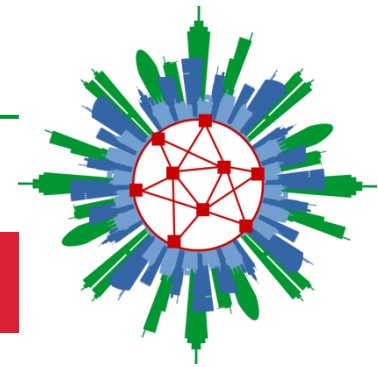




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Sustainability and Mobility
in the Context of Smart Cities



Economic instruments for water management of Mongolia: Analysis of water pollution control by economic instruments

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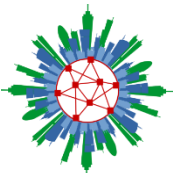
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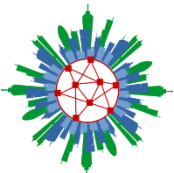




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Introduction



Start

The big WWTPs of Mongolia established in 1965-1970s
Most of the aimag centers WWTPs were renovated since 2000s.

Now

But most of them couldn't operate normally or cant work.
UB CWWTP and 15 aimag centers WWTPs started to renew.

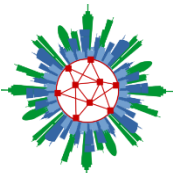
Need

For the correct and effective utilization of these WWTPs it is necessary to define failures and causes of the damages, injuries and take the necessary measures to eliminate these problems.

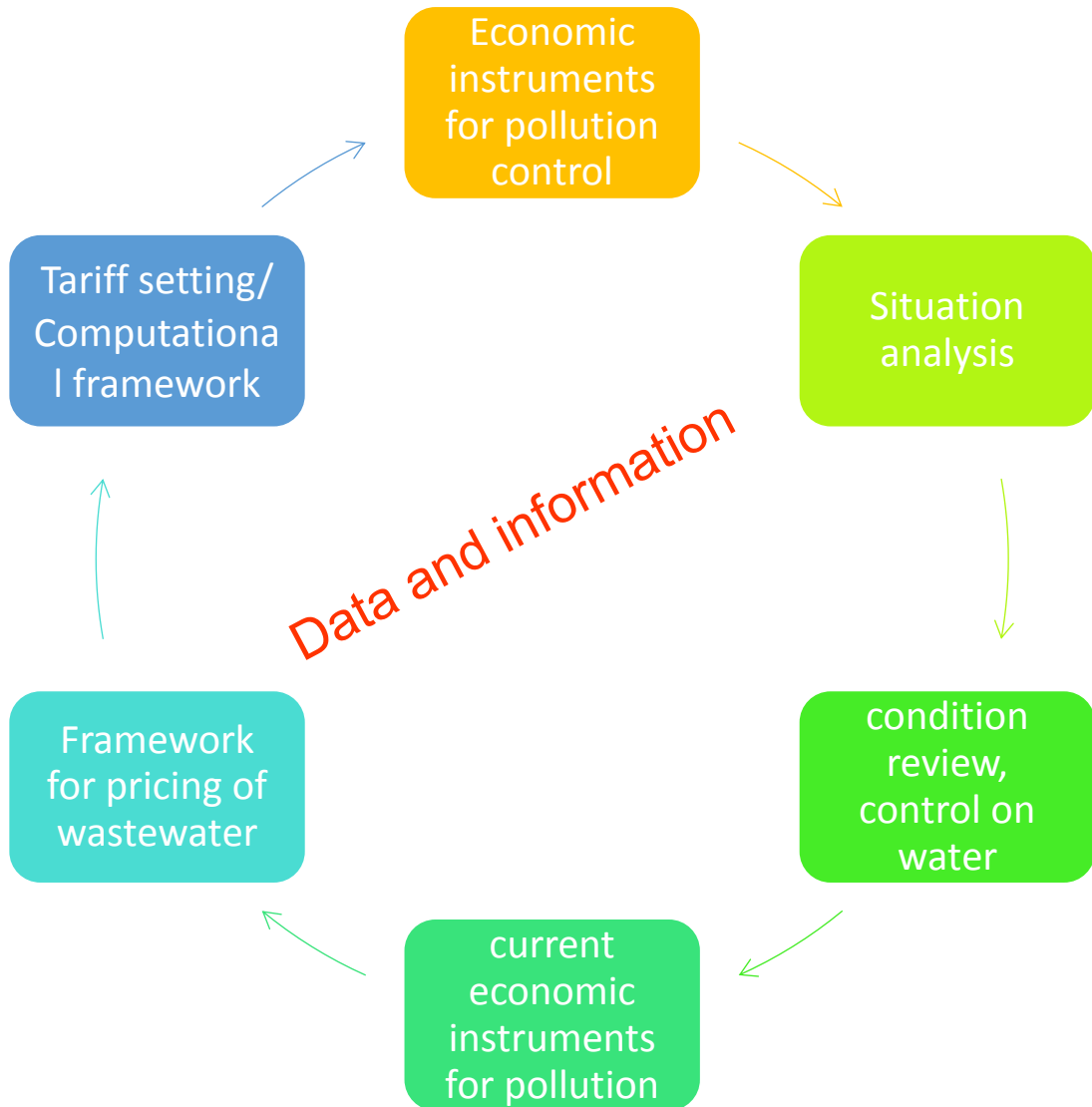
Causes might be:

