2030 Water Resources Group in Mongolia
Program Overview

1st Edition, June 2020

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Disclaimer

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FOREWORD

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Board Chair of MSP,
2030 WRG Mongolia,
State Secretary, Ministry of
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In 2011, while participating at the World Economic Forum, the Mongolian president asked 2030 WRG to support the country in improving its water management. The partnership was initiated in 2013 with the signing of a Memorandum of Understanding with the Mongolian Ministry of Environment, Green Development, and Tourism (former name) to collaborate on developing sustainable water resources management in the country through multi-stakeholder partnerships (MSPs). The Ministry of Environment and Tourism is an anchor of the Mongolia partnership, supporting the multi-stakeholder partnership and the Steering Board of the 2030 WRG Mongolia Program.

Mongolia's severe water challenges are due to climate change and natural features. The capital city, Ulaanbaatar, faces serious water challenges, which are compounded by unsustainable water management practices. The southern Gobi Desert region is home to large mining projects, which are the backbone of the country's economy. Mining in the water-scarce Gobi Desert is completely dependent on a groundwater aquifer. Consequently, the 2030 WRG Mongolia Program is focusing on these two areas to improve the country's water management and strengthen water governance throughout the country.

To date, the 2030 WRG Mongolia Program has successfully established MSPs at the national and river basin levels, enabled economic incentives in regulation, and supported the development of a hydro-economic analysis to inform decision making. It has also supported the reuse of treated wastewater, and the effective treatment and management of water resources based on the polluter pays principle. Based on MSP approaches, these initiatives have led to an improvement in sustainable water management in Mongolia, paving the way for the country's future economic growth.

We would like to thank the Steering Board, the working groups, and all stakeholders for their dedication to the 2030 WRG Mongolia Program. We hope to build on the program's successes to further strengthen sustainable water management in this arid country.

2030 WRG: MONGOLIA GROWTH PATH

2008/ **2030 WRG formed**
An informal consortium consisting of the International Finance Corporation (IFC) and several multinational corporations identified lack of inter-sectoral collaboration as a hindrance to effective water management.

2011/ **Mongolian president's attendance at the World Economic Forum**

Mongolian president Tsakhiagiin Elbegdorj attended the World Economic Forum, where he highlighted the country's water resources management issues and asked 2030 WRG to extend its program to Mongolia.

2012/ **Primary assessment on water resources management in Mongolia**
McKinsey & Co. conducted the primary assessment on water resources management and shared the outcomes with the partners.

2013/ **Mongolia MSP launched**
The 2030 WRG Mongolia partnership was officially launched in 2013 at the request of the President of Mongolia. It was initiated with the signing of an Memorandum of Understanding with the Mongolian Ministry of Environment, Green Development, and Tourism to collaborate on developing sustainable water resources management in the country through multi-stakeholder partnerships.

2014/ **Targeted analysis of water resources management issues**
2030 WRG's program started by conducting a targeted analysis of the scale and urgency of the country's water challenges and recommended areas of intervention. The report findings were shared with the partners during the workshop in April 2014.
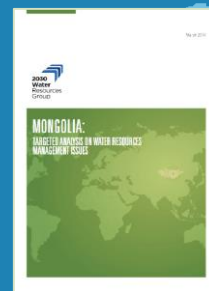
2015/ **Pricing and water valuation**
2030 WRG has supported a revised water valuation methodology in Mongolia, incorporating considerations for the economic and ecological value of water.

2030 WRG: MONGOLIA GROWTH PATH

2016/ **Hydroeconomic analysis**

Based on the water supply- demand gap, solutions to close the gap were identified and prioritized to allow for sustainable economic development.

06/2016: Hydro-economic analysis in Gobi Mining area. Deep dive analytics for the Orkhon-Gobi water transfer project were conducted.

08/2016: Hydro-economic analysis in Ulaanbaatar. This analysis was the basis for MCC allocating grant finance of $97.8 million to reuse of treated wastewater, a key prioritized technical solution for demand reduction under the analysis.

Voluntary Code of Practice for mine water management

2030 WRG collaborated with IFC on the Voluntary Code of Practice for mine water management, signed by 11 mining companies in Mongolia, for better water resources management in mining.

2017/ **MSP meetings**

Numerous MSP meetings for 'Review of River Basin Council' & 'Development of National Standards for Treated Wastewater Reuse' were organized and the reports were handed over to the partners.

2018/ **New River Basin Council Guidelines & National Standards for Treated Wastewater Reuse Adopted**

13/03/2018: New River Basin Council Guidelines were approved by the Mongolian Government as official administrative act. By the end of the year, the Mongolian government has formed 24 river basin MSPs across 29 river basins to improve water governance at this level.

21/06/2018: Treated wastewater reuse standard officially approved for implementation by Mongolian National Technical Committee on Standardization. Following the wastewater reuse standards developed by 2030 WRG, it has enabled a demonstration project on wastewater reuse.

2019/ **Amendments to the WPFL & urban water tariff assessment**

2030 WRG supported amendments to the water pollution fee law, which have been approved by Mongolia's Parliament, as well as six accompanying guidance documents, which have been approved by relevant ministers of Ministry of Environment and Tourism, Ministry of Finance, and Ministry of Construction and Urban Development.

2030 WRG conducted an economic analysis of urban water tariff reforms needed to support the fiscal sustainability of water utilities and agencies, as well as improve service delivery and water use efficiency. This is being taken forward by the government and MCC.

MONGOLIA RECEIVES ONLY

378 mm

OF RAINFALL ANNUALLY

Photo credit: *Michael Walther*

COUNTRY PROFILE

About Mongolia

Mongolia is a landlocked country in Northeast Asia. Despite covering an area of over 1.5 million square kilometers (making it the 19th largest country in the world and the third largest in the region), it has a population of just over 3.2 million (NSOM, 2020). The country ranks 92 out of 189 on the Human Development Index (UNDP, 2018), placing it at the global midpoint. Mongolia's economy is based on agriculture and mining. The country has rich mineral resources, and copper, coal, molybdenum, tin, tungsten, and gold account for a large part of industrial production.

