground coal production in Indonesia grows much slower than expected before, it is recommended to review and revise the original plan of the Project, i.e., revision of the Project Design Matrix (PDM) in near future. It is necessary to keep the function of existing facilities and equipment, and to improve and stabilize the capabilities of the Indonesian counterpart personnel. In addition, urgent matter may include identifying possible demand for technical training for underground coalmines in the country. Considering the characteristics and mandate of the BDTBT, it is also urgent task to establish national qualification system especially for underground mine safety and environmental preservation.

VII. EVALUATION GRID

		Objective Verification Indicator	Investigation Result	Remarks
Achievement of the Plan	The degree of the Overall Goal (Forecast)	1 Has the coal from underground increased? 2. Has the number of underground coal mines increased?	1. Although the coal production in Indonesia increase from approximately 54 million tons in 1997, when the Master Plan of this project (hereinafter referred as MP) was made, to 103 million tons in 2002; the coal from the underground mines has been similar 430 thousand in 1997 and 420 thousand tons in 2002. But there are some industries who have plans to develop the underground mine, therefore coal product from the underground mines will increase gradually in the near future. 2. The existing underground are three, same mines has been operating before the MP preparation. In addition, two mines start development and /or trial mining in this year. Also there are almost 10 industries who have plans to develop underground coal mine, it is estimated that some mines will be start the operation, so the number of underground coal mines will increase in the near future.	
		1. Have the accidents of the underground coal mine decreased?	Not available	
		2. Are the BDTBT graduates being engaged in the job related to underground coal mining? What kind of job are they being engaged in ?	2 The follow-up survey has not been carried out yet.	
	The degree of the Project Purpose	1. Have the C/Ps been able to execute the planning, management and training in the field of their expertise for themselves?	According to the C/P estimation done by the Long-term Experts, more than 70% C/Ps have been able to execute by themselves at present, and more than 90 % C/Ps will be able to execute by themselves by the Project completion. By the self-estimation, however new graduates answered 'Maybe' they will most C/Ps believe firmly that they will be able to execute by themselves.	
		1. Are the BDTBT's training courses estimated to be useful by the underground coalmines? 2. Are the BDTBT's training courses estimated to be useful by the coalmines, which were scheduled underground operation? 3. Are the BDTBT's training courses estimated to be useful by the companies and /or organization, which sent trainees?	However 116 questionnaires (72 to coal mining companies, and 43 to local government and local autonomous body) were sent by the Project, to survey what program will be meet the expectations of these organizations and degree of those, only 23 replies (10 from coal mining companies, and 13 from local government and local autonomous body) came to hand as of 27 October. Due to the low recovery and because of the meaning of the questionnaire was not understood enough, the replies are not sufficient to discuss those needs. (According to the result of the questionnaires to the trainee, it is not classified into three groups, almost trainee replied the programs are very useful or useful.)	

