
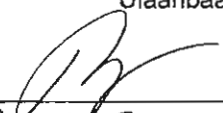


RECORD OF DISCUSSIONS
ON
STUDY ON THE STRATEGIC PLANNING FOR WATER SUPPLY
AND SEWERAGE SECTOR IN ULAANBAATAR CITY
IN
MONGOLIA
AGREED UPON BETWEEN
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF
MONGOLIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY


Ulaanbaatar, 9 January, 2012




Mr. Toshinori Isogai
Chief Representative
JICA Mongolia Office
Japan International Cooperation Agency
Japan



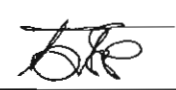
Mr. B. Baasan - 2
Director of Construction, Housing and
Public Utilities Policy Department
Ministry of Road, Transportation,
Construction and Urban Development
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Mr. Ch. Bat
General Manager of Ulaanbaatar City and
Head of Mayor's Office
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Mr. B. Khurenbaatar
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Mr. B. Purevjav
Director
Water Supply and Sewerage Authority of
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Appendix II: Record of Discussion

Based on the minutes of meeting on the Detailed Planning Survey on the Study on the Strategic Planning for Water Supply and Sewerage Sector in Ulaanbaatar City (hereinafter referred to as "the Study") signed on December 16, 2011 between the authorities concerned of Mongolia and the Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussion with the authorities concerned of Mongolia. Both parties agreed the details of the Study and the main points discussed as described in Appendix 1 and Appendix 2, respectively.

Both parties also agreed that Ministry of Road, Transportation, Construction and Urban Development (hereinafter referred to as "MRTCUD") will be responsible agency, and Municipality of Ulaanbaatar (hereinafter referred to as "MOU") and Water Supply and Sewerage Authority of Ulaanbaatar City (hereinafter referred to as "USUG") the counterpart to JICA, will be implementation agency for the Study in cooperation with JICA. MRTCUD, MOU and USUG (hereinafter referred to as Mongolian side) coordinate with other relevant organizations and ensure that the self-reliant operation of the Study is sustained during and after the implementation period in order to contribute toward social and economic development of Mongolia.

The Study will be implemented within the framework of the Agreement on Technical Cooperation signed on December 5th, 2003 and the Note Verbal exchanged on October 13th, 2011 between the Government of Japan (hereinafter referred to as "GOJ") and the Government of Mongolia (hereinafter referred to as "GOM").

Appendix 1: Study Description
Appendix 2: Main Points Discussed



Appendix 1

STUDY DESCRIPTION

I. BACKGROUND

Water and sewerage planning in Ulaanbaatar city has become a crucial issue in Mongolia. The Study on City Master Plan Urban Development Programme Ulaanbaatar City (UBMPS) supported by JICA reported that the water demand in Ulaanbaatar city will increase along with urbanization and the improvement of housing condition. It will reach current capacity of 241,000 m³/day sooner than 2012 and UBMPS recommended development of new water resources as soon as possible to address future demand of water supply. In recent year, population of Ulaanbaatar city has been conspicuously increased because of the immigration from rural areas as 1.03 million in 2007 reached 1.15 million in 2011 as a result of 4% population growth after 2000s. At present, 40% of total population of Mongolia has concentrated to Ulaanbaatar city. In 2011, JICA started water resources development, namely, The Programme for Ulaanbaatar Water Supply Development in Gachuurt through Japanese Grant Assistance as a countermeasure for above mentioned issues, and the projected demand-supply gap as 25,200 m³/day in 2014 will be fulfilled by this Programme. However availability of water supply which meets demand after 2014 is still uncertain. On the other hand, water supply to the Ger area of which population is about 60% of total population of Ulaanbaatar city relies on water kiosks and the consumption rate is only 7L/day/capita although that in apartment area is more than 200L/day/capita.

Coverage rate of sewage network in Ulaanbaatar city is 34.5% at present (that of water supply is 77.1%). Design capacity of existing wastewater treatment plant is 230,000 m³/day and actual capacity is 177,500 m³/day. It means that those treatment facilities need modification work to operate as design capacity. Replacement of pipe network is also necessary since 80% of the installed sewage pipeline has exceeded its durable period. Another problem is that industrial wastewater is flown into the wastewater treatment plant in Ulaanbaatar city with poor pretreatment, and as a result, reuse of the sludge is not available because of the accumulation of chromium which is disposed by tannery factories. Moreover, it is assumed that excess amount of wastewater may be flown into the treatment plant after completion of new town construction project including construction of apartment for 126 thousands households. On the other hand, sanitation facility in Ger area is not hygienic enough and it may become cause of infectious diseases. Contamination of groundwater because of infiltration from latrines in Ger area is also a serious problem and concrete sealed latrines are introduced as a countermeasure against the problem.