Mongolia's harsh climate is due to its unique geographical location in the arid and semi-arid region. The annual average air temperature for Mongolia is 0.7°C. It is 8.5°C in the warmest regions of the Gobi and south Altai deserts, and −7.8°C in the coldest region of the Darkhad depression. Mongolia is already experiencing the effects of climate change with the annual mean air temperature having increased by 2.25°C from 1940 to 2015 – triple the global average.

Precipitation is unevenly distributed across the country, with annual precipitation ranging from over 400 mm in the high mountain belts, to 50-150 mm in the Gobi Desert. About 85% of total precipitation falls from April to September, with 50-60% of this falling in July and August (MET, 2018).

Water Challenges

Mongolia's total water resources cover an estimated 564.8 cubic kilometers. Surface water, including glaciers, accounts for 98.1% of this total, with the remaining 1.9% coming from groundwater resources (MET, 2020).

Extremes in seasonal runoff, local stress, and chronic water deficits threaten economic development in Mongolia's key sectors. Rainfall varies widely across regions, leading to a high reliance on groundwater. Climate change multiplies stress, with heavy rainfall increasing in humid areas and ice cover shrinking elsewhere.

Increasing water consumption, driven by a rapidly urbanizing population and an increase in economic activity, is placing strain on Mongolia's groundwater supply. Consequently, groundwater reserves, the source of about 90% of Mongolia's water consumption, are depleting. The extractive industry, which accounts for 87.5% of Mongolia's total export revenue, and manufacturing activities pollute groundwater, further depleting available water resources and increasing the risk to economic output.

Ulaanbaatar, the capital city and home to roughly half the population, is equally at risk from water scarcity. In a high-demand scenario, about 43% of the total water demand in Ulaanbaatar will be unmet by existing supplies by 2030. Furthermore, the poor state and performance of current urban wastewater infrastructure and inadequate sanitation services result in morbidity and the widespread occurrence of waterborne diseases, particularly in rural areas and the ger (tent) settlements.

MONGOLIA ENGAGEMENT

Initiation of Mongolia Partnership

The 2030 WRG Mongolia partnership was started at the request of the President of Mongolia in 2011 and officially launched in 2013 with the signing of a Memorandum of Understanding with the Mongolian Ministry of Environment, Green Development, and Tourism to collaborate towards the development of sustainable water resources management in the country through multi-stakeholder partnerships.
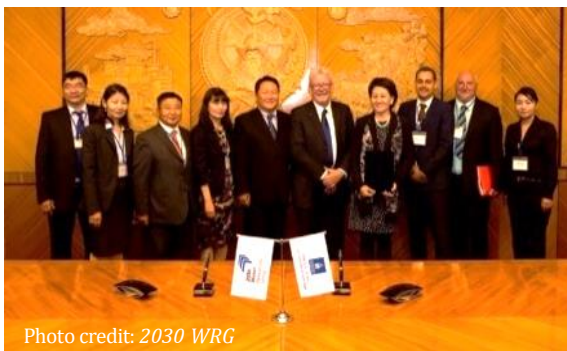
Photo credit: *2030 WRG*

Steering Board and Workstreams

2030 WRG convened a **multi-stakeholder platform Steering Board** comprising public, private sector, and civil society decision makers to foster partnerships and collaboration to develop water sector solutions. The first meeting of the Steering Board was held on September 18, 2014, where it was decided to create three distinct workstreams to guide 2030 WRG's engagements in Mongolia and address the recommendations of the analytical report. The Board is chaired by the State Secretary, Ministry of Environment and Tourism, with close to equal representation from public and private sector, and civil society.

Under the guidance of the 2030 WRG Mongolia Steering Board, representatives from government ministries, industry, civil society, and academia have come together in workstreams to strengthen local ownership and drive action in identified areas. The workstreams identified as a part of 2030 WRG's convening phase include:

- **#1 Water demand reduction and supply augmentation.** The workstream focuses on developing projects and financing for water-use efficiency, wastewater treatment and reuse, and circular economy solutions within urban, industry, and mining clusters, together with local partners.
- **#2 Water valuation and incentives for sustainable water management.** This workstream focuses on developing appropriate water valuation methodologies and contributing to the implementation of incentives for sustainably managing water efficiently, and treating wastewater across sectors. It has engaged with international and local experts on water valuation techniques and incentives to encourage sustainable water use.
- **#3 Strengthening water governance with multi-stakeholder partnership.** This workstream aims to improve water governance at the river basin level in Mongolia through strengthening institutional arrangements and operational guidelines, stakeholder collaboration, and capacity building.

Multi-Stakeholder Platform (MSP) structure of 2030 WRG, including workstreams and major objectives:

Steering Board
(Chaired by State Secretary, Ministry of Environment and Tourism)

WORKSTREAMS

#1 Water demand reduction and supply augmentation

Chair: Head of Water Resources Division - MET	Enabling legal environment for wastewater treatment and reuse

- Water pollution fee law amendment
- Pollution measurement methodology
- Standards for treated wastewater reuse
- Demo projects for reuse at urban and local levels

#2 Water valuation and incentives for sustainable water management

Chair: Head of Green Development Policy Planning Department - MET	Setting water ecological-economic valuation

- Incentives for mine water management
- Water valuation methodology
- Urban water tariff assessment

#3 Strengthening water governance with multi-Stakeholder Partnership

Chair: Head of River Basin Administration division - MET	Strengthening water governance at river basin level

- Guidelines for establishing river basin MSP
  (24 MSPs established)
- Tailored trainings and coaching for river basin MSPs
- Regional training for river basin MSPs

2030 WRG is focusing on two priority areas in Mongolia:

South Gobi

- Extractive industry – backbone of Mongolian economy with various mega projects
- Limited water resources for industry
- Employment and social welfare key priorities