The degree of achievement of the Output	1-1. ・How many allocation plans are there for C/Ps and Japanese experts prepared by the Project? And as for the plan at the present? ・If there are some changes among the plan, what are the reason for changes? ・Were the C/Ps and Japanese experts allocated according to each plan? (timing, the number) ・Were the C/Ps and Japanese experts (including short-term experts) adequate to their post, both in quality and quantity? ・Did bad influences by the defect of the C/P and /or experts allocation arise? ・ How are the progress of the personnel allocation forecasted in the future? 1-2. ・How are local costs, facilities and equipment planned? ・Were there big changes in comparison with the original plan? What were the reasons? ・Were facilities, equipment and local cost arranged as planned? ・Were there any big changes in the original plan itself? ・Are local cost, facilities and equipment adequate both quality and quantity? ・Did bad influences by the defect of local cost, facilities and equipment arise? ・How are the progress of the budget forecast in the future?	1 The allocation plans for C/P and Japanese experts have been based on the original plan. However the personnel were allocated almost as planed both the timing and numbers, the C/Ps from UPO left the Project by February 2003, due to the rationalization of the UPO. To cope with this situation, 4 persons (new graduates) from P3TMB and 2 persons from UPO were filled up. This change has exerted a bad influence on the progress of the technical transfer seriously. Also it happened after the Ramadan in 2002 that the most of C/Ps from P3TMB go back to their country on the vacation, and then did not return to the Project nearly for three months. Today the number of the C/P is 18 that is more than that of the original plan, which including 4 part-time C/Ps those were not allocated in the original plan. The quality of the C/Ps and Experts are almost adequate (the long –term expert in the field of the machinery mentions that it is preferable to increase 2 C/Ps in his field) . As stated before, 6 C/Ps from the UPO left the Project, A few C/Ps have the experience related to underground coal mining operation, so it is the urgent necessity how to give C/Ps the experience, then the training at the domestic mines and at the Japan are strengthen. For information, it is decided that the 4 new graduates and another C/P will be dispatched to the NEDO senior course in Japan, in January 2004. The forecast for the personnel allocation shall be decided based on the "Needs survey of the BDTBT's training toward the mining industries which will be conducted successively. 1-2 The facilities, equipment and machineries and local cost have been almost planned based on the original plan. With regard to these items serious problems did not occur in timing and in contents. But following problem happened. In comparison with the original plan, the experimental roadway was shortened from 200 m to 150 m due to the quotation price for the roadway was greater than that of the original plan. The change of the design suffered about three-month delay in the completion of the roadway. Although the influence on the technical transfer was small. At the beginning of the Project, after the reorganization of the Ministry, the positioning of the OMTC was not fixed; therefore there were difficulties of the smooth budget execution for the local cost. Even now, due to the financial difficulty of the financial situation of the Government, some time the delays of the budget execution for the local cost has happened occasionally,; and the training schedules have been forced to change. The facilities, equipment and machineries and local cost were almost adequate both in quality and quantity to carry out the technical transfers that have been done at the present.(the long-term expert in the field of mining request a boring machine for underground driven by the compressed air) The forecast for these items shall be decided based on the "Needs survey of the BDTBT's training toward the mining industries which will be conducted successively.	

1 55 1	(Achievement of the Plan)	2-1 ・What kind of plan was settled on about the operation and maintenance for equipment every year? ・Have the equipment been utilized and maintained based on plan? ・ Have the manuals and records on operation and maintenance of the equipment been prepared? 2-2 ・Has enough budget for operating and maintaining the equipment been allocated and disbursed? 2-3 ・How have the technology transfer on operating and maintaining the equipment been transferred? ・ How much knowledge and skill of operating and maintaining the acquired by each C/P? 2-1,2-2 ,2-3 How are the forecast?	2-1 As for the operation and maintenance for equipment plans were settle on every year based on the original plan.; and the equipment and machineries are utilized and maintained based on the plan. The manual of operation and maintenance for the equipment have been prepared and have been kept by the C/Ps in charge of the equipment. How ever it is observed that the equipment are well maintained, the records has not prepared by the reason that the equipment had used mainly used for the training period – the low frequency compare with the general equipment usage. The records will be prepared in future. 2-2 Enough budgets for operating and maintaining the equipment has been allocated and disbursed. 2-3 Technology transfer on operating and maintaining the equipment have been conducted by the long-term and/or short-term experts. And the technology transfers have carried out not only to the C/Ps in charge of the field, but also C/Ps in other fields. According to the evaluation by the long-term experts, except some C/Ps, C/Ps has been able to utilize and to maintain the equipment. And the presence of the C/Ps who have enough skill at the present has not affected the Project seriously. If the decision will be made by the result of the needs survey to use same equipment existing in the Project, all C/Ps will be utilize and maintain the equipment by the end of the Project.	
		3 . ・Have the technical transfer progressed according to the original Plan of Operations? ・Were those sufficient both in quality and quantity? ・Were the curriculum and textbooks prepared ? Were the contents sufficient? ・ Does each C/P utilize the technology transferred adequately? ・How are the forecast?	3. The safety course was influenced by departure of, or the long absence of the C/Ps. At the course it is estimated that degree of the achievement of transfer are serious in comparison with the original plan, and the delay is from half year to one year. At other courses, the degrees of the achievement were almost as planed. (However the machinery and electricity courses have the same effect, the influences were not serious because of the allocation of experienced C/P). The technical transfers have been carried out as planed. Furthermore the trainings at the mine site have been reinforced as the almost C/Ps have not the practical experiment in the field of underground mining. The curriculums and textbooks were prepared by 2002. In connection with the textbooks, a total of 68 subjects were prepared; 8 for general, 14 for mining, 12 for safety, 18 for machinery and 16 for electricity).(The environment courses is establish in 2002 and textbook were prepared in 2003) The review has been carried out.. Almost of all the C/Ps have acquired the technologies transferred.	

