

3 評価チェックリスト

21 June 1995

EVALUATION CHECK LIST

Evaluation Grade: O Satisfactory ΔFair X Unsatisfactory  
T : technology transfer A : technology acquirement

Evaluation Item	Results	Evaluation			Reference	
		Japn.	Pkstn.	Result		
1. Overall Goal Technical and professional assistance system in the field of Geological and Mineral Prospecting Technology is established in the Pakistan to contribute to the national policy for promotion of mineral resources development.	-Consistency between the mineral resources development policy in the National Plan and that of the Project:  -Influence of GL on GSP in terms of management and research methodology:	-	-	-	Pakistani side is unable to answer this item until the National Policy is announced in coming August.	
		Δ	Δ	Δ		
2. Project Purpose Geoscience Laboratory (GL) is enabled to analyze rocks and minerals leading to the preparation of thematic maps and research papers.	Enhancement of overall analytical capabilities  Improvement of capability for compiling thematic maps  Technical and institutional integration in geoscientific researches	T	A	A	T	A
		O	Δ	Δ	O	Δ
		Δ	Δ	Δ	Δ	Δ
		Δ	X	Δ	Δ	X

\* "Overall Goal" is defined as the future target after the completion of the project.

Evaluation Item	Results	Evaluation			Comments	
		Jpn.	Pkstn.	Result		
3. Output		T	A	T	A	
1. Prospecting technology for the ore deposits						
1-1 Field survey and sampling						
-1-1 field survey		○	△	○	△	Total number of surveyed areas: 13
-1-2 sampling of rocks and minerals		○	△	○	△	
-1-3 sampling for measurement of paleomagnetism		○	△	○	△	
1-2 Preparation and analysis of collected samples by utilizing provided equipment						
-2-1 preparation of thin section		○	○	○	○	Total number of thin sections: 1,236
-2-2 preparation of samples for chemical analysis		○	○	○	○	Total number of sample pulverization: 2,235
-2-3 determination of rocks and minerals		○	△	○	△	Total number of geochemical standard samples: 11.
-2-4 analysis of minerals by EPMA		○	○	○	○	Total number of EPMA analysis: 615
-2-5 chemical analysis by XRF		○	○	○	○	Total number of XRF analysis: 1,516
-2-6 chemical analysis by AAS		○	△	○	△	Total number of AAS analysis: 413

Evaluation Item	Results	Evaluation			Comments
		Jpn.	Pksth.	Result	
-2-7 determination of minerals by XRD	-2-7 -ability to operate XRD -ability to determine minerals by XRD -ability to maintain XRD	△	○	△	Total number of XRD analysis: 195
		△	○	△	
-2-8 thermal analysis of minerals	-2-8 -ability to analyze minerals	△	△	△	Total number of thermal analysis : 99
1-3 Synthesis of data	1-3				
-3-1 synthesis of data on geological structure, <del>etc</del> and ore minerals	-3-1 ability to synthesize data on -geological structure -ore minerals	○	△	△	
		△	△	△	
-3-2 processing of data for geochemical exploration	-3-2 ability to process and analyze data for geochemical exploration	△	△	△	
2. Training as professional experts of geology and mineralogy	2-1 Reporting skills	○	△	△	132 reports 40 colloquia 9 volumes 24 seminars
	-2 Oral presentation	○	△	△	
	-3 Accumulation of commonly utilized data	○	△	△	
3. Wide recognition of the importance of prospecting technology of geology and mineralogy	3-1 opening of technical seminars	○	△	△	Publication of GEOLOGICA is under preparation
	-2 publishing of PGC, articles, & text	○	○	○	
	-3 visitors to GL, access to library	○	○	○	
	-4 technical meeting, joint research	○	○	○	

Evaluation Item	Results	Evaluation		Reference
		Jpn.	Pkstn. Result	
4. <u>Input</u> Japanese Side	Dispatch of Japanese experts	○ ○ ○	○ ○ ○	Annex: List of Japanese experts
	Long-term: 14 prs. -field -number -length		○ ○ ○	
	Short-term: 51 prs. (of which, 9 is to be dispatched.) -field -number -length	○ ○ ○	△ ○ ○	Pakistani side expressed the need for experts in XRD, DTA/TG, ore microscopy, analytical chemistry and image analyser.
	16 prs. (of which, 2 is to be accepted.) -field -number -length	△ ○ ○	△ ○ ○	Annex: List of Pakistani counterpart personnel trained in Japan
Provision of machinery and equipment	-Timely provision -Timely installation -Operation and utilization -Maintenance	△ ○ ○ ○	○ ○ ○ △	Annex: List of provided equipment
Local cost assistance fund	-covered items -coverage of consumables, maintenance costs, spare parts for provided equipment	○ ○	○ ○	

