

## **Chapter 4**

# **Project Evaluation and Recommendation**

## **Chapter 4 Project Evaluation and Recommendation**

### **4 - 1 Project Effect**

#### **1. Project Effect**

The Project will have to make the following objectives and Mongolia will benefit from the Project as the project effect.

- 1) Protection of the capital city of Mongolia and Ulaanbaatar International Airport as the entrance gate of the country against the natural disasters caused by hazardous weather phenomenon is the determining factor for significant set-back of the socio-economy and development activities of Mongolia.
- 2) Reduction of natural disasters in Mongolia by strengthening the capabilities for weather monitoring and forecasting of disastrous meteorological phenomena such as prolonged snowfall, snow storm, hail, heavy rain, flash flood, thunderstorm, strong wind, drought, etc., and to the improvement of the safety of civil aviation operation and of people's life & property by providing more accurate forecasts and warnings to the general public.
- 3) Improvement of the living standard of the people of Mongolia and to the development of socio-economic activities including activities of any sector in Mongolia through the provision of the accurate meteorological information.

After the implementation of the Project, the weather monitoring system of NAMHEM will be strengthened, the position and intensity of severe meteorological phenomena will be determined more accurately and timely. Besides, the accuracy and the reliability of meteorological warnings related to natural disasters will be improved. And it is expected that with this NAMHEM can contribute to the reduction of natural disasters in the country. At the same time, overall standard of meteorological information will be in better position, and NAMHEM will thus be able to contribute in a greater perspective to reduction of the natural disasters. Further, the improvement of observing, forecasting & disseminating systems as the result of this Project will highly enhance NAMHEM's activities and will put NAMHEM in a position to play its due role in the economic development of Mongolia.

In addition, hazardous weather phenomenon warnings, weather forecasts and various kinds of weather information are provided to the general public of Mongolia through mass-media. In addition, the meteorological and hydrological information are also provided to the other users and the governmental agencies in the country. Thus, when the project will be completed, it will have high publicity.

The meteorological surveillance radar system can detect occurrence, movement and intensity of rainfall & hail (detecting range : 400km) and atmospheric turbulence (detecting range : 200km). A meteorological surveillance radar is the only equipment to be able to observe rainfall & atmospheric turbulence distribution, intensity and movement and also to provide precipitation information for large geographic areas on real time.

Information to be given and its possible application are as follows:

- 1) Meteorological surveillance radar system can observe the distribution of precipitation intensity and atmospheric turbulence & wind share instantaneously, spatially and continuously over a broad area (qualitatively within a radius of 400 km). Whenever precipitation phenomena and atmospheric turbulence & wind share appear in this area, their distribution and intensity can be monitored continuously.
- 2) The precipitation intensity, atmospheric turbulence and other characteristics of the hazardous weather condition can be obtained from echo intensity. The movement and modification of rainfall area also can be estimated by continuous monitoring of radar echo.
- 3) By integration of echo intensity data, the fine-meshed distribution of precipitation can be derived and also by doppler effect, information of atmospheric turbulence and wind share can be provided to Civil Aviation Authority for safe operation of the air traffic.

In this way, meteorological surveillance radar system is very effective equipment for observing precipitation and atmospheric turbulence and wind share because it enables to detect precipitation and closely associated meteorological phenomena in minute quantities, both spatially and temporally. Meteorological surveillance radar, therefore, is utilized throughout the world in areas that are frequently attacked by meteorological disaster caused by heavy rain, atmospheric turbulence, wind share, cyclones, etc.

The expected project effects to be generated by the Project are as follows.

