

Stockholm World Water Week 2019 | 25-30 August, Water for society: Including all

Practical IWRM

How it works in different context

Sunday 25 August | 11.00-12.30 | Room: L12

IRAN



INDONESIA



Towards a water secure world

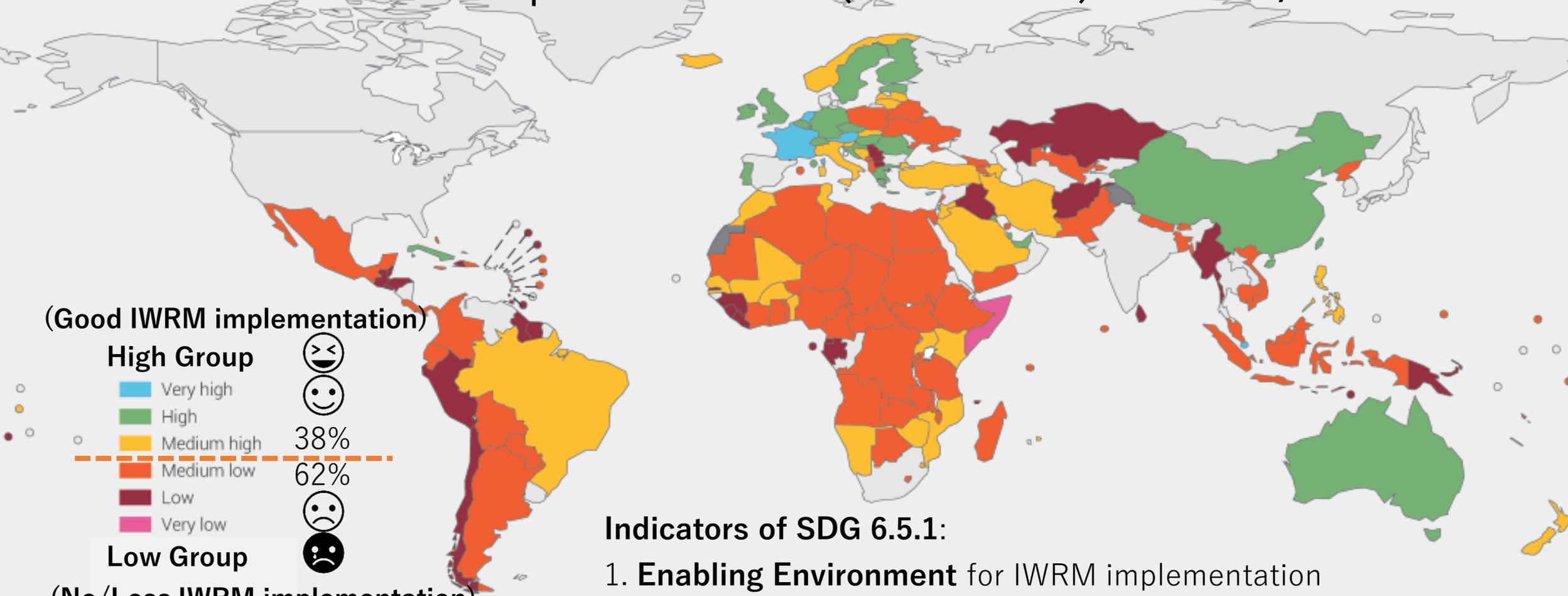
SUDAN



BOLIVIA



Status of IWRM Implementation (SDG 6.5.1) in 2017/2018



Indicators of SDG 6.5.1:

1. **Enabling Environment** for IWRM implementation
2. **Institutions and participation** for IWRM implementation
3. **Management Instruments** for rational decisions
4. **Financing** for IWRM.

Practical IWRM

not only refer to the four indicators to achieve SDG 6.5.1, but also solve water resources problems to accomplish the results.

