

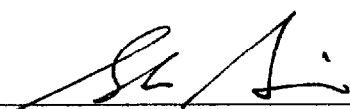
**MINUTES OF DISCUSSIONS
BETWEEN THE JAPANESE PRELIMINARY STUDY TEAM
AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT
OF THE SOCIALIST REPUBLIC OF VIETNAM
ON THE JAPANESE TECHNICAL COOPERATION
FOR COAL MINE FIREDAMP GAS
MANAGEMENT CENTER PROJECT
IN THE SOCIALIST REPUBLIC OF VIETNAM**

The Japanese Preliminary Study Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Shigemaro AOKI, visited the Socialist Republic of Vietnam from March 20 to March 29, 2000 for the purpose of clarifying the background of the project proposal made by the authorities concerned of the Government of the Socialist Republic of Vietnam (hereinafter referred to as "the Vietnamese side"), discussing the concept and scope of the Japanese Project-Type Technical Cooperation for Coal Mine Firedamp Gas Management Center Project in the Socialist Republic of Vietnam (hereinafter referred to as "the Project").


During its stay in the Socialist Republic of Vietnam, the Team exchanged views and had a series of discussions on the Project with the Vietnamese side.

As a result of the discussions, both sides reached common understandings concerning the matters referred to the documents attached hereto.

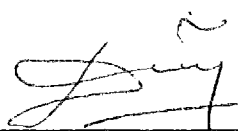
Hanoi, March 28, 2000



Mr. Shigemaro AOKI
Leader
Preliminary Study Team
Japan International Cooperation Agency
Japan



Mr. Doan Van Kien
President and CEO
Vietnam National Coal Corporation
The Socialist Republic of Vietnam



Mr. Nguyen Quang Dung
Director
Industrial Department
Ministry of Planning and Investment
The Socialist Republic of Vietnam



Mr. Tran Minh Huan
General Director
International Cooperation Department
Ministry of Industry
The Socialist Republic of Vietnam

THE ATTACHED DOCUMENT

1. NAME OF THE PROJECT

As to the name of the Project, both the Team and the Vietnamese side agreed on the followings:

"Coal Mine Firedamp Gas Management Center Project in the Socialist Republic of Vietnam"

2. RESPONSIBLE AGENCY

Both sides confirmed that the Ministry of Industry (hereinafter referred to as "MOI") will be responsible for the Project. The department in charge is International Cooperation Department.

The organization chart of MOI is as shown in ANNEX 1

3. IMPLEMENTING AGENCY OF THE PROJECT

(1) Vietnam National Coal Corporation

Vietnam National Coal Corporation (hereinafter referred to as "VINACOAL") will bear overall responsibility for the implementation of the Project.

The organization chart of VINACOAL is as shown in ANNEX 2.

(2) Institute of Mining Science and Technology

The Project will be implemented at Institute of Mining Science and Technology (hereinafter referred to as "IMSAT"), which is the agency responsible for the administrative management and technical matters of the Project.

The organization chart of IMSAT is as show in ANNEX 3

(3) Mao Khe Coal Mine

Both sides confirmed that an Underground Monitoring Model System will be installed in Mao Khe Coal Mine, VINACOAL. The installation and the management of the Underground Monitoring Model System will be conducted jointly by IMSAT and Mao Khe Coal Mine.

The demarcation of responsibilities between IMSAT and Mao Khe Coal Mine is as follows.



IMSAT is responsible for the technical matters of the installation and the management. Mao Khe Coal Mine is responsible for the actual installation, operation and maintenance.

The organization chart of Mao Khe Coal Mine is as shown in ANNEX 4.

4. ADMINISTRATION OF THE PROJECT

President and CEO of VINACOAL, as the Project Director, will bear overall responsibility for the implementation and the administration of the Project.

Director of IMSAT, as the Project Manager, will be responsible for the administrative management and technical matters of the Project. The provisional chart of the administration of the Project is as shown in ANNEX 5.

5. DURATION OF THE PROJECT

Both sides confirmed that the duration of the technical cooperation for the Project would be five (5) years from the date agreed by both sides in the Record of Discussions (hereinafter referred to as "R/D") to be concluded between JICA and the Vietnamese side.

6. SITE OF THE PROJECT

(1) Coal Mine Firedamp Gas Management Center

Both sides confirmed that the Project will be implemented at the Coal Mine Firedamp Gas Management Center, VINACOAL (hereinafter referred to as "the Center").

The location map of the Center and the layout of the Center are as shown in ANNEX 6-1 and ANNEX 6-2.

The address is as follows:

Address: Uong Bi town, Quang Ninh Province, Vietnam

(2) Mao Khe Coal Mine

Both sides confirmed that an Underground Monitoring Model System will be installed in Mao Khe Coal Mine, VINACOAL.

The map of Mao Khe Coal Mine is as shown in ANNEX 7.

The address is as follows:

Address: Mao Khe Town, Dong Trieu District, Quang Ninh Province
Tel: 84-33-871240

Fax: 84-33-871375

7. PROVISIONAL CONCEPT OF THE PROJECT

Both sides agreed that the provisional concept of the Project is as shown in ANNEX 8.

The Tentative Schedule of Implementation is as shown in ANNEX 9.

8. METHODOLOGY OF THE TECHNOLOGY TRANSFER

Both sides confirmed that the technology transfer would be conducted through the lectures and on-the-job training.

Both sides confirmed that the Vietnamese side has the overall responsibility for the ensuring the safety of the activities inside the mine pits.

With regard to the on the job training, both sides confirmed that the activities of the technology transfer inside the mine pits must be conducted under the principle shown in as ANNEX 10.

9. MEASURES TO BE TAKEN BY THE GOVERNMENT OF JAPAN

(1) Dispatch of Japanese Experts

(Long-term experts)

The following Japanese experts will be dispatched.

- 1) Chief Advisor
- 2) Coordinator
- 3) Gas Management Technology Expert
- 4) General Mine Safety Technology Expert
- 5) Explosion-proof Test Technology Expert

(Short-term experts)

Both sides agreed that short-term experts would be dispatched in the related field of technology transfer in accordance with necessity.

(2) Training of Vietnamese Counterpart Personnel in Japan

The Team explained and Vietnamese sides understood that counterpart personnel who have technical capability of the engineer level would be accepted for training in Japan, and the total number of counterpart personnel for training in Japan would be approximately ten (10) during the cooperation period.



However the Vietnamese side requested the Team that the approximately fifteen (15) of counterpart personnel have to be sent to Japan for training.

The application for the training program in Japan should be submitted in Form A2-3 to the Government of Japan by Vietnamese side at least two (2) months Prior to the schedule arrival in Japan.

(3) Provision of Machinery and Equipment

Both sides confirmed the necessary machinery, equipment and the other materials for the Project implementation (hereinafter referred to as “the Equipment”) as shown in as ANNEX 11, which also showed the priorities of Vietnamese side for each Equipment.

The Team explained and the Vietnamese side understood that, due to the budgetary constrain, the Government of Japan would be difficult to provide all the Equipment requested by the Vietnamese side, and would carefully make a selection of the Equipment to be provided.

The both sides agreed that the detailed list of the Equipment which would be provided by the Government of Japan shall be defined by the Japanese supplementary study team.

While both sides understood the responsibility and costs necessary for domestic transport, maintenance of machinery and equipment shall be borne by the Vietnamese side.

The request for provision of equipment should be submitted in Form A4 to the Government of Japan by the Vietnamese side immediately after the R/D has been signed.

10. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIETNAM

(1) Budget Allocation

The Vietnamese side understood that necessary amount of local costs by the Vietnamese side would be indispensable for smooth implementation of the Project. The plan of local cost borne by the Vietnamese side is as shown in ANNEX 12.

(2) Buildings and Facilities for the Project

The buildings and facilities necessary for implementation of the Project will be



prepared and the necessary renovation of the buildings and facilities for the Project will be completed by the Vietnamese side.

The office for the Japanese experts with adequate equipment will be prepared before the start of the Project.

The tentative floor plan of the building is shown in ANNEX 13.

(3) Machinery, Equipment and Materials

The Vietnamese side will supply or replace at its own expenses machinery, equipment, vehicles, tools, spare parts and any other materials necessary for implementation of the Project other than those provided by the Government of Japan.

The Equipment, which now exists at IMSAT, can be shared for use in the implementation of the Project is as shown in ANNEX 14.

(4) Long-term Assignment of Full-time Counterpart

Project Manager and the appropriate number of full-time technical counterpart personnel will be assigned before the start of the Project. The tentative allocation plan of counterpart personnel and the tentative counterpart personnel of IMSAT are shown in ANNEX 15-1, ANNEX 15-2

Should the allocation of counterpart personnel be changed for either personal or administrative reasons, the Vietnamese side will immediately take necessary measures to supplementarily assign appropriate number of personnel as counterpart for the Project.

(5) Privileges, Exemptions, Benefits and Claims to the Japanese Experts

The Vietnamese side will grant in the Socialist Republic of Vietnam privileges, exemptions and benefits to the Japanese experts and their families no less favorable than those accorded to experts of third countries working in the Socialist Republic of Vietnam. Also the Government of Vietnam will take necessary measures to assure the security of all the Japanese experts and the members of the Japanese study team.