In above mentioned situation, GOM requested the GOJ for the Technical Cooperation to improve the water and sewerage system in Ulaanbaatar city in August, 2011.

In response to the request from GOM, the Detailed Planning Study Team headed by Ms. Hiroko Kamata was sent to Mongolia by JICA from December 4 to December 23, 2011 for the purpose of discussion and confirmation of the scope of work for the Study on the Strategic Planning for Water Supply and

Sewerage Sector in Ulaanbaatar City (hereinafter referred to as "the Study").

II. OUTLINE OF THE STUDY

1. Title of the Study

Study on the Strategic Planning for Water Supply and Sewerage Sector in Ulaanbaatar City

2. Objectives of the Study

To re-examine the current situation and problems in the water supply and sewerage sector in Ulaanbaatar city based on the achievement of existing master plans, and make feasibility study on priority projects to be identified in the Study

3. Activities

Phase I : Basic Study

- 1) Review of the previously formulated Master Plan
- 2) Collection and analysis of the available data and information related to the Study
- 3) Field reconnaissance and survey on existing water supply facilities, water sources and sewerage facilities (apartment area and Ger area)
- 4) Water quality analysis of water sources, tap water and wastewater (treated and raw)
- 5) Survey on area development plan, land utilization and socio-economic condition
- 6) Survey on natural environmental condition
- 7) Survey on public perception
- 8) Survey on present situation of Public Private Partnership on water supply and sewerage sector
- 9) Survey on laws, policies and administration system related to water supply, sewerage
- 10) Institutional and management capacity assessment of relevant organization
- 11) Review and analysis of the plans and projects related to the study
- 12) Evaluation of present water supply, sewerage condition and identification of problems

Phase II: Re-examination of planning framework on existing master plan

- 1) Re-examination of the perspective between future demand and water supply/wastewater treatment capacity based on the existing development plan

For water supply

- 2) Plan for effective use of surface water
 - Underground dam
- 3) Plan for monitoring on groundwater
 - Monitoring of existing wells
 - Monitoring of water quality in Biokombinat plain through observation well
- 4) Plan for improvement of water supply in Ger area
 - Improvement of kiosk system
 - Installation of pipe network system
- 5) Plan for water demand saving for apartment area

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- 6) Plan for reduction of the non-revenue water and improvement of water distribution system including data management and development of telemetry system
- 7) Plan for improvement of tariff collection system

For sewerage

- 8) Confirmation of boundary served by Central Wastewater Treatment Plant (hereinafter referred as to "CWWTP")
- 9) Schematic lay-out plan of the facilities
 - Improvement and extension of capacity of CWWTP
 - Improvement of sewage network
 - Improvement of sanitation facilities in Ger area
- 10) Plan for operation and maintenance of sewerage system
 - Improvement of capacity of CWWTP
 - Improvement of capacity of Industry Waste water Treatment Plant
 - Improvement of capacity of sanitation facilities in Ger area
- 11) Plan for effective use of reclaimed water and sludge from wastewater treatment plant

For both water supply and sewerage

- 12) Analysis of alternatives through Strategic Environmental Assessment (SEA) and Initial Environmental Examination (IEE)-level environmental and social considerations studies
- 13) Selection of priority projects

Phase III : Feasibility Study on priority project(s)

- 14) Supplemental data collection and analysis
- 15) Preliminary design of the facilities on priority project(s)
- 16) Operation, maintenance, management and human resources development plan in priority projects
- 17) Construction and procurement plan
- 18) Cost estimation and financial and economic analysis
- 19) Formulation of financial plan
- 20) Support for Environmental Impact Assessment: survey on relevant laws and regulations, scoping on impacts of priority project(s), elaboration of mitigation measures, development of an environmental management plan including environmental monitoring plan and its implementation structure, consultation(s) with stakeholders, and preparation of document for information disclosure
- 21) Project evaluation
- 22) Formulation of implementation schedule

4. Input

- (1) Input by JICA
 - (a) Dispatch of Mission
 - i) Team leader
 - ii) Sewerage Infrastructure Plan
 - iii) Sewerage Process Evaluation
 - iv) Water supply Infrastructure Plan

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- v) Water Supply Network Control
- vi) Hydrogeology
- vii) Mechanical Facilities
- viii) Electrical Facilities
- ix) Business Management Specialist
- x) Cost Estimation/ Implementation Plan
- xi) Financial and Economic Analysis
- xii) Environmental and Social Considerations

Input other than indicated above will be determined through mutual consultations between JICA and Mongolian side during the implementation of the Study, if necessary.