Ulaanbaatar

- 50% of population in Ulaanbaatar
- Unsafe drinking water and hygiene issue
- Shortage of groundwater resources
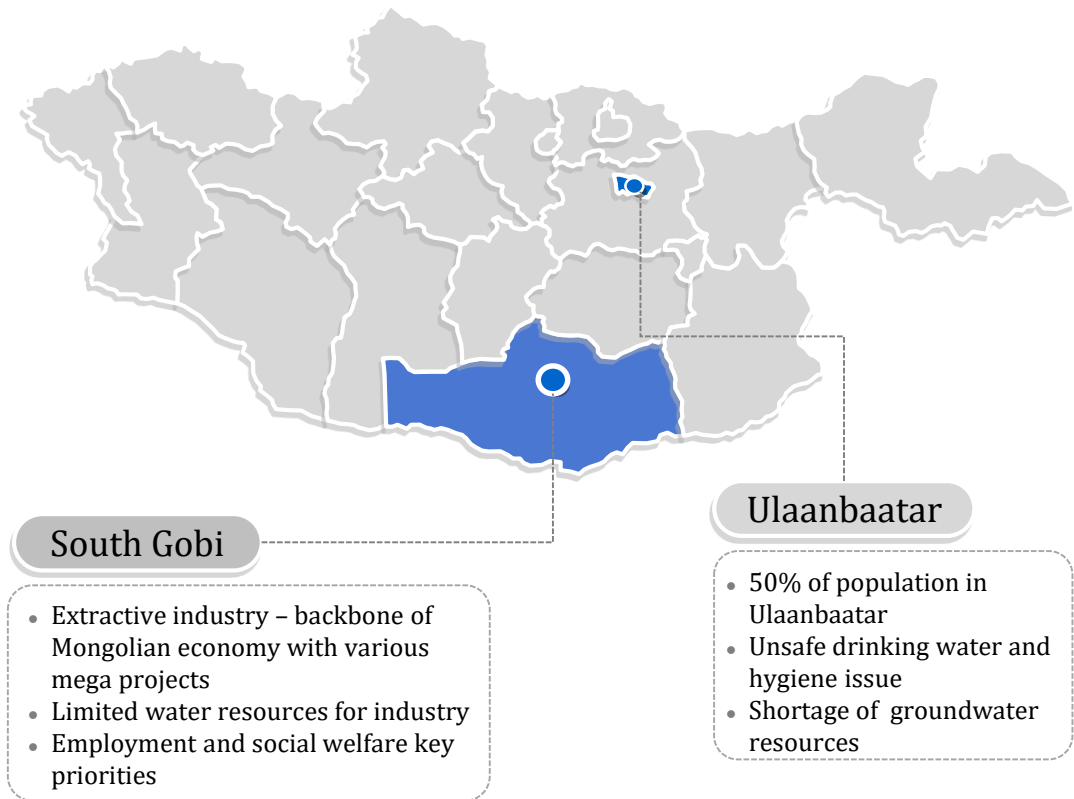
ULAANBAATAR, MONGOLIA'S CAPITAL, FACES A

43%

SHORTFALL BETWEEN FRESHWATER SUPPLY AND DEMAND IN 2030 UNLESS ACTION IS TAKEN TO IMPROVE EFFICIENCY NOW.

Photo credit: *André Künzelmann, UFZ*

ACHIEVEMENTS AND OUTCOMES

#1 Water demand reduction and supply augmentation

TARGETED ANALYSIS OF WATER RESOURCES MANAGEMENT

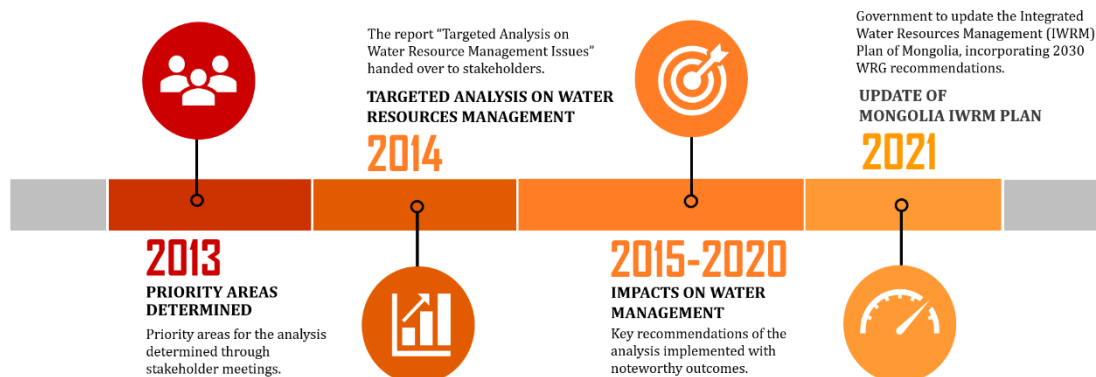Following the establishment of the 2030 WRG Mongolia partnership, 2030 WRG's first task was to compile data and information from across sectors to frame the water debate as it relates to Mongolia's economic growth aspirations. In 2014, with 2030 WRG's support, a team of experts from PwC and Deltares undertook a targeted analysis of Mongolia's water challenges and opportunities. The information was then used to raise awareness, mobilize, and engage "new actors" from the private sector and civil society in sustainable water activities. The findings of the analysis have provided the basis for supporting the Mongolian government in initiating and catalyzing reforms designed to ensure sustainable water resources management, and thus enable long-term economic development. In addition to building the knowledge base on the key challenges, underlying issues and opportunities relating to Mongolia's water management, the analysis emphasized involving and incorporating opinions from key stakeholders.