Evaluation Item	Results	Evaluation		Reference
		Jpn.	Pkstn. Result	
Pakistani Side	Allocation of qualified Pakistani counterpart and technical staffs.			Some of them were doubly assigned. Annex: List of Pakistani Counterpart
	Counterpart: Administration 2 prs. Petrology 2 prs. Mineralogy 5 prs. Stratigraphy 3 prs. Chemical Analysis 7 prs. Geochemical Exploration 1 prs. Structural Geology 2 prs. Economic Geology 2 prs. Paleomagnetism 4 prs. -field -number -qualification	△ △ △	○ △ ○	○ △ ○
	Effective utilization of knowledge and experience of the Pakistani counterpart trained in Japan.	○	○	○
	Retention rate of counterpart	○	○	100 % retained
	Effective allocation of counterpart	○	○	○
	Adequate provision and allocation of machinery and equipment necessary for the Project.	○	○	Annex: List of equipment procured by Pakistani side
	Supply and/or replacement of machinery and equipment (machinery, equipment, instruments, tools, vehicles, and spare parts, other than the ones provided by Japan as referred to in R/D.)			

Evaluation Item	Results	Evaluation		Reference
		Jpn.	Pksta. Result	
Pakistani Side (continued)	To secure privileges, exemptions and benefits to the Japanese experts	○	○	○
	Provision equivalent to the ones given to other international experts carrying out similar missions.	○	○	○
	Transportation facilities for the Japanese experts.	○	○	○
Other expenses necessary for the implementation of the Project	For machinery and equipment given by Japan:	○	○	○
	-transportation within Pakistan -installation -operation and maintenance -customs duties, domestic taxes and other charges	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○
To secure utilization of the buildings and facilities provided by Japan for the implementation of the Project	Other running costs for the Project	○	○	○
	Adequate measures to secure their availability	△	△	△

Evaluation	Results	Evaluation		Result		
		Jpn.	Pksta.			
5. <u>Prospect of Sustainability</u>	1 Organizational Aspects	1-1 Organizational arrangement necessary for the activities of Geolab and its relation with GSP	△	△	△	Pakistani side made a remark that it was difficult to reply these questions in a strict sense.
		1-2 Number and allocation of researchers (prospect of further recruitment of researchers)	△	△	△	
		1-3 Retention rate of counterpart	○	○	○	
		1-4 Number and allocation of administrative staff	○	○	○	
		1-5 Relation between Geolab and GSP (personnel drawn from GSP and appropriate technology transfer to GSP)	△	△	△	
	2 Financial Aspects	2-1 Budget of GSP	X	X	X	
		2-2 Budget of Geolab	△	△	△	
		2-3 Local cost for the Project borne by the Pakistani Side	△	△	△	
		2-4 Budget for maintenance of buildings, machinery and equipment	△	△	△	
		2-5 Budget for spare parts	△	△	△	
		2-6 Budget for consumables	△	△	△	
		2-7 Budget for other running costs	△	△	△	

Evaluation	Technical Aspects	Results	Evaluation		Reference
			Jpn.	Pksta. Result	
	3 Technical Aspects	<p>3-1 Ability to integrate individual capabilities in order to evaluate and assess geological features of specific areas of Pakistan</p> <p>= quantity and quality of researches</p> <p>= extent of dissemination of research results for outside use</p> <p>= degree of contribution by Geolab to GSP</p> <ul style="list-style-type: none"> <li>- training</li> <li>- personnel exchange</li> <li>- utilization of facilities and research results of Geolab</li> </ul> <p>= Contribution to activities of other institute and companies</p>	<p>△</p> <p>○</p> <p>○</p> <p>△</p> <p>△</p> <p>△</p> <p>△</p> <p>○</p>	<p>○</p> <p>○</p> <p>○</p> <p>△</p> <p>△</p> <p>△</p> <p>○</p>	