The Government of the Socialist Republic of Vietnam undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Socialist Republic of Vietnam except for those arising



from the willful misconduct or gross negligence of the Japanese experts.

(6) Official approval and certificate test system for evaluating the explosion-proof performances

Both side confirmed that it is indispensable for smooth implementation of the Project that making the laws and the regulations about Official approval and certificate test system for evaluating the explosion-proof performances.

11. THE JOINT COORDINATING COMMITTEE OF THE PROJECT

Both sides agreed that, for the effective and successful implementation of technical cooperation for the Project, the Joint Coordinating Committee, composed of members appointed by both sides, will be established and held at least once a year. Its functions and compositions are described in ANNEX 16.

12. SCHEDULE OF THE PROJECT

The team explained and the Vietnamese side understood that the following study teams would be dispatched before the start of the Project:

1. Supplementary Study Team June, July or August, 2000
2. Implementation Study Team December, 2000, January or February, 2001

13. JOINT EVALUATION OF THE PROJECT

Both sides agreed that evaluation of the Project would be conducted jointly by JICA and the Vietnamese side, approximately in the middle and during the last six (6) months of the cooperation term, in order to examine the level of achievement of the Project.

Furthermore, both sides agreed to use the methodology of evaluation, especially, the Five (5) Basic Evaluation Components as shown in ANNEX 17.

14. SUSTAINABILITY OF THE PROJECT

The Vietnamese side will take the necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of the Japanese technical cooperation, through the full and active involvement in the Project by all related authorities and institutions so that the technologies and knowledge acquired by

Vietnamese counterpart personnel through the Project will ultimately contribute to the effort toward improvement and diffusion of coal mine safety technology in the Socialist Republic of Vietnam.

15. OTHERS

(1) Both sides agreed that common language used in any activities of the Project is English.

(2) The Japanese side explained the Project-Type Technical Cooperation and the Vietnamese side understood the scheme and system of the Project-Type Technical Cooperation.

(3) Both sides agreed that the items mentioned above 1 to 14 are still provisional and will be discussed further with other necessary issues to be finalized when the Implementation Study Team is dispatched.

(4) Both sides understood that the Project should be conducted under the Agreement on Technical Cooperation between the Government of Japan and the Government of the Socialist Republic of Vietnam, signed in Hanoi on October 20, 1998.

(5) List of attendance of the discussions is shown in ANNEX 18.



ANNEX LIST

- ANNEX 1** Organization Chart of MOI
- ANNEX 2** Organization Chart of VINACOAL
- ANNEX 3** Organization Chart of IMSAT
- ANNEX 4** Organization Chart of Mao Khe Coal Mine
- ANNEX 5** Provisional Chart of the Administration of the Project
- ANNEX 6-1** Location Map of the Center (Hanoi and Quang Ninh)
- ANNEX 6-2** Layout of the Center
- ANNEX 7** Map of Mao Khe Coal Mine
- ANNEX 8** Provisional Concept of the Project
- ANNEX 9** Tentative schedule of Implementation of the Project
- ANNEX 10** Principle of the technology transfer inside the mine pits
- ANNEX 11** List of the Equipment necessary for the Project Implementation
- ANNEX 12** Provisional Plan of local Cost borne by the Vietnamese side
- ANNEX 13** Tentative Floor Plan of the Building
- ANNEX 14** Existing Equipment List of IMSAT
- ANNEX 15-1** Tentative Allocation Plan of Counterpart Personnel

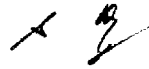
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ANNEX 15-2 Tentative Counterpart Personnel List of IMSAT

ANNEX 16 Functions and Compositions of Joint Coordinating Committee

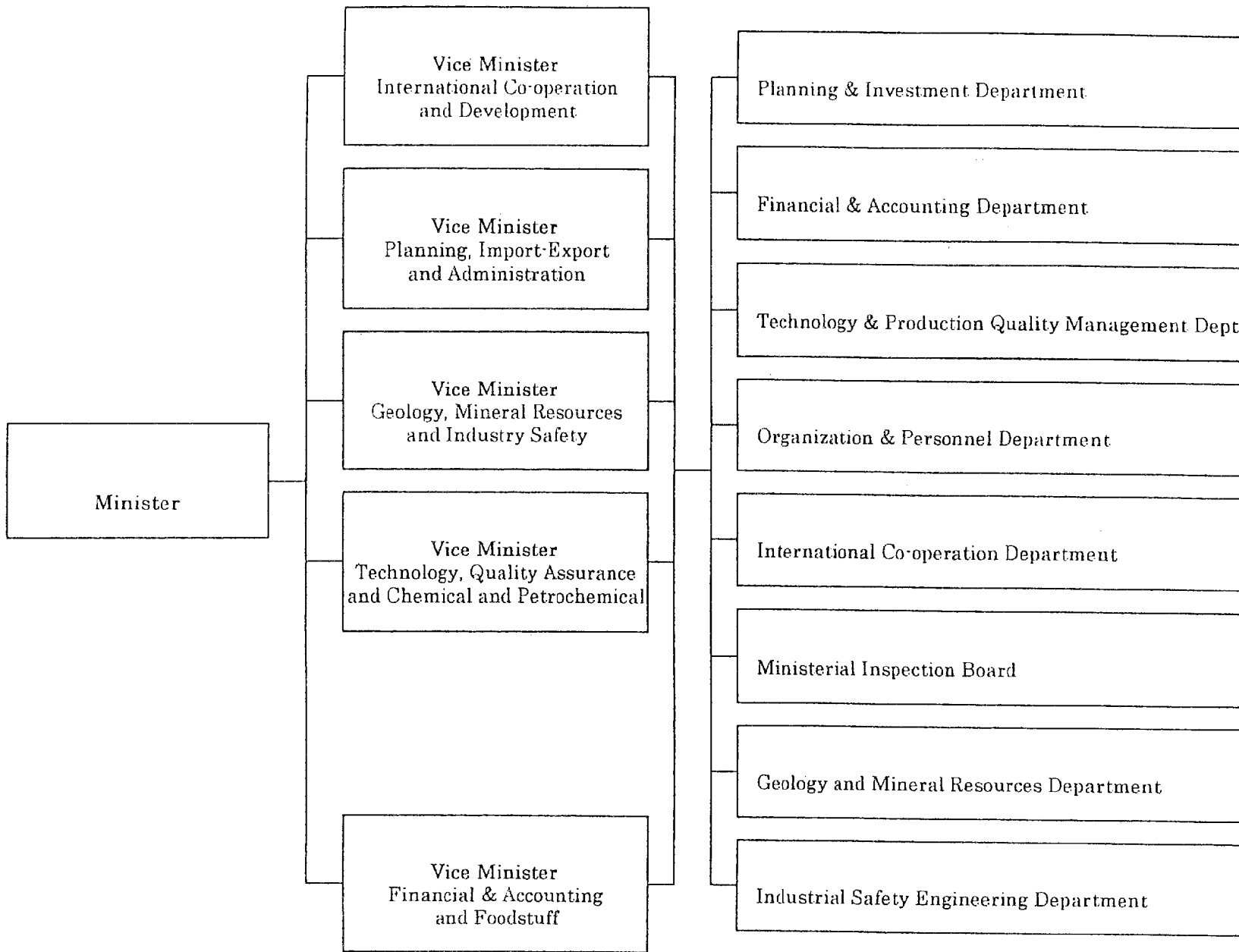
ANNEX 17 Five (5) Basic Evaluation Components

