CHAPTER 4 PROJECT EVALUATION AND CONCLUSION

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4.1 Project Evaluation

The Project will provide percussion rigs to the DAE in order to promote the installation of tubewells at Malakand Division, where the irrigation needs are not covered sufficiently compared with other sites, as a part of the Five Year 1,000 tubewell installation plan. At present, most of the existing available drilling machines of the DAE are deteriorated, except for those procured by the Japanese Grant Aid Assistance 9 years ago. Most of the drilling machines have been used for more than 20 or 30 years. Thus, a lot of of time and high costs are required and operation efficiency is low. Under these circumstances, attainment of this goal is very difficult.

Through implementation of the Project, 25 tubewells will be installed and the following direct benefits will be achieved:

The Project site is located in a geographically advantageous area for vegetable and orchard cultivation compared with other regions of Pakistan. However, the areas where it is possible to introduce surface irrigation are limited and most of them are already irrigated. The only solution to this problem is ground water irrigation. In these areas, improvement of the agricultural economy is possible by the cultivation of cash crops made possible by the introduction of irrigation water.

Agricultural production, especially, vegetable and orchard cultivation will increase through the stable irrigation water supply. Due to the possibility of intensive farming, small size farmers owing less than 2.5 ha will also increase.

By the introduction of intensive farming, working opportunities will increase.

1,000 ha will be benefited through the installation of 25 tubewells.

If the equipment provided under the Project is properly maintained and managed, and if the tools, spare parts and materials are supplied continually, the AED will be able to continue with the ground water development in the Project area.

4.2 Recommendations

It is recommended that the persons concerned with this Project consider the following points in addition to what was agreed upon in the Minutes of Discussions prepared during the Basic Design Study.

(1) The Project will be completed when the equipment arrives at NWFP of Pakistan. The NWFP government shall provide the budget and personnel necessary to complete the drilling project, and maintain the machinery appropriately.

(2) It was determined that a two year supply of spare parts would be sufficient for the Project. During two years, the NWFP side shall take necessary steps to establish the method for obtaining additional spare parts for future use. By proper use of the equipment and transferred techniques, the NWFP should be able to use the machinery provided efficiently.

(3) It is proposed that a worshop is planned for Bunir district since the area has a high priority in drilling work under the Project.

(4) DAE shall formulate a plan to increase the number of vehicles, particularly, pickup trucks usable for various purposes such as contracts between the concerned offices, parts delivery and transportation of personnel.

In order to increase the benefits of this Project, the following measures shall be taken;

(1) Upgrading drilling capacity through smooth implementation schedule

It is necessary to upgrade the drilling capacity of the existing equipment, as well as the drilling equipment to be procured by this Project, in order to achieve the targeted number of

It is necessary to upgrade the drilling capacity of the existing equipment, as well as the drilling equipment to be procured by this Project, in order to achieve the targeted number of tubewell installation. The reason why installation takes more time is the shortage of supporting equipment for drilling. It is deemed that through the efficient use of the supporting equipment, such as truck crane, water tank, etc., drilling capacity of existing machines will be improved. And it is important to take measures for smoothing the drilling schedule. The following measures shall also be implemented by the executing agency.

1 Maintenance of the existing rig machinery.

2 Repairing the Rig machinery out of order.

3 Undertake the following efforts to make possible the smooth installation of tubewells

- Guidance for procurement and scheduling of necessary materials for tubewell installation.
- make smooth application
- Scheduling of Drilling Machines
- Administration and Management of Machinery in order to reduce time losses due to mechanic troubles

(2) Beneficiary farmers

In order to promote the drilling for small size farmers, it is important to carry out guidance for cooperative formation for collective well instalation.