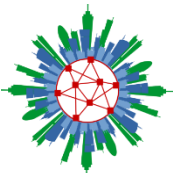
- Weak legal condition
- Lack of funding O&M
- Lack of qualified workers etc.





Methodology



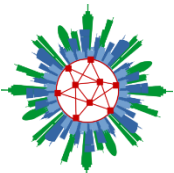


WATER RESOURCE MANAGEMENT

- In 2004 approved Water Law
 - Introduced idea river basin management, Established Water Authority
 - Improved the water pricing system , Introduced water use fee /tax/
- In 2012 approved Water Law and Law on Environmental Resource Use Fee, Law on Water Pollution
 - Improved IWRM, approved national IWRM plan established River Basin Authorities
 - Improved the water pricing system
 - Introduced polluter pays principle /WPL adopted in 2019./

WATER&SANITATION MANAGEMENT

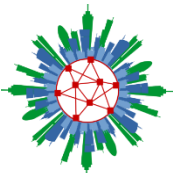
- In 2002 approved Law on Urban, Settlements Water Supply and Sewerage Utilization
 - Improved WSS management and water&waste water tariff condition
- In 2003 and 2011 approved Law on Urban, Settlements Water Supply and Sewerage Utilization
 - Introduced regulation option and established WSRC



Economic instruments for water management of Mongolia



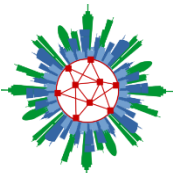
No	Type	Laws	Targets	In reality	Remarks
1	Water resource use fee /tax/	Water Law Law on Natural Resources Use Fee	Rational water use, increase water use efficiency	yes	Water utilities do not pay
			To decrease water loss	yes, no	
			To manage extraction of water from sources, to protect environment	yes	
			To decrease groundwater use and increase surface water use	no big changes	
2	Water pollution fee	Law on Water Pollution	Water pollution prevention and reduction	no	Not yet implemented.
3	Water resource depletion fee	Water Law	To develop green city	no	Not yet implemented
4	Water and wastewater tariff	Law on Urban , Settlement's WSS Utilization	Continuous and reliable WSS service	yes	can't cover full cost



Economic instruments for water management of Mongolia



No	Type	Laws	Targets	In reality	Remarks
1	Water resource use fee /tax/	Water Law Law on Natural Resources Use Fee	Rational water use, increase water use efficiency	yes	
5	Compensation fee&penalties	Environmental Protection Law, Law on Violation	Rational water use, increase water use efficiency	yes	
			To prevent over extraction	yes	
			Water pollution prevention and reduction	no	No real economic incentives
6	Subsides	209 resolution of GoM	For ger area water supply	yes, no	Only for some provinces
7	Other insentives	Water Law, Law on Natural Resources Use Fee, Water pollution fee	Rational water use, increase water use efficiency	yes, no	Law on Water Pollution ammended in 2019. Not yet implemented.