- Since installation of the meteorological surveillance radar system with a changeable function of rain surveillance (detecting range : 400km) and atmospheric turbulence surveillance (detecting range : 200km) at Morin-Uul radar site, the capital city of Mongolia and Ulaanbaatar International Airport as the entrance gate of the country will be protected against the natural disasters caused by hazardous weather phenomenon is the determining factor for significant set-back of the socio-economy and development activities of Mongolia.
- NAMHEM will be able to supply information of distribution, intensity and movement of rainfall area, cloud echoes, atmospheric turbulence, wind share and other necessary information to agencies concerning to reduction of natural disasters, civil defence, disaster relief action, safe operation of air traffic and other weather information users.
- The weather information and warning on heavy rain, flooding, atmospheric turbulence, wind share, etc. of NAMHEM will be utilized for taking measures against natural disaster and making prompt relief action of the Government of Mongolia
- By comparative observation between the existing automatic weather observation system at the runway touch point and new one to be located at Morin-Uul radar site for surveillance of wind shear and other hazardous weather condition for safety operation of air-traffics, during landing and take-off, an air craft is in instability position and it is very delicate for wind share and other hazardous weather condition.
- The meteorological telecommunication links will be able to ensure continuous supply of necessary information on weather condition to NAMHEM for contributing to accurately and speedily make weather forecasts and warnings and to other organizations related to reduction of natural disasters for making prompt disaster relief action.
- Weather forecasting and warning will be able to promptly be announced by mass media (TV, radio, and newspaper) to the general public. Specially, in order to prepare a weather program by Mongolian Radio & TV Center, visible images such as radar images and weather charts will be broadcasted. Using the weather information broadcasting system, Mongolian Radio & TV Center will be able to provide understandable and attractive weather program for the people of Mongolia.

- Through monitoring water level of Tuul river by the water level monitoring system at Ikh Tenger Bridge, NAMHEM will be able to receive timely and accurate Tuul river water level information and also to make flood and a water shortage forecasts & warnings for the safety of people's lives and properties. The accurate flood forecasting information will directly contribute to reduction of flood disasters through organizations related to flood action.
- In case of emergency and an evacuation warning of a flash flood due to a heavy rain required to the general public, NAMHEM will be able to blow a weather warning siren, immediately, by the weather warning siren system.
- In consequence of provision of the educational automatic weather observation system, acquiring skills and measures of operation and maintenance for the automatic weather observation system to be installed at Morin-Uul radar site under the Project will be expedited and the technical level of meteorology in Mongolia will be highly upgraded.

## 2. Verification of Appropriateness

In consequence of the Implementation of the Project, the NAMHEM's observing, forecasting & disseminating systems will be modernized. This will make it possible to continuously detect and monitor the hazardous weather condition, heavy rain, hail, flooding, atmospheric turbulence, wind share, etc., that lead to meteorological damage, and so can be expected to improve forecasting accuracy. NAMHEM will thereby be in a position to provide accurately timed forecasts and warnings to the general public, disaster relief organizations and aviation sectors.

NAMHEM has a plan for organizational restructuring and personnel deployment in connection with ongoing operation and maintenance of all the meteorological systems to be established under the Project. Judging by operating performance, engineers of NAMHEM have been satisfactorily nurtured, while an appropriate training system is also being planned. NAMHEM is, accordingly, deemed fully capable of operation and maintenance of the new systems. It has, therefore, been determined that the operation and maintenance plans for this Project are quite realistic.

Based on all the above consequences, it has been concluded that it would be appropriate to implement the Project under Japan's Grant Aid Assistance.

### 4 - 2 Recommendation

The Project is expected to produce the considerable benefits as mentioned above. The Project would substantially contribute to the development of the basic human needs in the people of Mongolia. The appropriateness of carrying out this Project under a grant-aid has been amply confirmed. Therefore, the implementation of the Project is inferred to be truly significant.

In addition, by improving and expediting the following items, the smoothness and effectiveness of the Project could be increased further.

- In order to operate the meteorological surveillance radar system on an integrated basis, radar information must be standardized and their observations be conducted smoothly. It would be desirable, in this connection, that NAMHEM should strengthen the engineering

section and establish new operation and maintenance structure within the organization and a proper maintenance system for the whole meteorological systems.

- For the meteorological surveillance radar systems, the telecommunication equipment and other equipment to be supplied under the Project, it is essential that competent maintenance engineers be secured for ongoing operations. To this end, an efficient and effective training plan should be established to ensure continuing development of a qualified technical personnel.
- In order to diffuse and improve the standards of forecasting techniques based on the use of radar data and image, it is desirable that forecasters be trained and that technical skills be constantly refined for very short range forecasts.
- Through observation of precipitation distribution on a continuous basis, using meteorological surveillance radar system, it will be possible to estimate surface rainfall. And, by correcting these radar-based estimates by actual surface measurements, highly accurate rainfall can be obtained which will further enhance forecasting accuracy. For this purpose, it is very useful to have precipitation data from synoptic observatories.
- In order to utilize information on hazardous weather condition such as on heavy rainfall, atmospheric turbulence, wind share, etc. for safe operation of the civil aviation and natural disaster reduction, NAMHEM should make very close communication and association with the Ministry of Nature & the Environment, Civil Aviation Authority, Civil Defence Committee and other necessary organizations as the governmental organization obtained a special obligation of reduction of the natural disaster.