“Problem-solving-oriented Implementation of IWRM”

In implementing “Practical IWRM”

- Focus on **the local context** such as the history, the culture, the society, the peoples’ lives and the environment.
- Utilize both natural and **social science** technologies.
- Analyze local problems and get **lessons learnt for solutions**.
- Provide **multi-stakeholders partnerships that effectively function**.
- **Solve water resources problems** on the ground rooted in local governance.

“Practical IWRM” is a tool
for all the people to be happy.

- Not only water resources development and management,
- Not only environmental and social consideration,
- Not only researches and investigations,

**“Practical IWRM” must solve water resources problems,
and make all the people happy.**

GWP’s Definition: Integrated Water Resources Management (IWRM) is a process which promotes the coordinated development and management of water, land and related resources in order to **maximize economic and social welfare** in an equitable manner **without compromising the sustainability** of vital ecosystems and the environment.

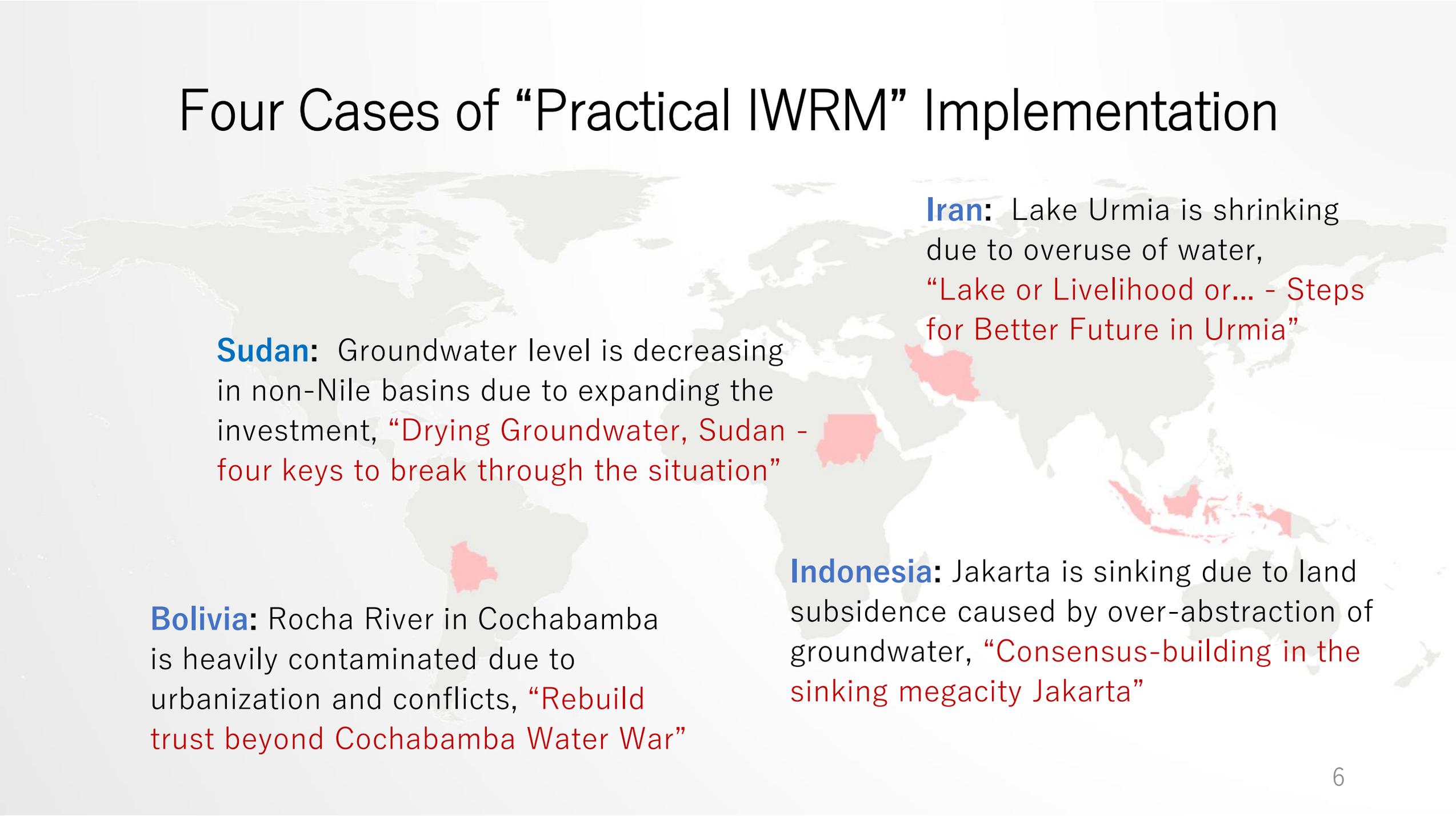
HOW Do We Implement “Practical IWRM”?

