WATER AND SANITATION IN MONGOLIA 2008-2011

JUNE, 2008

CONTENTS

LIST OF ACRONYMS

ADB	Asian Development Bank
AWP	Annual Work Plan
CCA	Common Country Assessment
CPD	Country Programme Document
CPAP	Country Programme Action Plan
EGSPRS	Economic Growth Support Poverty Reduction Strategy
JMP	Joint Monitoring Programme
JP	Joint Programme
HDR	Human Development Report
HSUM	Health Sciences University of Mongolia
IWRM	Integrated Water Resource Management
LGs	Local Governments
MCUD	Ministry of Construction and Urban Development
MDGs	Millennium Development Goals
MUST	Mongolian University of Science and Technology
MNE	Ministry of Nature and Environment
MoECS	Ministry of Education, Culture and Science
MoFE	Ministry of Fuel and Energy
MoH	Ministry of Health
MoFAg	Ministry of Food and Agriculture
NGOs	Non-Governmental Organizations
NSO	National Statistical Office
PHI	Public Health Institute
PPP	Polluter Pay Principle
PSC	Programme Steering Committee
SPH	School of Public Health
UN	United Nations
UNCT	United Nations Country Team
UNTG	United Nations Team Group
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population's Fund
WB	World Bank
WHO	World Health Organization
WAA	Water Authority Agency
WSAA	Water and Sewage Authority Agency

COVER PAGE

UNDAF Outcome(s)/Indicator(s):	A holistic approach to environmentally sustainable development is promoted and practiced for improving the well-being of rural and urban poor.
Expected Outcome(s)/Indicator (s)	Improved water and sanitation management is practiced.
Expected Output(s)/Annual Targets:	3.3.1 Community ownership over water sources improved and their capacity to maintain/manage their wells in a sustainable manner is strengthened, access to and repairs of wells improved 3.3.2 Institutional capacities enhanced to manage, regulate and monitor the delivery of water and sanitation services in rural and urban poor areas 3.3.3 Improved water quality monitoring, water treatment and adequate sanitation services is promoted.
Implementing partner:	Ministry of Nature and Environment (National Water Committee)
Responsible parties:	MNE (NWC, WAA), MCUD, academic and research institutions, Local Governments and NGOs

SUMMARY

UNDP plans to work jointly with relevant Ministries, local Government, academic institutions and NGOs on improving the water and sanitation management and provision in Mongolia. The overall goal of the project is to increase access to improved drinking water sources and sanitation facilities in the target communities by improving water and sanitation management during the period of 2008-2011. This will enable Mongolia to accelerate the efforts to achieve the Mongolian MDG 1, 3, 7, 8 and 9, EGSPRS, the Government's Regional Development Strategy, the National development programme of Mongolia 2004-2020 and UNDAF Outcome 3. The project activities include the improvement of water governance, creating a consolidated national database, promoting laboratory capacity, providing safe water supplies and appropriate sanitation facilities, enhancing water and sanitation education and community ownership of water sources. The current document outlines UNDP component of the UN Joint Programme on Water and Sanitation for 2007-2011.

Programme Period: 2008-2011
Programme Component:
Project Title: **Water and Sanitation Project**
Project ID: 00060999
Project Duration: 4 years, Jan 2008 – Dec 2011
Management Arrangement: NEX

Total Budget	**US$ 1,314,651**
Allocated resources:	
• Donor resources: (incl. GMS	US$ 994.651 US$ 74.033)
• UNDP TRAC:	US$ 183,000
• UNDP WGF:	US$ 137,0000
• Government in kind:	US$ 60,000

Agreed by:

Ministry of Nature and Environment

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G. Shiilegdamba, Minister

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Date

UNDP Mongolia

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D. Comini, Resident Representative

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Date

SECTION 1: BACKGROUND AND ANALYSIS

1.1 General Information of Mongolia

Mongolia is located in the north of the central Asian plateau and has a total area of 1,566,500 km^2. The country has severe climatic conditions with long and cold winters. The average annual precipitation is 251 mm, ranging from 400 mm in the north to less than 100 mm in the southern Gobi region. The mean monthly temperature is below 0°C throughout the entire country between November and March.

Mongolia is divided into 21 major administrative units known as Aimags and one capital city (Ulaanbaatar). Each of the rural units is further divided into smaller administrative units known as soums (340) and the soums are divided into bags (around 1664), which are the smallest administrative and territorial units in Mongolia. The capital city has 9 districts and 121 khoroos (subdistricts).

In 2005, the population of Mongolia was estimated at 2.646 million. The annual population growth rate is 1.2. Mongolia is sparsely populated with an average density of 2.0 inhabitants/km^2. Approximately 46.6% of the population resides in rural areas according to the UNESCAP report. The 2006 statistical data indicates that 38% (994,300) of Mongolians live in Ulaanbaatar city, which is a result of rapidly increasing urban migration by the rural poor since 1990.

The crude birth and death rates are estimated to be 18.4 and 6.1 respectively per 1000 head, while the infant mortality rate is estimated at 19.8 per 1000 live births. The average life expectancy is 65 years (Annual Health Indicators, MoH, 2006)[1].

1.2 Water resources and water consumption

Mongolia is a landlocked country, which is divided into three large watersheds. The country's water resource is dependent mostly on river water of trans-boundary inflows. Considering the low population density, Mongolia has comparatively abundant surface and ground water resources. The Mongolian rivers belong to the inland catchments basins of the Arctic Ocean, the Pacific Ocean and Internal (closet basin) Drainage Basin of Central Asia. In the northern and western mountainous parts of Mongolia, the surface water network has the highest density. The southern, central and south-eastern parts of the country have a few rivers and other surface water resources, which are usually situated in depressions without any outflows.

The total surface water resource of Mongolia is estimated at 599 km^3/year, and consists mainly of water stored in lakes (500 km^3/year), glaciers (62.9 km^3/year) and rivers (34.6 km^3/year) and others (Myagmarjav and Davaa, 1999). The amount of renewable groundwater resources has been estimated at 10.8 km^3/year (Jadambaa, 2002).

Approximately twenty percent of Mongolia's water consumption is provided from surface water resources and the rest from ground water. The various types of water usage are assessed as 18.1% for drinking and domestic use, 39.3% for industry, 24.0% for animal husbandry, 17.4% for irrigation and 1.2% for other purposes[2].