Recommendations for the way forward:
- Improving the databases and scientific understanding of water resources
- Developing water economics and valuation of water resources to set the right incentives
- Identifying cost-effective solutions via the hydro-economic analysis
- Build capacity in the water sector by clarifying responsibilities and strengthening capacities at all levels of the government
- Setting up a multi-stakeholder platform with priority workstreams for inclusive decision making and efficient knowledge transfers

Addressing these focus areas will enable and provide a strong basis for sustainable water resources management, with which Mongolia can achieve its social and economic growth aspirations.

The report "Targeted Analysis on Water Resource Management Issues" handed over to stakeholders.
TARGETED ANALYSIS ON WATER RESOURCES MANAGEMENT
2014

Government to update the Integrated Water Resources Management (IWRM) Plan of Mongolia, incorporating 2030 WRG recommendations.
UPDATE OF MONGOLIA IWRM PLAN
2021

2013
PRIORITY AREAS DETERMINED
Priority areas for the analysis determined through stakeholder meetings.

2015-2020
IMPACTS ON WATER MANAGEMENT
Key recommendations of the analysis implemented with noteworthy outcomes.

HYDRO-ECONOMIC ANALYSIS

The Mongolian economy is growing rapidly, spurred largely by the mining sector and the mineral reserves in the Gobi region. As Mongolia transitions from an agrarian economy to one driven by mining and urbanization, the country's limited and unevenly distributed water resources are under increasing pressure. Water is crucial for Mongolia's people, livestock, and ecosystems, but it is also an essential resource for the mining sector.

In 2016, 2030 WRG conducted a hydro-economic analysis of the mining sector in the south Gobi Desert and in Ulaanbaatar. The analyses prioritized solutions to close the gap between water demand and supply across key water users in Ulaanbaatar and Gobi region, including the energy, domestic, mining and industrial sectors. Analyzed solutions included measures to reduce water demand and augment supply.
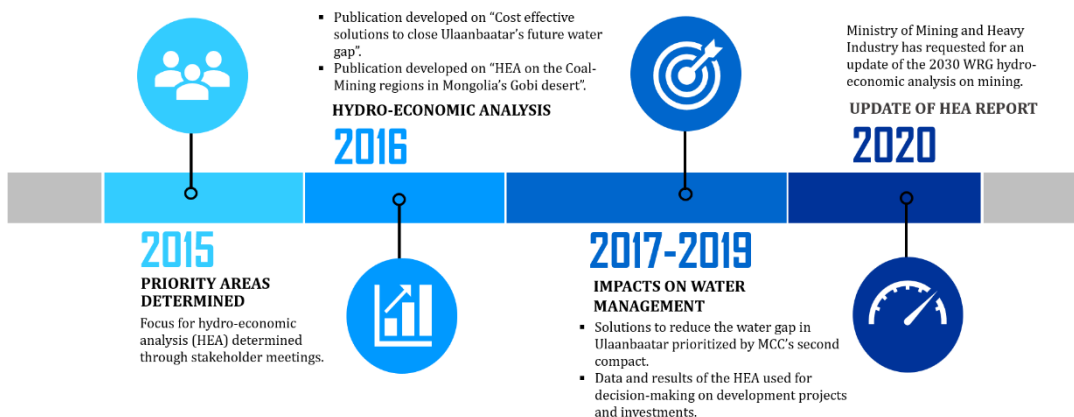

Photo credit: *www.umgugovinews.mn*

For the south Gobi region, the analysis prioritized the following solutions to supply water-intensive projects, including the coal washing industry, power plant, and coal-liquid complex planned for the Tavan Tolgoi and Shivee Ovoo regions: introducing dry coal washing technology, technology to reuse treated wastewater, measures to efficiently use water sources locally, and solutions to recycle and reuse treated wastewater for multiple purposes.

For Ulaanbaatar, the most effective solution to reduce the expected gap between supply and demand 2030 is to replace 75,000 m^3 of water used daily by combined heating plants with treated wastewater from the central treatment plant. This will free up water for the city's domestic supply and reduce the amount of pollution being discharged from the central treatment plant into Tuul River by 30-40%. Factories and public services in Ulaanbaatar will be able to reuse treated wastewater for multiple purposes, reducing freshwater demand.

The two reports have been widely used for feasibility studies on development projects, water related research, and water resources management. The hydro-economic analysis will be updated for the Tavan Tolgoi and Oyu Tolgoi regions in 2020.

- Publication developed on "Cost effective solutions to close Ulaanbaatar's future water gap".
- Publication developed on "HEA on the Coal-Mining regions in Mongolia's Gobi desert".

HYDRO-ECONOMIC ANALYSIS

2016

Ministry of Mining and Heavy Industry has requested for an update of the 2030 WRG hydro-economic analysis on mining.

UPDATE OF HEA REPORT

2020

2015

PRIORITY AREAS DETERMINED

Focus for hydro-economic analysis (HEA) determined through stakeholder meetings.

2017-2019

IMPACTS ON WATER MANAGEMENT

- Solutions to reduce the water gap in Ulaanbaatar prioritized by MCC's second compact.
- Data and results of the HEA used for decision-making on development projects and investments.