- The concept of IWRM is beautiful, but...
- IWRM is difficult to do.
- It’s impossible for all the people and sectors to be integrated.

You may also raise the question:



Four Cases of “Practical IWRM” Implementation



Sudan: Groundwater level is decreasing in non-Nile basins due to expanding the investment, “Drying Groundwater, Sudan - four keys to break through the situation”

Bolivia: Rocha River in Cochabamba is heavily contaminated due to urbanization and conflicts, “Rebuild trust beyond Cochabamba Water War”

Iran: Lake Urmia is shrinking due to overuse of water, “Lake or Livelihood or... - Steps for Better Future in Urmia”

Indonesia: Jakarta is sinking due to land subsidence caused by over-abstraction of groundwater, “Consensus-building in the sinking megacity Jakarta”

Co-convener's Speech

Honorary Professor Howard Bamsey,
Chair of Global Water Partnership (GWP)



IWRM and Multi- stakeholder partnership approach

Howard Bamsey
Chair
Global Water Partnership

THE URGENCY



Decreasing water quality
Pollution
Poor coordination Urbanisation
inequalities
Climate change
Competing demands
Migration
Floods
Water scarcity
Population growth
Droughts
Fragmentation
Ecosystem degradation
Conflicts
Water-borne disease
Water-related risks