Project Benefit

Present Situation and Problem	Proposed Countermeasure	Project Benefit
(1) Shortage of Irrigation Water	To solve the irrigation water shortage problem (where the introduction of surface water is difficult), through the ground water development by the drilling machine procured under this project	To increase the agricultural production on the newly incorporated irrigation area through the irrigation water. Especially, the introduction of cash crops, such as vegetable and orchard cultivation will be possible.
(2) Decrease of drilling capacity for the implementation of the Project	To increase drilling capacity , especially at Malakand Division, through the introduction of Percussion Rigs appropriate for the geological characteristics of the Malakand Division.	At present, the completion of the Five Year Drilling Plan is difficult. However by the implementation of this Grant Aid Project which provides 5 percussion rigs, drilling capacity will increase and enable the achievement of the Project.
(3) Deterioration of drilling capacity of existing machines	To provide Crane truck, Water tank, Pick-up truck and Pumping test equipment as support equipment.	With the provision of this equipment, drilling capacity of the existing machinery will be increased.
(4) Employment problem for the increasing rural labor	To promote groundwater development	By the promotion of the groundwater development, the irrigation of non irrigated areas will be possible, and intensive farming will be introduced. This intensive farming absorbs lots of labor for the cultivation. Consequently it is possible to absorb a larger labor force.
(5) Low income for large number of small size farmers	To promote groundwater development	To increase the vegetable and orchard cultivation through the introduction of irrigation water. By this type of agriculture, it is possible for small size farmers to get high incomes. Consequently, farmers economy, especially, that of small scale farmers will be improved.

APPENDIX

MEMBER LIST OF THE STUDY TEAM

Assignment	Name	Title	Period
Team Leader	Hiroyuki Kinomoto	First Design Study Division, Grant Aid Study and Design Department, Japan International Cooperation Agency	January 20 to January 28, 1995
Chief Engineer/ Irrigation	Masayuki Honjo	Pacific Consultants International	January 20 to February 2, 1995
Hydro-geology	Hisashi Kobayashi	Ditto	Ditto
Equipment Engineer	Naoki Taira	Japan TECNO CO.,LTD	Ditto

Schedule of the Field Survey

No.	Date	Day	Activities
1	20-Jan-95	Fri	Tokyo-Islamabad
2	21-Jan-95	Sat	Courtesy call to Japan Embassy & JICA
3	22-Jan-95	Sun	Move to Peshawar Submission & Explanation of Inception Report Coordination of Study Schedule
4	23-Jan-95	Mon.	Confirmation of requested project, contents and background of irrigation project and O&M Plan
5	24-Jan-95	Tus	Technical survey (Data collection and analyzing)
6	25-Jan-95	Wed	Discussion & preparation of M/D Technical survey (Data collection and analyzing)
7	26-Jan-95	Thu	Signing of M/D Technical survey (Data Collection, O&M Survey)
8	27-Jan-95	Fri	Return to Japan /KINIMOTO Move to Mingola (Other Study Member)
9	28-Jan-95	Sat	Site survey (Existing groundwater irrigation project and wells)
10	29-Jan-95	Sun	Site Survey (Existing groundwater irrigation project and wells)
11	30-Jan-95	Mon	Discussion with NWFP (Content and background of the Project, Detail of the machinery and equipment to be procured)
12	31-Jan-95	Tue	Confirmation of the Project (Responsibility, Budget, Executing Organization, O&M System, Project Contents, etc.)
13	1-Feb-95	Wed	REPORT TO JICA
14	2-Feb-95	Thu	Return to Japan(PK751)

List of Organizations and Persons Contacted

Civil Secretariate, N.W.F.P. Government

Mr. Himayatullah Khan	Additional Secretary PE&D Dept., Government of N.W.F.P.
Mr. Alamgir Khan Gandapur	Chief of Section, Agriculture, PED Department
Mr. Waqr Ayub	Chief of Foreign Aid
Mr. Irshad Khan	Reserch Officer, Foreign Aid,

Food, Agriculture, Live Stock & Cooperative Department

Mr. Ejaz Ahmad Qureshi	Secretary of Agricultural Department, Civil Secretariat
Mr. Mohammad Iqbal	Chief Planning Officer

Directorate of Agricultural Engineering, N.W.F.P.

Mr. Abdul Wahab Khan	Director of Agricultural Engineeing
Mr. Saifullah Khan	Agricultural Enginner
Miss Saima	Assistant Director (Planning) of Agricultural Engineering
Mr. Hidayatullah Jan	Agricultural Engineer, Peshawar Div.
Mr. Amirzad Gul	Agricultural Engineer, Malakand Div.
Mr. Gauhan Ali	Agricultural Engineer, Swat District
Mr. Sader Khan	Assistant Agricultural Engineer, Malakand Agency
Mr. Mehmood Khan	Drilling Enginerr, Peshawar
Mr. Rahat Gul Unite	Supervisor, Malakand Agency

Irrigation Department, N.W.F.P

Mr. Mawab Khan Khattak	Dupty Secretary, Irrigation Department
Mr. Abdul Khanan	Executive Engineer, Irrigation Department