UB wastewater management



USUG – Water supply and Sewerage Authority of UB

No	WWTP	Year of operation	Treatment method	Decontamination Method
1	CWWTP	1964	Mechanical and biological	UV and chlorination
2	Nisekh	2014	Mechanical and biological	Chlorination
3	Moringiin davaa	2018	Mechanical and biological	UV
4	Bayangol	1978	Mechanical and biological	Chlorination
5	Biokombinat	1990	Mechanical and biological	Chlorination
6	Dambadarjaa	2010	Mechanical and biological	Chlorination
7	Bagakhangai	1989	Mechanical	Chlorination
8	Industrial pretreatment plant	1972	Mechanical and chemical	-

Management

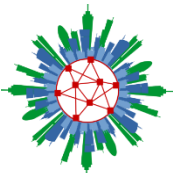
UB city

Regulation

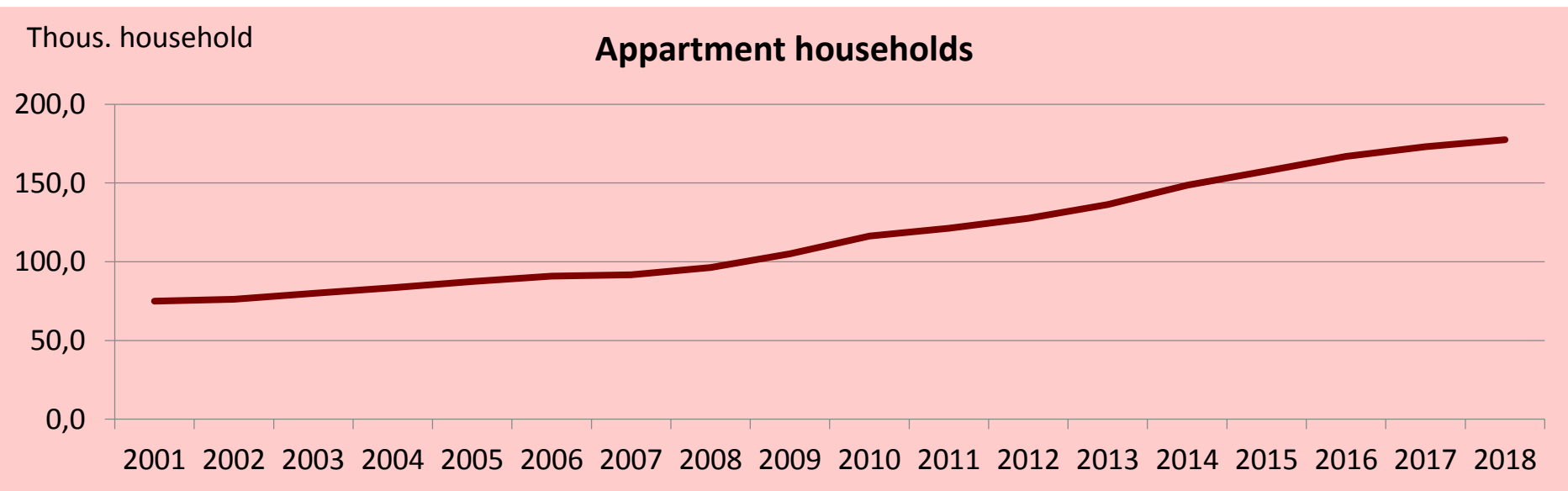
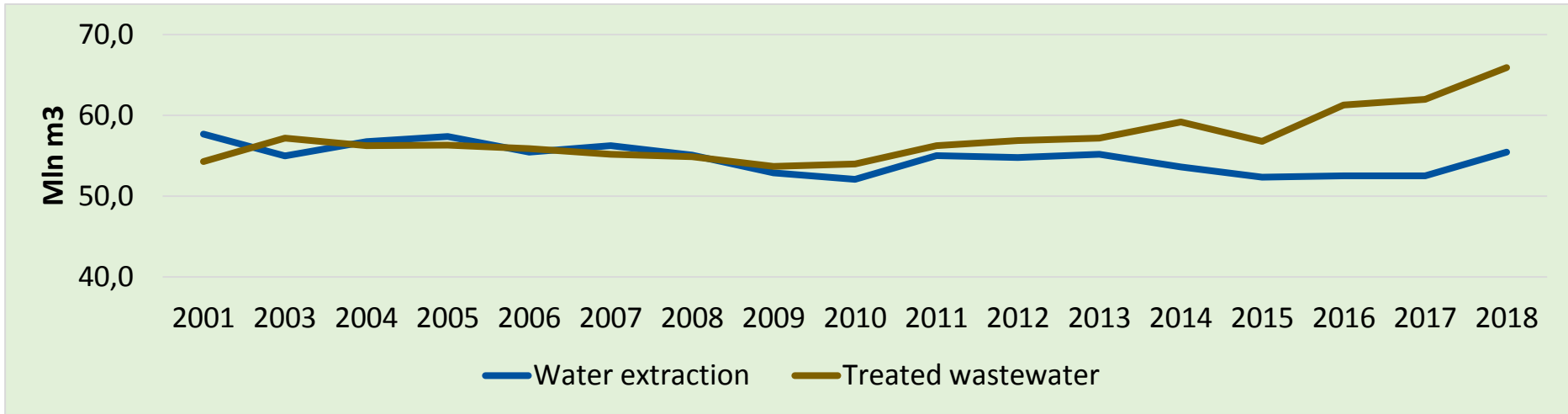
WSRC