ANNEX 18 List of Attendance of the Discussions

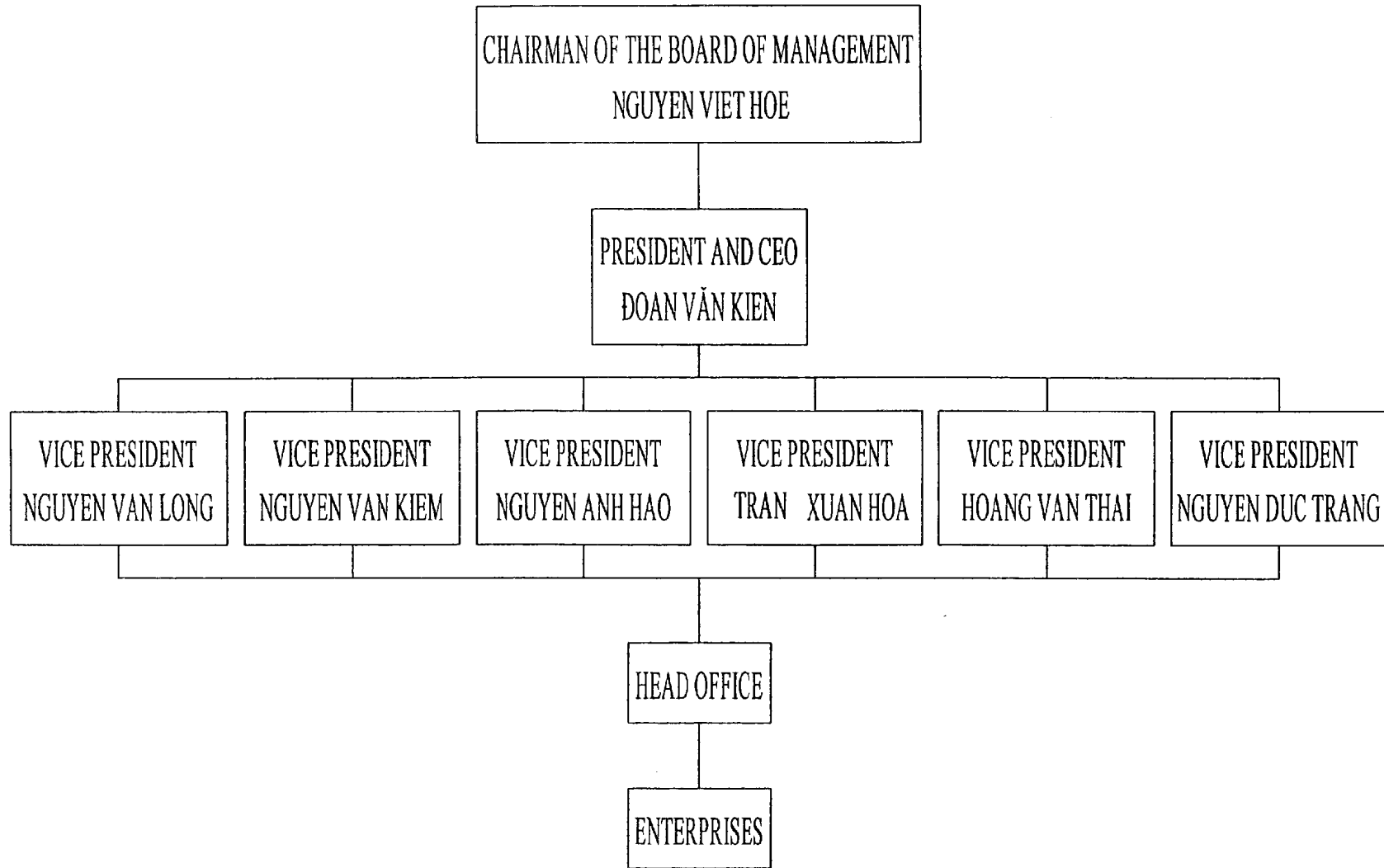


ANNEXES

ANNEX 1 Organization Chart of MOI



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I. Member enterprises with independent accounting:

1. HonGai Coal Company
2. UongBi Coal Company
3. QuangNinh Coal Company
4. DongBac Coal Company
5. Interior Coal Company
6. Mining Construction Company
7. DeoNai Coal Mine
8. CaoSon Coal Mine
9. CocSau Coal Mine
10. NuiBeo Coal Mine
11. VangDanh Coal Mine
12. MaoKhe Coal Mine
13. MongDuong Coal Mine
14. HaTu Coal Mine
15. HaLam Coal Mine
16. ThongNhat Coal Mine
17. DuongHuy Coal Mine
18. KheCham Coal Mine
19. Mining Chemical Company
20. Geology and Mineral Mining Company
21. General Service and Trading Company
22. Vinacoal Tourist Service Company
23. Import-Export International Cooperation Company
24. Southern Coal Processing and Trading Company
25. Northern Coal Processing and Trading Company
26. Central Region Coal Company
27. CuaOng Coal Preparation Enterprise



28. Measure and Quality Control Center
29. CamPha Mechanical Engineering Plant
30. HonGai Mechanical Engineering Plant
31. MaoKhe Mechanical Engineering Plant
32. UongBi Mechanical Engineering Plant
33. Truck Engineering Plant
34. Material Transport and Loading Company
35. Industrial and Mine Investment Consulting Company

II. Member enterprises with dependent accounting:

1. Coal Trading and Port Company
2. HonGai Coal Preparation Enterprise
3. Miner Rescue Center

III. Non Productive Institutions:

1. Institute of Mining and Science Technology
2. Coal Industry Labour-Health Care Center
3. Friendship Miner Vocational School

IV. Divisions in the Head Office of Vinacoal:

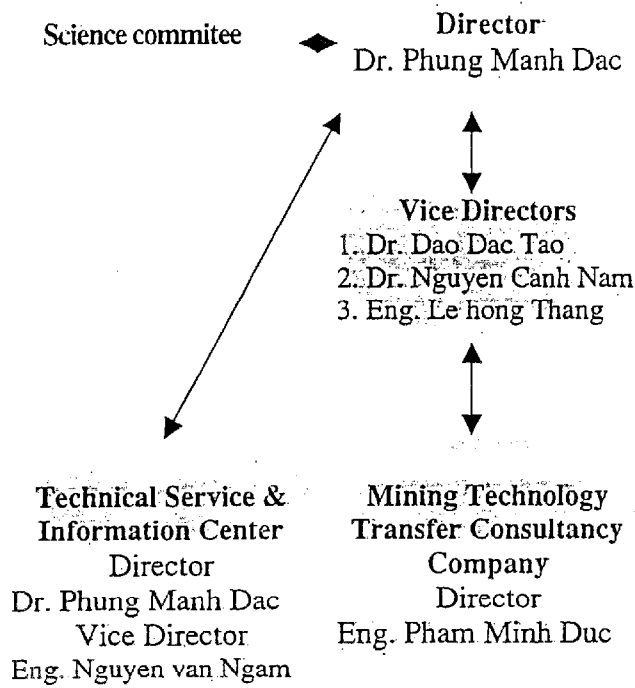
1. Administrative Office
2. Personnel Division
3. Planning and Manufacturing Cost Division
4. Accountancy-Statistic-Finance Division
5. Labour, Wage and Developmental Force Division
6. Investment and International Cooperation Division
7. Technical-Production-Environment Division
8. Materials and Trading Division
9. Inspection-Protection-Military Force Division



10. Mineral Geology and Industrial Production Division
11. Development of Electric Projects Division
12. Interior Coal Processing and Coal Seles Division
13. Coal Export-Import Division
14. Control Safety and Protection Labour Division
15. Interior Auditing Division
16. Mechanical Manufacturing and Operation of Mining Equipment
Division

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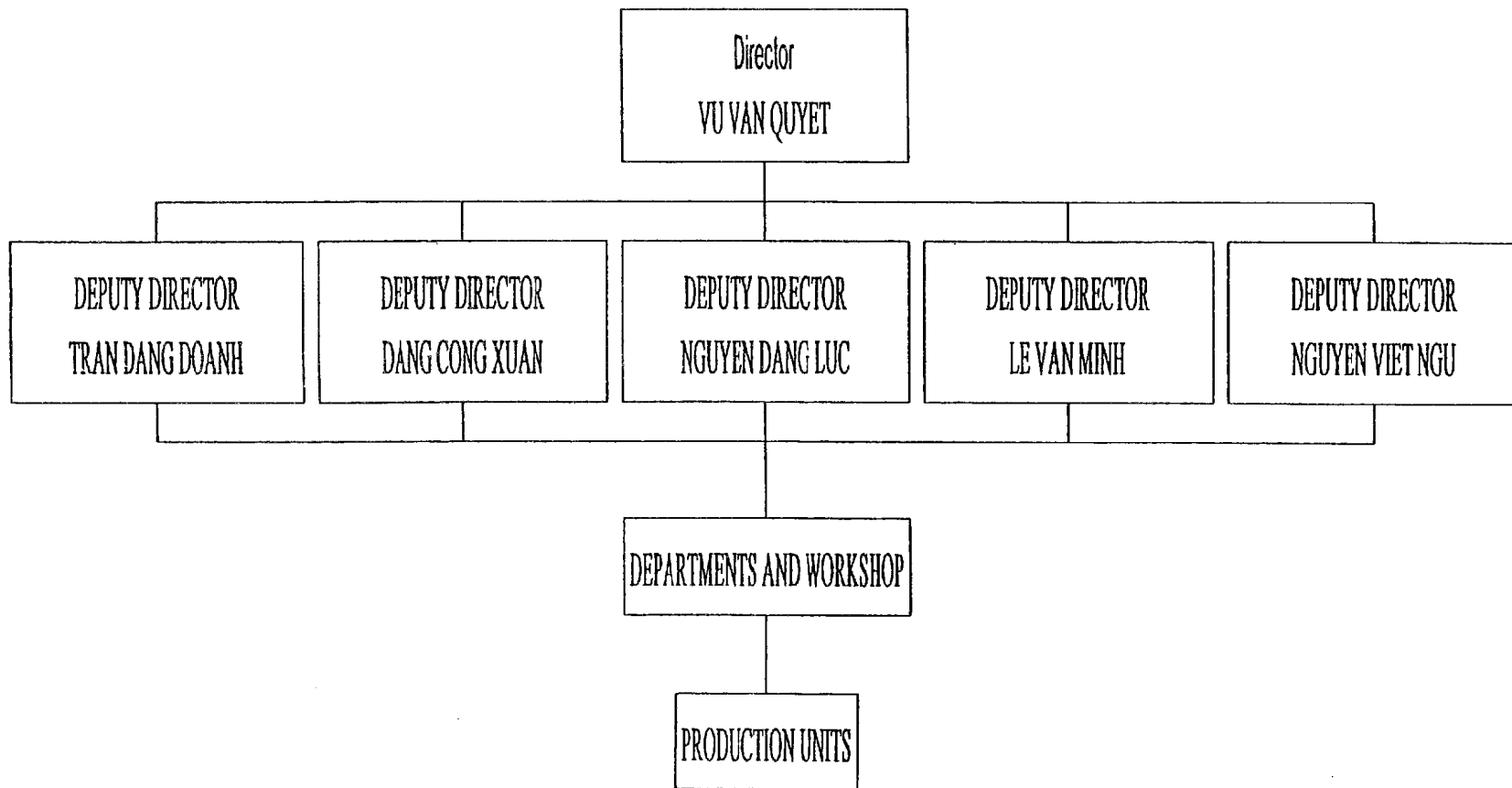
ORGANIZATION OF IMSAT