JAPAN Embasy

Masahiko Tanoi	First secretary, Japan Embassy

JICA OFFICE

Noriaki Nishimiya	Deputy Resident Representative

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON THE PROJECT FOR
GROUND WATER DEVELOPMENT AT MALAKAND DIVISION
OF
NORTH WEST FRONTIER PROVINCE
IN
ISLAMIC REPUBLIC OF PAKISTAN

In response to a request from the Government of the Islamic Republic of Pakistan, the Government of Japan decided to conduct a Basic Design Study on the Project for Ground water Development at Malakand Division of North West Frontier Province (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA has sent to Pakistan a study team, which is headed by Mr. Hiroyuki Kinomoto, First Basic Study Division, Grant Aid Study and Design Department, JICA, and is scheduled to stay in the country from January 20 to February 2, 1995.

The team held discussions with the officials concerned of the Government of Pakistan and the Government of N.W.F.P., and conducted a field survey at the study area.

In the course of the discussions and field survey, both sides have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Study Report.

Peshawar, January 26, 1995

Mr. Hiroyuki Kinomoto
Leader
Basic Design Study Team
JICA

Mr. Himayatullah Khan
Additional Secretary
PE & D Dept., Government
of N.W.F.P

25/1/95

Mr. Muhammad Iqbal
Chief Planning Officer,
Agriculture Dept.,
Government of N.W.F.P.

Mr. Shahid Humayun
Deputy Secretary
Economic Affairs Div.
Ministry of Finance
& Economic Affairs
Government of Pakistan

ATTACHMENT

1. Objective

The objective of the Project is to develop ground water for irrigation by provision of necessary equipment for drilling wells.

2. Project Sites

Project site are in following 5 districts in Malakand Division of N.W.F.P.

- Malakand Agency
- Swat District
- Dir District
- Bunir District
- Chitrar District

3. Executing agency of the Government of Pakistan

Directorate of Agricultural Engineering in the Food, Agriculture, Live Stock & Cooperative Department of the Government of North West Frontier Province is responsible for the procurement, administration and execution of the Project.

4. Items requested by the Government of Pakistan

After discussions with the Basic Design Study Team, items described in Annex I were finally requested by the Government of N.W.F.P. on behalf of the Government of Pakistan.
However, final components of the Project and quantities of equipment to be provided will be determined after further consideration in Japan.

5. Japan's Grant Aid System

1) Pakistani side has understood the system of Japanese Grant Aid explained by the team with Annex III.
2) Pakistani side will take necessary measures, as described in Annex II for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

6. Schedule of the Study

1) The consultants will proceed to further studies in Pakistan until February 2, 1995.
2) JICA will complete the final report and send it to the Government of Pakistan by April, 1995.

Annex I.

EQUIPMENT LIST

Item	Description	Q'ty
1.	**Percussion Drilling Equipment:**	5 Units
1-1	Cable tool percussion type drilling machine, driven by water-cooled diesel engine, mounted on 4x4, diesel engine truck, capable of drilling more that 200 m (660') depth with maximum borehole diameter of 450mm (18") capable handling a tool string not less than 1,850 kg in weight by using 24 mm diameter wire drill line.	
2.	**Standard Operating Accessories:** (Following Q'ty for 1 unit of the rig)	5 Lots
2-1	Drilling line, 6xFi(25), right lay, 24mm dia., 250m long. (reeled on bull reel)	1 roll
2-2	Sand line, 6x24, galvanized, right lay, 12mm dia., 250m long. (reeled on sand reel)	1 roll
2-3	Casing line, 6x24, right lay, 18mm dia., 130m long. (reeled on casing reel)	1 roll
2-4	Three(3) sheave travelling block for casing line, 14" dia. sheaves, 30 ton working capacity. (attached to casing line)	1 pc.
2-5	Mast reinforcing legs (A-frame), complete with screw type levelling jacks and base plates.	1 set
2-6	Working reinforcing for drilling operation, steel construction type, approx. 3m x 3.5m	1 set
2-7	Spare timbers for levelling jacks. 300mm square x 4.0m long x 3 pcs. 240mm square x 1.0m long x 6 pcs.	1 set
3.	**Drilling Tools:** (Following Q'ty for 1 unit of the rig)	5 Lots
3-1	Tabular bit for 26" dia., 7.2m long.	1 pc.
3-2	- do -, for 22" dia., 7.2m long.	1 pc.
3-3	- do -, for 18" dia., 7.2m long.	1 pc.