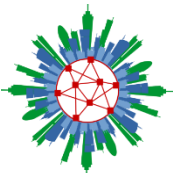
Control

Inspection Agency



UB wastewater management

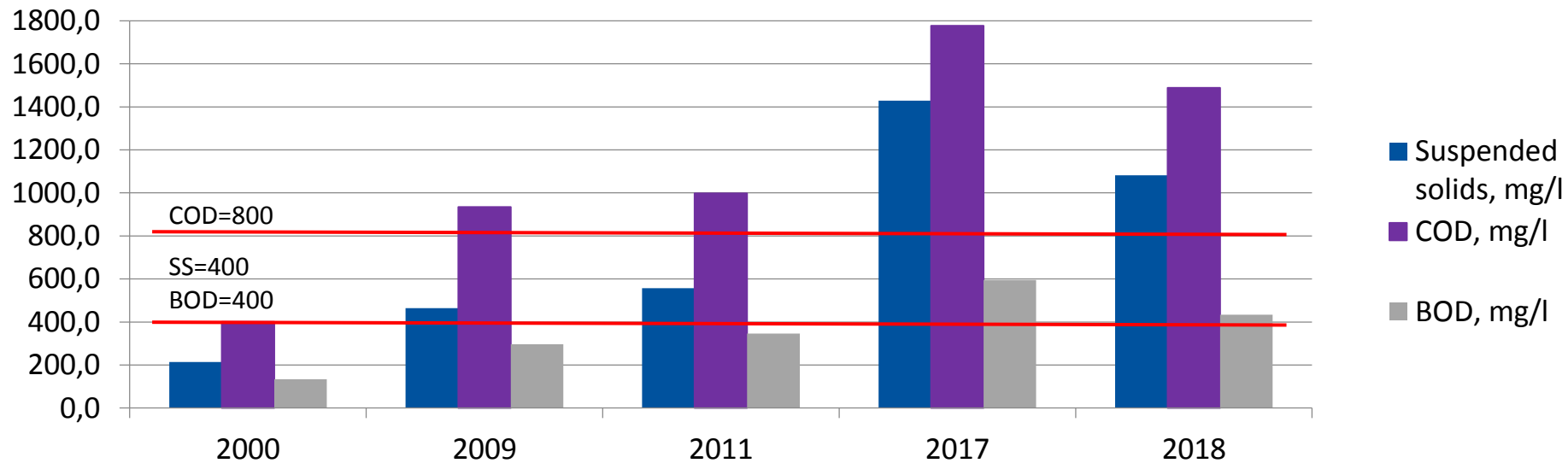
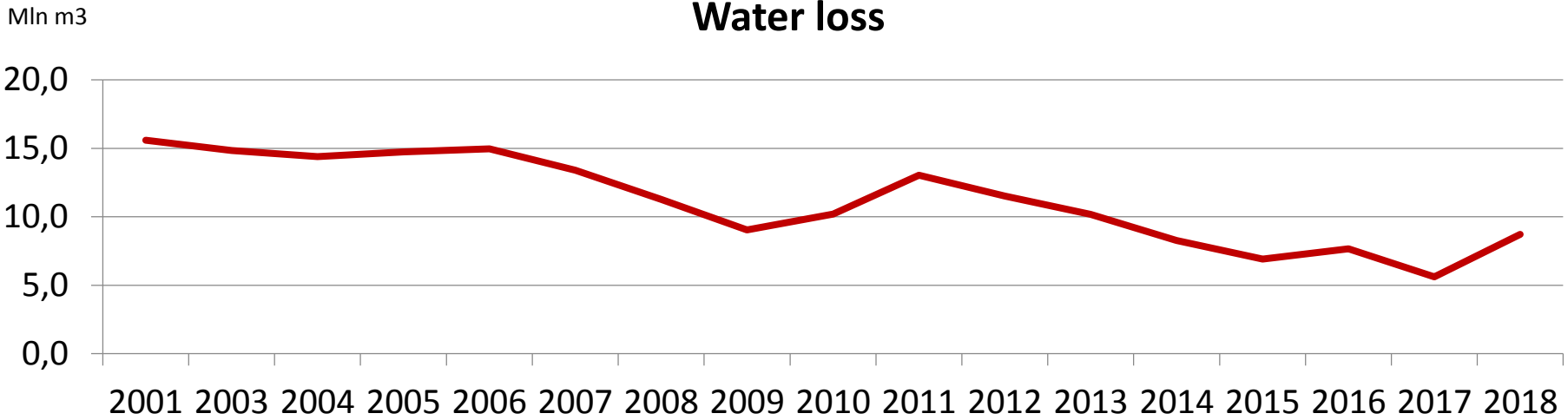