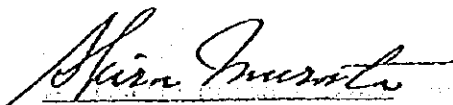


THE RECORD OF DISCUSSIONS  
ON THE FOLLOW-UP PROGRAMME  
OF THE JAPANESE PROJECT-TYPE TECHNICAL COOPERATION  
FOR THE PROJECT ON  
GEOSCIENCE LABORATORY IN THE GEOLOGICAL SURVEY OF PAKISTAN

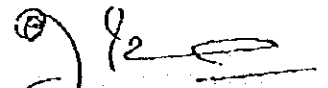
With regard to the follow-up programme of the Japanese technical cooperation for the Project of Geoscience Laboratory in the Geological Survey of Pakistan (hereinafter referred to as "the Project") based on the Record of Discussions signed in Islamabad on 26 March 1990, Mr. Akira Murata, Resident Representative of the Japan International Cooperation Agency, held a series of discussions with the concerned Pakistani authorities. The discussions were in accordance with the results of the joint evaluation by the Japanese and the Pakistani sides conducted in Islamabad in June 1995.

As a result of the discussions, both sides agreed to recommend to their respective Governments the implementation of the follow-up programme of the Japanese technical cooperation for the Project along the lines described in the document attached hereto.

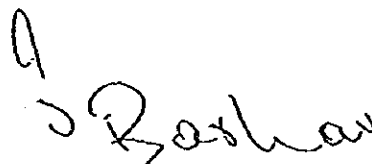
Islamabad, September 13, 1995



Mr. Akira Murata  
Resident Representative,  
Japan International Cooperation  
Agency (JICA)



Mr. Muhammad Ali Mirza  
Director General,  
Geological Survey of Pakistan  
Ministry of Petroleum and  
Natural Resources



Mr. Jahangir Bashir  
Joint Secretary  
Ministry of Petroleum and  
Natural Resources

## THE ATTACHED DOCUMENT

The Government of Japan and the Government of the Islamic Republic of Pakistan will cooperate with each other in implementing the follow-up programme for the Project in accordance with the following:

### 1. Term of Cooperation

The duration of the technical cooperation for the follow-up programme for the Project will be one and half (1.5) years from October 1, 1995.

### 2. Dispatch of Japanese Experts (Long-Term)

The Government of Japan will provide the services of the Japanese long-term experts as listed below:

(1) Chief Advisor (One of the technical experts listed under (2) below will be assigned as the chief advisor.)

(2) Experts in the fields of:

a. Economic Geology

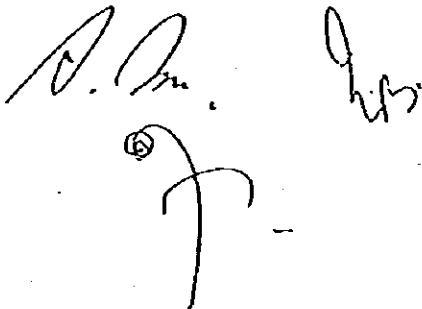
b. Petrology

c. Paleomagnetism

d. Chemical Analysis

(3) Coordinator

All matters other than those mentioned above will be treated in the same manner as prescribed in the articles of the Record of Discussions signed in Islamabad on 26 March 1990.

The block contains several handwritten signatures and initials. On the left, there is a signature that appears to be 'A. An.' followed by a large, stylized signature that looks like a '7' with a circled '6' above it. To the right of these, there are some smaller, less distinct initials or marks.

RECORD OF DISCUSSIONS  
BETWEEN THE JAPANESE IMPLEMENTATION SURVEY TEAM  
AND THE AUTHORITIES CONCERNED OF  
THE GOVERNMENT OF THE ISLAMIC REPUBLIC OF PAKISTAN  
ON THE JAPANESE PROJECT-TYPE TECHNICAL COOPERATION  
FOR THE PROJECT ON  
GEOSCIENCE LABORATORY IN THE GEOLOGICAL SURVEY OF PAKISTAN

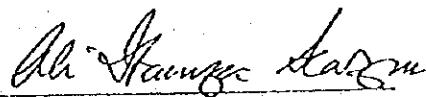
The Japanese Implementation Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (JICA) and headed by Dr. Kenji Tomita, Special Technical Advisor of JICA, and authorities concerned of the Islamic Republic of Pakistan exchanged views and had a series of discussions in respect of the desirable measures to be taken by both Governments for successful implementation of the Project-type technical cooperation for the Project on Geoscience Laboratory in the Geological Survey of Pakistan (hereinafter referred to as "the Project") from March 21 to March 27, 1990 in Islamabad, Pakistan.