## **Appendices**



## Appendix 1. Member List of the Survey Team

### (1) Basic Design Survey Team

Mr. Masahiro ATSUMI	Leader	Grant Aid Division, Bureau of Economic Cooperatin, Ministry of Forein Affairs
Mr. Etsuji YOSIMURA	Project Coordinator	General Affairs Division, Tokyo International Training Center, JICA
Mr. Kenji AKAEDA	Technical Advisor	Senior Scentific Officer, Observational Technology Divition, Observations Department, Japan Meteorological Agency
Mr. Kunio AKATSU	Chief Consultant	Japan Weather Association
Mr. Hideshige IIDA	Meteorological Observation & Forecast Facilities Planner	Japan Weather Association
Mr. Yoshihisa UCHIDA	Meteorological Rader System Planner	Japan Weather Association
Mr. Shigemi NISHI	Meteorological Telecommunication System Planner	Japan Weather Association
Mr. Hiroshi AMEMIYA	Schedule and Procurement Planner	Japan Weather Association
Ms. Atsuko TANAKA	Cost Estimator	Japan Weather Association

### (2) Explanation of Draft Report

Mr. Toshihisa HASEGAWA	Leader	Consultant Contract Division, Procurement Department, JICA
Mr. Kunio AKATSU	Chief Consultant	Japan Weather Association
Mr. Hideshige IIDA	Meteorological Observation & Forecast Facilities Planner	Japan Weather Association
Mr. Shigemi NISHI	Meteorological Telecommunication System Planner	Japan Weather Association



(1) Basic Design Study

Study Schedule

		Governmental Member						Consultant Member					
		Mr. Masahiro ATSUMI	Mr. Eiji YOSHIMURA	Mr. Kenji AKEDA	Mr. Kunio AKATSU	Mr. Yoshihisa UCHIDA	Mr. Hideshige IIDA	Mr. Shigem NISHI	Mr. Hiroshi AMEMIYA	Ms. Aizuko TANAKA			
1997		Leader	Project Coordinator	Technical Advisor	Chief Consultant	Metacological Radar System Planner	Metecological Observation and Forecast Facilities Planner	Metecological System Telecommunication System Planner	Schedule and Procurement Planner	Cost Estimator			
1	9 Aug. Sat	Kansu ==> Ulaanbaatar (MO 904)											
2	10 Aug. Sun	Survey at Morn-Uul Radar Site											
3	11 Aug. Mon	Courtesy call on Embassy of Japan, JICA office and NAMHEM, and Meeting with NAMHEM											
4	12 Aug. Tue	Survey at Tuul River Water Level Station											
5	13 Aug. Wed	Survey and Meeting with NAMHEM, Civil Aviation Authority and Mongolia TV & Radio Center						Site survey					
6	14 Aug. Thu	Signing of the Minutes of Discussion						Data Collection for preparation of a report					
7	15 Aug. Fri	Courtesy call on Ministry of Nature and the Environment, Reporting to Embassy of Japan and JICA office						Data Collection for preparation of a report					
8	16 Aug. Sat	Ulaanbaatar ==> Tokyo						Survey at NAMHEM					
9	17 Aug. Sun							Inner meeting					
10	18 Aug. Mon							Survey at International Airport					
11	19 Aug. Tue							Survey at Water Level Station and Morn-Uul Radar Site					
12	20 Aug. Wed							Data Collection for preparation of a report					
13	21 Aug. Thu							Meeting with NAMHEM					
14	22 Aug. Fri							Meeting with NAMHEM and National Air Traffic Service					
15	23 Aug. Sat							Data Collection for preparation of a report					
16	24 Aug. Sun							Inner meeting					
17	25 Aug. Mon							Meeting with NAMHEM and Customs General Administration					
18	26 Aug. Tue							Meeting with NAMHEM					
19	27 Aug. Wed							Meeting and discussion on a basic design with NAMHEM and TV & Radio Center					
20	28 Aug. Thu							Meeting and discussion on a basic design with NAMHEM and Civil Aviation Authority					
21	29 Aug. Fri							Reporting to Embassy of Japan and JICA office					
22	30 Aug. Sat							Ulaanbaatar ==> Kansu (MO 903)					