(The degree of achievement of the Output)	How many training courses were held? How many trainees did attend the training courses? Who did dispatch the trainees? Did the trainees acquire the Certificate? And how much Certificate were given?	In 2002 total of 7 courses were held; 2 for mining, 2 for safety, 1 for local government, 1 for machinery and 1 for electricity. The term of each training course is approximately 2 weeks. Number of trainee of each course is 20. In total 140 persons joined. Trainees by the source of dispatch were as follows: 74 from local government, 51 from mining companies and 15 from education institutions; and out of the trainee from the mining company, 25 were dispatched from UPO. In 2003 total of 10courses were held; 2 for mining, 2 for safety, 2 for machinery, 2 for electricity and 2 for environment. The term of each training course is approximately 2 weeks. Number of trainee of each course is almost 20. In total 187 persons joined. Trainees by the source of dispatch were as follows: 65 from local government, 99 from mining companies and 23 from education institutions; and out of the trainee from the mining company, 66 were dispatched from UPO Furthermore a special course of safety was held in June, targeting the 60 new employees of AIC who has been developing the new underground mine And a especial courses for mine rescue , in June and 13 trainees were joined.	

	Input	・The number of experts (long-term, short-term) and their expertise.	1. Japanese Experts (as of October 31, 2003) (1) Long-term experts ・Team Leader : 1 ・Coordinator : 1 ・Underground Coal Mining Technology : 1 ・Underground Coal Mining Safety Technology : 1 ・Underground Coal Mining Machinery Technology : 1 ・Underground Coal Mining Electricity Technology : 1 ・Underground Coal Mining Environment Technology : 1 (2) Short-term Experts ・Japanese Fiscal Year(JFY) 2001 : 7 ・ 2002 : 8 ・ 2003 : 4 (2 completed, 2 planed)	
		・The number of C/P and their expertise.	2. Counterparts (as of October 31,2003) 18 ・Underground Coal Mining Technology : 4 ・Underground Coal Mining Safety Technology : 4 ・Underground Coal Mining Machinery Technology : 3 ・Underground Coal Mining Electricity Technology : 3 ・Underground Coal Mining Environment Technology : 4 (Including 4 part-time C/P)	
		・Equipment provided and expense.	3. Equipment provided and expense (thousands yen) Total amount up to 31,October Approximately 247,490. Experimental roadway 33,987 Side Dump Loader 40,250 Coal Preparation System 7,163 Oxygen breathing apparatus 6,303 Underground Boring machine 6,009 Monitoring System 19,000 Hydraulic System 7,980 Others 126,798	
		・Local cost.	4. Local Cost ・2001 Actual Approximately 2,381 mil. RP ・2002 Actual 2,047 ・2003 Budget 3,507	
		C/P training in Japan.	5. Training in Japan ・JFY 2001 3 persons (1 month / person) ・JFY 2002 3 persons (1 month / person) ・JFY 2003 3 persons	