NATIONAL STANDARDS FOR TREATED WASTEWATER REUSE

In recent years, water consumption has been increasing in Mongolia due to a rise in the urban population and socioeconomic development from mining. It is estimated that Ulaanbaatar alone represents 70 percent of the country's total drinking water demand. Following the introduction of integrated water resources management in Mongolia in 2000, the government developed several laws and guidelines related to water resources. Reusing treated wastewater was debated in Mongolia for several years, but was not implemented due to an undeveloped legislative environment and lack of knowledge of global practices. 2030 WRG led a multi-stakeholder process in 2017-2018 to develop standards for reusing treated wastewater and revise and adopt the water pollution fee law.
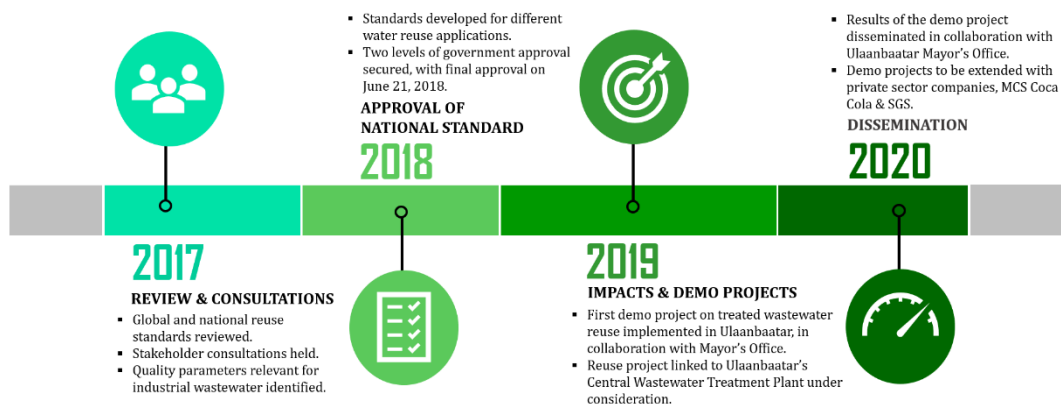
The Mongolian Agency for Standards and Metrology approved the National Standards for Treated Wastewater Reuse (MNS6734:2018) in June 2018. The standards are premised on the principle that the treatment level of wastewater depends on its end use, ensuring cost-effective wastewater treatment and fit-for-purpose reuse. These standards opened the door for a wastewater reuse project under the Millennium Challenge Cooperation's (MCC's) second compact. An investment of about US$100 million will be used to build infrastructure that will enable power plants to reuse wastewater.

Following the standard's approval, 2030 WRG implemented a project at the Teachers' Development Institute in Ulaanbaatar to demonstrate that treated wastewater can be reused.

Photo credit: *2030 WRG*

The Institute is located on the banks of the Selbe River. During warm seasons, persistent rain causes soil saturation, creating hydrostatic pressure and the pressure forces moisture through the basement walls and floor. The project eliminates the risk of the basement of the Institute flooding, purifies accumulated soil-contaminated water and channels it into the sewerage system for reuse, and provides excess purified water for extinguishing fires and irrigating plants. The model provides the city with a replicable approach to drainage and reuse. Additional benefits of the model include saving freshwater resources and reducing water demand.

- Standards developed for different water reuse applications.
- Two levels of government approval secured, with final approval on June 21, 2018.

APPROVAL OF NATIONAL STANDARD

2018

- Results of the demo project disseminated in collaboration with Ulaanbaatar Mayor's Office.
- Demo projects to be extended with private sector companies, MCS Coca Cola & SGS.

DISSEMINATION

2020

2017

REVIEW & CONSULTATIONS

- Global and national reuse standards reviewed.
- Stakeholder consultations held.
- Quality parameters relevant for industrial wastewater identified.

2019

IMPACTS & DEMO PROJECTS

- First demo project on treated wastewater reuse implemented in Ulaanbaatar, in collaboration with Mayor's Office.
- Reuse project linked to Ulaanbaatar's Central Wastewater Treatment Plant under consideration.
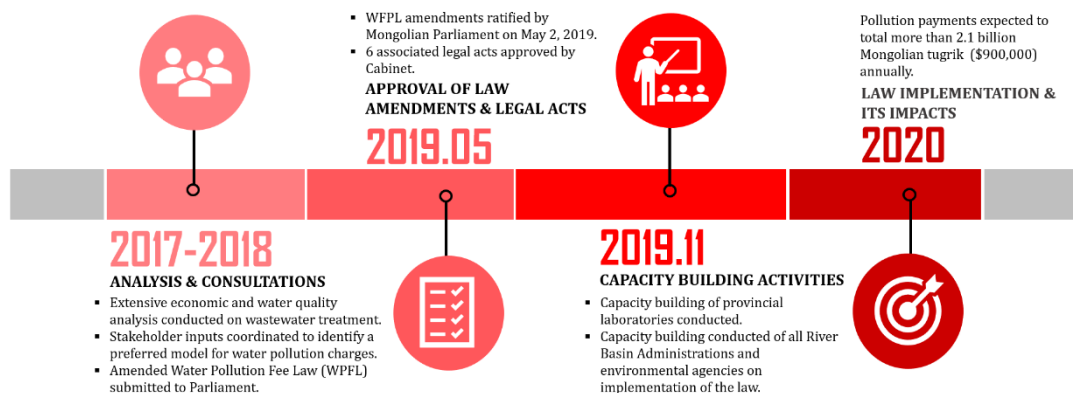
AMENDMENTS TO THE WATER POLLUTION FEE LAW

Photo credit: *André Künzelmann, UFZ*

Mongolian parliament adopted the water pollution fee law in 2012. The aim of the law is to reduce the volume of wastewater and level of pollutants in effluent sent to the central wastewater treatment plant. However, successful implementation remained elusive seven years after the law was established. This was largely due to an overly complex model for estimating pollution charges, and limited technical and implementation capacity. Although the private sector supported the law in principle, it had concerns about its feasibility because of these limitations. To help the Mongolian government revise and improve the law implementation, the 2030 WRG Mongolia team shared best practices from Hong Kong, Singapore, India, and Belgium and examples suited to Mongolia's context, highlighting simple and implementable water pollution fee models that incorporate economic incentives for water users to promote pollution reduction, and use a simpler methodology to

estimate the pollution level in wastewater discharge. The proposed revision was ratified by the Mongolian parliament in May 2019. It supports better monitoring of effluent, provides economic incentives for industry to treat and reuse wastewater before discharge, and identifies a simpler methodology for estimating pollution levels in wastewater. Six legal documents related to the law (including discharge permits, contractual arrangements, guidelines for increasing the water pollution compensation fee in increments) were approved by Cabinet and are being implemented. The methodology for estimating water pollution in wastewater will likely be approved by the Mongolian government in 2020.