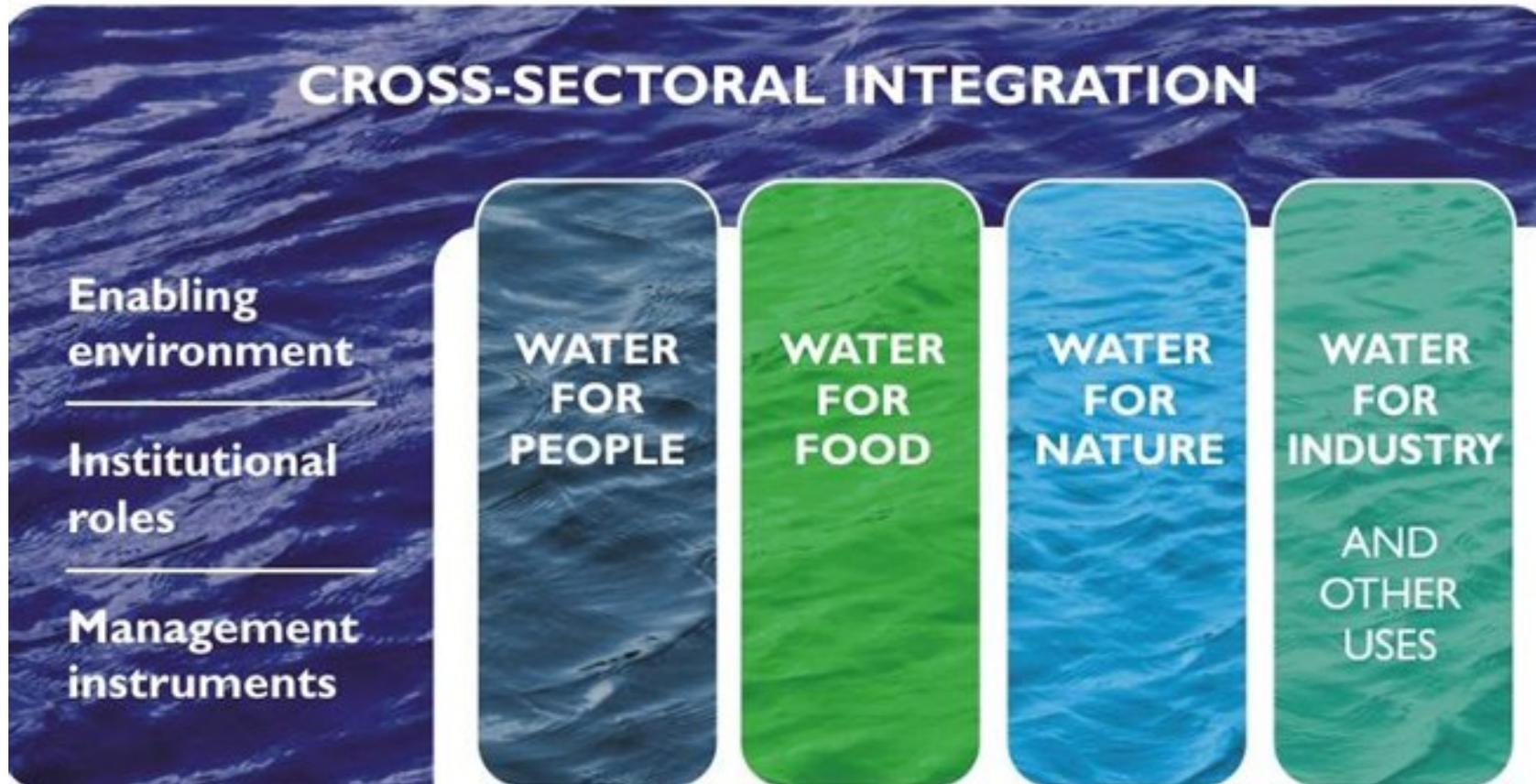
Investment Infrastructure
Sustainable 'voices
Development of water'
Goals (SDGs) Nature-based solutions