As a result of the discussions, the Team and the Pakistani authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

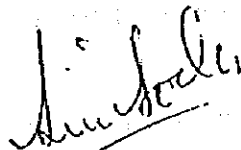
Islamabad, March 26, 1990



Dr. Kenji Tomita  
Leader,  
Implementation Survey Team,  
Japan International Cooperation  
Agency (JICA)



Mr. A.H. Kazmi  
Director General,  
Geological Survey of Pakistan,  
Ministry of Petroleum and  
Natural Resources



Mr. Mohammad Ilyas Lodhi  
Joint Secretary,  
Ministry of Petroleum and  
Natural Resources

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

The Government of Japan and the Government of the Islamic Republic of Pakistan will cooperate with each other in implementing the Project in accordance with the Master Plan which is given in Annex.

II. MEASURES TO BE TAKEN BY THE GOVERNMENT OF JAPAN

In accordance with the laws and regulations in force in Japan, the Government of Japan will take, at its own expense, the following measures through JICA according to the normal procedures under the Colombo Plan Technical Cooperation Scheme.

1. Dispatch of Japanese Experts

The Government of Japan will provide services of the Japanese experts as listed in Paragraph 4. of Annex.

2. Provision of Machinery and Equipment

(1) The Government of Japan will provide such machinery, equipment and other materials as described in Paragraph 5. of Annex .

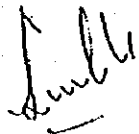
(2) The articles referred to in 2. (1) above will become the property of the Government of the Islamic Republic of Pakistan upon being delivered C.I.F. to the Pakistani authorities concerned at the ports and/or airports of disembarkation, and will be utilized exclusively for implementation of the Project in consultation with the Japanese experts referred to in 2.1. above.

3. Training of Pakistani Personnel in Japan

The Government of Japan will accept the Pakistani counterpart personnel connected with the Project for technical training in Japan.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE ISLAMIC REPUBLIC OF PAKISTAN

In accordance with the laws and regulations in force in the Islamic Republic of Pakistan and the provision of the Colombo Plan Technical Cooperation Scheme, the Government of the Islamic Republic of Pskistan will take, at its own expense, the measures listed below.



## 1. Services of Counterpart and Administrative Personnel

- (1) The Government of the Islamic Republic of Pakistan will secure the services of qualified Pakistani counterpart and administrative personnel as listed in Paragraph 6. of Annex.
- (2) The Government of the Islamic Republic of Pakistan will ensure that the knowledge and experience acquired by the Pakistani counterpart personnel from technical training in Japan will be utilized effectively for the successful implementation of the Project.

## 2. Supply and/or Replacement of Machinery and Equipment

The Government of the Islamic Republic of Pakistan will supply and/or replace machinery, equipment, instruments, tools, vehicles, and other materials including spare parts necessary for implementation of the Project except for the equipment referred to in II.2.(1) above.

## 3. Privileges, Exemptions and Benefits to the Japanese Experts and their Families

The Government of the Islamic Republic of Pakistan will secure the following:

- (1) Privileges, exemptions and benefits to the Japanese experts and their families no less favorable than those granted to the experts of third countries or international organizations performing similar missions in the Islamic Republic of Pakistan;
- (2) Transportation facilities and travel allowance for the official travel of the Japanese experts within the Islamic Republic of Pakistan;
- (3) Suitably furnished accommodations or equivalent housing allowance for the Japanese experts and their families.

## 4. Expenses Necessary for Implementation of the Project

The Government of the Islamic Republic of Pakistan will cover the following expenses:

- (1) Expenses necessary for transportation within the Islamic Republic of Pakistan of the articles referred to in II.2.(1) as well as for installation, operation and maintenance thereof;
- (2) Customs duties, internal taxes and any other charges imposed in the Islamic Republic of Pakistan on the articles referred to in II.2.(1) above;

(15)

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- (3) All running expenses necessary for implementation of the Project.
5. The buildings and facilities provided by the Government of Japan through the Grant-Aid Program will be utilized for the Project with top priority.

#### IV. IMPLEMENTING AGENCY

The implementing agency of the Project will be the Geological Survey of Pakistan, Ministry of Petroleum and Natural Resources (hereinafter referred to as "GSP").