**(2) Explanation of Draft Report**

			Sched			
			Governmental Member	Consultant Member		
			T.HASEGAWA	K.AKATSU	H.HIDA	S.NISHII
1	10-Oct.	Tue	Narita → Beijing (NH905)			
2	11-Oct.	Wed	Beijing → Ulaanbaatar (OM224)			
3	12-Oct.	Thu	Courtesy call on Embassy of Japan and JICA office Meeting with Ministry of External Relations, Ministry of Nature and Environment and NAMHEM			
4	13-Oct.	Fri	Inspection at the Morin-Uul Radar Site and Tuul River Water Level Station			
5	14-Oct.	Sat	Meeting with CAA. Explanation of Draft Report to NAMHEM			
6	15-Oct.	Sun	Explanation of Draft Report to NAMHEM			
7	16-Oct.	Mon	Signing of Minutes of Discussion			
8	17-Oct.	Tue	Reporting to Embassy of Japan and JICA Office			
9	18-Oct.	Wed	Ulaanbaatar → Beijing (OM223) Beijing → Narita (JL782)			

## **Appendix 3. Name of Discussants**

### **Name of Discussants**

#### **Ministry of Nature and the Environment**

Dr. T. Adyasuren	Minister
Mr. T. Enebish	Director, Department of Strategy, Management & Planning
Mr. B. Ganbaatar	Director, International Cooperation Department
Mr. D. Enhbold	Specialist, Department of Strategy, Management & Planning

#### **Ministry of External Relations**

Dr. L. Dawagiv	Director, First Department (Asia & America)
Ms. T. Bolormaa	Officer (Asia & America Department)
Mr. P. Gankhuyag	Deputy Director (Department of Foreign Trade & Economic Cooperation)

#### **Ministry of Finance**

Mr. Ts. Davaasuren	Economist, External Relation Division
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#### **Ministry of Infrastructure and Development**

Ms. L. Banzragch	Senior Officer, Communication Department
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#### **National Agency for Meteorology, Hydrology and Environment Monitoring (NAMHEM)**

Dr. Z. Batjargal	Director-General
Dr. D. Dagvadorj	Scientific Secretary
Mr. S. Khudulmur	Director, Information and Computer Center
Dr. L. Natsagdorj	Director, Institute of Meteorology & Hydrology
Ms. D. Tungalag	Chief Engineer, Meteorological Telecommunication Center
Mr. J. Tsogt	Chief Engineer, Weather Forecasting Division
Mr. Ts. Dorchin	Engineer, Bureau of Meteorology & Meteorological Instruments Calibration
Mr. K. Khangaisaikhana	Chief Engineer, Ulaanbaatar Radar Site
Mr. Sambuu	Chief Engineer, Head Office
Mr. D. Tseesodroltsoo	Senior Engineer, Head Office
Mr. D. Oyunbaatar	Engineer, Surface Water Section
Ms. P. Batima	Researcher of Hydrology

- Meteorological Office, Ulaanbaatar International Airport

Ms. B. Jambaagarav          Director

- Central Laboratory of Environmental Monitoring

Mr. B. Lkhagbasuren          Director

- Meteorological Instrument Calibration Center

Mr. G. Enhbat                  Chief of the Center

- Weather Modification Center

Mr. D. Chuluunbat          Director

### **National State University, Ulaanbaatar**

Dr. D. Azzaya                  Head of Department, Meteorology & Hydrology

Dr. Galbadrah                  Dean, Faculty of Physics

Dr. M. Tsoodol                  Assistant Professor, Department of Meteorology & Hydrology

Dr. Erdenesukh                  Lecturer, Department of Meteorology & Hydrology

### **Mongolian Radio & Television**

Mr. D. Davaasuren          Director of Mongolian Television

Mr. Ch. Tsagaan                  Director of Technical Center

- Mongolian TV

Ms. A. Sarangerel                  Chief of Programme Administration

Mr. D. Dashdondog                  Director of Mongolian Television

Mr. T. Chuluun                  Director of Technical center

- Mongolian Radio

Mr. O. Gankhuu                  Chief Engineer of Mongolian Radio

Mr. Shawkat Osman                  Chief of Programme Administration

### **National Air Traffic Services of Mongolia**

Mr. D. Tuyat                  Director-General

Mr. T. Jigjid                  Manager Air Traffic Control (ATC) Standard

### **Civil Aviation Authority**

Mr. S. Khurelbaatar	Deputy Director General
Mr. G. Davaa	Project Manager (National Air Navigation Development Project)
Dr. Ch. Yadamsuren	Officer of Aeronautical Meteorology