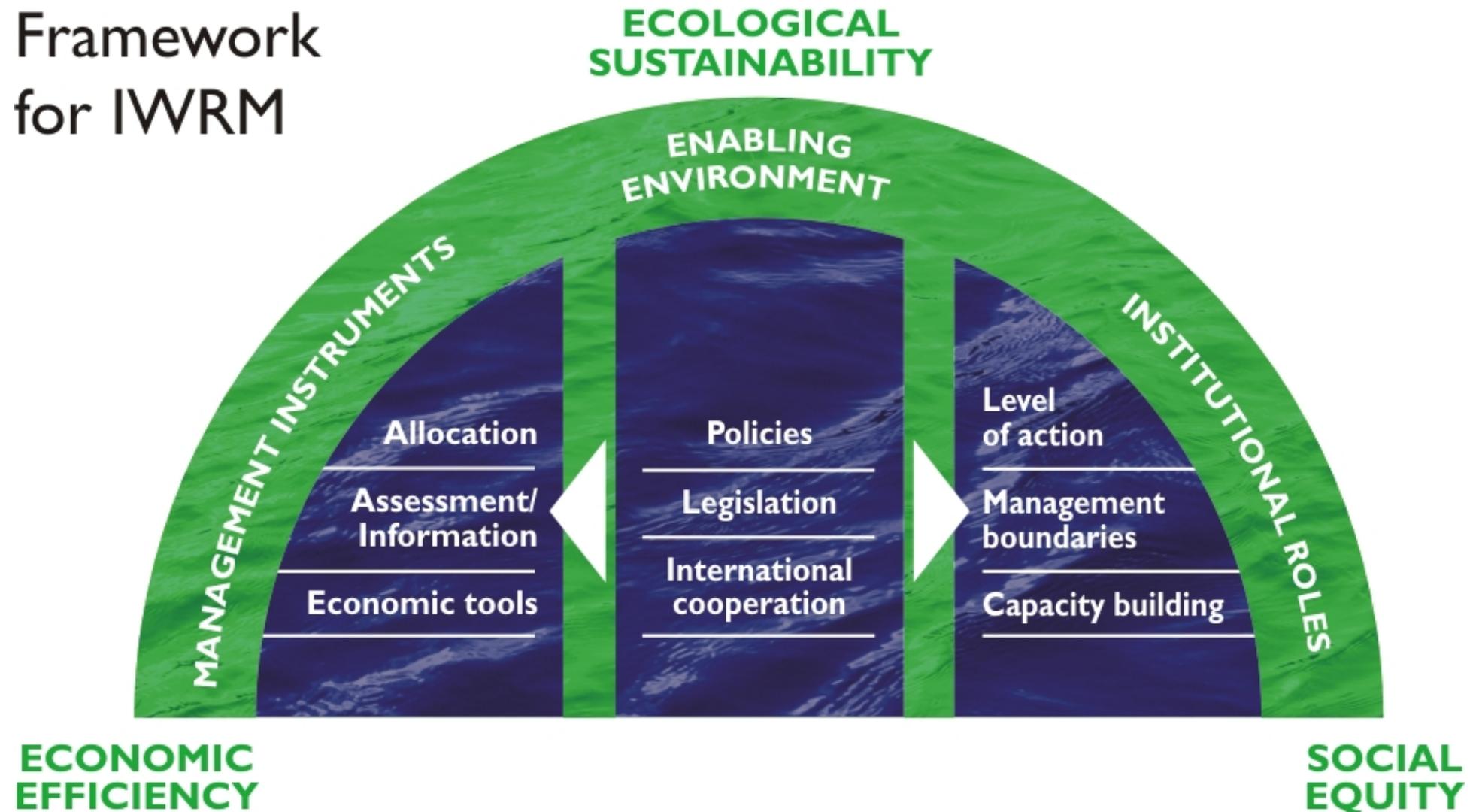
Sendai framework
Technology
Transboundary cooperation
Gender equality
Nexus
Private sector
New business practices Youth engagement
Innovation
Valuing water
Paris Agreement
Employment



Importance for approaching 'water' in integrated manner: Integrated Water Resources Management (IWRM)