- (b) Counterpart Training in Japan
Approximate five (5) counterpart personnel

(2) Input by Mongolian side

Mongolian side will take necessary measures to provide at its own expense:

- (a) Services of Mongolian counterpart personnel and administrative personnel
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Study other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;
- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Study;
- (g) Expenses necessary for transportation within Mongolia of the equipment which will be procured in the Study as well as for the installation, operation and maintenance thereof; and

5. Implementation Structure

The roles and assignments of relevant organizations are as follows (Please refer to Annex 1):

(1) Municipality of Ulaanbaatar

- (a) Project Director
General Manager of Ulaanbaatar City and Head of Mayor's Office will be Project Director and overall responsible for the Study.
- (b) Counterpart Personnel

(2) Water Supply and Sewerage Authority of Ulaanbaatar City

- (a) Project Manager
Deputy Director of Water Supply and Sewerage Authority of Ulaanbaatar City will be Project Manager and responsible for implementation of the Study.
- (b) Counterpart Personnel

A list of Counterpart personnel of Mongolian side is shown in Annex 2.

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(3) Members of the JICA missions

Members of the JICA missions will give necessary technical guidance, advice and recommendations to Mongolian side on any matters pertaining to the implementation of the Study.

(4) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held whenever deems it necessary. A list of proposed members of JCC is shown in Annex 3.

6. Study Site(s) and Beneficiaries

Ulaanbaatar City and its people (8 districts excepting Baganuur district)

7. Duration

The duration of the Study would be ten (10) months from the date when the JICA Study Team member(s) arrives. The Study will be carried out in accordance with the tentative schedule as below. The schedule is tentative and subject to change when both parties agree upon any necessity that will arise during the course of the Study.

TENTATIVE SCHEDULE

Month	1	2	3	4	5	6	7	8	9	10
Work in Ulaanbaatar	■				■					
Inception Report	▲									
Interim Report				▲						
Draft Final Report									▲	
Final Report										▲
Work in Japan	■			■						■
Seminar/Workshop					▲				▲	

8. Reports

JICA will prepare and submit the following reports to Mongolian side in English.

- (1) Thirty (30) copies of Inception Report at the commencement of the first work period in Mongolia
- (2) Thirty (30) copies of Interim Report at the time about five (3) months after the commencement of the first work period in Mongolia
- (3) Fifty (50) copies of Draft Final Report at the end of the last work period in Mongolia
- (4) Fifty (50) copies of Final Report within one (1) month after the receipt of the comments on the Draft Final Report

9. Environmental and Social Considerations

Mongolian side agreed to abide by 'JICA Guidelines for Environmental and Social Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Study. At the stage of the implementation of priority project(s) included in the Master Plan, an environmental monitoring may be required. Accordingly a Monitoring Form is attached to Annex 4 as reference although such monitoring is not necessary in

the Study. Similarly an environmental review using Environmental Checklists may be conducted in the project implementation stage. Environmental Checklists are therefore attached to Annex 5 as reference. They need to be updated according to the components of each priority project.

III. UNDERTAKINGS OF MONGOLIAN SIDE

1. Mongolian side will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Mongolian nationals as a result of Japanese technical cooperation contributes to the economic and social development of Mongolia, and that the knowledge and experience acquired by the personnel of Mongolia from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Study; and
- (2) grant privileges, exemptions and benefits to members of the JICA missions and their families, which are no less favorable than those granted to experts of third countries performing similar missions in Mongolia under the Colombo Plan Technical Cooperation Scheme.

2. Other privileges, exemptions and benefits will be provided in accordance with the Agreement on Technical Cooperation signed on December 5th, 2003 and the Note Verbal exchanged on October 13th, 2011 between the GOJ and GOM.

IV. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Study, Mongolian side will take appropriate measures to make the Study widely known to the people of Mongolia.

V. MUTUAL CONSULTATION

JICA and Mongolian side will consult each other whenever any major issues arise in the course of Study implementation.