### **Civil Defense Committee**

Mr. Y. Tseredavaa	Deputy Chief of the Civil Defense Committee
Mr. Ch. Khureltogoo	Head of Information and Communication Division

### **Trade & Development Bank of Mongolia**

Mr. Ts. Oyunchimeg	Economist, Credit Department
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### **Customs General Administration**

Ms. V. Oyungerel	Director, Duty Assessment & Revenue Collection Division
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### **Embassy of Japan**

Mr. Taira Iwasaki	Secretary, Chief of Economic Cooperation
Mr. Satoshi Matoba	Second Secretary

### **JICA Mongolia Office**

Mr. Yoshifusa Shikama	Resident Representative of JICA
Mr. Tuyosi Siromizu	Assistant Resident Representative





MINUTES OF DISCUSSIONS  
BASIC DESIGN STUDY ON THE PROJECT  
FOR  
NATURAL DISASTER REDUCTION  
IN  
MONGOLIA

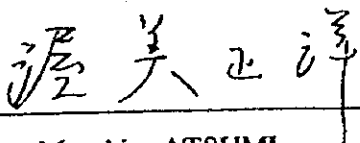
In response to a request from the Government of Mongolia, the Government of Japan decided to conduct a Basic Design Study on the Project for Natural Disaster Reduction (hereinafter referred to as "the Project"), and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Mongolia the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Masahiro ATSUMI, Grant Aid Division, Bureau of Economic Cooperation, Ministry of Foreign Affairs, and is scheduled to stay in the country from 9th of August to 16th of August, 1997.

The Team held a series of discussions with the relevant officials of the Government of Mongolia and conducted a field survey at the study area.

In the course of 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 Design Study Report.

Ulaanbaatar, August 14, 1997

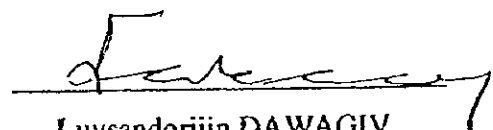


Masahiro ATSUMI

Leader

Basic Design Study Team

Japan International Cooperation Agency

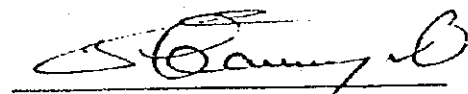


Luvsandorjiin DAWAGIV

Director

First Department (Asia & America)

Ministry of External Relations



Zambyn BATJARGAL

Director-General

National Agency for Meteorology,  
Hydrology and Environment Monitoring

# ATTACHMENT

## 1. OBJECTIVE

The objective of the Project is to contribute to;

- i) the prevention and reduction of natural disasters in Mongolia by improving and strengthening capability for weather observation and forecasting of disastrous meteorological phenomena, and
- ii) the improvement of the safety of aviation operation and of people's life & property by providing more accurate weather forecasts and warnings.

## 2. PROJECT SITES

The proposed Project sites are as follows.

- (1) Ulaanbaatar Radar Site (Morin-Uul)
- (2) National Agency for Meteorology, Hydrology and Environmental Monitoring
- (3) Mongolia TV & Radio Center
- (4) Ulaanbaatar International Airport
- (5) Water Level Observation Station, Tuul River
- (6) Meteorological Telecommunication Repeater Station

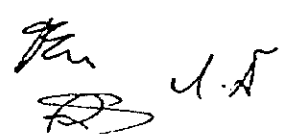
## 3. EXECUTING AGENCY

National Agency for Meteorology, Hydrology and Environmental Monitoring is responsible for the administration and execution of the Project.

## 4. ITEMS REQUESTED BY THE GOVERNMENT OF MONGOLIA

As a result of the series of discussions, the following items have finally been requested by the Government of Mongolia.

- (1) Construction of a radar tower facility for installation of radar antenna and radome at the Ulaanbaatar Radar Site (Morin-Uul).
- (2) Replacement of the existing radar system at Ulaanbaatar Radar Site and provision of a new meteorological surveillance radar system which has changeable functions of rain surveillance and atmospheric turbulence surveillance.

Handwritten signatures and initials in black ink, including a large signature and the initials 'U.A.' and 'RS'.