By introducing the polluter pays principle in the law, Mongolia encourages using water efficiently. The fee is expected to reduce discharge of inadequately treated effluent into the Tuul River by over 61.2 million cubic meters each year. It has already catalyzed innovation in small-scale onsite wastewater treatment systems.

2030 WRG is providing support for the River Basin Administrations to implement the law. For example, it worked with the Ministry of Environment and Tourism to organize capacity building activities for employees of the River Basin Administrations, provincial environmental agencies, and environmental laboratories.

- WFPL amendments ratified by Mongolian Parliament on May 2, 2019.
- 6 associated legal acts approved by Cabinet.

APPROVAL OF LAW AMENDMENTS & LEGAL ACTS

2019.05

Pollution payments expected to total more than 2.1 billion Mongolian tugrik ($900,000) annually.

LAW IMPLEMENTATION & ITS IMPACTS

2020

2017-2018
ANALYSIS & CONSULTATIONS
- Extensive economic and water quality analysis conducted on wastewater treatment.
- Stakeholder inputs coordinated to identify a preferred model for water pollution charges.
- Amended Water Pollution Fee Law (WPFL) submitted to Parliament.

2019.11
CAPACITY BUILDING ACTIVITIES
- Capacity building of provincial laboratories conducted.
- Capacity building conducted of all River Basin Administrations and environmental agencies on implementation of the law.
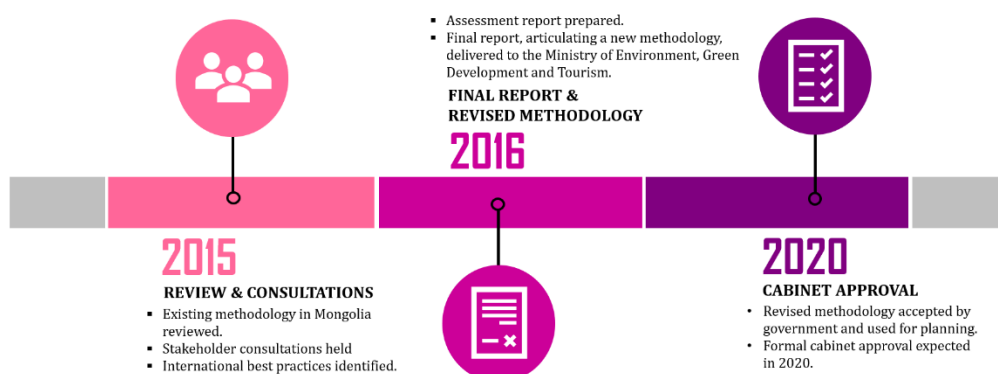
ACHIEVEMENTS AND OUTCOMES

#2 Water valuation and incentives for sustainable water management

WATER VALUATION METHODOLOGY

Mongolia's Water Law allows for water-use fees and compensation fees. To support the implementation of these fees, the law supports a methodology to determine the ecological and economic value of water resources by the government. It recommends establishing water-use fees in each basin, based on available exploitable resources, and collecting the fee in the provincial budget, with up to 35% of the budget allocated for protecting and restoring water resources. 2030 WRG conducted a study on water economic valuation and developed an updated and revised water valuation methodology, which was approved in 2011 and is still in force. This methodology evaluates water resources based on their total socioeconomic value, while taking into consideration international best practices and reflecting policy regulations. It also contributes to the design and implementation of incentives to encourage efficient water use across sectors.

Moreover, the improved valuation methodology recognizes customary rights and environmental values, considers water a critical input for different economic activities (such as mining, power generation, agriculture, manufacturing etc.), and considers the spatial and temporal differences in the value of water. It also increases transparency for water users, making the system more robust. This is important as the valuation methodology is used to calculate the water abstraction fee.

The final report and new methodology have been submitted to the Ministry of Environment and Tourism. The Ministry has accepted the methodology and used it to inform policy.

2016
FINAL REPORT & REVISED METHODOLOGY
- Assessment report prepared.
- Final report, articulating a new methodology, delivered to the Ministry of Environment, Green Development and Tourism.

2015
REVIEW & CONSULTATIONS
- Existing methodology in Mongolia reviewed.
- Stakeholder consultations held
- International best practices identified.

2020
CABINET APPROVAL
- Revised methodology accepted by government and used for planning.
- Formal cabinet approval expected in 2020.
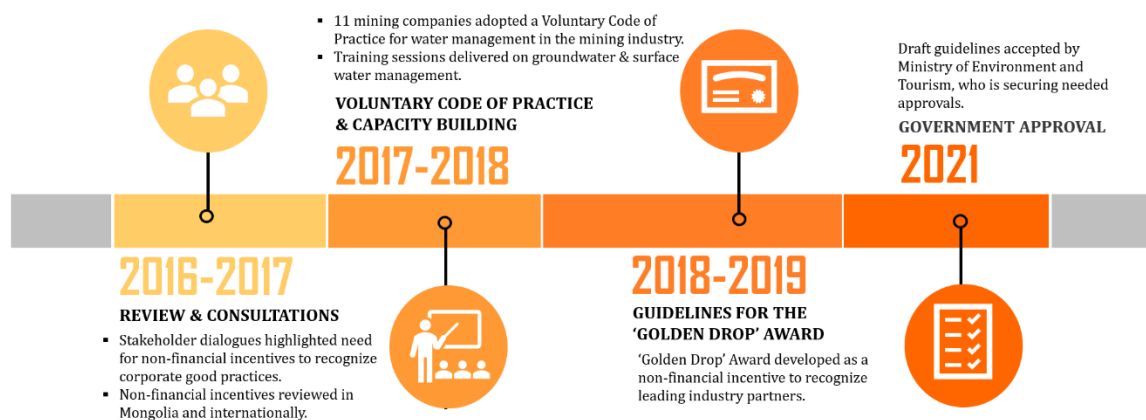
Voluntary Code of Practice

In 2016, 2030 WRG supported IFC's mining roundtable, which led to 11 mining companies in south Gobi adopting a Voluntary Code of Practice for water management in the mining industry. In collaboration with the IFC mining roundtable, 2030 WRG has also conducted training sessions on groundwater and sustainable surface water management for the government, private sector, and various communities. Through its MSP, 2030 WRG is enabling the roundtable to work closely with the Ministry of Environment and Tourism to implement the key pillars of the code. 2030 WRG is in discussions with the World Bank Mongolia office to assess climate change impacts in the Gobi Desert. The assessment will also identify mitigation and adaptation tools for sustainable mining.