VI. AMENDMENTS

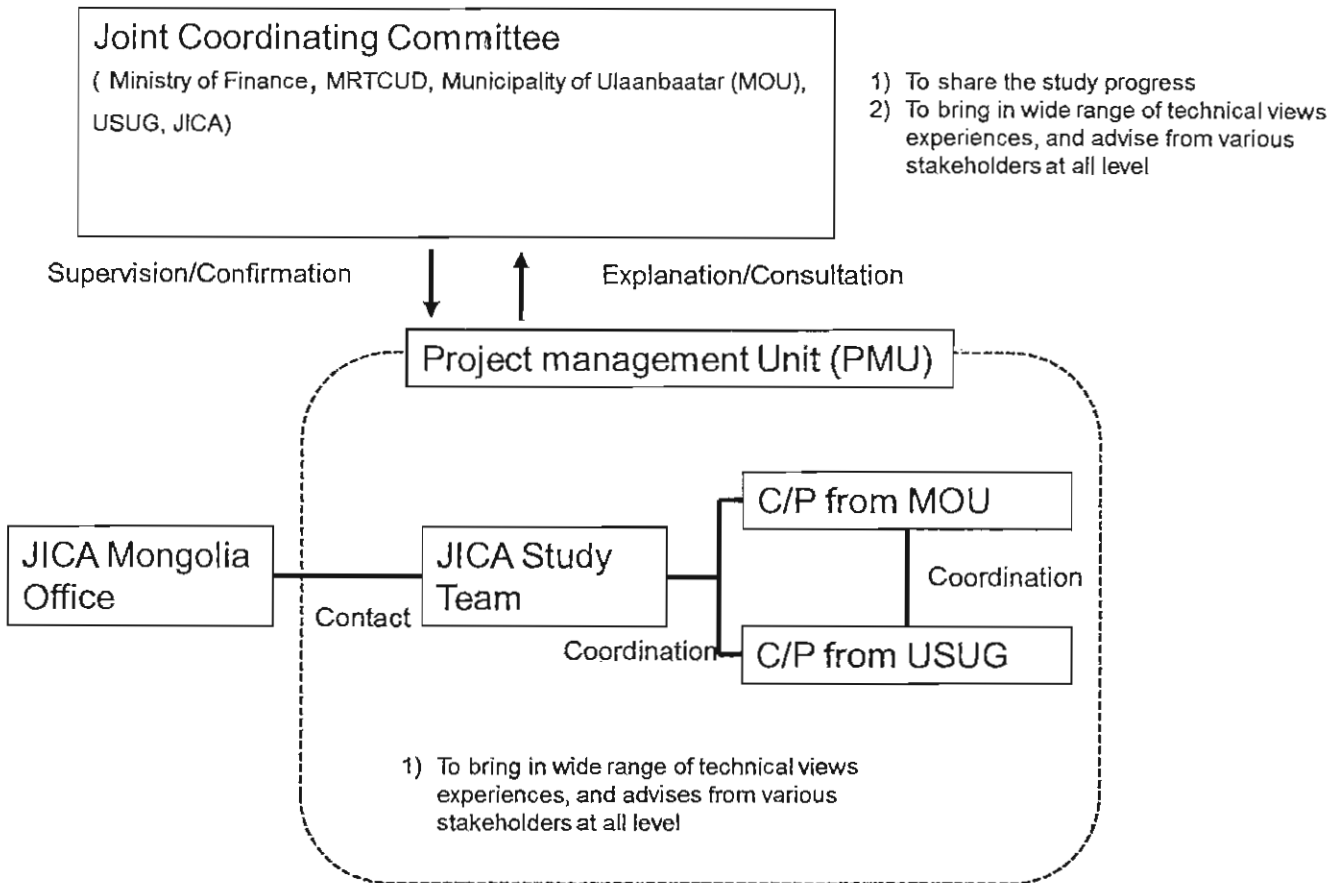
The record of discussions may be amended by the minutes of meetings among JICA and Mongolian side if necessary.

The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

- Annex 1 Implementation Structure of the Study
- Annex 2 List of Counterpart Personnel
- Annex 3 List of Proposed Members of Joint Coordinating Committee
- Annex 4 Monitoring Form
- Annex 5 Environmental Checklist



Annex 1 Implementation Structure of the Study



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Annex 2 List of Counterpart Personnel from Mongolian side

1. Counterpart Personnel from MOU

- 1) Mr. Itgel.N - Specialist for water issues of Urban development and policy department
- 2) Mr. Ankhbat - Specialist of water supply and sewerage system of Engineering Facilities Division
- 3) Mr. Chimid-Ochir.T – Specialist for water supply and sewerage system

2. Counterpart Personnel from USUG

- 1) Team leader – Mr. Baatarkhuyag.B – Deputy director and chief engineer
- 2) Sewerage Infrastructure Plan – Mr. Boldbaatar.L – Head of Technical business development and asset management department
- 3) Sewerage Process Evaluation – Mr. Batsukh.B – Senior engineer of Waste water treatment plant
- 4) Water Supply Infrastructure Plan – Mr. Batsaikhan.N – Senior engineer of Water Supply Division
- 5) Water Supply Network Control – Mr.Dagvasuren.J – Water supply hydraulic and prospective engineer of Technical business development and asset management department
- 6) Hydrogeology – Ms. Chimgee.Kh - Waste water calculation and prospective engineer of Technical business development and asset management department
- 7) Mechanical facilities – Mr. Bayarbileg.B – Water supply engineer of Operational control and management department
- 8) Electrical facilities – Mr. Batkhishig.G – Senior electrical engineer of Operational control and management department
- 9) Business Management Specialist – Ms. Enkhjargal.D – economist of Technical business development and asset management department, Ms. Otgonbayar.Kh - economist of Technical business development and asset management department
- 10) Cost estimation / implementation Plan – Ms. Suren.M – Construction and estimation engineer of Investment and Project Implementation Unit
- 11) Financial and Economic Analyses – Ms. Altantsetseg.Z – Senior economist of technical business development and asset management department
- 12) Environmental and social considerations – Ms. Chimgee.Kh – Waste water calculation and prospective engineer of Technical business development and asset management department, Ms. Buurtsag.S – Specialist for water source of Water supply division