PTS	TH.S	Kỹ sư	Kỹ thuật viên	Nhân viên	Tổng số
Dr.Sci	M.Sc	Engineer	Technician	Other	Total
20	7	130	26	22	205

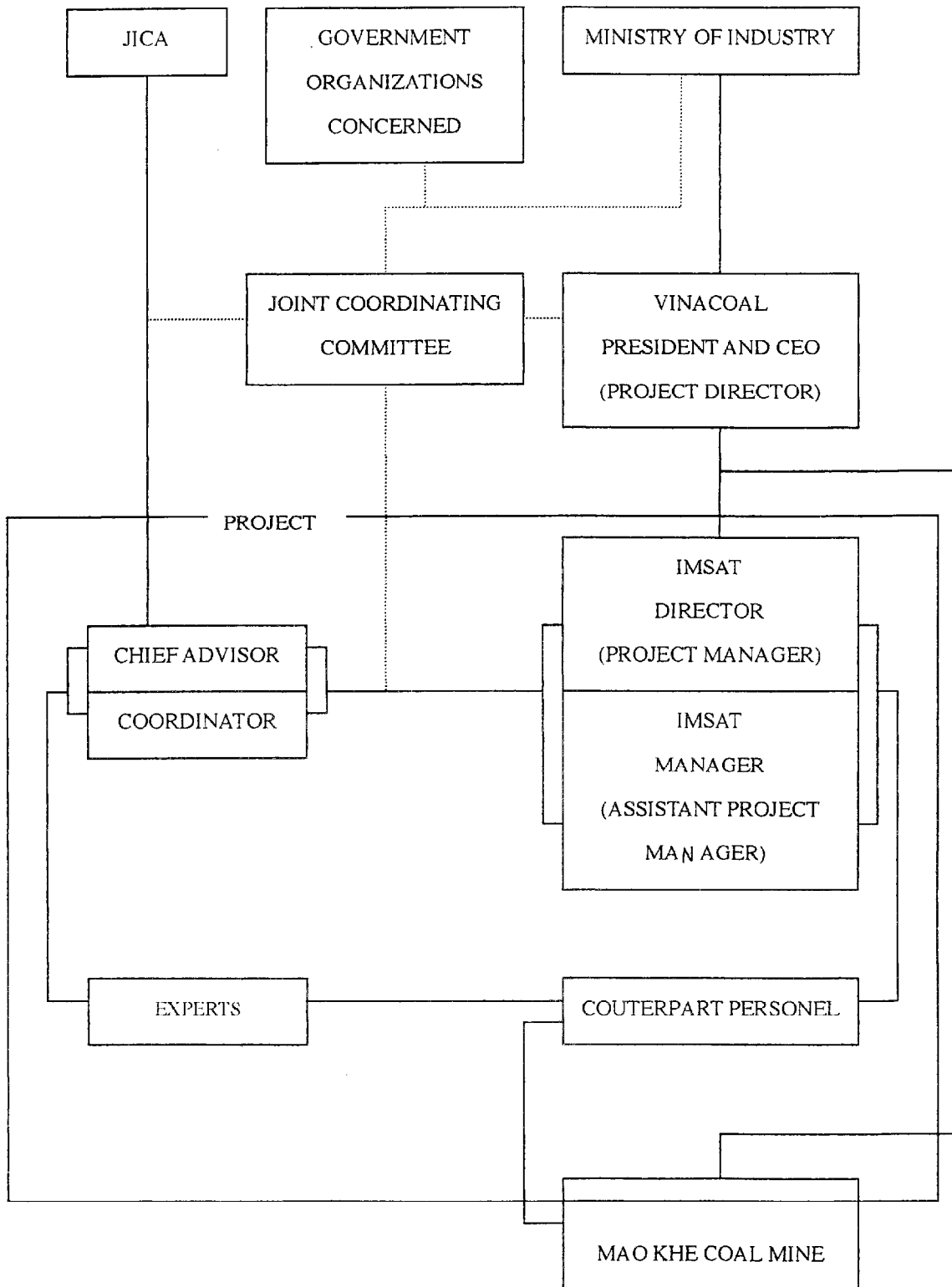
- International Cooperation and Project Development Division
- Research on underground mining technology Dept
- Research on mining Auto. Electrification Dept
- Research on clean coal technology Dept
- Research on coal utilization Dept
- Research on Mine construction Dept
- Research on Mineral properties Dept
- Research on Mining Mechanization Dept
- Research on Open cast mining technology Dept
- Research on economics Dept
- Research on Mine safety Dept
- Research on Mine Environment Dept
- Mechanical Geology Dept
- Finance and account Dept
- Personnel Dept
- Administrative office
- Planning Dept
- Technical - Project Dept

ANNEX 4 Organization Chart of Mao Khe Coal Mine

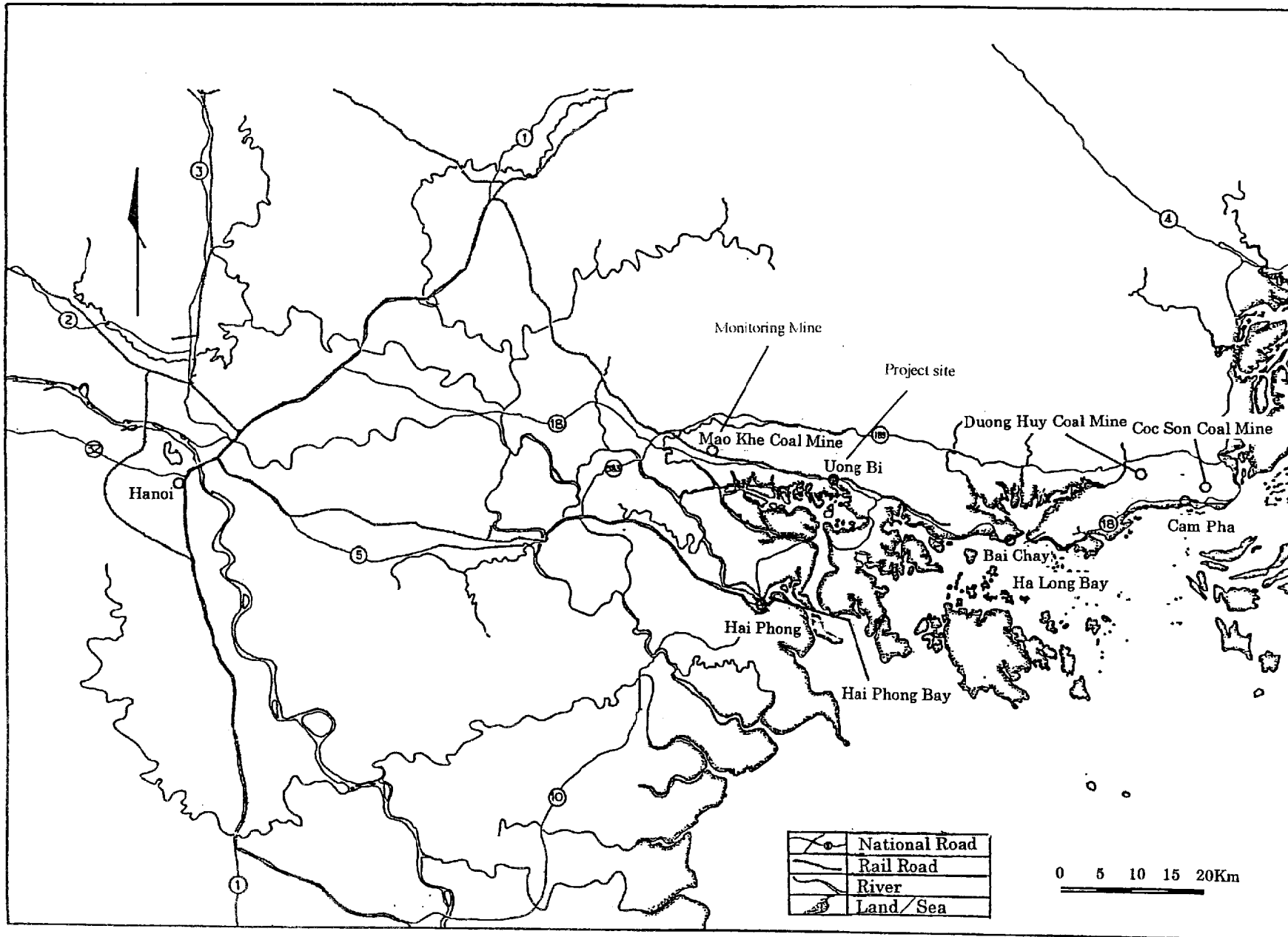


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ANNEX 5 Provisional Chart of the Administration of the Project