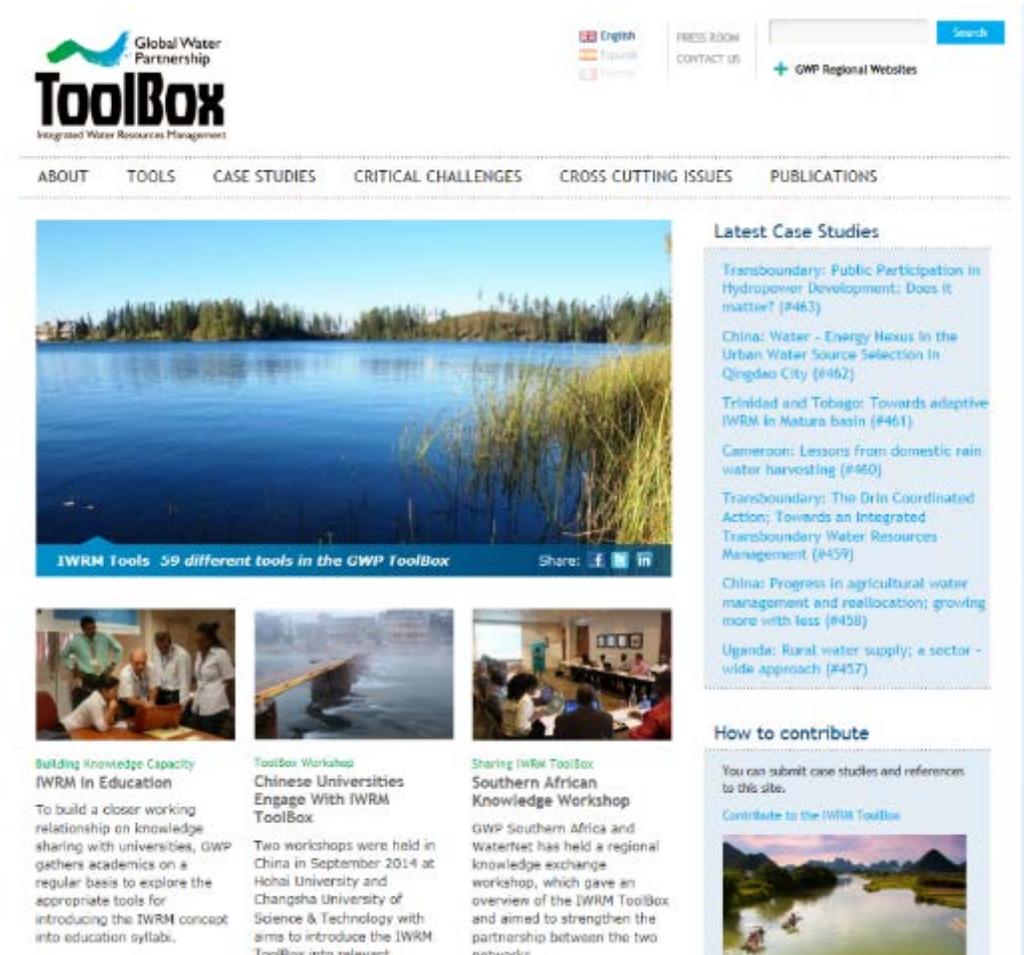


General Framework for IWRM



GWP IWRM ToolBox

- Free online database
- Tools help the user understand the concepts of integrated water resources management
- Contains a library of case studies and references on how to apply an integrated approach



The screenshot shows the GWP IWRM ToolBox website. At the top left is the logo for the Global Water Partnership ToolBox, which includes the text 'Global Water Partnership' and 'ToolBox Integrated Water Resources Management'. To the right of the logo are language selection options for English, Spanish, and French, along with links for 'PRESS ROOM', 'CONTACT US', and 'GWP Regional Websites'. A search bar is also present. Below the header is a navigation menu with links for 'ABOUT', 'TOOLS', 'CASE STUDIES', 'CRITICAL CHALLENGES', 'CROSS CUTTING ISSUES', and 'PUBLICATIONS'. The main content area features a large image of a lake with reeds, with the text 'IWRM Tools 59 different tools in the GWP ToolBox' and social media share icons. To the right of this image is a 'Latest Case Studies' section listing several articles with their titles and IDs, such as 'Transboundary: Public Participation in Hydropower Development: Does it matter? (#463)'. Below the main image are three smaller images with accompanying text: 'Building Knowledge Capacity IWRM in Education', 'ToolBox Workshop Chinese Universities Engage With IWRM ToolBox', and 'Sharing IWRM ToolBox Southern African Knowledge Workshop'. At the bottom right is a 'How to contribute' section with the text 'You can submit case studies and references to this site.' and a link 'Contribute to the IWRM ToolBox'.

Technical resources

GWP provides technical leadership for water resources management:

- Background Papers
- Policy Briefs
- Perspectives Papers
- Technical Focus Papers

All online at www.gwp.org



GWP: network promoting IWRM since 1996



GWP Region	No. of Partners (2019)
Caribbean	105
Caucasus and Central Asia	146
Central Africa	173
Central America	216
Central and Eastern Europe	184
China	99
Eastern Africa	303
Mediterranean	91
South America	359
South Asia	404
South East Asia	247
Southern Africa	338
West Africa	235
Global	290
Total	3,190

We're a large, diverse, inclusive, multi-stakeholder partnership that supports communities and countries to improve the way they manage water.

Put simply, we're about bringing water users together - that's everyone - to solve water problems.

Our reach

We comprise 3,000+ partner organisations in over 180 countries, influencing change from local to global levels.

Our network

65+ Country Water Partnerships and 13 Regional Water Partnerships convene and broker coordinated action of government and non-governmental actors.