Annex 3 List of Proposed Member of Joint Coordinating Committee

1. Chairperson

General Manager of Ulaanbaatar City and Head of Mayor's Office (Project Director)

2. Members

1) Representative of Ministry of Finance

2) Representative of Ministry of Road, Transportation, Construction and Urban Development

3) Chief Engineer of Ulaanbaatar City and Head of Engineering Facilities Department, Municipality of Ulaanbaatar

4) Head of the Urban Policy Development Department, Municipality of Ulaanbaatar

5) Deputy Director, Water Supply and Sewerage Authority of Ulaanbaatar City (Project Manager)

6) Team Leader, JICA Study Team

7) Representative of JICA Mongolia Office

Annex 4 Monitoring Form

MONITORING FORM

-If environmental reviews indicate the need of monitoring by JICA, JICA undertakes monitoring for necessary items that are decided by environmental reviews. JICA undertakes monitoring based on regular reports including measured data submitted by the project proponent. When necessary, the project proponent should refer to the following monitoring form for submitting reports.

-When monitoring plans including monitoring items, frequencies and methods are decided, project phase or project life cycle (such as construction phase and operation phase) should be considered.

1. Responses/Actions to Comments and Guidance from Government Authorities and the Public

Monitoring Item	Monitoring Results during Report Period
ex.) Responses/Actions to Comments and Guidance from Government Authorities	

2. Mitigation Measures

- Water Quality (Effluent/Wastewater/Ambient Water Quality)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
pH						
SS (Suspended Solid)						
BOD/COD						
DO						
Total Nitrogen						
Total Phosphorus						
Heavy Metals						
Hydrocarbons / Mineral Oils						
Phenols						
Cyanide						
Temperature						

- Waste

Monitoring Item	Monitoring Results during Report Period
ex.) Negative effects of disposal of sludge and other wastes	

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- Odor

Monitoring Item	Monitoring Results during Report Period
Ex.) Odor from sewerage treatment plant	

- Air Quality (Emission Gas / Ambient Air Quality)

Adverse impacts on air quality are not anticipated in the Master Plan Study, but monitoring items may be added in the process of project formulation stage.

- Noise / Vibration

Adverse impacts regarding noise and vibration are not anticipated in the Master Plan Study, but monitoring items may be added in the process of project formulation stage.

3. Natural Environment

- Ecosystem

Monitoring Item	Monitoring Results during Report Period
ex.) Negative effects/Actions to Valuable species	

4. Social Environment

- Resettlement and land acquisition

Monitoring Item	Monitoring Results during Report Period
ex.) Number of households to be relocated, area of land to be appropriated, amount of compensation, etc.	

- Living / Livelihood

Monitoring Item	Monitoring Results during Report Period

5. Other, if any

Monitoring Item	Monitoring Results during Report Period

Annex 5 Environmental Checklist

Environmental Checklist: 14. Water Supply

Note: Many parts of the Environmental Checklist cannot be filled at the stage of Detailed Planning Study for the "Study on the Strategic Planning for Water Supply and Sewerage Sector in Ulaanbaatar City". The Environmental Checklist needs to be updated when conducting feasibility studies on each JICA-supported project.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process?	(a)	(a)(b)(c)(d) EIA is not required for the Master Plan Study itself, but for the feasibility study for priority projects EIA may be required. Details will be clarified when candidate projects are identified in the Study.
		(b) Have EIA reports been approved by authorities of the host country's government?	(b)	
		(c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied?	(c)	
		(d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(d)	
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders?	(a)	(a)(b) Stakeholder meetings have not been held so far, but such meetings will be held in the Study.
		(b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(b)	
		(a) Have alternative plans of the project been examined with social and environmental considerations?	(a)	
2 Pollution Control	(3) Examination of Alternatives (1) Air Quality	(a) Is there a possibility that chlorine from chlorine storage facilities and chlorine injection facilities will cause air pollution? Are any mitigating measures taken?	(a)	(a) Alternatives will be examined in the process of identification of candidate projects in the Study. (a)(b) Details will be clarified when candidate projects are identified in the Study.
		(b) Do chlorine concentrations within the working environments comply with the country's occupational health and safety standards?	(b)	