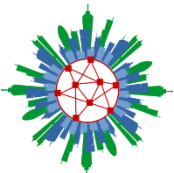


UB wastewater management



Water loss





Water Pollution Control: Polluter pays principle

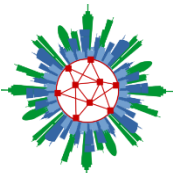


- Water pollution control /MNET, Inspection Agency etc./
 - Environmental Protection Law
 - Law on Violation
 - Law on Water Pollution
 - Law on Urban , Settlement's WSS Utilization
 - Effluent standards
- To 2019
 - Effluent standards
 - Other measures /restrict or stop services/
 - No real economic mechanizm

Water pollution is increased and influenced on CWWTP



Gereichnuun



Economic Incentives: Water Pollution fee



On of the causes of water pollution: **Absence of the Economic Incentives**

In 2012 Introduced pollution fee based on polluter pays principle /but couldn't implement due to absence of the laboratory capacity and couldn't prepare related rules/

Effluent concentration within the standards – pollution fee

Effluent concentration within the standards - penalties /2-3 times higher than pollution fee/

The rate depends on

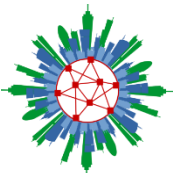
- Quality of wastewater discharged from any industry or entity
- Volume of wastewater discharged

Proposed pollution fee rate

150-350 MNT/m³

Exempt- households, schools, offices, health org.





Wastewater tariff, needs to change and effective wastewater tariff structure



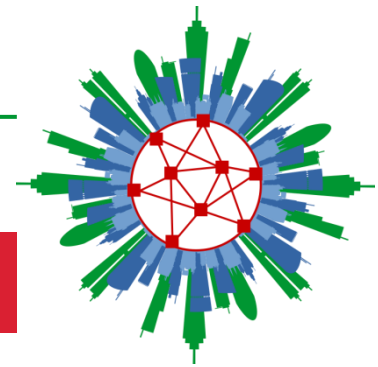
Wastewater tariff

- Volume of wastewater discharged to the system
- Different by customer type
 - Tannery, car wash, spirit, meat industry
 - Soft drinks, food
 - Other
 - Household
- If decrease pollution no benefits for polluters
- Necessary to renew
 - Connect with pollution fee
 - 3-4 customer categories based on effluent concentration
 - If decrease pollution can change to low level /tariff will decrease/ or increase pollution can change to high level
 - Revenue requirements have to recover O&M of the WWTP

Economic instruments are most strong tool for pollution control!

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Thank you for your attention