Golden Drop Award

Gobi Photo credit: *Oyu Tolgoi LLC*

Although the Mongolian water law (2012) includes economic instruments such as water service charges and water usage fees, their current design does not adequately encourage water stewardship. To promote water-use efficiency and circular economy solutions, 2030 WRG supported an assessment of potential incentives and regulatory reform in Mongolia's mining sector. The assessment and subsequent stakeholder dialogues highlighted the need to implement non-financial incentives, such as an award to recognize corporate good practices.

Consequently, 2030 WRG is facilitating new guideline and design of the Golden Drop, a prestigious award to recognize leading industry partners for their water stewardship efforts, while encouraging companies to innovate further and develop best practices in water management. 2030 WRG is engaging with key stakeholders to design the award, including the Ministry of Environment and Tourism, the National Water Committee, the Mongolian Mining Association, the Chamber of Trade and Commerce, water users, and environmental nongovernmental organizations. The award will be based on a robust nomination and selection framework to give it credibility.

- 11 mining companies adopted a Voluntary Code of Practice for water management in the mining industry.
- Training sessions delivered on groundwater & surface water management.

VOLUNTARY CODE OF PRACTICE & CAPACITY BUILDING

2017-2018

Draft guidelines accepted by Ministry of Environment and Tourism, who is securing needed approvals.

GOVERNMENT APPROVAL

2021

2016-2017

REVIEW & CONSULTATIONS

- Stakeholder dialogues highlighted need for non-financial incentives to recognize corporate good practices.
- Non-financial incentives reviewed in Mongolia and internationally.

2018-2019

GUIDELINES FOR THE 'GOLDEN DROP' AWARD

'Golden Drop' Award developed as a non-financial incentive to recognize leading industry partners.

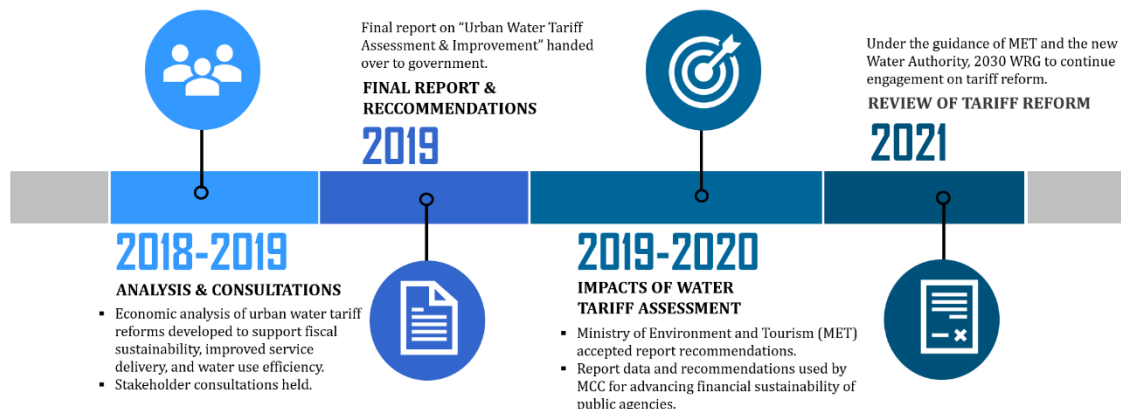# URBAN WATER TARIFF ASSESSMENT AND IMPROVEMENT

In 2018, the MSP asked 2030 WRG to assess Mongolia's water tariff and provide recommendations on an effective water tariff system in urban areas, focusing on Ulaanbaatar. This assessment was undertaken as part of a larger initiative to review arrangements in the water sector. The objective of the urban water tariff assessment was to inform a simple and appropriate approach for the regulation and structure of water tariffs in Ulaanbaatar, based on social equity, financial sustainability, and resource conservation. A review of water tariff regulation and structure in cities with a comparable context (Cape Town, South Africa, and Brasília, Brazil) revealed that utilities were able to successfully meet the established revenue required – covering operational expenditure, asset depreciation, and capital charges – through an affordable water tariff.

Ulaanbaatar's water sector is fragmented, with multiple public agencies and private entities mandated with decision-making and operational responsibilities. This is particularly evident in responsibilities related to water resources management, which are poorly integrated with water supply mandates in the city. The assessment results showed that the current water tariff structure needs to be improved.

Key recommendations on tariff regulation:
- Prioritize full recovery of operational and maintenance costs and coverage of depreciation
- Elaborate on methodology for a bulk water tariff
- Integrate an affordability check into the tariff determination process
- Associate tariffs with reporting of verifiable performance indicators
- Check affordability while revising tariff (in Kenya: 3 – 5% of average household income)
- Transition to an increasing block tariff structure
- Integrate collection of water use fee with water charges

The suggested improvements will enable water supply organizations to fully recover depreciation and operational and maintenance costs. The assessment recommends that the utilities incorporate an increasing block tariff structure based on customers' willingness and ability to pay, and include water-use fee in the tariff, among other suggestions. This work is being taken forward and applied by the MCC in Mongolia.

Final report on "Urban Water Tariff Assessment & Improvement" handed over to government.
FINAL REPORT & RECCOMMENDATIONS
2019

Under the guidance of MET and the new Water Authority, 2030 WRG to continue engagement on tariff reform.
REVIEW OF TARIFF REFORM
2021

2018-2019
ANALYSIS & CONSULTATIONS
- Economic analysis of urban water tariff reforms developed to support fiscal sustainability, improved service delivery, and water use efficiency.
- Stakeholder consultations held.