#### V. ADMINISTRATION OF THE PROJECT

1. The Director General of GSP will bear the overall responsibility for the Project.
2. The Project Director, Geoscience Laboratory will be responsible for the implementation, administration, management and technical operation of the Project.
3. The Japanese Chief Advisor will provide necessary recommendation and advice to the Director General of GSP and Project Director, Geoscience Laboratory on technical and administrative matters pertaining to implementation of the Project.
4. The Project Director, Geoscience Laboratory and the Japanese Chief Advisor will work in close consultation in the implementation of the Project.
5. The Japanese experts will give necessary guidance and advice to the Pakistani counterpart personnel on the technical matters pertaining to implementation of the Project.
6. A Joint Committee will be established with the composition as referred to Paragraph 7. of Annex for the effective and successful implementation of the Project.
7. The Organization Chart of the Project is shown in Paragraph 8. of Annex.

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## VI. CLAIMS AGAINST JAPANESE EXPERTS

The Government of the Islamic Republic of Pakistan shall undertake to bear claims, if any arises, against the Japanese experts engaged in the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Islamic Republic of Pakistan except for those arising from willful misconduct or gross negligence of the Japanese experts.

## VII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major issues arising from, or in connection with this Attached Document.

## VIII. TERM OF COOPERATION

The duration of technical cooperation for the Project will be five (5) years beginning October 1, 1990.

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## MASTER PLAN

## 1. OBJECTIVE OF TECHNICAL COOPERATION

The objective of technical cooperation for the Project is to transfer appropriate technology to the Pakistani counterpart personnel for the purpose of training skilled technical and professional manpower in the field of Geological and Mineral Prospecting Technology to contribute to the national policy for promotion of mineral resources development in the Islamic Republic of Pakistan.

## 2. SCOPE OF TECHNICAL COOPERATION

Technology transfer to the Pakistani counterpart personnel for the Project will be specified as follows:

- (1) Prospecting Technology for the Ore Deposits associated with Igneous and Metamorphic Rocks
- (2) Prospecting Technology for the Ore Deposits associated with Sedimentary Rocks
- (3) Prospecting Technology for the Ore Deposits by means of Geochemical Exploration

## 3. TARGET OF TECHNICAL COOPERATION

The target of technical cooperation is to enable Pakistani counterpart personnel to prepare special thematic maps, such as structural geologic maps, mineral distribution maps and geochemical maps utilizing equipment of Geoscience Laboratory as well as geologic maps.

## 4. LIST OF JAPANESE EXPERTS (LONG-TERM)

- (1) Chief Advisor
- (2) Experts in the fields of:

(1/3)

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- a. Petrology
  - b. Mineralogy
  - c. Stratigraphy
  - d. Structural Geology
  - e. Paleomagnetism
  - f. Geochemical Exploration
  - g. Chemical Analysis
- (3) Coordinator

Note: Short-term experts may be dispatched when the necessity arises, and mutually agreed upon, for the smooth implementation of the Project.

## 5. EQUIPMENT

Machinery and equipment necessary for the technology transfer by the Japanese experts:

- (1) Auxiliary machinery and equipment for those provided by the Government of Japan through the Grant-Aid Program
- (2) Other necessary equipment and materials to be mutually agreed upon for the effective implementation of the Project.

## 6. LIST OF PAKISTANI COUNTERPART AND ADMINISTRATIVE PERSONNEL

- (1) Project Director, Geoscience Laboratory (Chief Geoscientist)
- (2) Counterpart personnel in the fields of:
  - a. Petrology
  - b. Mineralogy
  - c. Stratigraphy
  - d. Structural Geology
  - e. Paleomagnetism
  - f. Geochemical Exploration
  - g. Chemical Analysis
- (3) Administrative and Clerical Staff
- (4) Other necessary personnel mutually agreed upon

(14)

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## 7. JOINT COMMITTEE

### (1) Functions

The Joint Committee will meet at least once a year and whenever necessity arises, and work:

- a. To formulate the Annual Work Plan of the Project in line with the Tentative Schedule of Implementation formulated under the framework of this Record of Discussions;
- b. To review the overall progress of the Technical Cooperation Program as well as the achievements of the above-mentioned Annual Work Plan;
- c. To review and exchange views on major issues arising from or in connection with the Technical Cooperation Program.