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(2) Water Quality	(a) Do pollutants, such as SS, BOD, COD contained in effluents discharged by the facility operations comply with the country's effluent standards?	(a)	(a) No effluents are expected to be discharged from facility operations since all water sources of Ulaanbaatar are groundwater, but details will be clarified when candidate projects are identified in the Study.
(3) Wastes	(a) Are wastes, such as sludge generated by the facility operations properly treated and disposed in accordance with the country's regulations?	(a)	(a) No sludge and other wastes are expected in the process of water supply since all water sources of Ulaanbaatar are groundwater, but details will be clarified when candidate projects are identified in the Study.
(4) Noise and Vibration	(a) Do noise and vibrations generated from the facilities, such as pumping stations comply with the country's standards?	(a)	(a) No impacts are expected so far, but details will be clarified when candidate projects are identified in the Study.
(5) Subsidence	(a) In the case of extraction of a large volume of groundwater, is there a possibility that the extraction of groundwater will cause subsidence?	(a)	(a) Subsidence is basically not expected since the geologic condition of Ulaanbaatar is basically gravel bed, but details will be examined when candidate projects are identified in the Study.
3 Natural Environment (1) Protected Areas	(a) Is the project site or discharge area located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a)	(a) Impacts on protected areas depend on the location of the candidate projects. Details will be clarified when candidate projects are identified in the Study.
(2) Ecosystem	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site or discharge area encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? (d) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by project will adversely affect aquatic environments, such as rivers? Are adequate measures taken to reduce the impacts on aquatic environments, such as aquatic organisms?	(a) (b) (c) (d)	(a)(b)(c)(d) Impacts on ecosystem depend on the location of the candidate projects. Details will be clarified when candidate projects are identified in the Study.

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<p>4 Social Environment</p>	<p>(3) Hydrology</p>	<p>(a) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by the project will adversely affect surface water and groundwater flows? (b) Is there a possibility that hydrologic changes due to the installation of structures, such as weirs will adversely affect the surface and groundwater flows (especially in "run of the river generation" projects)?</p>	<p>(a)(b)</p>	<p>(a)(b) There may be a possibility of the adverse effects, but it depends on the amount of water intake. Details will be clarified when candidate projects are identified.</p>
<p>4 Social Environment</p>	<p>(1) Resettlement</p>	<p>(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? (b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement? (c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? (d) Is the compensations going to be paid prior to the resettlement? (e) Is the compensation policies prepared in document? (f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? (g) Are agreements with the affected people obtained prior to resettlement? (h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? (i) Are any plans developed to monitor the impacts of resettlement? (j) Is the grievance redress mechanism established?</p>	<p>(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)</p>	<p>(a)(b)(c)(d)(e)(f)(g)(h)(i)(j) There may be a possibility of involuntary resettlement, but it depends on the location of candidate projects. Details will be clarified when candidate projects are identified in the Study.</p>

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(2) Living and Livelihood	<p>(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?</p> <p>(b) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by the project will adversely affect the existing water uses and water area uses?</p>	(a) (b)	(a)(b) Adverse effects on living and livelihood conditions of inhabitants are basically not expected. Details will be clarified when candidate projects are identified in the Study.
(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	(a)	(a) There are some cultural heritages in and around Ulaanbaatar, but a possibility of the damage depends on the location of candidate projects. Details will be clarified when candidate projects are identified in the Study.
(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a)	(a) No adverse effects on local landscape are expected, but details will be clarified when candidate projects are identified in the Study.
(5) Ethnic Minorities and Indigenous Peoples	<p>(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples?</p> <p>(b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?</p>	(a) (b)	(a)(b) No ethnic minorities and indigenous peoples are identified so far, but details will be clarified when candidate projects are identified in the Study.
(6) Working Conditions	<p>(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project?</p> <p>(b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?</p> <p>(c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.?</p> <p>(d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?</p>	(a) (b) (c) (d)	(a)(b)(c)(d) Details will be clarified when candidate projects are identified in the Study.

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5 Others	(1) Impacts during Construction	<p>(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?</p> <p>(b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?</p> <p>(c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?</p> <p>(d) If the construction activities might cause traffic congestion, are adequate measures considered to reduce such impacts?</p>	<p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p>	(a)(b)(c)(d) The mitigation measures against adverse impacts during construction phase need to be undertaken, but details will be clarified when candidate projects are identified in the Study.
(2) Monitoring		<p>(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts?</p> <p>(b) What are the items, methods and frequencies of the monitoring program?</p> <p>(c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)?</p> <p>(d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?</p>	<p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p>	(a)(b)(c)(d) A monitoring plan for priority projects will be formulated at the feasibility study phase for such projects.
6 Note	Reference to Checklist of Other Sectors Note on Using Environmental Checklist	<p>(a) Where necessary, pertinent items described in the Dam and River Projects checklist should also be checked.</p> <p>(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).</p>	<p>(a)</p> <p>(a)</p>	<p>(a) In reference to the checklist of dam, 3(3)(b) was added.</p> <p>(a) Impacts to transboundary or global issues are negligible.</p>

1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made. In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).