In recent years, water consumption has been increasing in Mongolia, due to a rise in the urban population and to social-economic development. The impact of climate change and human activities have resulted in increased water scarcity, increased pollution levels of ground and surface water and water regime change. This will continue in the future, if no appropriate actions are taken, especially

because Mongolia has scattered and limited water resources. It was evident from the results of a water census conducted by the MNE how much Mongolia's water resources have decreased. Altogether, 683 rivers, 1484 ponds and springs, and 760 lakes have dried up over the last five years (MNE, 2002).

Data updated in 2003 shows that a total of 39843 engineer-designed and hand-dug wells were registered, out of which, 51.8% /20654/ were hand-dug wells in Mongolia intended for watering livestock, which are also used as drinking water sources for herders. Therefore, laboratory tests should be carried out for verifying water quality (MoFAg, 2003).

There are considerable disparities in terms of water usage. The 2003 National HDR estimated that water consumption by apartment dwellers in Ulaanbaatar, averaged 240-450 litres/day while the consumption for those who lived in ger districts (traditional Mongolian felt, canvas and wood dwelling) was 8-10 liters/day. Apartment dwellers use safe and readily available tap water for their drinking and domestic needs, while ger dweller use unsafe water from rivers, springs and hand-dug wells, which have not been properly inspected. It is usually women and children who are responsible for collecting water in the ger districts and they spend long hours queuing in freezing winter weather, causing many school age children to be absent from school. In addition, the private householder pays 84 times higher than the industries and mining companies for 1000 liters of water used and they need to spend time and electricity on heating and boiling water.

1.3 Access to water supply and sanitation facilities and human rights

1.3.1 General concepts

> Clean water and sanitation can make or break human development. They are fundamental to what people can do and what they can become—to their capabilities. Access to water is not just a fundamental human right and an intrinsically important indicator for human progress. It also gives substance to other human rights and is a condition for attaining wider human development goals (Human Development report, 2006).

At the start of the 21st century, the violation of the right of every human being to have access to clean water and sanitation is destroying human potential on an epic scale. In today's increasingly prosperous and interconnected world, children still die for want of clean water and sanitation. Exclusion from clean water and basic sanitation destroys more lives than any war or terrorist act. It also reinforces the deep inequalities in life chances that divide countries and people within countries on the basis of wealth, gender and other markers for deprivation. Better access to water and sanitation would act as the catalyst for a giant advance in human development, creating opportunities for gains in public health, education and economic growth.

"The human right to water", declares the UN Committee on Economic, Social and Cultural Rights, *"entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use"*. These five core attributes represent the foundations for water security. As determined in HDR, 2006, water security is about ensuring that every person has reliable access to enough safe water at an affordable price to lead a healthy, dignified and productive life, while maintaining the ecological systems that provide water and also depend on water.

Apart from the highly visible destructive impacts on people, water insecurity violates some of the most basic principles of social justice. Among them:

- *Equal citizenship.* Every person is entitled to an equal set of civil, political and social rights, including the means to exercise these rights effectively. Water insecurity compromises these rights. A woman who spends long hours collecting water, or who suffers from constant water-

related illness, has less capacity to participate in society, even if she can participate in electing her government.

- *The social minimum.* All citizens should have access to resources sufficient to meet their basic needs and live a dignified life. Clean water is part of the social minimum, with 20 litres per person each day as the minimum threshold requirement from a source less than 1 kilometre from their home.
- *Equality of opportunity.* Equality of opportunity, a key requirement for social justice, is diminished by water insecurity. Most people would accept that education is integral to equality of opportunity. For example, children unable to attend school when they are afflicted by constant bouts of sickness caused by unclean water do not, in any meaningful sense, enjoy a right to education.
- *Fair distribution.* All societies set limits to the justifiable extent of inequality. Deep inequality in access to clean water in the home or productive water in the field does not meet the criterion for fair distribution, especially when linked to high levels of avoidable child death or poverty.

1.3.2 Definitions of indicators

Access to safe drinking water is estimated by the percentage of the population using improved drinking water sources. Similarly, access to sanitary means of excreta disposal is estimated by the percentage of the population using improved sanitation facilities which are more likely to ensure privacy and hygienic use. Improved drinking water technologies are those more likely to provide safe drinking water than those characterized as unimproved (Meeting the MDG drinking water and sanitation target, WHO, UNICEF, 2004).

The MDG target refers to "access to safe drinking water and basic sanitation." Though it sounds straightforward, monitoring such a target can be complex. For example, how should drinking water be defined? How would an interviewer determine whether a household's water is safe? Measuring 'basic sanitation' is equally complicated. Ideally, the definition of this term would encompass critical components of what sanitation services should aim for: privacy, dignity, cleanliness and a healthy environment.

To resolve these issues, the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation classifies sanitation facilities and water supply sources as either 'improved' or 'unimproved' (table 1.1). Improved drinking water sources encompass three dimensions of water security: quality, proximity and quantity. For international reporting purposes, "improved sanitation" means advancing through progressively better sanitation facilities from pit latrines to pour flush latrines and septic tank latrines with plausible options[15].

Table 1.1 Definitions of drinking water sources and sanitation facilities

Improved drinking water sources	Unimproved drinking water sources	Improved sanitation facilities	Unimproved sanitation facilities
Household connection Public standpipe Borehole Protected dug well Protected spring Rainwater collection	Unprotected well Unprotected spring River or pond Vendor-provided water Bottled water* Tanker truck water	Connection to a public sewer Connection to a septic system Pour-flush latrine Simple pit latrine** Ventilated improved pit latrine	Public or shared latrine Open pit latrine Bucket latrine

Note: *Bottled water is not considered improved due to limitations in the potential quantity, not quality, of the water.
**Only a portion of poorly defined categories of latrines are included in sanitation coverage estimates.

1.3.3 Drinking water supply and sanitation provision in Mongolia

Recent report of MCUD (2006) shows that only 39.2% of the total population has access to drinking water sources, which is by 20% lower than the global average. When disaggregated according to type of improved drinking water sources, 22% have household connections (see table 1.2). The MCUD report (2006) also indicates that 26.6% of the total population has access to improved sanitation facilities.