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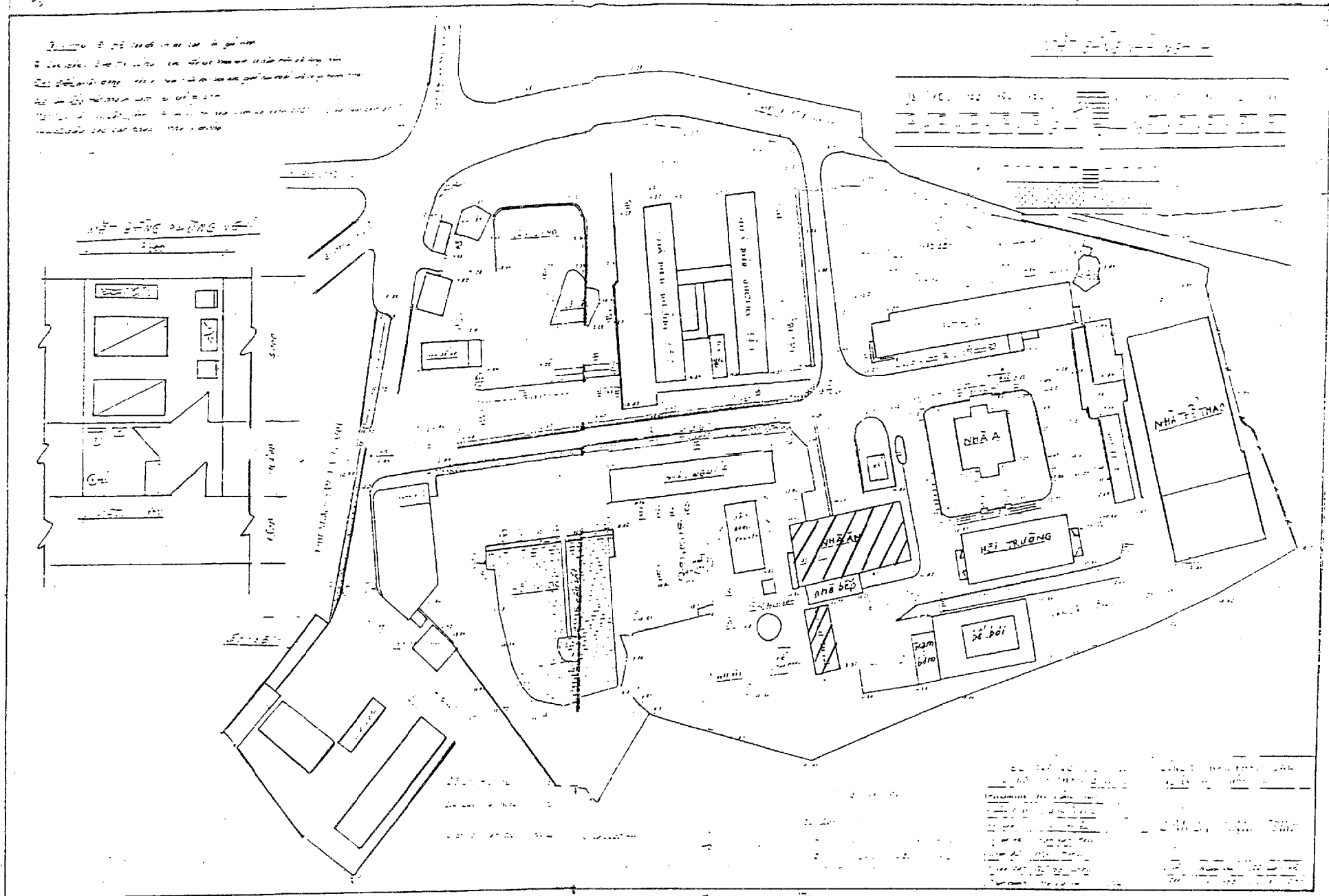


HANOI and QUANG NINH

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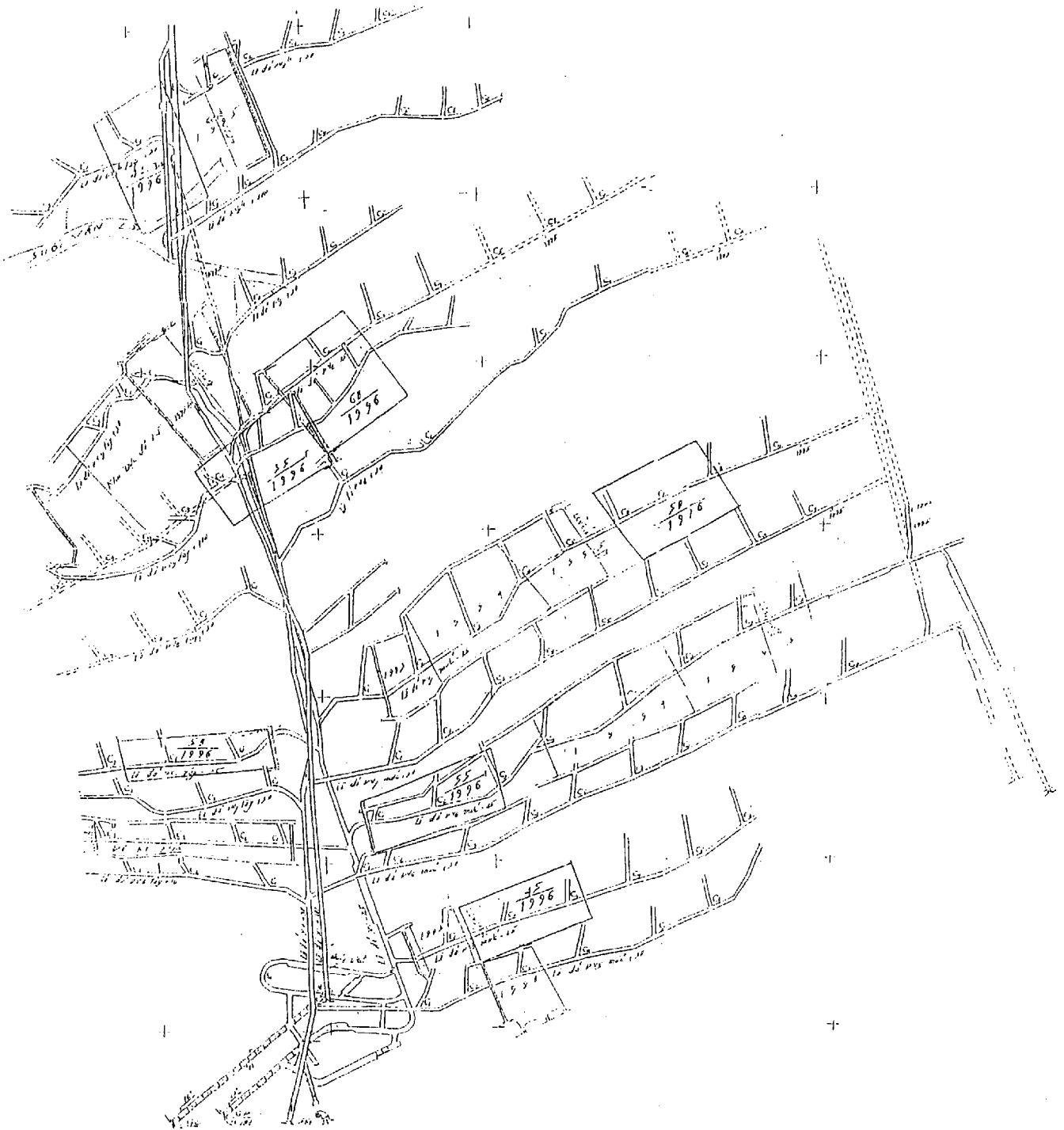
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ANNEX 6-2 Layout of the Center



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ANNEX 7 Map of Mao Khe Coal Mine



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ANNEX 8 Provisional Concept of the Project

[Overall goal]

To improve and transfer Coal Mine Safety Technology for the Coal Mine Industry in the Socialist Republic of Vietnam

[Project purpose]

To establish the Safety Management System of Coal Mine Firedamp Gas in the Socialist Republic of Vietnam

[Output]

- ① Management and Operational Systems at the Project Center are to be established
- ② To establish an evaluation system for in-situ Gas Content in coal seams
- ③ To establish Mine Monitoring and Underground Mine Ventilation Control System for Firedamp gas
- ④ To establish Official Approval and Certificate Test System for evaluating the explosion-proof performances of electrical facilities for use in underground coal mines
- ⑤ To conduct education and training program for the mine safety technologies

[Activities]

- ①-1 Allocate personnel according to the project
 - 2 Elaborate a plan concerning activities and duties
 - 3 Elaborate a budget plan
- ②-1 To learn coal sampling technology
 - 2 To learn analysis technology of coal samples
 - 3 To learn technical evaluation of analyzed results
- ③-1 To install a Model Underground Monitoring System in Mao Khe Coal Mine
 - 2 To learn operational technologies of centralized monitoring system for underground mine
 - 3 To learn underground mine ventilation analysis and prediction technology
 - 4 To learn measuring technology for underground mine ventilation
- ④-1 To establish the test standard of explosion-proof tests
 - 2 To learn explosion-proof test technologies
 - 3 To put into practice explosion-proof tests
- ⑤-1 To prepare texts for mine safety training
 - 2 To establish the training system for mining safety and rescue activities
 - 3 To transfer safety technologies through introduced facilities by the project