*1 DMCE ---- Directorate of Mining and Coal Enterprise

		Objective Verification Indicator	Investigation Result	Remarks

Process Implemen	Progress condition of the activities	Were activities conducted as planned?	The 6 long-term experts and 15 C/Ps were allocated by early June 2001. And environment course were held in JFY 2002.The procurement, construction and instruction of the main facilities, equipment and machineries were finished by the end of JFY 2001. Each plans required as project activities were prepared every year. . The curriculum and all (68) of textbooks were prepared by the mid 2002. The technical knowledge and skill have been transferred to the C/Ps by the long-term and short-term experts However the project activities were delayed in some field caused by the problem of C/P stabilities, these will be estimated to be finished by the end of project as planed.	
	The implementation of the project monitoring	· Has the structure of the monitoring prepared and being done as planned? · Have the result of the monitoring been transmitted to the whole of the Project? · Have the result of the monitoring been reflected on the activities? Were the PDM and/or the detail activities modified? · How has the Project coped with the change in the Important Assumptions?	The monitoring were carried out one in JFY 2001, and semiannually basis in 2002 and 2003. The results of the monitoring were reported in the annual or semiannual reports. The results were discussed at the Joint Coordinating meeting and the decisions of the meeting give the feedback to the Project. Also the results were also reflected to the Project directly. Minor changes of the activities were done on the ground of the monitoring. This year, the 'Competency Target' , which define the items C/Ps have to acquire at every course during the technical transfer period of Introductory Course, was prepared and in future the target will be used to evaluate the degree of competency that C/Ps will acquire.	
	Relationship between the experts and C/Ps	·Were the lines of communication between the experts and C/Ps established? · How has the Project been coping with the problem between C/Ps and the experts? ·Have the result of the meeting improved the project activities? Are there concrete examples? · Do the C/Ps participate in the Project independently and actively?	· Some groups have regularly meeting and other groups have the occasionally meeting. According to the questionnaires to the C/Ps, all C/Ps relied that they have " always" discuss with the long-term expert about the methods / contents in the field of technical transfer. And their opinion reflect" a lot on" the Project. · According to the evaluation done by the long-term expert to the C/Ps, they evaluate that the almost of all C/Ps participate in the technical transfer actively, and all C/Ps carry out the training actively. The questionnaire regarding the 'preparation of training materials ' C/P self-evaluated 90%of them conduct the training actively.	
	Were beneficiaries interested in the Project?	· Do the underground coalmines , coalmines scheduled underground operation and the local government/self-government of the coal mining area understand the contents of the technology transfer? And do they cooperate the Project positively?	The existing coal mines in West Sumatra and in East Kalimantan have understood the contents of the technical transfer to the Project, and cooperated as much as they can in the form of dispatching trainees to the project and receiving C/Ps to visit the mine site. But as it does not always say that the mining companies, who have plans to develop the underground mines, understand the contents, it is required for the project to carry out the publicity work and to survey the training needs of the companies.	
	Ownership of Implementing Agency of the project, Indonesia side	· Have the executive of the Implementing Agency participate in the Project activities aggressively? · Have the disbursements of the expenditure carried out securely? · Has the Implement Agency allocated C/Ps as planned, and attention in such the way to prevent the hindrance for the project management?	· The executive of the implement Agency participate the Project activities. which one's participation is required, including the Joint Coordinating Meeting aggressively · The budget executions are some time delayed because of the financial situation in Indonesia, which exerted influence on the supply of consumable goods and drove to change the time of the training course. · However the executive care about the issues of C/P allocation, the long absence of C/Ps and the breakaway UPO stuffs from the project occurred in the past.	

		Objective Verification Indicator	Investigation Result	Remarks
Relevance (Consistency with the needs of the recipient country. Does it have relevance as assistant activities of Japan?)	Does the Overall Goal agree in the development policy on the Indonesia side?	· Is there any change in the government strategy toward the coal development?	· The coal development of the government that recognizes the coal as important energy resources to promote the energy diversification, and develop the coal resources based on the 'The general policy in the Energy Sector (1997 KUBE)' which defined as following: Diversification – a diverse and optimum use of energy resources to the net benefit of the nation, the reduction of the rate of depletion of those resources, and sustained development Intensification of the search for resources – the survey and exploration of oil/gas and coal resources on a continuous basis. There is no change in the coal policy at the present.	
		· Has the policy (e.g. deregulation) that promotes mining investment been evolved? · What is government requesting from this project at present?	· By way of promoting the coal mining the Direct General Geology and Mineral Resources (the ' Directorate') considered that the Royalty can be negotiated between the government and a mine with the R.O.I and I.R.R as indicator; the Royalty for a underground mine is set up lower that a open-cut mine. And the 'Directorate considered to give direction to approve the special depreciation_ · The Government is request the following matters from the Project: At first, to cope with the forecast of increase of the mining inspectors due to the decentralization, especially underground mining training. Second, the underground mining technical training to the engineers working at the existing coal mines or companies that have plan to develop the underground coal mines Third, the training center for the mining technological qualification, as a core of underground mining training.	
	Can we expect the riffle effect on any people except for the target group?	· Do the related groups, especially mining industries, show keen interest in this Project?	· As mentioned before the existing coal mines show interest and cooperate with the Project, but it does not always say that the other mining companies shows interest in the this project.	
	Does the Project Purpose agree in the needs on the Indonesia side?	· Have the aspirations of the mining industries to develop the underground coalmines been risen. · What are the mining industries requiring from the Project to improve the mining technology?	· However the mining companies who has the plan to develop the underground mine, the influences of the Project has been small for the reason that the training courses started last year. · It is unclear at the present. The needs survey to the mining companies should be carried out in succession.	
	Does it have relevance as assistant activities of Japan?		As Indonesia is one of the important thermal coal exporter for Japan, from the view point of the stability of the coal source, the Project, which supported Indonesian coal mines with enhancement of coal mining technology. Japan has a great stock of experienced underground coal mining. As there is some coal geological resemblance between the two countries so it is supposed that the mining conditions are also similar. If the technology transfers, which fully consider the cost effectiveness, are carried out, the relevance of the technological support is high.	