Table 1.2 Current situation and future trends on access to improved drinking water sources in Mongolia

Type of improved drinking water sources	2005 (%)	2015 (%)
Household connection	22	36.6
Public standpipe	8.5	13.6
Borehole and protected dug well	8.6	29.3
Protected spring	0.1	69.6

Source: Government of Mongolia 2006, Programme of improved sanitation facilities, MCUD 2005 MDG report 2006.

A Joint Household Pilot Survey (UNDP, WHO and UNICEF, 2004) involving a target population of 1500 households, has shown existing disparities in urban and rural areas in terms of access to safe water and appropriate sanitation facilities. This study was the first attempt to address the gaps, in terms of data on safe water and sanitation coverage for poor and marginalized groups by applying the definitions and indicators of the UN-mandated Joint Monitoring Program (JMP). The survey indicates that, within the urban households, 62.1 % and 42.6 % respectively, have access to improved drinking water sources and sanitation facilities, while only 17.3 and 4.8% of rural households have access.

Mongolia is one of 189 nations who adopted MDG targets, as the Government's mid-strategic goal, of increasing the coverage of improved water sources to 70%, and improved sanitation services to 63.3% of the population respectively by 2015, against the 1990 baseline average.

MoF, MCUD, MoH and other key ministries have estimated the cost to reach MDG target to be USD 874 Mln. in total, for increased access to improved water sources (336 Mln.) and sanitation (537 Mln.) coverage by 2015.

The study carried out by PHI in 2001-2002 determined that 15 % of the 120 surveyed households in Ulaanbaatar use spring water only for their drinking and domestic needs, while 45% of them use both spring water and water from distribution points[6].

According to the assessment completed by the State Inspection Agency in 2003, 59 % of pit latrines and 54 % of soak pits in the Ger district do not meet the hygienic requirements. While the 14 % and 34 % respectively of the total households in Ger district, did not have a pit latrine or soak pit. As a result, the soil contamination has been increasing progressively during the recent years. For instance, a soil bacteriological contamination has been increased almost three fold during the last 10 years. MoH reports that the soil contamination contributes to a 20-30 % increased risk of infectious diseases, such as the diarrhea and Hepatitis A.

In 2005, a WHO/MoH survey showed that more than 75% of soum hospitals and schools do not have safe and adequate water and sanitation facilities. This makes it difficult for health facilities to provide

essential health services and act as models for the community[19]. Only 9.2-9.9 % of soum and town hospitals and schools are connected to a central water supply and sewage system (MCUD, 2006).

Currently, the information derived from analysis of existing data on water and sanitation provision, rests with each ministry and agency and is treated as an asset to that institution. Consequently, it is necessary, during the UN Joint Programme implementation, to organise an extended nationwide survey on access to improved drinking water sources and sanitation facilities, involving trained researchers and experts, in order to build consolidated national database using standardized definitions of indicators of JMP .

1.4 Operation of wastewater treatment plant

According to the 2001 National Survey of Wastewater Treatment Plants, there are 103 wastewater treatment plants nationwide, out of which, 41 /39.8%/ are operational, 27 /26.2%/ are partially operational and 35 /34%/ are non operational. Out of 103 wastewater plants, 30 are biological, 5 are ordinary natural biological, 61 are mechanical and 7 are mechanical-chemical plants.

Over 200 million cubic meter of wastewater is transported by public sewage in Mongolia per year, of which 60 % is treated by the treatment facilities. Every year 50 million cubic meters of untreated wastewater is dumped into the river, polluting the environment. For instance, treated water from the central wastewater treatment plant of Ulaanbaatar city is released into the Tuul river. The surface water clearness index around the Tuul-Songino area, which was 4.2 in 1997, had increased to 8.42 in 2004, which indicates increased pollution of river water due to the poor operation of the wastewater treatment plant. One of the causes for the technological failure of the wastewater treatment plant is the release into the river of untreated or half treated wastewater from the leather processing factories. Their wastewater contains biological oxygen demand and particulate matter exceeding 5-20 times the standard level[2].

The quality of wastewater treatment plant operation must be monitored through a laboratory analysis, to ensure adequate technological regime. However, with the exception of those operating in Ulaanbaatar, Darkhan, Erdenet, Zuunkharaa and Hutol, wastewater treatment plants do not have the necessary laboratory capacity to fulfill the requirements[16].

1.5 Health outcomes related to poor water supply, sanitation and hygiene

> Water and Sanitation is one of the primary drivers of public health. I often refer to it as “Health 101”, which means that once we can secure access to clean water and to adequate sanitation facilities for all people, irrespective of the difference in their living conditions, a huge battle against all kinds of diseases will be won." (Dr LEE Jong-wook, Director-General, World Health Organization).

Water, sanitation, hygiene and health are interrelated. Inadequate quantities and poor quality of drinking water, lack of sanitation facilities and poor hygiene cause millions of the world’s poorest people to die from preventable diseases each year. Water, sanitation and hygiene are health risk factors that present different types of hazards including chemical and microbiological hazards, vectors and injuries[3].

Ensuring safe drinking water is one of the highest priorities in Mongolia. PHI conducted a study between 1993 and 2000, for all soums, aimags and regions, identifying the amount of minerals and microelements in ground water. The research determined that an unacceptable concentration of minerals and microelements in drinking water causes illnesses in the digestive, cardiovascular and urine – genital organs. The survey also defined a large number of cases of dental fluorosis among

residents of Dornogobi and Sukhbaatar aimags, due to the high concentration of fluoride in groundwater used for drinking purposes, and a high prevalence of iodine deficiency disorder among the people of Bulgan, Uvurkhangai, Khovd and Uvs aimags, caused by a low content of iodine in drinking water[2].

In addition, the above mentioned study indicated that 13.4 % of the rural population use water that contains a high degree of minerals. The level of hardness in the water of the Gobi region was estimated within a range of 3-34 mg-eqi/liter, indicating that water sources in the region has a high hardness[2] level. MoFAg data indicates that the water sources of 110 soums (or 33% of all soums) were classified to have a high degree of hardness. A high level of hardness in drinking water increases the risk of chronic diseases of the kidney and urine tract.

An assessment of the quality and hygienic conditions of spring water was undertaken in Mongolia in 2004, by the SPH, with financial and technical support from AGFUND through the WHO. The study indicated that 78 % of the total number of springs studied (127) were observed not to have any protection or upgrading of their surrounding areas. In most of the studied areas, 40-80 % of the spring water samples were evaluated as 4^{th} and 5^{th} degree of surface water cleanliness, which does not meet drinking water quality[18] requirements.