Our knowledge

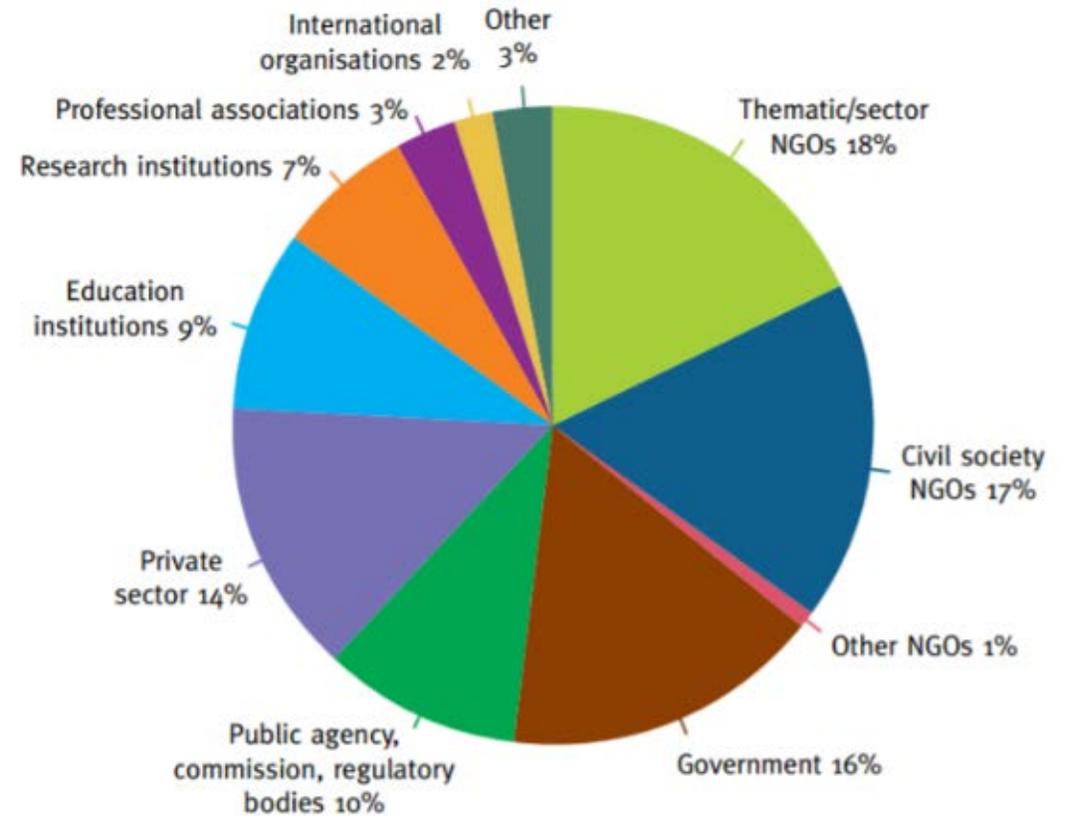
We draw on implementation experience at the local level and link it across our Network and to global development agendas.

The presentation of material on this map does not imply the expression of any opinion whatsoever on the part of GWP concerning the legal status of any country, territory, or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

A Network of Partners

- **Advocating, facilitating, and supporting change** processes for sustainable water management.
- **A neutral platform for multi-stakeholder dialogue** at global, national, and local levels that connects water resources planning and operations.
- **Contributing technical knowledge and building capacity** for improving water management.

GWP Partners by type



Water crises need **ATTENTION** and **COORDINATED ACTION** for systemic change.