Effectiveness (Can we get expected effect by the execution of the Project? Can we say that the Project is effective?)	Is the BDTBT train able to train underground mining supervisors ?	· Is the Project Purpose achieved as planned? · Will the Project Purpose be achieved as planned by the completion of the Project? · What kind of modifications are necessary for the project? · Have the C/.P acquired new knowledge and technology? · Will the C/P be able to establish oneself as an trainer?	· A training course (safety) has been delayed in consequence of the breakaway of UPO C/Ps from the Project. At present 70% of C/P acquired the knowledge and skills transferred, and they has been able to prepare the plans and to manage the courses that they are in charge. According to the forecast of the long-term experts, the technical transfer for Introductory Courses will be completed by the end of 2004. The forecast estimated by the long-term experts and self-estimation of C/Ps achievement say that the C/Ps will establish themselves as trainer by the end of the project. · With respect to the vocational aptitude for trainers of C/Ps, judging from the training demonstrations done in June for Japanese research team, interview with C/Ps for this time and the opinion of the long-term experts, it says that they have high aptitude. Although they are excellent in knowledge and potential abilities, it is a fact that there are many C/Ps who have no practical experience related to the underground mine operation. Therefore the increase of the OJT to deepen the underground mining technology shall be promoted. If not, it is concerned that the Project get no further than the basic technical training organization. As for the target group, the target group namely the underground mining engineers have not increase rapidly. On the analogy of the recent coal surroundings in Indonesia, the increase of the engineers will be gradually for the time being. While, the Central Government has considered that the trainings to the administrative official and mining inspectors in the autonomies are urgent necessities, so in fact that trainees from autonomies have accounted for more than 50% of the BDTBT trainees. Therefore the Input, the Activities, the Output and Project Purpose shall be reviewed.	
		· Do the trained C/Ps continue to teach and assist courses at BDTBT? (Is there any change with the external condition?)	Due to the rationalization of the Ombilin Coal Mine, the C/Ps from UPO left the Project in 2002.	
		· Have the appropriate number of trainees from coal mines been applying to BDTBT recruitment? (Is there any change with the external condition?)	After the economical crisis in Indonesia, for the reason that the investment in Indonesian coal development has been slowing down, and that the Project locates in West Sumatra, not so many participate from mining industries participated in the Project, except trainees from existing mines and a developing coal mine nearby the project.	