Item	Description	Q'ty
3-4	Bit gauge for 26", 22" and 18" bits.	1 set
3-5	Extra center edge assembly.	
	a) For 26" bit.	1 pc.
	b) For 22" bit.	1 pc.
	c) For 18" bit.	1 pc.
3-6	Center edge, high carbon steel.	
	a) For 26" bit.	2 pc.
	b) For 22" bit.	2 pc.
	c) For 18" bit.	2 pc.
3-7	Flat valve bailer, 14" O.D., 3.5m long.	1 pc.
3-8	- do -, 12-1/2"O.D., 3.5m long.	1 pc.
3-9	Dart valve bailer, 12-1/2"O.D., 3.5m long.	1 pc.
3-10	- do -, 8-1/2"O.D., 4m long.	1 pc.
3-11	Steel bailing ditch.	1 pc.
3-12	Wire grip, to fit 24mm dia., drilling line.	1 pc.
3-13	Wire line drilling clamp, to fit drilling and sand line.	1 pc.
3-14	Solid type jar bumper, 150mm dia., 1.8m long, complete with swivel.	1 pc.
3-15	Babbitt ladle with handle.	1 pc.
3-16	Babbitt metal to attached drilling line to bit.	100 kg
3-17	Motor driven mud mixer,3" outlet connection, complete with switch box and 15m long cable.	1 set
3-18	Outlet hose for mud mixer, 3" dia., 5m long, complete with hose joint and clamps.	2 pcs.
3-19	Wire line saver for tubular bit.	1 pc.
3-20	Sleeve pipe, 36"(914.4mm)O.D., 8mm wall thickness, 2m long/pc.	2 pcs.
3-21	Surface casing, 24"(609.6mm)O.D., 9.5mm wall thickness, 3m long/pc.	10 pcs.

Item	Description	Q'ty
3-22	Casing clamp for 24" dia. surface casing, complete with wrenches and sling wire ropes. (2 pcs. for 1 set).	1 set
3-23	Pipe cutting guide for 24"O.D. surface casing	1 set
4.	**Casing Tools:** (Following Q'ty for 1 unit of the rig)	5 Lots
4-1	Casing clamp for 16"O.D. casing. (2 pcs. for 1 set)	1 set
4-2	- do -, 12-3/4"O.D. casing.	1 set
4-3	Wrench for above clamps.	4 pcs.
4-4	Sling wire rope for above clamps.	4 pcs.
5.	**Fishing Tools:** (Following Q'ty for 1 unit of the rig)	5 Lots
5-1	Hydraulic jacks(2),50 ton capacity,complete with hand operated pumps, high pressure hoses and pressure gauges.	1 set
5-2	Spider and slips for jack-up operation.	1 set
5-3	Sleeve pipe for jack-up operation.	1 pcs.
5-4	Jack-up rods, 60mm dia., 3m long, complete with thread coupling and thread protector.	70 pcs.
5-5	- do -, 1.5m long.	2 pcs.
5-6	Overshot for tubular bit.	1 pc.
5-7	Center latch elevator with links for jack-up rod. (2 pcs. for 1 set)	1 set
5-8	Jack-up rod clamp with bolts, nuts and wrenches. (2 pcs. for 1 set)	1 set
5-9	Jack-up rod base plate.	1 pc.
5-10	Two prong wire line grab with latch jack bottom.	1 pc.

Item	Description	Q'ty
6.	**Miscellaneous Equipment:** (Following Q'ty for 1 unit of the rig)	5 Lots
6-1	Oxgen-acetylene welding and cutting equipment, complete with cylinders, regulators, 1m long twin hose, torches, nozzles, lighter, gloves, safety mask etc.	1 set
6-2	DC arc welder/generator, water-cooled diesel engine driven, current range of 30 to 280A, rated output of 10kVA/AC440V, 50Hz, 3-phase and 1kVA/AC220V, 50Hz, single-phase, complete with electrode holder with 20m long cable, earthing clamp with 20m long cable and other accessories.	1 set
6-3	Electric welding rods. a) Hard facing electrodes. (JIS DF3C-B or equivalent) b) -do-, (JIS DF3B-B or equivalent) c) Electrodes for high tensile steel. (JIS D5016 or equivalent) d) Electrodes for general use. (JIS D4301 or equivalent)	80 kg 40 kg 40 kg 80 kg
6-4	Generator, water-cooled diesel engine driven for mud mixer, submersible dewatering pump etc., 17KVA/AC440V, 50Hz, 3-phase and 1KVA/ AC220V, 50Hz, single-phase.	1 set
6-5	Submersible dewatering pump with 3 psc. of 5m long delivery hose, 20m long flexible hose, clamps and joints, 200 liter/min x 15m	1 set
6-6	Electric disc grinder with 200 pcs. of spare grinding wheels, AC220V, 50Hz, single-phase.	1 set
6-7	Electric cord reel with 30m long cable.	1 set
6-8	Engine driven self priming pump with 2 pcs. of 5m long delivery hose with joint and clamps and 6m long suction hose, 200liter/min x 20m.	1 set
6-9	Collapsible water tank with housing bag, 1,500 liter capacity.	2 sets
6-10	Portable water level indicator, dry battery operated type, 200m measuring capacity.	1 set