### (2) Composition

a. Chairman : Director General of GSP

b. Members

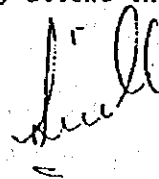
(Pakistani Side)

- 1) Project Director, Geoscience Laboratory
- 2) Personnel connected with the Project designated by the Chairman
- 3) Representatives of Ministry of Petroleum and Natural Resources
- 4) Representatives of Economic Affairs Division

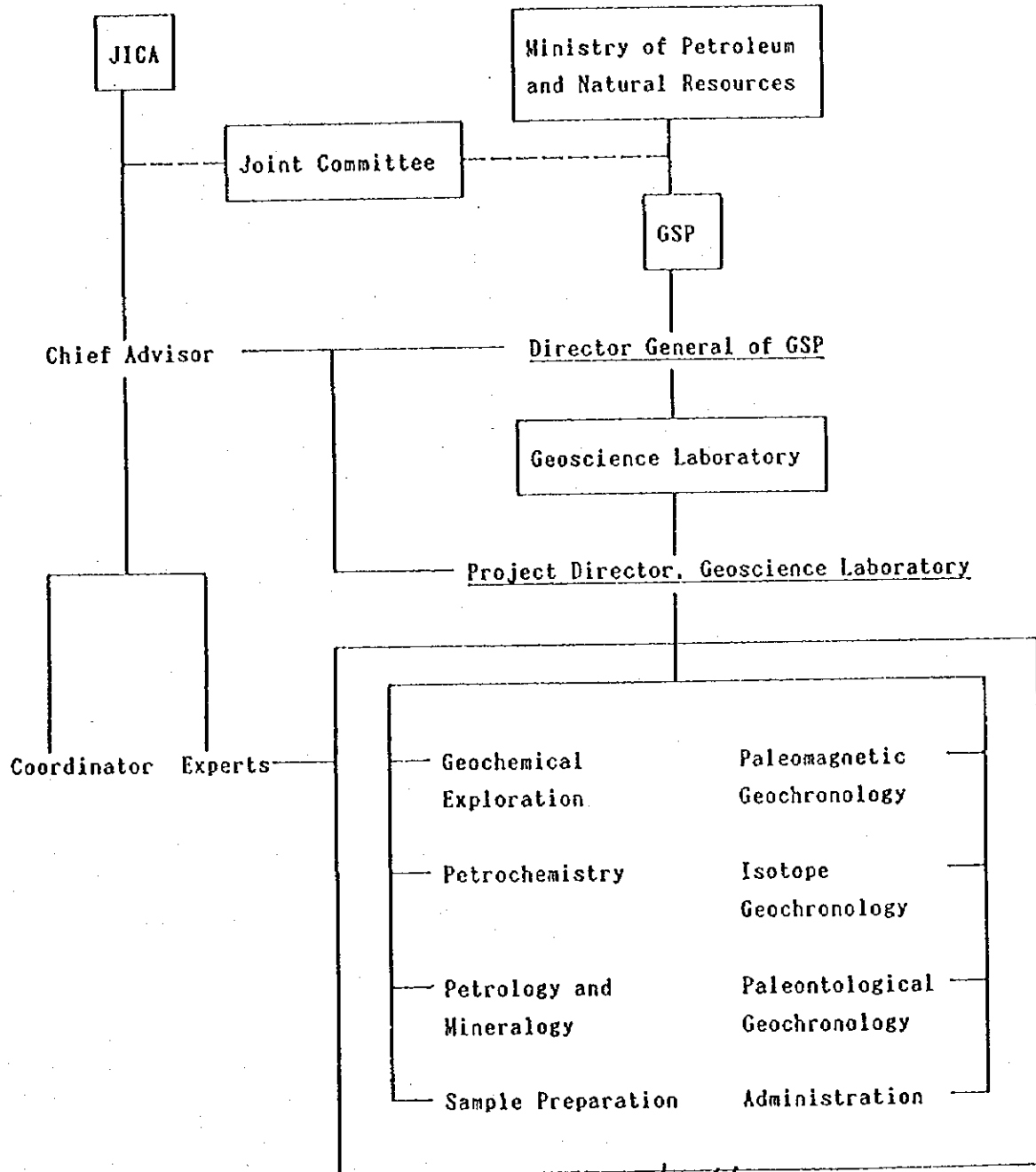
(Japanese Side)

- 1) Chief Advisor
- 2) The Japanese experts designated by the Chief Advisor
- 3) Representatives of JICA Pakistan Office
- 4) Personnel concerned with the Project to be dispatched by JICA, if necessary

Note: Officials of the Embassy of Japan may attend the Joint Committee as observers.



8. ORGANIZATION CHART FOR IMPLEMENTATION OF THE PROJECT



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11