ANNEX 9

Tentative schedule of Implementation of the Project

Calendar Year	2000				2001				2002				2003				2004				2005				2006		Remarks		
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II			
Japanese Fiscal Year	99				2000				2001				2002				2003				2004				2005		06		
1. Term of Technical Cooperation	[Solid bar from 2001 Q1 to 2005 Q4]																												
2. Dispatch Japanese Mission to Vietnam	[Timeline with horizontal bars and equals signs indicating specific activities]																												
3. Japanese side	[Detailed timeline for Japanese side activities, including expert dispatches and training]																												NB :
3.1 Long Term Experts	[Timeline for long-term experts: Chief Adviser, Coordinator, Gas Management, General Mine Safety, Explosionproof Test]																												
3.2 Short Term Experts	[Timeline for short-term experts: Gas Management, Gas Monitoring, Underground Safety, Explosionproof Test, Machine Installation]																												
3.3 Provision of Machinery and Equipment	[Timeline for machinery and equipment provision]																												
3.4 Training for Vietnamese Personnel in Japan	[Timeline for training in Japan]																												
4. Vietnamese Side	[Detailed timeline for Vietnamese side activities, including land/building, facilities, and personnel allocation]																												
4.1 Land, Building and Facilities	[Timeline for land, building, and facilities]																												
4.2 Facilities	[Timeline for training rooms and expert room facilities]																												
4.3 Allocation of Counterpart Personnel and Other Staffs	[Timeline for allocation of counterpart personnel and office workers]																												

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ANNEX 10 Principle of the technology transfer inside the mine pits

For the purpose of safe implementation of the Coal Mine Firedamp Gas Management Center Project in Vietnam, the on-the-job training at the underground mining site shall not be conducted unless the Japanese experts and the Vietnamese counterparts confirm the safety condition of the concerned area based on the following method;

The Japanese experts stand on a right and responsibility to check through the safety condition where the underground cooperation concerned. The methods of safety checking mainly based on the technical aspects of the Mining Safety Law, the Mining Safety Regulation and the other relevant documents of Japan. The relevant technical aspects for safety checking shall be explained to the Vietnamese counterparts from the Japanese experts. Necessary information shall be provided from Vietnamese counterparts to Japanese experts.

When the underground cooperation is conducted, the Vietnamese counter parts also stand on a right and responsibility to check through the safety condition where the underground cooperation concerned. The methods of safety checking based on the Vietnamese Laws, Regulations and the other relevant documents. The relevant technical aspects for safety checking shall be explained to the Japanese experts from the Vietnamese counterparts.

In case the understanding of the safety condition become different between Japanese experts and the counterpart personnel, both side try to find a way to ensure the mutual safety of Japanese experts and the counterpart personnel through the discussion each other.

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ANNEX 11 List of the Equipment necessary for the Project Implementation

	Division	Name	Specification	Quantity	Priority
1	Methane gas content analysis system	· Gas desorption pressure measuring instrument	Compressed air drive	1 set	A-4
		· Small size boring machine		1 set	
2	Gas analysis system	· Gas collecting device	Compressed air drive Compressed air drive φ40.5 x 200m	1 set	B-4
		· Pilot Boring machine		1 set	
		· Pump		1 set	
		· Rod, tool, etc.		1 set	
3	Coal proximate analysis system	· Automatic calorimeter · Electric furnace · Electric oven · Sample crusher · Mill for crushing · Measuring device		1 set 1 set 1 set 1 set 1 set 1 set	B-1
4	Ventilation network analysis system	· Analysis software(Vietnamese) · Analysis computer · Measuring apparatus · Back up electric supply	Resistively/network with plotter Anemometer, etc.	1 set 1 set 1 set 1 set	A-5
5	Underground monitoring system	· Monitoring equipment · Sensor, cable, etc.		1 set 1 set	A-2
6	Underground communication system	· Explosion-proof telephone · Inductive radio device		1 set 1 set	B-2
7	Explosion-proof approval system	· Gas mixing supplying device · IEC type intrinsic safe testing device · Flame-proof ignition testing device · Hydraulic pressure test device of flame-proof enclosure · Environmental testing device · Electric measuring device, etc.		1 set 1 set 1 set 1 set 1 set	A-1
8	Dust measuring system	· Mass concentration meter · Relative concentration meter · Measuring device	Shibata LV-5E Shibata LD-1E Balance, etc.	1 set 1 set 1 set	B-5
9	Gas detector	· Mobile type gas detector · Mobile type gas alarm · Mobile type thermometer	CH ₄ ,CO ₂ CH ₄	1 set 1 set 1 set	B-3
10	Mine rescue-brigade apparatus	· Breathing apparatus · Oxygen filling up device · Breathing appliance testing device · Foam extinguisher · Gas explosion testing equipment · Coal dust explosion testing equipment	with mask	20 sets 1 set 1 set 1 set 1 set 1 set	A-6
11	Business Vehicles	· Landcruiser · Microbus		1 unit 1 unit	A-7
12	Office device	· Audio-visual education device · Analysis, office work treatment device		1 set 1 set	A-8

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ANNEX 12 Provisional Plan of Local Cost borne by the Vietnamese side

Vietnamese input:

Expenses for transportation, installation, operation of instruments, maintenance, construct buildings, staff charge, utilities, miscellaneous.

From State Budget	300,000USD
From Coal Industry's budget	200,000USD
Total	500,000USD



ANNEX 13 Tentative Floor Plan of the Building

Main Building of Vietnam Coal Mine Firedamp Management Center

(2nd Floor)

- Room for Chief Advisor
- Room for Experts
- Room for Counterpart Personnel
- Explosion-proof test system (Intrinsic safety)
- Gas analysis system
- CH₄ gas content analysis system
- Coal proximate analysis system
- Ventilation analysis system
- Dust measuring system
- Gas explosion test system etc.

SÂN
BÔNG
CHUYÊN

NHÀ ĂN
BỂ nước

NHÀ KẾ

NHÀ SÀI - QUẢN LÝ

BỂ chứa nước

NHÀ A

HỘI TRƯỞNG

BỂ BỒ

SÂN

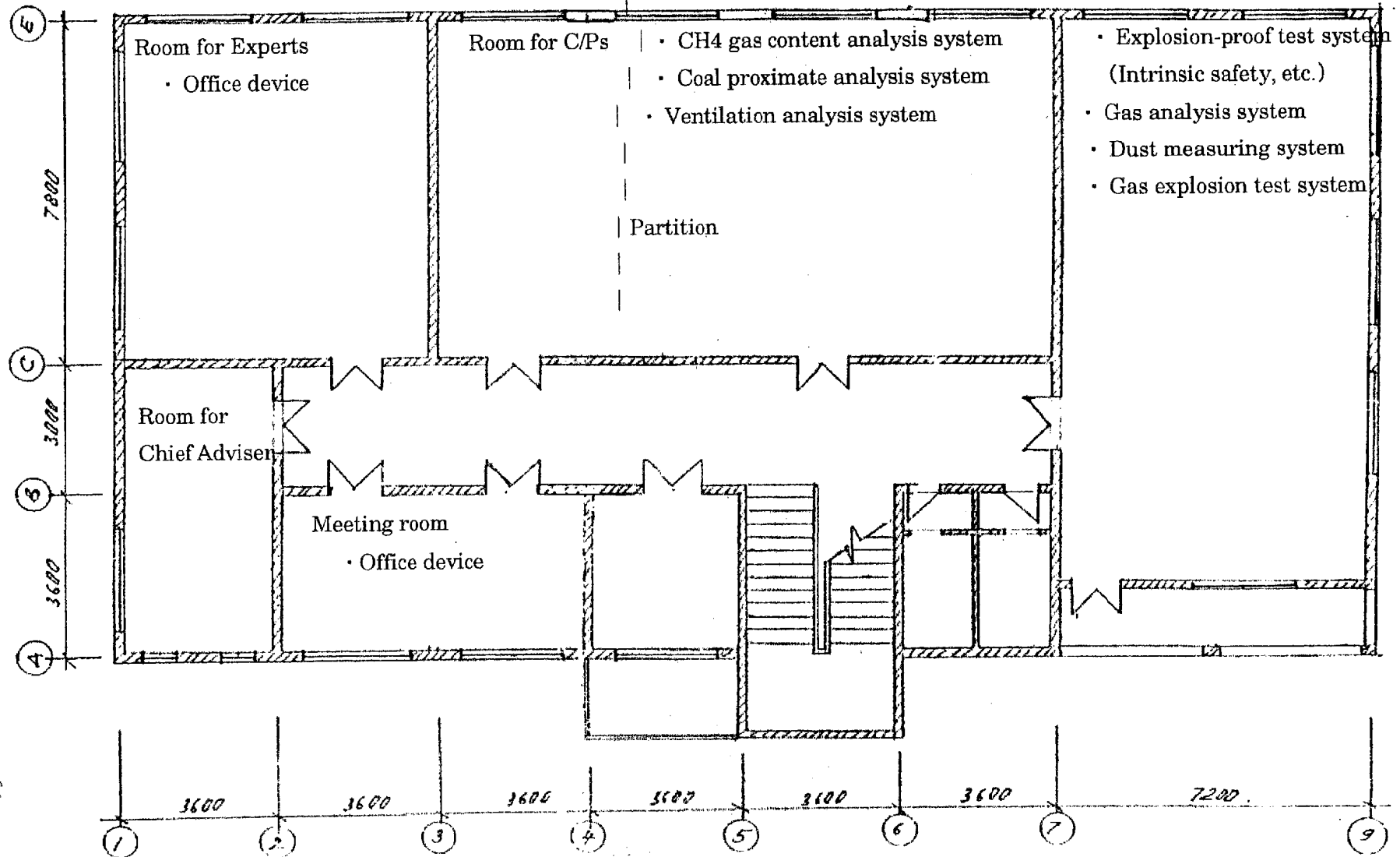
Sub Building of Vietnam Coal Mine Firedamp Management Center