Item	Description	Q'ty
6-11	Pipe sling hook with sling wire and shackle.	2 pcs.
6-12	Chain pipe tong.	
	a) For 2" to 8" pipe.	2 pcs.
	b) For 4" to 12" pipe.	2 pcs.
6-13	pipe wrench.	
	a) 450mm (18")	2 pcs.
	b) 600mm (24")	2 pcs.
	c) 900mm (36")	2 pcs.
6-14	Sling wire rope.	
	a) 16mm dia., 3m long	2 pcs.
	b) 16mm dia., 1.5m long	2 pcs.
	c) 12mm dia., 2m long	2 pcs.
	d) 9mm dia., 2m long	2 pcs.
	e) 9mm dia., 1m long	2 pcs.
6-15	Hand tools kit for maintanance of the rig. Contains the following tools; (Packed in tool boxes with lock and key) Hacksaw, machinist files, measuring tools, calipers, spanners, pliers, socket wrenches, chisels, hammers, craw bars, pipe wrenches, chain pipe tongs, screw dirvers etc.	1 set
6-16	Cat line ropes.	
	a) 12mm dia., 30m long	1 roll
	b) 20mm dia., 30m long	1 roll
6-17	Angle cutter, 450mm	1 pc.
6-18	Wire rope cutter, 25mm capacity.	1 pc.
6-19	Mud pit hoes with handle.	2 pcs.
6-20	Pick with handle.	2 pcs.
6-21	Shovel round point with handle.	3 pcs.
6-22	Shovel square point with handle.	3 pcs.
6-23	Chain hoist block, 2 ton capacity.	1 pc.
6-24	Nylon deck brush with handle.	3 pcs.
6-25	Wheelbarrow, deep type.	2 pcs.

Item	Description	Q'ty

6-26 Wire rope winding machine with spare drum, engine driven, spooling capacity of 400m with 24mm dia. wire rope. — 1 set

7. Supporting Equipment for Well Drilling: (Following Q'ty for 5 units of the rigs) — 5 Units

7-1 Cab-back crane truck. — 5 units

This truck is use to support the drilling operation in the field.
Water-cooled diesel engine, 6x4, right hand steering, equipped with a PTO driven hydraulically operated cab-back crane of 4 ton capacity.

G.V.W. : 26,000 kg or more
Engine : 4-cycle, 6-cylinder, water-cooled diesel, max, output 260 PS or more
Payload capacity : 12 ton or more
Cargo space : approx. L=6.5m, W=2.3, H=0.45m
Cargo body : Steel construction
Crane : 4 ton at 2.65m working radius or more
2-section telescoping, box beam, hook height 8m or more
360° continuous rotation
Outriggers : Two (2) hydraulic operated jacks and manual sliding extension type horizontal beams.

7-2 Water tank truck. — 5 units

This truck is used to carring the water for drilling site.
Water-cooled diesel engine, 4x2, right hand steering, equipped with PTO dirven centrifugal pump, valve and hoses.

G.V.W. : 10,000 kg or more
Engine : 4-cycle, 6-cylinder, water-cooled diesel, Max. output 165 PS or more
Water tank capacity : 6,000 liter or more

7-3 Double cab pick-up truck. — 3 units

This truck is used for transportation of the drilling crew and servicing the maintenance of the rig in the site etc.
Water-cooled diesel engine, 4x4, right hand steering.