Drinking water sources containing certain levels of arsenic and similar substances are known to exist naturally in some areas. A study, conducted in 2003-2004, with support from UNICEF, indicated that arsenic was detected in 10 % of water samples from a total of 1023 wells and that the arsenic concentration was higher than acceptable levels in water sources in Gobi-Sumber, Dornod, Gobi-Altai and Dornogobi aimags. In these aimags, the initial symptoms of the chronic impact of arsenic were observed among the surveyed population [2].

Since 1990, mining activities have been increasing rapidly in Mongolia, which leads to an equally rapid increase in environmental pollution, including mercury contamination of water, soil and air. The 2004 study indicates that the mercury concentration in the water of Boroo river, near the gold mining was six times higher than the acceptable level. The same study also showed that 24.5 % of the informal gold miners who were surveyed, have had symptoms of the chronic effects of mercury, namely high mercury concentrations in their blood and urine, and symptoms in the nervous system[5].

At present, the diarrhoeal diseases caused by the poor quality of drinking water, sanitation and hygiene practices still remains the main concern of the public health sector in Mongolia. Diarrhoeal diseases, including dysentery, typhoid and Hepatitis A, are among the major causes of child morbidity and under five mortality[1]. It was determined by the study conducted by PHI in 2001-2002, that households without a pit latrine had more cases of diarrhoea (65.2%) compared to households with a pit latrine. Households with access to a water distribution point had 1.6 times fewer cases of diarrhoea, compared to the households using spring water. Moreover, households using raw water had 20 % more cases of diarrhoea than those not using raw water[6].

1.6 Institutional framework and structure

Water Authority, the government implementing agency, was established under the MNE in 2004, with responsibility for all water-related affairs, according to the Water Law. Although this organization is responsible for dealing with water-related affairs nationwide, a comprehensive policy on water issues is still lacking.

Many institutions are involved in the water sector. For example, the centralized water supply institutions are under the mandate of the MCUD, the policies of irrigated crop farming and

pastureland and livestock water supply are under the mandate of the MoFAg, hydro-electric power issues are the responsibility of MoFE, public health issues lie within the scope of the MoH and overall water recourse management is coordinated by the MNE. Because of the division of responsibilities, none of the institutions has the right to fully co-ordinate water-related issues.

The National Water Committee was established as an institution in 1999, and has the right to co-ordinate water sector institutions and the responsibility to implement the national water program. However, due to lack of legislation, the NWC's responsibilities and functions are not yet fully clear.

There are altogether eight laws to regulate water management issues. In addition, the government has issued over 20 acts and regulations and over 20 standards, which are in force in the water sector.

1.7 Overview of key problems and issues

1. Lack of legal framework and institutional structure on water governance and sanitation sector.
2. No consolidated national database for water and sanitation provision.
3. Disparities in access to water and sanitation provision in urban and rural areas, especially people living in ger areas, whose are in the worst situation.
4. Water and soil contamination, caused by inappropriate waste and waste water management.
5. Health risks including morbidity, disability, mortality and threats to well-being caused by communicable and non-communicable diseases, related to poor water supply, sanitation and hygiene practices are still central issues of the public health sector.
6. Lack of education and knowledge of traditional customs on the protection of water resources and appropriate use of water and sanitation facilities and hygienic behaviour.
7. Lack of public participation in sustainable use of water sources through workshops and awareness raising programmes conducted for schoolchildren and communities on hygienic use of sanitation and water, especially involving vulnerable sections of the population, such as those living in ger areas.

SECTION 2. PROVISIONS OF THE PROJECT

2.1 National priorities and goals

The project will be linked to National priorities and goals, namely policies and programmes.

- MDG7. Ensure environmental sustainability.
  "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation", specifically
  Increase the coverage of improved water sources to 70%, and improved sanitation services to 50% of the population by 2015, against the 1990 baseline average.
- National Water Programme activities:
  4.2 Appropriate water use and supply
  4.3 Water resources protection and rehabilitation
  4.6 Science and technology
- Government's Regional Development Strategy.
- MDG-based National Development Strategy of Mongolia.

2.2 Overall Goal of the project

To improve water and sanitation governance and living conditions of target area population through providing support to strengthened coordination mechanism and increasing access to safe drinking water sources and sanitation facilities and improving water resources management.

2.3 Specific objectives

1. Strengthen the institutional structure and legal framework on water governance and sanitation service.
2. Increase knowledge, skills and practice of professionals, communities and schoolchildren on water, sanitation and hygiene practices.
3. Improve laboratory capacity on drinking water and wastewater analysis, especially in rural areas.
4. Support the construction of safe water supplies and adequate sanitation facilities in the target communities, schools and soum hospitals.
5. Enhance community-based management of water sources in target areas and improve their capacity to maintain/manage them in a sustainable manner in, as models for national level.

2.4 Target areas and population

The following criteria will be used for selecting target areas and population:

- Ger districts of Ulaanbaatar city, where the low income people live in poor hygienic conditions with insufficient and unsafe sources of water, inadequate sanitation facilities and hygienic behavior.
- The Western region, at the greatest distance from the capital city and the most socially deprived, as defined within UNDAF.
- Other aimags and soums would be selected, on the basis of data indicating limited access to improved drinking water sources and sanitation facilities and a high incidence of infectious diarrheal diseases, including Hepatitis A.

2.5 Focal government counterparts

- Ministry of Nature and Environment (National Water Committee and Water Authority)
- Ministry of Construction and Urban Development
- Ministry of Food and Agriculture

2.6 Participating institutions

- UNDP Water Governance Facility at the Swedish International Water Institute
- Institute of Geoecology
- National Agency for Meteorology, Hydrology and Environment Monitoring
- Mongolian University of Science and Technology, Research and Training Center in IWRM
- Local governor's offices
- Private companies
- NGOs

2.7 Donor Agencies

- UNTFHS
- UNDP Water Governance Facility at Swedish International Water Institute
- NGOs etc.

2.8 Detailed activities

Activities will be implemented with five specific objectives, to achieve the overall goal of the project.