2019-2020
IMPACTS OF WATER TARIFF ASSESSMENT
- Ministry of Environment and Tourism (MET) accepted report recommendations.
- Report data and recommendations used by MCC for advancing financial sustainability of public agencies.

OVER
1000 STAKEHOLDERS

IN THE WATER SECTOR PARTICIPATED IN CAPACITY BUILDING ACTIVITIES IN 2018-2019 TO LEARN ABOUT THE MULTI-STAKEHOLDER PARTNERSHIP (MSP) APPROACH TO WATER GOVERNANCE AND MANAGEMENT WITH THE SUPPORT OF 2030 WRG.

Photo credit:: *Ichinkhorloo, FWRNCC*

ACHIEVEMENTS AND OUTCOMES

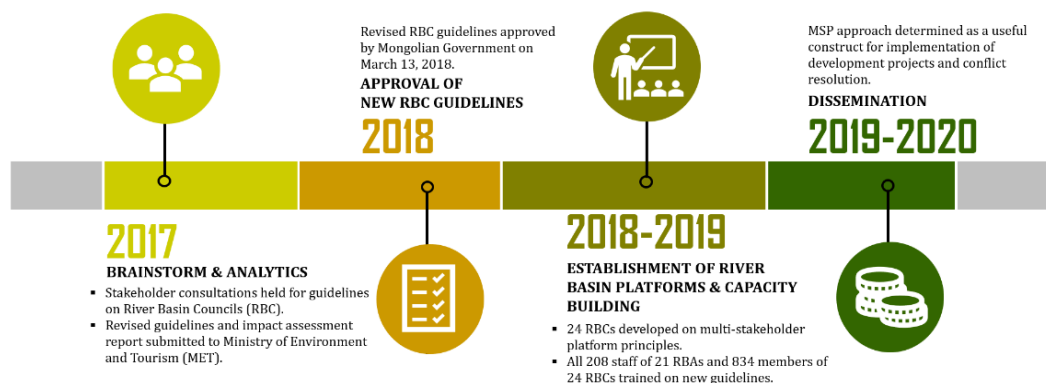## #3 Strengthening water governance with multi-stakeholder partnerships

RIVER BASIN GOVERNANCE GUIDELINES & IMPLEMENTATION

Mongolia introduced integrated water resources management as a key framework for hydrological planning and implementation in the 29 river basins identified by the water law. The law opts for the creation of River Basin Administrations which are part of the government and monitored by a multi-stakeholder River Basin Council (RBC). The River Basin Administrations were established in 2014 and are functioning effectively. However, in many cases, planned RBCs have not been created. Where created, their performance was weak. Therefore, 2030 WRG organized several meetings among stakeholders in Ulaanbaatar and the Gobi region to discuss the challenges and solutions for effective river basin governance. Collectively, the stakeholders identified the 2013 RBC guidelines' lack of clarity on the establishment, composition, financing and operation of the RBCs as the key constraint to their efficient functioning. Insufficient knowledge exacerbated the situation.

Through a multi-stakeholder process, 2030 WRG supported the establishment of new RBC guidelines forming River Basin MSP Councils, with a particular focus on strengthening

participation for effective river basin governance. Through extensive and inclusive workshops and consultations, including international best practices, 2030 WRG-facilitated guidelines were endorsed by stakeholders and approved by the Mongolian Government on March 13th, 2018.

Before the adoption of the new guidelines, 14 River Basin Councils had been established in Mongolia according to the 2013 RBC guidelines. To implement the new guidelines, the River Basin Administration Division of the Ministry of Environment and Tourism collaborated with 2030 WRG on establishing the new RBCs, as well as reforming existing RBCs into River Basin MSP Councils. As a result of this collaboration, by December 2018, 10 new RBCs had been successfully established, and 14 RBCs reorganized according to the MSP concept. In addition to forming basin-level MSPs, 2030 WRG has supported capacity building and coaching on river basin governance for a range of stakeholders, ensuring effective stakeholder participation in water management to address specific challenges.

2017
BRAINSTORM & ANALYTICS
- Stakeholder consultations held for guidelines on River Basin Councils (RBC).
- Revised guidelines and impact assessment report submitted to Ministry of Environment and Tourism (MET).

Revised RBC guidelines approved by Mongolian Government on March 13, 2018.
APPROVAL OF NEW RBC GUIDELINES
2018

2018-2019
ESTABLISHMENT OF RIVER BASIN PLATFORMS & CAPACITY BUILDING
- 24 RBCs developed on multi-stakeholder platform principles.
- All 208 staff of 21 RBAs and 834 members of 24 RBCs trained on new guidelines.

MSP approach determined as a useful construct for implementation of development projects and conflict resolution.
DISSEMINATION
2019-2020

UPCOMING WORK

Additional Wastewater Reuse Projects
2030 WRG is working to establish the pre-feasibility of two more projects focused on industrial reuse: one targets reuse between a beverage facility and a power plant close to Ulaanbaatar, while the other focuses on reuse in mining.

Groundwater Data Management using Digital Technology
2030 WRG is working to develop a digital architecture that will collect and analyze groundwater data, using technologies such as smart meters for data collection and machine learning algorithms for analysis. This data will be used to better understand existing groundwater sources, as well as future demand-side management of water.

Update to Mining Hydro-Economic Analysis
The Ministry of Mining and Heavy Industry has requested an update of the 2030 WRG hydro-economic analysis on mining, with a special focus on the Tavan Tolgoi and Oyu Tolgoi regions, to promote circular economy solutions and water-use efficiency, considering the limitations of available groundwater.

Supporting Learning Across 2030 WRG
2030 WRG is working on supporting best practice sharing and learning from the Mongolia engagement across all of 2030 WRG's country and state platforms globally.

Photo credit: *André Künzelmann, UFZ*

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