*2 MEMR --- Ministry of Energy and Mineral Resources

		Objective Verification Indicator	Investigation Result	Remarks
Efficiency (Was the Project efficient?)	Is the Output, which corresponded with the Input of resources, attained?	・Have the Output been achieved as planned ? ・Will the Output be achieved as planned by the completion of the Project?	・At the present the Output have been almost achieved as planed except the Safety Course which exert harmful influence upon the project by the instability of the C/Ps allocation. As for the Introductory Courses it is judged that the Output will be achieved as planed within the Project period.	
		・Can all the C/Ps and the Japanese Experts concentrate on the Project, during the time given to them? ・Do the C/P, Japanese Experts have the skill suitable for the technology transfer? ・Have the provided facilities and equipment been operating at high availabilities? ・Are provided facilities and equipment suitable for the planned activities? ・ ・Is the provided budget suitable for the planned activities? ・Is there big alienation between the original plan and the recent (or forecasted) input plan from the viewpoint of allocation?	・Up to end of JFY2002 there were the problem of C/P allocation. But after the 2003 follows the independent institutionalization (to become UPT) , it has been judged that the C/Ps would be stabilized at the Project. And according to the questionnaires to the C/Ps, they wish to continuously engage in the BDTBT after the Project completion. ・The experts and C/Ps have the skills suitable for the technology transfer, except many C/Ps are lacking in the underground mining experience. ・The major provided facilities and equipment are suitable for the planed activities, therefore those availabilities at the practice are high. ・The provided budget were almost suitable for the planed activities. ・The Input Plan may be reviewed based on the result of the needs survey. In future.	
		・Was the timing of the personnel allocation appropriate for the plan? ・Was the timing of the installation of facilities and equipment appropriate for the plan? ・Was the timing of disbursement appropriate for the plan? ・Is there big alienation between the original plan and the recent (or forecasted) input plan, from the viewpoint of timing?	・The timing of personal allocation have been appropriate for the plan. ・The timing of the installation of facilities and equipment is almost appropriate for the plan except the delay of experimental roadway construction. ・Sometimes the delay on the budget execution occurred.	
		・Have the Inputs been made close studies of both utilities and cost, before the purchase?	・Like the experimental roadway design was reviewed, on the occasion of the facility construction and the equipment purchase, the Inputs have been made close study of both utilities and cost.	
		・Was there any unexpected Important assumption which exerted a remarkable influence on the Input?	・The rationalization of the UPO was the unexpected one.	

		Objective Verification Indicator	Investigation Result	Remarks
Impact (Is there indirect or ripple effect by the project execution?)	Has the underground coal mining technology been enhanced in Indonesia. Are there other ripple effects?	How has it affected the increase of underground coalmines? (Has the Project received inquiries about development? ----.)	・It does not say that the Project give the influence on the subject. (Many inquiries was made when they visit the mines or mining companies, but the Project activities have not begin in line with the inquiries)	
		How has it affected the increase coal production from the underground mines? (Has the Project received inquiries about operation technologies? ----)	・ Ditto	
		How has it affected the increase safety of the underground coalmines? (Has the Project received inquiries about mine safety technologies? ---)	・Ditto	
		Have the research and development for underground coal mining technology raised in the Universities and/or research laboratories?	・The Project received short-term student apprentices from UNP and UNISBA, it is expected that this activity will trigger the research and development of underground coal mining technologies in Indonesia. ・BDTBT has a plan to receive short-term apprentices from Polytechnic, which will be established in Sawahlunto in 2004.	
		Have the number of underground training courses increased? Have the contents of the BDTBT training courses been introduced OJT training conducted by industries?	・In 2003, two Special Courses including safety training to 60 of new employees of AIC and mine rescue training were carried out other than the regularly courses.. One part of the P3TMB training course for Senior mining manager was held at BDTBT.	
		Are there unexpected positive and/or influence those are not written in the PDM?	In the Suwahlunto area the two ODA business, namely JICA and NEDO) are tied up some area of technical transfer, it will be strengthen the coal technology in Indonesia.	