1. Strengthen institutional structure and legal framework on water governance and sanitation service:
   - Support to improve capacity of umbrella organization on water and sanitation service /UNDP, UNICEF and WHO/
   - Facilitate implementation of the follow-up action plans and programmes; namely National Environmental Health Programme and Programme for Sanitation Facilities agreed with the concerned ministries, especially for the creation of a legal framework on water and sanitation management, which enables clear definition of responsibility/roles of institutions and enforcement of the Polluter Pay Principle (PPP) /UNDP, UNICEF and WHO/.
   - Conduct a needs assessment for institutional capacity on water governance in terms of legal and policy environment, division of roles and responsibilities, capacity to implement policies and fulfill their roles, human resources, technical and financial capacities of the institutions within water and sanitation sector /UNDP, UNICEF and WHO/.
   - Conduct a case study on legal and policy framework for water supply and sanitation for improving service delivery at the local level. /UNDP/.
2. Increase knowledge, skills and practice of professionals, communities, and schoolchildren on water, sanitation and hygiene at both national and local levels:
   - Provide trainings and study tours for both national and local level staff in target areas in water engineering and public health sector /UNDP, UNICEF and WHO/.
   - Conduct training, advocacy and awareness campaigns among the communities on water saving and protection of water resources, improved water and sanitation management and hygiene practice /UNDP, UNICEF and WHO/.
   - Develop and publish IEC and BCC materials and tools for the communities, children, lecturers and health workers /WHO, UNICEF, UNDP and UNFPA/.
3. Improve laboratory capacity on drinking water and wastewater analysis, especially in rural areas:
   - Provide assistance to the agencies and their local branches in order to get them adequately equipped with portable tools and devices for research and analysis laboratory / WHO and UNDP/.
   - Conduct feasibility study for improved wastewater treatment operations and monitoring, in addition to identifying the current situation, problems and future priorities /UNDP/.
   - Train laboratory staffs within the country and abroad /WHO, UNDP and UNICEF/.
4. Support constructing safe water supply and adequate sanitation facilities in the target communities, schools and soum hospitals:
   - Construct new wells or repair exiting ones in the primary focus areas with a poor population and create sanitation facilities /UNDP and UNICEF/.
5. Enhance community ownership over water sources and improve capacity to maintain/manage the resources in a sustainable manner in the target areas, as a model to introduce at the national level:
   - Mobilize community participation in sustainable use of water resources, such as founding well users committees /UNDP/.
   - Enhance effective cost sharing and cost recovery mechanism for both providers and owners /UNDP/.

2.9 Expected outcome

Water and sanitation governance and living conditions of target area population will be improved.

2.10 Expected outputs

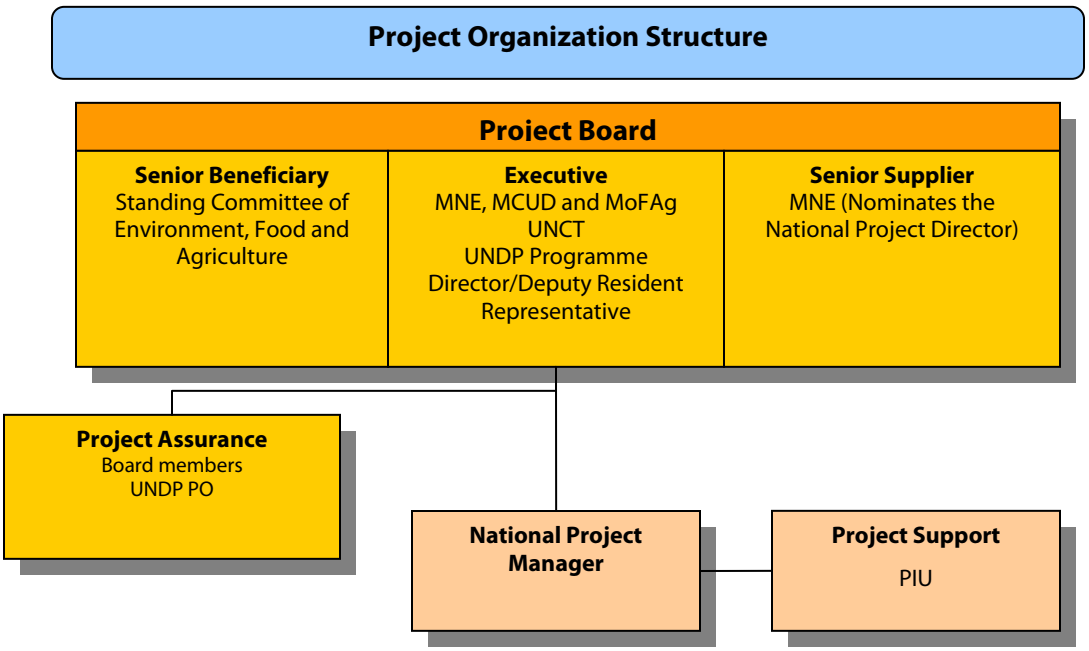
- Institutional structure and legal framework of water governance and sanitation will be strengthened.
- Awareness, knowledge, skills and practice of professionals, communities and schoolchildren will be improved on water, sanitation and hygiene.
- Increased laboratory capacity on drinking and wastewater testing will be promoted, especially in rural areas.
- The number of improved drinking water sources and sanitation facilities will be increased in the target communities, schools and hospitals.
- Community-based management of water sources will be enhanced in a sustainable manner.

SECTION 3. MANAGEMENT ARRANGEMENT

3.1 Coordination mechanism

The project will be led by the **Project Board (the Board)** which brings together the roles and responsibilities of the Executive (MNE, MCUD, MoFAg and UNDP). The Board authorizes any major deviation from the agreed plans driven by the need in project modification or when project tolerances (approved budget and delivery deadlines) have been exceeded. Board members individually and collectively will ensure that potential risks in the project's policy and political environment that may undermine the achievement of project objectives or production of its outputs are removed or mitigated in a timely and effective manner. The Project Board will be chaired by the State Secretary of the MCUD and will include relevant ministries representations. Appointments to the Project Board will be on an honorary basis and no fees will be paid.

The project will be executed under the overall coordination of the MNE, namely the National Water Committee. National Project Director will be appointed by the MNE. Alternate NPD will be appointed by the MoFAg. The PIU is responsible for the overall direction and management of the project, which will be established under the National Water Committee. In addition to the Project Manager, Admin and Finance Assistant will be recruited to support. See scheme below.