- Explosion-proof test system (Flame-proof enclosure)
- Hydraulic pressure test device for flame-proof enclosure
- Other facilities for test implementation
- Ignition test chamber for flame-proof enclosure (Outside the building)
- Business Vehicles

08

MẶT BẰNG TẦNG II

Vietnam Coal Mine Firedamp Management Center Project (2 F) Layout Plan for Facilities and Personnel



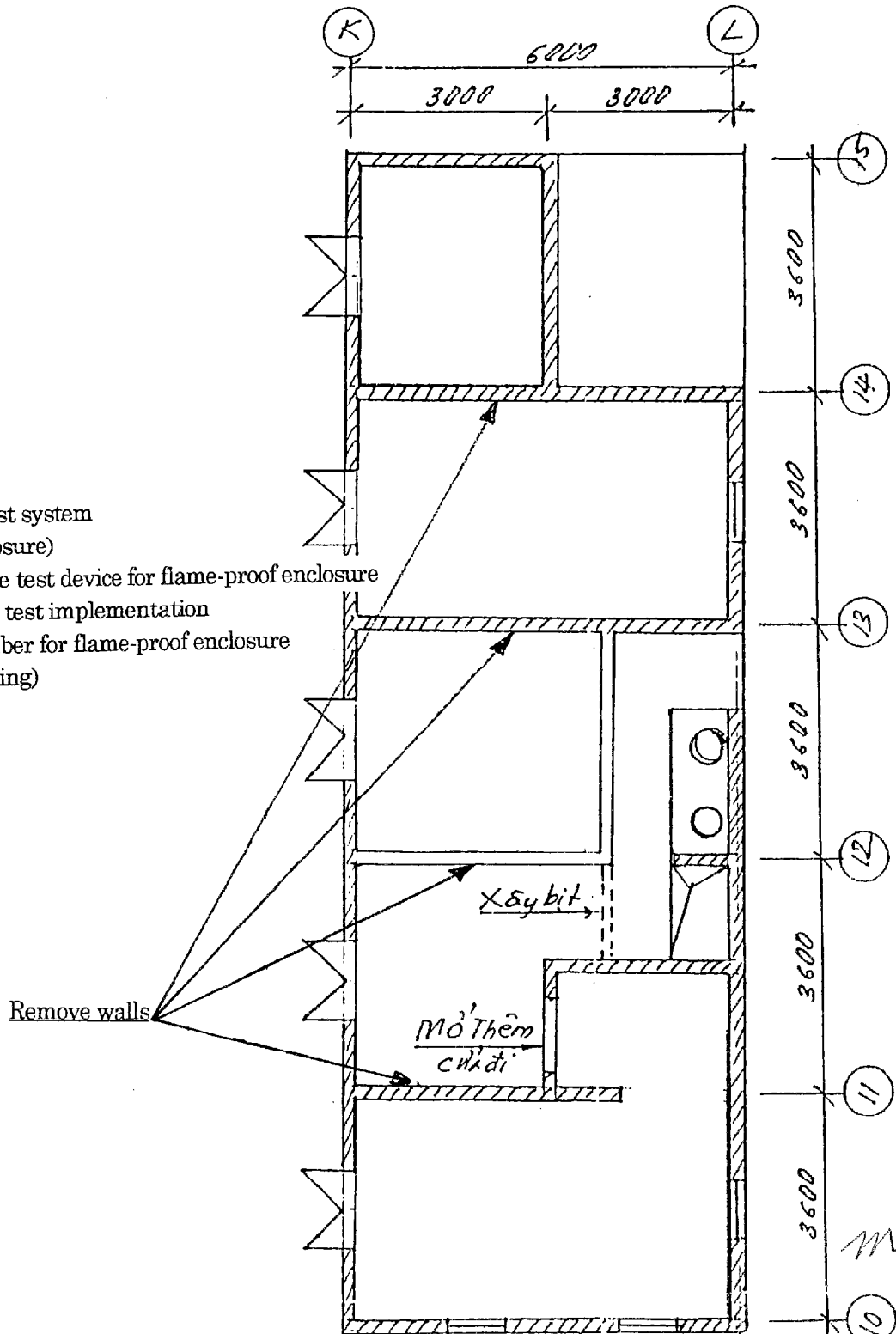
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Vietnam Coal Mine Firedamp Management Center Project

Layout Plan for Facilities and Personnel

Sub Building of Vietnam Coal Mine Firedamp Management Center

- Explosion-proof test system (Flame-proof enclosure)
- Hydraulic pressure test device for flame-proof enclosure
- Other facilities for test implementation
- Ignition test chamber for flame-proof enclosure (Outside the building)
- Business Vehicles



ANNEX 14 Existing Equipment List of IMSAT

1. Gas analyser ГХЛ-1
2. Gas chromatography ГХ-I (Russia)
3. Methanometer ШИ-10
4. Methanometer ШИ-12
5. Methanometer VM-1M
6. CO detector
7. CO₂ detector
8. H₂S detector
9. Sampling pump
10. Sampling tube
11. Wind flow meter: DFA-3
12. Wind flow meter ACO-3
13. Wind flow meter MC 13
14. Psychrometer
15. Water flow meter
16. Luxmeter
17. Foam injection pump
18. Vacuum pump
19. Breathing apparatus
20. PH meter
21. Ovens
22. Centrifuge-2010
23. Calorimeter-B-08
24. Flame photometer-PFP-7
25. Scale
26. Dust gravity sampler
27. Sound level
28. Stop watch
29. Heating sensor
30. Main fans
31. Balances

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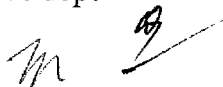
ANNEX 15-1 Tentative Allocation Plan of Counterpart Personnel

Project Director	1 President and CEO of VINACOAL
Project Manager	1 Director of IMSAT
Assistant Project Manager	1 Manager
Gas Management Technology	3 Engineers
General Mine Safety Technology	4 Engineers
Explosion-proof Test Technology	5 Engineers
Administration	1 Administration Staff (Contract Staff)
Part-time Staff as required	4 Engineers



ANNEX 15-2 Tentative Counterpart Personnel List of IMSAT

1. Eng. Doan van Kien, President of VINACOAL
2. Dr. Phung Manh Dac, Director
3. Dr. Dao Dac Tao, Deputy Director
4. Dr. Nguyen Binh, Manager General
of Division for International Cooperation & Project Development
5. Eng. Tran Tu Ba, Manager of mine safety dept.
6. Dr. Tran Minh, Manager of Electrical dept.
7. Ma. Le Thanh Phuong, mine safety dept
8. Eng. Pham Chan Chinh, mine safety dept
9. Eng. Phung Quoc Huy, mine safety dept
10. Eng. Le Trung Tuyen, mine safety dept
11. Eng. Do Huy Hoang, mine safety dept
12. Eng. Nguyen Dinh Thong, Underground technology dept.
13. Eng. Nguyen thi Huong, Mine Environment dept.
14. Eng. Nguyen Duc Son, Electrical dept
15. Eng. Pham Xuan Thanh, Electrical dept
16. Eng. Vu Manh Anh, Electrical dept



ANNEX 16 Functions and Compositions of Joint Coordinating Committee

1 Functions

The Joint Coordinating Committee will be held at least once a year and whenever necessity arises. Its Functions are as follows:

- (1) To review Annual Work Plan for the Project.
- (2) To review the overall progress of the Technical Cooperation Program as well as the achievement of the Annual Work Plan.
- (3) To exchange views on major issues arising from or in connection with the Technical Cooperation Program.

2 Composition

(1) Chairman

(Chairman will be appointed by members of the Joint Coordinating Committee)

(2) Committee Members

-Vietnamese side-

- a Project director, Vietnam National Coal Corporation (VINACOAL)
- b Representative(s), from VINACOAL
- c Representative(s), from Ministry of Industry (MOI)
- d Representative(s), from Ministry of Planning and Investment (MPI)
- e Representative(s), from Ministry of Finance (MOF)
- f Representative(s), from Ministry of Science, Technology and Environment (MOSTE)
- g Representative(s), from Ministry of Labor, Invalid and social affairs (MOLISA)
- h Project manager, Institute of Mining Science and Technology (IMSAT)
- i Other personnel concerned with the Project decided by the Vietnamese side

-Japanese side-

- a Chief Advisor
- b Coordinator
- c Japanese Experts designated by the Chief Advisor
- d Representative(s) of the JICA Vietnam Office
- e Other Personnel concerned to be decided and dispatched by JICA, If necessary

Note: The Official(s) of Embassy of Japan in Vietnam may attend the Joint Coordinating Committee as observer (s).