- (3) Installation of automatic weather observation system (temperature, humidity, wind velocity, wind direction, pressure and precipitation) at the top of Morin-Uul mountain to obtain meteorological & environmental information which is necessary for the safety operation of the International Airport.
- (4) Establishment of water level telemeter system at Tuul river for water level surveillance.
- (5) Establishment of radio data transmission systems between National Agency for Meteorology, Hydrology and Environmental Monitoring and the following sites.
  - a. Ulaanbaatar Radar Site
  - b. Ulaanbaatar International Airport
  - c. Radio & TV Center
  - d. Water Level Telemeter Station
- (6) Provision of equipment of weather information broadcasting through Radio and TV.
- (7) Installation of weather warning siren system for the general public.

(All the above components between (2) ~ (7) are shown as "Project Configuration" in ANNEX I.)
- (8) Provision of meteorological training equipment.

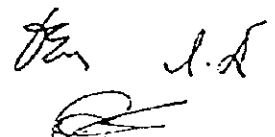
However, the final components of the Project will be decided after further discussion and field survey in Mongolia and detailed analysis in Japan.

## 5. JAPAN'S GRANT AID SYSTEM

- (1) The Government of Mongolia has understood the system of Japan's Grant Aid explained in ANNEX II.
- (2) The Government of Mongolia will take necessary measures described in Annex III for smooth implementation of the Project on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

## 6. SCHEDULE OF THE STUDY

- (1) The Team will continue further studies in Mongolia until August 30, 1997.
- (2) Based on the results of the study in Mongolia and Japan, JICA will prepare the Draft Basic Design Report in English and dispatch a team toward the end of October, 1997 in order to explain and confirm the contents.