3.1.1 Joint Programme particulars on coordination

The current document is a UNDP component of the UN Joint Programme on Water and Sanitation for 2007-2011. Therefore, any decisions taken on deviation from the agreed plans, which would result in modifications, will be consulted with the UNCT and the approval of the Resident Representatives of the participating UN organizations (UNDP, UNICEF, WHO and UNFPA) will be obtained through the head of the Project Board. UNDP will ensure overall cohesion the project activities with ongoing efforts of other UN agencies, within the approved Joint Programme Document.

3.2 Monitoring and Evaluation

3.2.1 Introduction

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

Within the annual cycle

- On a quarterly basis, a quality assessment shall record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table below.
- An Issue Log shall be activated in Atlas and updated by the Project Manager to facilitate tracking and resolution of potential problems or requests for change.
- Based on the initial risk analysis submitted (see annex 1), a risk log shall be activated in Atlas and regularly updated by reviewing the external environment that may affect the project implementation.
- Based on the above information recorded in Atlas, a Quarterly Progress Reports (QPR) shall be submitted by the Project Manager to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.
- A project Lesson-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organization, and to facilitate the preparation of the Lessons-learned Report at the end of the project
- A Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events

Annually

- **Annual Review Report**. An Annual Review Report shall be prepared by the Project Manager and shared with the Project Board and the Outcome Board. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the QPR covering the whole year with updated information for each above element of the QPR as well as a summary of results achieved against pre-defined annual targets at the output level.
- **Annual Project Review**. Based on the above report, an annual project review shall be conducted during the fourth quarter of the year or soon after, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It shall focus on the extent to which progress is being made towards outputs, and that these remain aligned to appropriate outcomes.

3.2.2 Reporting specifics under Joint Programme

Annual review of a Joint Programme, done collectively by (sub-) national partners and participating UN organizations, results in a single report, thus reducing transaction costs. Therefore, the Joint Programme will have one consolidated report annually. The current component is a UNDP Component of the Joint P, the PIU will provide the UNDP specific inputs to the consolidated report annually.

A common format for reporting based on key principles such as results-based annual programme level reporting should be used to the extent possible. All reports will be shared with all relevant stakeholders through the coordination mechanism. Reporting arrangements and accountabilities depends on the fund management option chosen. Since, a parallel fund management option is chosen for the Joint Programme, UNDP will prepare narrative and financial reports in accordance with its policies and procedures, and operational policy guidance. Project reporting will be annual, focused on results and part of a one consolidated report. The aggregated/consolidated narrative and financial report should be clearly identified as a compilation of the participating UN organizations' narrative and financial reporting and be presented "for information purposes" only. Accounting is managed by each UN organizations in accordance with its financial regulations and rules.

External evaluations

- The project will be subjected to at least two independent external evaluations. The first will be an independent **Mid-Term Review** (MTR), in the third year of the project. This will determine progress being made towards the achievement of outcomes and will identify course correction if needed, focusing on effectiveness, efficiency and timeliness of project implementation; highlight issues requiring decisions and actions; and present initial lessons learned about project design, implementation and management. The timing of the mid-term evaluation will allow coordinators to make any modifications necessary to incorporate improvements or changes in the project's activities for the remaining project period. An independent **Final Evaluation** will take place six months prior to the project end. Both evaluations will be a joint mission to evaluate activities of all participating UN agencies of the Water and Sanitation Joint Programme.

3.3 Measures to ensure sustainability of on-ground activities

3.3.1 In order to encourage community led initiatives and enable ownership among herders and rural center citizens, it will be requested that the local communities provide 30% of the total monetary support in physical structures, for example, establishing new wells or repairing existing ones.

3.3.2 Strong commitments and in-kind supports from the local government, will further promote sustainable outputs. Aimag and Soum governments of the programme target area will make office space available for the Aimag and Soum level implementation unit/bodies.

3.4 Legal context

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA and all CPAP provisions apply to this document. Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document".

TABLE 3.1 OUTPUT EVALUATIONS

Expected outputs	Key activities	Indicators	Methods of the evaluation	Risks (R) and assumption (A)
Output 1. Structure and legal framework of institutions will be improved on water governance and sanitation.	1.1 Support to improve capacity of umbrella organization on water and sanitation service /UNDP/.	1.1.1 Improved capacity of Umbrella organization	Reviewing negotiations and legal documentation	R: Institution's ambition and duplication of activities. A: Improvement of coordination.
	1.2 Facilitate implementation of the follow-up action plans and national programmes, especially those creating an enabling legal framework on water and sanitation management, including clear separation of responsibilities/roles of institutions and enforcement of PPP /UNDP/.	1.2.1 Approved legal documents on responsibilities and roles of institutions 1.2.2 Approved legal documents on the PPPs	Reviewing legislation, protocol and interviews Reviewing legislation, protocol and interviews	R: Institution's ambition, lack of coordination, weak lobby aimed at high-level politicians. A: Reducing duplication, improvement of coordination. R: Conflict between government and public, institution's ambition, lack of knowledge among general public. A: Increase public awareness and sense of duty .
	1.3Conduct needs assessment for institutional capacity on water governance /UNDP/.	1.3.1 Assessment report of institutional capacity in terms of legal and policy environment, roles and responsibilities, human resources, technical and financial capacities	Review of the report and interviews with professionals	R: Lack of business plan, Lack of human capacity. A: Improvement of Institution's capacity.
	1.4Support case study on need for sectoral decentralization policy frameworks to improve public service on water and sanitation /UNDP/.	1.4.1 Report of the study on need for sectoral decentralization policy	Review of the report and interviews with the communities	R: Lack of knowledge and methodology. A: Enhance decentralization policy for public service. Improvement of knowledge.
Output 2. Awareness, knowledge, skills	2.1 Provide training and study tours for both national and	2.1.1 Number of trained professionals	Reviewing reports	R: Inappropriate selection of participants and lack of