ANNEX 17 Five (5) Basic Evaluation Components

1 Five Basic Evaluation Components

The five basic components defined by JICA as mentioned below are in line with those used for the evaluation works by DAC and other international assistance organization. Introduction of these components has enabled a consistent, well-balanced evaluation, which minimizes evaluator bias. Further, it allows us to share the results, knowledge and lessons with other aid organizations, since we are using common components and can discuss with them from the same viewpoints.

(1) Efficiency

Evaluate the method, procedure, term and cost of the project with a view to productivity.

(2) Effectiveness

Evaluate the results in comparison with the goals (or revised ones) defined at the initial or intermediate stage, and evaluate the attributes (factors and conditions) of the results.

(3) Impact

Evaluate the positive and negative effects of the project, extent of the effect and beneficiaries.

(4) Relevance

Preliminary evaluate whether the needs in the country have been correctly identified, and whether the design is consistent with the national and/or master plan.

(5) Sustainability

Evaluate the autonomy and sustainability of the project after the termination of cooperation, from the perspectives of operation, management, economy, finance and technology.

2 Relation between Five Basic Components and PDM

The five components are used for the evaluation and a selection of a project.

These components are directly connected to the elements of PDM as shown in the Figure in the following page.

(1) Efficiency

The component "Efficiency" is a measure to qualitatively and quantitatively compare all resource (input) to the results (output) of the project in order to evaluate the economic efficiency or conversion from input to output.

(2) Effectiveness

The component "Effectiveness" is a measure to evaluate whether the project purpose has been achieved or not, or to evaluate how much the outputs contributed to the achievement of the project purpose, or to evaluate whether or not the characteristics of the outputs were as expected.

(3) Impact

The component "Impact" is a foreseeable or unforeseeable, and a favorable or adverse effect of the project upon society. To evaluate impact, both the overall goal and project purpose should be referred to in the beginning of the evaluation. Evaluation with this component could lead to more than the confirmation as whether or not the overall goal have been obtained. Evaluation with this component requires comprehensive surveys in many cases.

(4) Relevance

The component "Relevance" is to comprehensively evaluate whether or not the project meets the overall goal, politics of both the donor and recipient, local needs and given priority levels, in order to decide whether the project should be continued, reformulated or terminated.

(5) Sustainability

The component "Sustainability" is to comprehensively evaluate how long the favorable effect as a result of the project can continue after the project has been terminated. Evaluation with this component is required to decide how much the local resources should continue to be used for the project, and to evaluate how much the country receiving the assistance has been considering important. According to OECD (1989), "Sustainability" is a component to be used for the final test of the success of a development project.

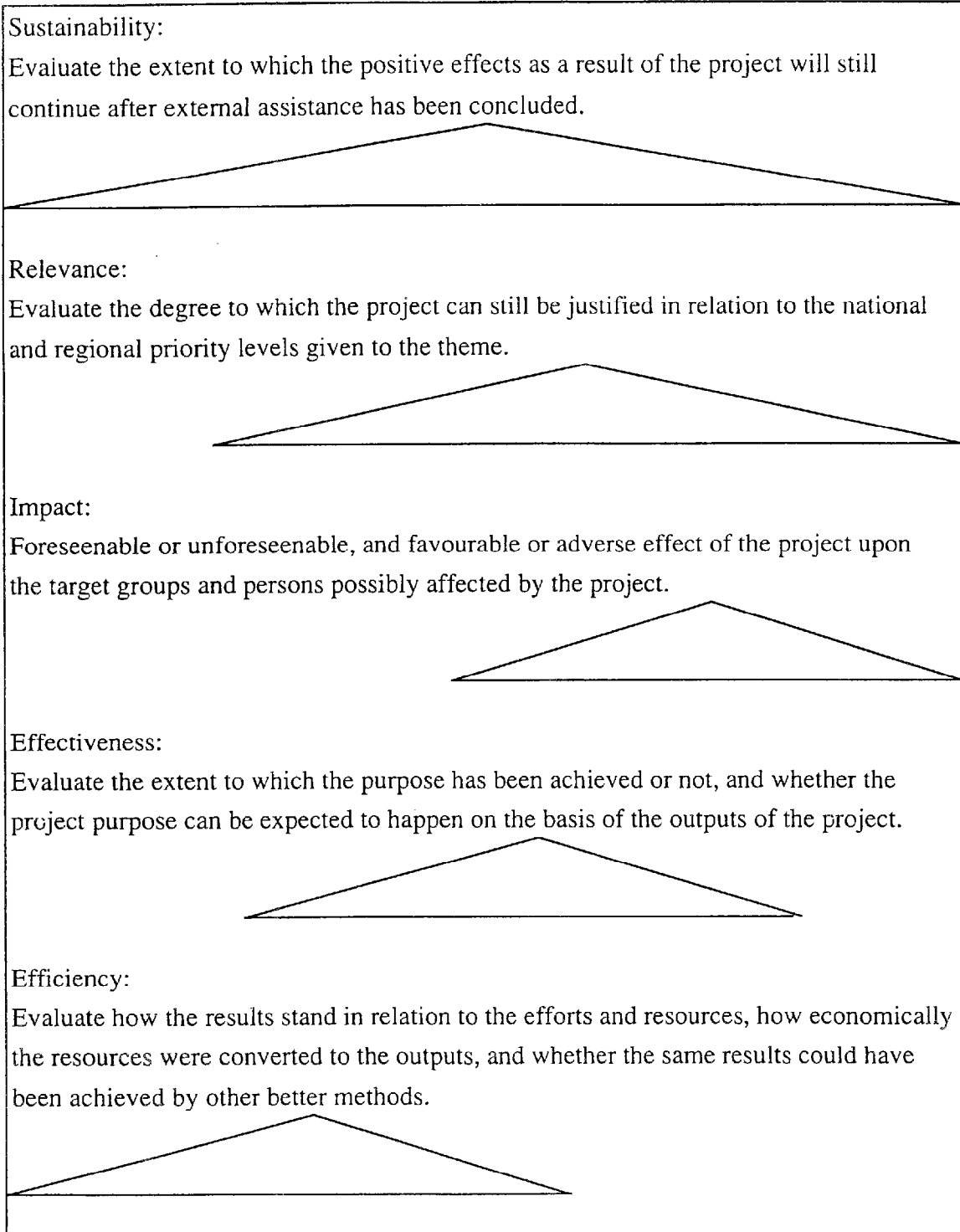
All five components are essential for any of the projects or programs. The five components give necessary information to the decision maker so that he/she can decide how to approach the next step. Since each of the five components build on the intervention strategy, they also lay the foundation for standardization in monitoring and information handling within and among organizations and agencies.

In practice, each of the five components should also contain project-specific information.

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Five Components vs Goal Hierarchy

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Inputs	Outputs	Project Purpose	Overall Goal
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Goal Hierarchy

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ANNEX 18 List of Attendance of the Discussions

1. The Japanese Side

(1) Preliminary Study Team

Mr. Shigemaro AOKI	Leader
Mr. Yasushi TAKAKURA	Technical Cooperation Planning
Dr. Takehiro ISEI	Technology Transfer Planning
Mr. Junichi KAMADA	Provision Equipment Planning
Mr. Satoshi MURAKAMI	Project Cooperation Planning

(2) JICA Expert in VINACOAL

Mr. Tsugunori TERAMOTO

(3) JICA Vietnam Office

Mr. Takashi HATAKEYAMA	Deputy Resident Representative
Mr. Kazuhiko KIKUCHI	Assistant Resident Representative

(4) Embassy of Japan

Mr. Hisayuki IMURA	Second Secretary
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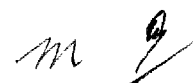
2. The Vietnamese Side

(1) VINACOAL

Mr. Doan Van Kien	President and CEO
Mr. Vuong Van Doc	Deputy General Manager, Investment and International cooperation Dept.
Mr. Tran Mien	Principal Expert, Investment and International cooperation Dept.

(2) IMSAT

Dr. Phung Manh Dac	Director
Dr. Dao Dac Tao	Deputy Director of Institute
Dr. Nguyen Binh	Manager General, Department for International Cooperation and



Ph. D Nguyen Anh Tuan	Project Development Manager of Underground Mining Dept.
Eng. Tran Tu Ba	Manager of Mining Safety Dept.
Eng. Truong Van Loi	Manager, Planning Dept.
Eng. Le Thanh Viet	Manager, Financing Dept.
Eng. Dinh Thi Mo	Manager, Information Dept.
Dr. Tran Minh	General Manager, Mining electrification and Atomization Dept.
(3) Rescue Mining Center	
Mr. Pham Van Tang	Director
(4) Mao Khe Coal Mine	
Eng. Tran Dang Doanh	Deputy Director
Mr. Pham Duc Khiem	General Manager, Technology Dept.
(5) MOI	
Dr. Tran Minh Huan	General Director of International Cooperation Dept.
Eng. Nguyen Thanh Hoa	Senior Officer International Cooperation Dept.
Mr. Pham Thanh Tung	Expert on Energy, International Cooperation Dept.
(6) MPI	
Mr. Nguyen Quang Dung	Director, Industrial Dept.
Mr. Nguyen Trong Cam	Economist, Industrial Dept.
Mr. Nguyen Xuan Tien	Senior Expert, Foreign Economic Relations Dept.