2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which the project is located.

Environmental Checklist: 15. Waste Water Treatment

Note: Many parts of the Environmental Checklist cannot be filled at the stage of Detailed Planning Study for the "Study on the Strategic Planning for Water Supply and Sewerage Sector in Ulaanbaatar City". The Environmental Checklist needs to be updated when conducting feasibility studies on each JICA-supported project.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process?	(a)	(a)(b)(c)(d) EIA is not required for the Master Plan Study itself, but for the feasibility study for priority projects EIA may be required. Details will be clarified when candidate projects are identified in the Study.
		(b) Have EIA reports been approved by authorities of the host country's government?	(b)	
		(c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied?	(c)	
		(d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(d)	
2 Pollution Control	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders?	(a)	(a)(b) Stakeholder meetings have not been held so far, but such meetings will be held in the Study.
		(b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(b)	
		(3) Examination of Alternatives	(a)	(a) Alternatives will be examined in the process of identification of candidate projects in the Study.
	(1) Water Quality	(a) Do pollutants, such as SS, BOD, COD, pH contained in treated effluent from a sewage treatment plant comply with the country's effluent standards?	(a)	(a)(b) Effluent from sewerage treatment plants fails to comply with the country's effluent standards at present. Necessary measures will be examined in the Study.
		(b) Does untreated water contain heavy metals?	(b)	(b) Water discharged from factories into sewerage treatment plants contains heavy metals. Necessary measures will be examined when candidate projects are identified in the Study.

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(2) Wastes	(a) Are wastes, such as sludge generated by the facility operations properly treated and disposed of in accordance with the country's standards?	(a)	(a) Sludge is currently stored in the site of the central waste water treatment plants. Details and measures will be examined when candidate projects are identified in the Study.
(3) Soil Contamination	(a) If wastes, such as sludge are suspected to contain heavy metals, are adequate measures taken to prevent contamination of soil and groundwater by leachates from the wastes?	(a)	(a) There may be a possibility of soil contamination caused by sludge and other wastes. Details and measures will be examined when candidate projects are identified in the Study.
(4) Noise and Vibration	(a) Do noise and vibrations generated from the facilities, such as sludge treatment facilities and pumping stations comply with the country's standards?	(a)	(a) No impacts are expected so far, but details will be clarified when candidate projects are identified when candidate projects are identified in the Study.
(5) Odor	(a) Are adequate control measures taken for odor sources, such as sludge treatment facilities?	(a)	(a) Complaints about odor from local residents are sometime delivered to the central waste water treatment plant in the summer. Measures to prevent odor will be examined when candidate projects are identified in the Study.
3 Natural Environment	(1) Protected Areas	(a)	(a) Impacts on protected areas depend on the location of the candidate projects. Details will be clarified when candidate projects are identified in the Study.
	(2) Ecosystem	(a) (b) (c) (d)	(a)(b)(c)(d) Impacts on ecosystem depend on the location of the candidate projects. Details will be clarified when candidate projects are identified in the Study.

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4 Social Environment	(1) Resettlement	<p>(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?</p> <p>(b) Is adequate explanation on compensation and resettlement given to affected people prior to resettlement?</p> <p>(c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?</p> <p>(d) Is the compensations going to be paid prior to the resettlement?</p> <p>(e) Is the compensation policies prepared in document?</p> <p>(f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples?</p> <p>(g) Are agreements with the affected people obtained prior to resettlement?</p> <p>(h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?</p> <p>(i) Are any plans developed to monitor the impacts of resettlement?</p> <p>(j) Is the grievance redress mechanism established?</p>	<p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p> <p>(e)</p> <p>(f)</p> <p>(g)</p> <p>(h)</p> <p>(i)</p> <p>(j)</p>	<p>(a)(b)(c)(d)(e)(f)(g)(h)(i)(j) There may be a possibility of involuntary resettlement, but it depends on the location of candidate projects. Details will be clarified when candidate projects are identified in the Study.</p>
	(2) Living and Livelihood	<p>(a) Is there a possibility that changes in land uses and water uses due to the project will adversely affect the living conditions of inhabitants?</p> <p>(b) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?</p>	<p>(a)</p> <p>(b)</p>	<p>(a)(b) Adverse effects on living and livelihood conditions of inhabitants are basically not expected. Details will be clarified when candidate projects are identified in the Study.</p>
	(3) Heritage	<p>(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?</p>	<p>(a)</p>	<p>(a) There are some cultural heritages in and around Ulaanbaatar, but a possibility of the damage depends on the location of candidate projects. Details will be clarified when candidate projects are identified in the Study.</p>