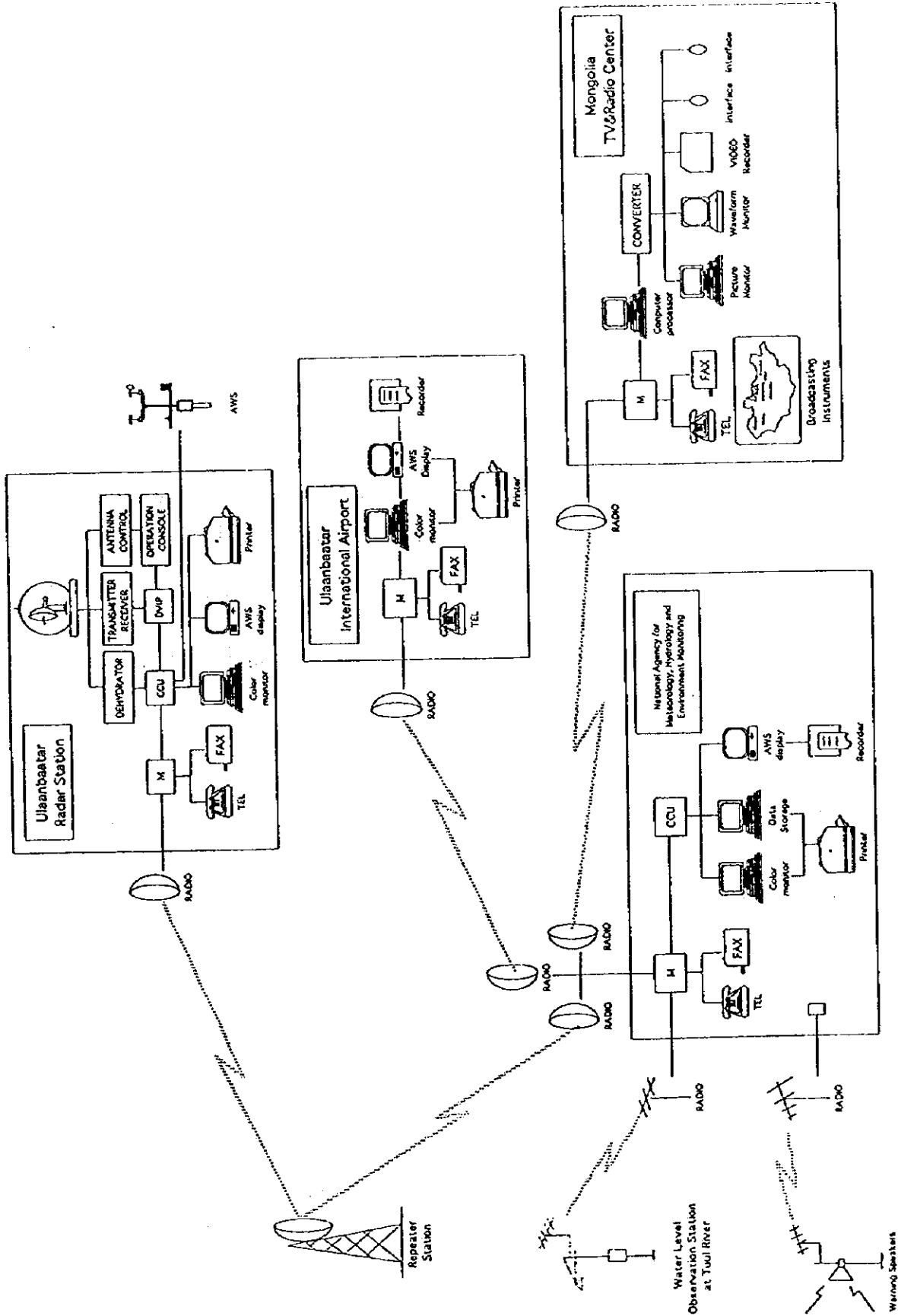


- (3) In case that the contents of the report is accepted in principle by the Government of Mongolia, JICA will complete the final version of Basic Design Report and forward it to the Mongolia side by the middle of December, 1997.

## 7. OTHER RELEVANT ISSUES

- (1) The Government of Mongolia shall provide all necessary information and data when requested by the Basic Design Team.
- (2) The Mongolia side will take all possible measures to secure the safety of the Team during the field survey.
- (3) The Government of Mongolia shall promptly proceed all necessary internal procedures and also shall appropriately coordinate among the organizations concerned for smooth implementation of the Project.
- (4) The Government of Mongolia has recognized the necessity for relevant training related to the Project under JICA's technical cooperation.
- (5) The Government of Mongolia will take necessary financial measures for appropriate operation & maintenance and also procurement of spare parts & consumables for the whole equipment and systems to be supplied under the Project.

*Jan L. d.*  
*[Signature]*



Project Configuration

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## Japan's Grant Aid Scheme

### I. 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 Government 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) firm(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)

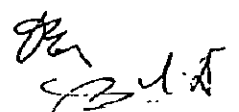
Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

#### 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 payment 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.

ANNEX III

Necessary measures to be taken by the Government of Mongolia  
in case Japan's Grant Aid is executed

1. To secure the sites for the Project.
2. To clear, level and reclaim the site prior to commencement of the construction.
3. To undertake incidental outdoor works such as gardening, fencing, gates and exterior lighting in and around the site.
4. To construct the access road to the site prior to commencement of the construction.
5. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental facilities to the Project site.
  - 1) Electricity distributing line to the site
  - 2) City water distribution main to the site
  - 3) Drainage city main to the site
  - 4) Telephone trunk line and the main distribution panel of building
  - 5) General furniture such as carpets, curtains, tables, chairs and others
6. To bear commissions to the Japanese foreign exchange bank for the banking services based upon Banking Arrangement.
7. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the project at the port of disembarkation.
8. To accord Japanese nationals whose services may require in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into Mongolia and stay therein for the performance of their work.
9. To maintain and use properly and effectively that the facilities constructed and equipment purchased under the Grant.
10. To bear all the expenses other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment.
11. To provide appropriate frequencies for the meteorological surveillance radar system and also meteorological telecommunication systems to be established.
12. To secure effective spaces at the existing facilities for installation of the equipment to be supplied.

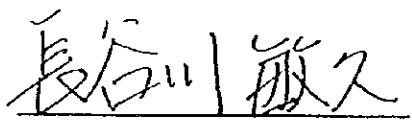
MINUTES OF DISCUSSIONS  
BASIC DESIGN STUDY ON THE PROJECT  
FOR NATURAL DISASTER REDUCTION  
IN MONGOLIA  
(CONSULTATION ON DRAFT REPORT)

In August 1997, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study team on the Project for Natural Disaster Reduction (hereinafter referred to as "the Project") to Mongolia, and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft report of the study.