and practice of the professionals, communities, schoolchildren will be increased on water, sanitation and hygiene.	targeted local level staffs in engineering and public health sector /UNDP, WHO/.	2.1.2 Improvement of knowledge, skills and practices 2.1.3 Satisfaction level on trainings	Questionnaire, test or/and interviews	finances. A: Improvement of capacity of human resources.
	2.2 Conduct training, advocacy and awareness campaigns on water saving and protection of water resources, improved water and sanitation management and hygiene practice among the communities, especially people who live in ger areas /UNDP, UNICEF, WHO/.	2.2.1 Number of trained people 2.2.2 Improvement of knowledge, skills and experiences	Review of the report Questionnaire, test or/and interviews, observation	A: Improvement in public awareness, knowledge, skills.
	2.3 Develop and publish IEC materials for the communities, schools, teachers and health facilities /UNDP, UNICEF, UNFPA, WHO/.	2.3.1 Number of IEC materials developed and published 2.3.2 Satisfaction level of the communities and children with the IEC materials	Review of the report Questionnaire and interviews	R: Lack of Delivery system. A: Improvement of public awareness.
<u>Output 3.</u> Laboratory capacity on drinking and wastewater testing will be promoted, especially in rural areas.	3.1 Provide assistance to the agencies and their local branches to get adequately equipped with portable laboratory research tools and devices /UNDP, WHO/.	3.1.1 Number of laboratories equipped with portable tools 3.1.2 Effectiveness, efficiency and sustainability of laboratory	Review of the report Interviews and field visits	R: Lack of specialized person Poor maintenance of lab. Tools. A: Strengthen water quality monitoring .
	3.2 Conduct feasibility study for improved wastewater treatment operations and monitoring, in cooperation, to identify the current situation, problems, and future priorities /UNDP/.	3.2.1 Report of national study 3.2.2 Assessment on causes for wastewater treatment operations in terms of technology, human resources, finance, management	Review of the report Review of assessment	A: Available nationwide data. Recommendation on advanced technology of wastewater treatment.
	3.3 Train laboratory staff in Mongolia, and abroad /WHO,	3.3.1 Number of trained professionals	Review of the report	R: Selection of participants.

	UNDP/.	3.3.2 Improvement of knowledge, skills and experience 3.3.3 Satisfaction level of participants in training courses	Questionnaire, test or/and interviews Questionnaire	A: Improvement in the capacity of human resources.
Output 4. The number improved drinking water sources and sanitation facilities will be increased in the target communities, schools and hospitals.	4.1 Construct new wells or repair the existing ones in the primary focus areas with poor populations and create sanitation facilities /UNDP, UNICEF/.	4.1.1 Number of new and repaired wells and sanitation facilities 4.1.2 Number of people with access to improved water sources and sanitation facilities 4.1.3 Drinking water quality of wells	Review of the report and field visits Review of the report Laboratory test and interviews with water users	R: Poor selection of target population and lack of finance. A. Increased access to improved water sources and sanitation facilities. Improvement of population health and hygiene condition. R: Lack of laboratory capacity to test water. A: Clarification of further measures.
Output 5. Community ownership of water sources will be enhanced in a sustainable manner.	5.1 Support grass root projects to promote community efforts in sustainable and effective use of water sources /UNDP/.	5.1.1 Number (percentage) of wells owned by the communities 5.1.2 Number of well users committees established	Field visits	R: Lack of awareness of community and coordination. A: Create sustainable use of wells.
	5.2 Enhance effective cost sharing and cost covering mechanism for both providers and owners /UNDP/.	5.2.1 Increased community participation 5.2.2 Effective mechanism	Review of the report and interviews Interviews	R: Lack of knowledge and conflict within management. A: Effective options on sustainable use of wells.

SECTION 4. WORKPLAN AND BUDGET (2008-2011)

TABLE 4.1

Expected outputs	Key activities	Responsible institutions	Counterparts	2008	2009	2010	2011	Total budget (US$)
Output 1. Structure and legal framework of institutions responsible for water governance and sanitation will be improved	1.1 Support to improve capacity of umbrella organization on water and sanitations service	UNDP, WGF, National water committee (NWC), MCUD, MoH, MNE, MoFAg	UNICEF, WHO, Inspectorate Agencies, Key institutions	17,475	25,000			**42,475** Training: 25,000 Procurement: 17,475
	1.2 Facilitate implementation of the follow-up Action plans and programmes, especially in terms of the creation of an enabling legal framework on water and sanitation management, clarifying responsibilities/roles of institutions and enforcement PPP	UNDP, MCUD, MoH	UNICEF, WHO, MNE, WAA, Academic institutions, NGOs		30,000	30,000	20,000	**80,000** TBD
	1.3 Conduct needs assessment for institutional capacity on water and sanitation governance.	UNDP, WGF National water committee (NWC), MCUD, MoH, MNE, MoFAg	WHO, UNICEF, Key implementing and academic institutions	15,000	20,000			**35,000** IC: 25,000 NC: 10,000
	1.4 Promote case study on need for sectoral decentralization policy frameworks to improve public service on water and sanitation.	UNDP MCUD	Local Governments (LG), research institutions and NGOs	10,000				**10,000** IC: 10,000
OUTPUT 1 TOTAL				**42,475**	**75,000**	**30,000**	**20,000**	**167,475**
Output 2. Awareness, knowledge, skills and practice of professionals,	2.1 Provide training and study tours for both national and targeted local level staff in engineering and public health sector.	UNDP, WGF, WHO, MCUD, MoH, MNE, MoFAg	Implementing institutions, Inspection agencies, PHI, HSUM (SPH)	7,000	65,000	20,000	5,000	**97,000** Intl. Training: 80,000 Local Training: 17,000