		Objective Verification Indicator	Investigation Result	Remarks
Sustainability (Does the effect last after cooperation is finished?)	Government support for organization and systems (forecast).	· Is there any change in the government strategy which makes mining the key industries of the country? · Does the factor that is expected a strategy change exist?	· There is no change in the government strategy which makes mining the key industries of the countries. By way of promoting the coal mining the Direct General Geology and Mineral Resources (the ' Directorate') considered that the loyalty can be negotiated between the government and a mine with the R.O.I and I.R.R as indicator; the Royalty for a underground mine is set up lower that a open-cut mine. And the 'Directorate considered to give direction to approve the special depreciation.	
	Future vision of underground coal mining	· How does the Indonesia side estimate the progress of underground coal mining, After 2006 (Project completion)? · Number of the mines, annual coal production from underground mines. · What kind of direction will be done by the government to the mines whose operation will be carry out by subcontractor, about the job training system and mine safety system?	· After the economical crisis investment in coal mines has been hung low because of instability of economy, finance and social, sluggish coal price. Before the Project three underground coal mines had operated and at present only same mine has been operating. While, two mines – one is under construction and another is in trial-mining —will start underground operation in near future. There are nearly 10 mines who show a disposition to open mew underground coal mine to the Directorate, and there is some possibility that these underground mines start with in 5 year. However the as long as the above mentioned coal circumstance continues the increase of the numbers of underground coal mine is slowly., for the reason of the environment protecting toward surface mining and of the general trend of increase of strip-ratio of the surface mines it can say that the numbers and production of underground coal mine will grow in future. · The senior responsibilities for mining operation and safety management are charged to mining license holder. The contractors were evaluated its sufficiency by the government.	
	The support of the related organization and/or industries.	· Will the project be supported continuously by federal and provincial government, and local autonomous body? · Is the connection with other offices of the Ministry of Energy and Mineral Resources examined? (especially as for qualification system for mine safety technologies)	· The Central Government is in the position to manage the BDTBT because BDTBT is one of the governmental body,; consequently the support will be continued. For the local government and local autonomous body, the training in the field of mining is important; therefore their support to the BDTBT will be continue. But if the political power is changed, it is undeniable that the support will be changed because the position of the BDTBT is UPT. · Especially as for the qualification system for mine safety technology , the Directorate and JICA committed that they will cooperation and also cooperate to the Agency.	
	Future vision of BDTBT	· Who will be the target group after the project? · According to the estimation of the government; What kind of courses will be held, and how many trainees per annual will take part in each course, after the Project? · Who will bear the training cost of BDTBT?	· The executives of the 'agency' recently set up the mine engineers and mine inspectors as the target group. Their point of view is, IF the extent of the target group or not, the training to the inspector and mining engineers is almost same. But if the 'engineer' means the 'middle class engineer' so the degree of the skill of mining technologies for the inspector and for the engineer is quite different, also the competency of the trainer. · The all of the training cost will be borne by the organization who send the trainee.	

	The existence of the organization ability of the Implementing Agency.	· Do the executive s of the Implementing Agency participate in the Project activities aggressively? And will the aggressive attitude be kept? · Is the arrangement of C/Ps proper to carry out activities smoothly? How will it be in the future? How much is the turnover rate in Indonesia and in the Ministry? · Is the budget which is appropriate for carrying out the Project activities smoothly secured? · Will the Agency and the Government continue financial support after the completion of the Project ? (Including the small-scale mining subsidies to train the underground coal mining technology) · Does Agency and BDTBT examine the method which creates fund and leads the Project to achieve the Overall Goal? · Is a result of a monitoring reflected on the project by the Agency	· The executives of the implementing Agency are keen to participate in the Project activities. · At present the arrangement of C/.Ps is proper to carry out activities smoothly ·The Agency*1 considers the expenditure (salary, equipment, consumable, electricity, gas, water ···) of the BDTBT will be borne 100% by government and the training fee (foods, accommodation and training| materials) will born the beneficiaries (government, mining companies and others who send the trainee). So, it is predicted that 50% are born by government and another 50% by mining companies. However this matter is not discussed with other Governmental Organizations concerned. As an immediate measure, the Agency intends to increase the revenue from special training course, apprentices of educational institutes and mining qualification training other than the regularly courses But it is difficult to prepare the long-term forecast of budget without the needs study · As mentioned before, the result of monitoring has been reflected on the project.	
	The fixity of the technology, and the structure of fixing.	· Does the Agency consider how to take root the knowledge and technology transferred ? · Does Agency examine the structure which popularizes the technology transferred throughout the whole extent of coal mining area in the Country? (revision of the technical needs, Training center for mining qualifications for mine safety technologies) · Will the materials and equipment be maintained thoroughly? · Is the structure of the replacement and/or expansion of facilities and equipment examined?	· At the BDTBT, the technology will be transferred trainer to trainer. Also the transfer between the BDTBT and P3TMB will be carried out through the personal exchanges. · The structure which will popularize the technology transferred throughout the whole extent of coal mining area will be examined based on the result of training needs survey. But basic idea is training will be carried out at the BDTBT and P3TMB; if it is required, the trainers will be dispatched to Kalimantan. · The materials and equipment will be maintained thoroughly..	
	Consideration to the society	Is there any social inconvenience caused by insufficient consideration to inhabitant in vicinity of the Project or local communities?	There is no social inconvenience for the time being.	
	Others	(The factor that obstruct the Sustainability, which becomes clear in the investigation process)		

*1 The Agency ···· The Education and Training Agency of Energy and Mineral Resources