In order to explain and to consult the Mongolian side on the components of the draft report, JICA sent to Mongolia a study team, which is headed by Mr. Toshihisa HASEGAWA, Third Contract Division, Procurement Department, JICA, and is scheduled to stay in the country from 14th to 18th of October, 1997.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

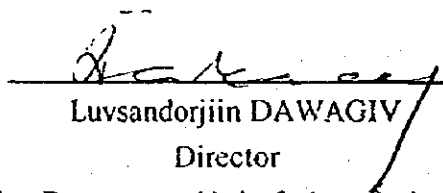
Ulaanbaatar, October 16, 1997



Toshihisa HASEGAWA

Leader

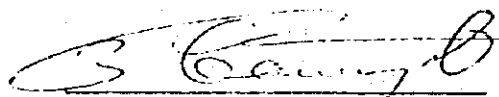
Draft Report Explanation Team  
Japan International Cooperation Agency



Luvsandorjiin DAWAGIV

Director

First Department (Asia & America)  
Ministry of External Relations



Zambyn BATJARGAL

Director-General

National Agency for Meteorology,  
Hydrology and Environment Monitoring

## ATTACHMENT

### 1. Components of Draft Report

The Government of Mongolia has agreed and accepted in principle the components of the Draft Report proposed by the team.

### 2. Japan's Grant Aid system

- (1) The Government of Mongolia has understood the system of Japanese Grant Aid explained by the team as attached Annex I.
- (2) The Government of Mongolia will take the necessary measures, described in Annex II, for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.

### 3. Further schedule

The team will make the Final report in accordance with the confirmed items, and send it to Government of Mongolia within January 1998.

*LA* 

## Japan's Grant Aid Scheme

### I. 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	(The Notes exchanged between the Governments of Japan and the recipient
Implementation	country)

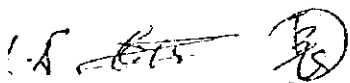
2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA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

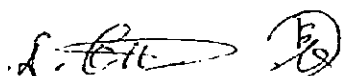
The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid Project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

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.

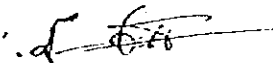

### 2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(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.

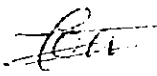

#### 4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

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

  
A. d. 

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"

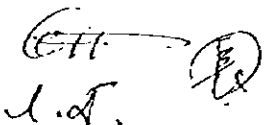
The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

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

Handwritten signature and initials, possibly 'U.S.' and a circular stamp.

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.

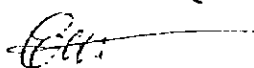
- b) The payment will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

~~\_\_\_\_\_~~   
A.S.

Annex II

Necessary measures to be taken by the Government of Mongolia  
in case Japan's Grant Aid is executed

1. To secure the site for the Project.
2. To clear, level and reclaim the site prior to commencement of the construction.
3. To undertake incidental outdoor works such as gardening, fencing, gates and exterior lighting in and around the site.
4. To construct the access road to the site prior to commencement of the construction.
5. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental facilities to the Project site.
  - 1) Electricity distributing line to the site
  - 2) City water distribution main to the site
  - 3) Drainage city main to the site
  - 4) Telephone trunk line and the main distribution panel of building
  - 5) General furniture such as carpets, curtains, tables, chairs and others.
6. To bear commissions to the Japanese foreign exchange bank for the banking services based upon Banking Arrangement.
7. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the project at the port of disembarkation.
8. To accord Japanese nationals whose services may require in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into Mongolia and stay therein for the performance of their work.
9. To maintain and use properly and effectively that the facilities constructed and equipment purchased under the Grant.
10. To bear all the expenses other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment.
11. To provide appropriate frequencies for the meteorological surveillance radar system and also meteorological telecommunication systems to be established.
12. To secure effective spaces at the existing facilities for installation of the equipment to be supplied.

  
M. O.

## Appendix. 5. Cost Estimation Borne by the Recipient Country

At the time of implementation of the Project under Japan's Grant Aid Assistance, the estimated cost for the major undertaking of the Government of Mongolia will be necessary as described in the following table. However, due to the local regulation, commissions to the Japanese foreign exchange bank through the Bank of Trade and Development nominated by the Government of Mongolia for the banking services based upon Banking Arrangement will be 0.035% of the total project cost and the Government of Mongolia shall bear it in accordance with the Minutes of Discussions signed by both governments on 14th of August, 1997.

Item	
Power meter cost	US\$ 200.-
Telephone line intake cost	US\$ 800.-
Furniture cost	US\$ 500.-
Total	US\$1,500.-

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JICA