G.V.W. : approx. 2,600 kg
Engine : 4-cycle, 4-cylinder, water-cooled diesel, Max. output 65 PS or more
Seating capacity : 6 or more

Item	Description	Q'ty

7-4 Pumping test equipment.
This equipment is used for pumping test, development of the well and include a submersible pump with accessories, water-cooled diesel engine generator and triangular weir.

a) Submersible pump with accessories. 2 sets
Capacity : 2,000 literr/min x 95m
Minimum setting well dia. : 12"
Maximum installed depth : 90m
Submersible motor : 2-pole, star-delta starting system
Power source : AC440V, 50Hz, 3-pole, 55kw
Accessories : Following/set

(1)	Submersible cable, 120m long	: 1 set
(2)	Discharge frame assy.	: 1 set
(3)	Sluice valve	: 1 pc.
(4)	Check valve	: 1 pc.
(5)	Air vent valve	: 1 set
(6)	Compound gauge with cock	: 1 pc.
(7)	Discharge pipe, 1.5m long.	: 1 pc.
(8)	Column pipe with bolts, nuts and packing, 4" dia., 2.75m long/pc.	:33 pcs.
(9)	Control panel, outdoor type	: 1 set
(10)	Electrodes with cable for level control, 120m long.	: 1 set
(11)	Connecting cable, generator to control panel, 15m long.	: 1 set
(12)	VP pipe with socket and adhesive for measuring of water level.	: 1 set
(13)	Cable clip	: 1 set
(14)	Insulation tester	: 1 pc.
(15)	Raiser pipee clamp	: 2 pcs.
(16)	Sling wire for clamp	: 2 pcs.
(17)	Wrench for clamp	: 4 pcs.

b) Generator. 2 sets
Water-cooled diesel engine driven, mounted on 4-wheel pneumatic tires trailer.
Capacity : 130 KVA
Prime output : AC440V. 50Hz, 3-phase, 4-wire system
Secondry output : 10 KVA, AC220V, 50Hz, single-phase
Engine : Water-cooled diesel, 4-cycle, 6-cylinder, approx. 150 PS/1,500rpm

Item	Description	Q'ty
	c) Triangular weir. All steel construction. Max, measuring capacity : 2.9 cu.m/min.	2 pcs.
7-5	Survey equipment. a) Well logging equipment for 300m depth capacity, complete with accessories. ~~b) Resistivity seurvey equipment, complete with accessories.~~	2 sets ~~2 sets~~
8.	Spare Parts :	5 Units
8-1	For 5 units of rigs, including rig's engine and truck.	1 lot
8-2	Spare wire ropes. a) Drilling line, 250m x 1 /rig b) Sand line, 250m x 1 /rig c) Casing line, 130m x 1 /rig	
8-3	For engine driven DC arc welder/generator.	1 lot
8-4	For engine driven generator.	1 lot
8-5	For cab-back crane truck with crane.	1 lot
8-6	For water tank truck.	1 lot
8-7	For double cab pick-up truck.	1 lot
8-8	For pumping test equipment. a) For submersible pump. b) For engine driven generator.	 1 lot 1 lot
8-9	For survey equipment. a) For well logging equipment. b) For resistivity survey equipment.	 1 lot 1 lot

Annex II

Necessary measures to be taken by the Government of Pakistan on condition that Japan's Grant Aid is extended;

1. To bear commissions to the Japanese foreign exchange bank to execute the banking services based upon the banking arrangement

2. To ensure prompt unloading and customs clearance at port of disembarkation in Pakistan and facilitate internal transportation therein of the products purchased under the Grant.

3. To exempt Japanese Nationals from custom duties, internal taxes and other fiscal levies which may be imposed in Pakistan with respect to the supply of the products and services under the verified contracts.

4. To accord Japanese Nationals, whose services may be required in connection with the supply of products and the services under the verified contracts, such facilities as may be necessary for their entry into Pakistan and stay therein for the performance of their work.

5. To use and maintain properly and effectively all the facilities constructed and equipment purchased under the Grant.

6. To bear all the expenses other than those to be borne by the Grant, necessary for the execution of the Project.

Annex III

Japan's Grant Aid Scheme

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
d) Preparation of a basic design of the Project
e) Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firms(s) based on proposals submitted by interested firms. The firm(s) selected carry (ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. *Japan's Grant Aid Scheme*

1) What is Grant Aid ?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country.

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

(1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
(2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
(3) To secure buildings prior to the procurement in case the installation of the equipment.
(4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
(5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
(6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

9) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

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