communities and schoolchildren will be increased on water, sanitation and hygiene.								
	2.2 Conduct training, and advocacy and awareness campaigns among the communities on water saving and protection of water resources, improved water and sanitation management and hygiene practice.	UNDP, UNICEF, WHO MCUD, MoH, MNE, MoFAg	Implementing institutions, Academic institutions, Inspection agencies, LGs, NGOs	3,000	35,000	23.234	10,000	**71,234** Training: 26,234 NC team: 10,000 Advocacy: 20,000 Miscell.: 5,000 Travel/DSA/Petrol: 10,000
	2.3 Develop and publish IEC and BCC materials and manuals for communities, schools, teachers and health facilities.	UNICEF, UNFPA, WHO, UNDP, MoH, MCUD, MNE	Academic institutions and NGOs			9,000	21,168	**30,168** 2 NC: 4,000 Publ. : 26,168
OUTPUT 2 TOTAL				**10,000**	**100,000**	**52,234**	**36,168**	**198.402**
Output 3. Laboratory capacity on drinking and wastewater testing will be promoted, especially in rural areas.	3.1 Provide assistance to the agencies and their local branches to become adequately equipped with portable laboratory research tools and devices.	UNDP, WHO, MoH, MCUD, MNE	Inspectorate Agencies, implementing laboratories	16,000	150,000	50,000	100,000	**316,000** Intl. Procurement: 296,000 Transportation: 10,000 Installment: 10,000
	3.2 Conduct feasibility study for improved wastewater treatment operations and monitoring, to identify the current situation, problems, and future priorities.	UNDP, WGF, MCUD	MNE, MoH, WSSA, MUST	16,991	57,645			**74,636** SP: 50,000 IC: 24,636
	3.3 Train laboratory staffs abroad and in Mongolia.	WHO, UNDP, MoH, MNE	UNICEF, Academic institutions, Inspection Agencies		10,000	10,000		**20,000** Intl. Training: 15,000 Local training: 5,000
OUTPUT 3 TOTAL				**32,991**	**217,645**	**60.000**	**100,000**	**410,636**
Output 4.	4.1 Construct new wells or	UNDP, UNICEF,	WAA, MoH.		100,000	100,000	50,000	**250,000**

The number of improved drinking water sources and sanitation facilities will be increased in the target communities, schools and hospitals.	repairing the exiting ones, and create sanitation facilities. in the primary focus areas with poor populations.	MCUD	LGs, WSSA, Private Sectors, MUST, Inspectorate agencies					NC team: 5,000 SP: 245,000 Travel/DSA/Petrol: 5,000
OUTPUT 4 TOTAL				**0.0**	**100,000**	**100,000**	**50,000**	**250,000**
Output 5. Community ownership of water sources will be enhanced in a sustainable manner.	5.1 Implement grass roots project in sustainable use, such as establishing well users committee with responsibility for drinking water sources including wells.	UNDP, MCUD, MoFAg	UNICEF, WAA, WSSA, LGs, NGOs, Private sectors		20,000	10,000		**30,000** workshops: 13,000 PRA teams: 10,000 Travel/DSA/petrol: 7,000
	5.2 Enhance effective cost sharing and cost covering mechanism for both providers and owners.	UNDP, MCUD, MoFAg	LGs, NGOs, WSSA, WAA, Private sectors		10,000	10,000	10,000	**30,000** NC: 2,000 Local funds: 28,000
OUTPUT 5 TOTAL				**0.0**	**30,000**	**20,000**	**10,000**	**60,000**
OTHER ACTIVITIES	Personnel	UNDP, WHO, UNICEF, Key Ministries	Academic institutions, NGOs	7,525	18,060	18,060	18,060	**61,705** NPM:37,720 AFA: 23,985
	Monitoring/Audits/Joint mid-term and Terminal evaluations	UNDP, WHO, UNICEF, Key Ministries	Academic institutions, NGOs, independent team of consultants		25,000	2,000	30,000	**57,000** IC Mid-Term: 22,000 NC Mid-Term: 3,000 NC: 2,000 IC Terminal: 25,000 IC Terminal: 5,000
	Communication				2,400	2,400	2,400	**7,200**
	Travel/Vehicle rent				7,000	7,000	7,000	**21,000**
	Miscellaneous				2,400	2,400	2,400	**7,200**
O.A. TOTAL				**7,525**	**54,860**	**31,860**	**59,860**	**154,105**
TOTAL OF ACTIVITIES				**92,991**	**577,505**	**294,094**	**276,028**	**1,240.618**
	Donor resources to charge GMS			42,991	527.505	244.094	243,028	**1,057,618**
	TRAC			50,000	50,000	50,000	33,000	**183,000**
GMS				**3.009**	**36.925**	**17.087**	**17,012**	**74.033**
GRAND TOTAL				**96,000**	**614,430**	**311.181**	**293,040**	**1,314,651**

REFERENCES

1. Annual health indicators, MoH, 2006, Ulaanbaatar
2. Access to water and sanitation services in Mongolia, UNDP, UNICEF, WHO, Government of Mongolia, 2004
3. Application of methodologies for analysing health outcomes related to unsafe water, sanitation, and hygiene in national studies, Practical manual for national researchers, WHO, 2006
4. Assessment of soil bacterial contamination in Ulaanbaatar city, IAC, PHI, MoH, Ulaanbaatar, 2003
5. Book of Science and research work - V, Public Health Institute, 2006, Ulaanbaatar, page 45-78
6. Book of Science and research work -I V, Public Health Institute, 2005, Ulaanbaatar, page 97-134
7. Country programme document, UNDP, Ulaanbaatar, 2007
8. Country programme document, UNICEF, Ulaanbaatar, January, 2007
9. Country Programme Action Plan between the government of Mongolia and United Nations Development Programme, Ulaanbaatar, January, 2007
10. Country Programme Action Plan between the government of Mongolia and UNICEF, Ulaanbaatar, February, 2007
11. Guidance Note on Joint Programming, United Nations Development group, 19 December, 2003
12. Improving Hygiene Practice and provision of safe water and adequate sanitation to schools and communities, Funding proposal, UNICEF, 2007
13. Inventory data on wells provided by the Ministry of Food and Agriculture, 2003
14. Mongolia Common Country Assessment, United Nations Country Team, Ulaanbaatar, Mongolia, November, 2005
15. Meeting the MDG drinking water and sanitation target, a mid-term assessment of progress, WHO, UNICEF, 2004
16. Programme for sanitation facilities, Government of Mongolia, 2006
17. Rural water supply, sanitation and hygiene, WHO, AGFUND, UNDP, UNICEF, Government of Mongolia, Ulaanbaatar, 2007
18. Report of the project 'Healthy springs in Mongolia', WHO, AGFUND, MoH, SPH, Ulaanbaatar, 2006
19. Report on 'Survey on soum hospital water, sanitation and hygiene status in Mongolia', 2006, MoH, WHO
20. Strengthened Water Governance for Improving Access of the poor to safe drinking water and Sanitation services in Mongolia, Proposal, UNDP, 2007
21. UNDAF evaluation guidelines for terms of reference, February, 2005
22. Human development report 2006, Beyond scarcity: Power, poverty and the global water crisis