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(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a)	(a) No adverse effects on local landscape are expected, but details will be clarified when candidate projects are identified in the Study.
(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to lands and resources respected?	(a) (b)	(a)(b) No ethnic minorities and indigenous peoples are identified so far, but details will be clarified when candidate projects are identified in the Study.
(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? (b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? (c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.? (d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	(a) (b) (c) (d)	(a)(b)(c)(d) Details will be clarified when candidate projects are identified in the Study.
5 Others	(1) Impacts during Construction (a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? (b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts? (d) If the construction activities might cause traffic congestion, are adequate measures considered to reduce such impacts?	(a) (b) (c) (d)	(a)(b)(c)(d) The mitigation measures against adverse impacts during construction phase need to be undertaken, but details will be clarified when candidate projects are identified in the Study.

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6 Note	(2) Monitoring Note on Using Environmental Checklist	<p>(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts?</p> <p>(b) What are the items, methods and frequencies of the monitoring program?</p> <p>(c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)?</p> <p>(d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?</p> <p>(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).</p>	<p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p> <p>(a)</p>	<p>(a)(b)(c)(d) A monitoring plan for priority projects will be formulated at the feasibility study phase for such projects.</p> <p>(a) Impacts to transboundary or global issues are negligible.</p>
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1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made. In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).

2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which the project is located.

Appendix 2

MAIN POINTS DISCUSSED

1. Seminar and/or Workshops

Both sides agreed that seminars and/or workshops would be jointly held by MOU, USUG and JICA Study Team to provide opportunities of dialogue with stakeholders and technology transfer to the Mongolia counterparts. Cost for holding seminars/workshops will be mainly borne by JICA.

2. Necessary Equipment and Facilities for the Study

MOU and USUG agreed to provide suitable office space, furniture, air conditioners, and communication facilities in USUG Office during the Study.

Both sides agreed that USUG shall provide the communication facilities and that the bills for the use of the communication would be paid by JICA Study Team.

3. Reports

Both sides agreed that the reports of the Study shall be made available to stakeholders and open to the public. MRTAUD, MOU and USUG agreed to make sure of disclosing the reports on web site of all counterparts.

4. Environmental and Social Considerations

JICA provided JICA's Guidelines for environmental and social considerations (2010), (hereinafter referred to as "the JICA guidelines") and explained that it would be applied to the Study. The Mongolian side understood the policy of the JICA guidelines and agreed in principle as follows:

- (1) The Mongolian side will follow EIA regulations in Mongolia for Study activities and take appropriate measures, if necessary. The JICA Study Team will provide the technical support to do it.
- (2) The information disclosure such as opening the study report shall be made in order to ensure the participation and dialogues with various stakeholders, in order to achieve appropriate environmental and social considerations.
- (3) In the course of implementation of the Study, public consultation with communities and stakeholders shall be included, if necessary.
- (4) In view of the Study objectives, both side agreed that the Study follows laws and regulations in force in Mongolia and the JICA guidelines.

Terms of Reference for the environmental and social considerations study is described below.

- (1) Environmental and social consideration study in reviewing the previously formulated Master Plan
 - (a) Study on institutional framework of Mongolia regarding environmental and social considerations
 - (b) Study on current environmental and social status of areas covered by

the Master Plan

- (c) Analysis on alternatives, including zero-option scenario, through the implementation of Strategic Environmental Assessment
 - (d) Scoping on possible environmental and social impacts, focusing on water quality, waste, odor, groundwater, subsidence, involuntary resettlement and land acquisition, impacts during construction phase, and other impacts.
 - (e) Elaboration of mitigation measures
 - (f) Implementation of stakeholder consultation meeting
 - (g) Elaboration on points to consider for the environmental and social considerations at the project implementation stage
- (2) Environmental and social consideration study for selected project
- If project(s) subject to EIA is selected as priority project(s), the following studies will be conducted to support Mongolian side to implement EIA.
- (a) Study on current environmental and social status of project site(s)
 - (b) Analysis on alternatives including zero-option scenario
 - (c) Scoping of possible impacts according to the components of candidate project(s)
 - (d) Elaboration of mitigation measures
 - (e) Implementation of stakeholder consultation meeting
 - (f) Elaboration of environmental management plan and environmental monitoring plan and their implementation structures

5. Synergy with Activities by Other Development Partners

Both side agreed that the Study shall cooperate and make synergy with other development partner's activities including donor agencies, NGOs and private sector, rather than making unnecessary duplication. The Study shall make the activity plan and share the progress in close cooperation with other development partners, especially, ADB, KOICA and KfW.