<p>THREATS</p> <p>Poverty Decreasing water quality Pollution Climate change Inequalities Urbanisation Competing demands Migration Floods Water scarcity Population growth Droughts Fragmentation Conflicts Ecosystem degradation Water-related risks Water-borne disease Hunger</p>	<p>OPPORTUNITIES</p> <p>Investment Sustainable Development Goals (SDGs) Voices of water Infrastructure Youth engagement Employment Nature-based solutions Sendai framework Valuing water Transboundary cooperation Gender equality Private sector Nexus New business practices Technology Paris Agreement Innovation</p>
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GWP influences needed systems change through its **UNIQUE VALUE PROPOSITION.**

STRATEGY 2020–2025:

leverage global policy frameworks, **MOBILISE, ACT, and LEARN**



Water Solutions for the SDGs



Climate resilience through water



Transboundary water cooperation



Mobilize youth



Work towards gender equality



Engage the private sector

Look forward to vibrant discussions on practical examples of IWRM



Go to Get Involved at: www.gwp.org

And visit our online library for water resources management: www.gwptoolbox.org

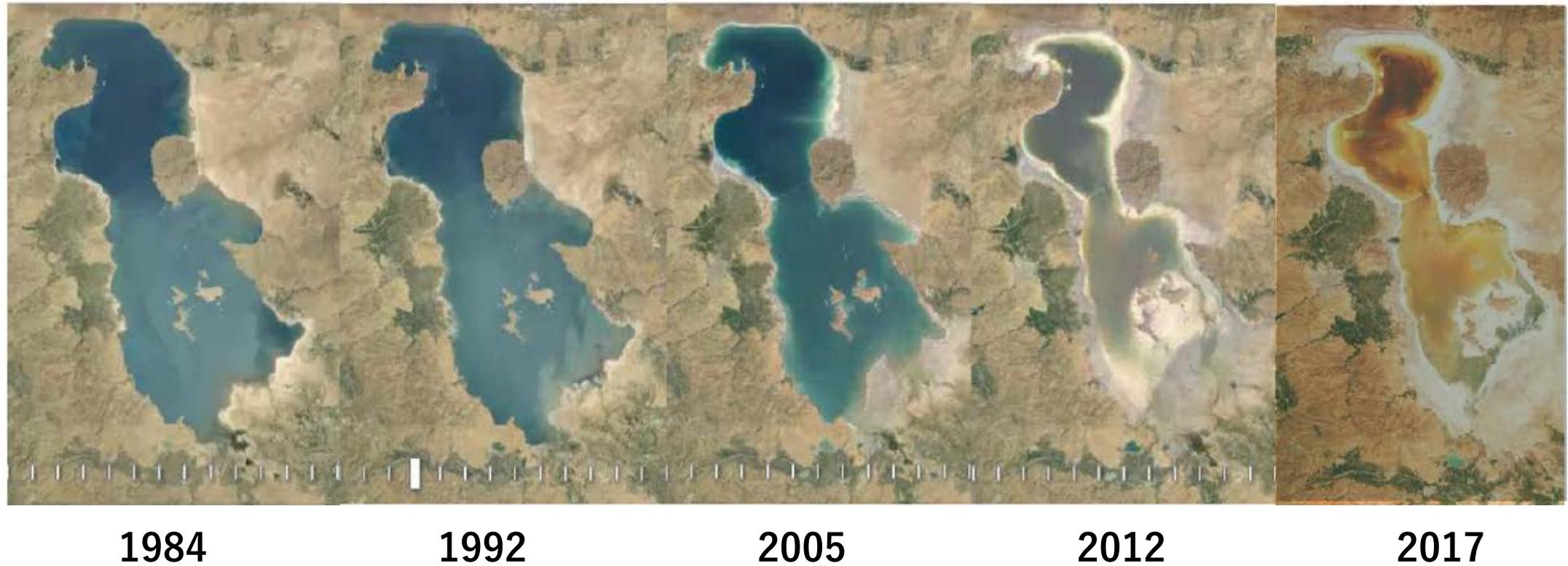
Lake or Livelihood or ...

- Steps for Better Future in Urmia -

Urmia Lake Restoration Program
Japan International Cooperation Agency



Lake Shrinking Due to Increase of Irrigation Use and Climate Change



Case Study: Aral Sea Crisis



Lack of consensus for the strategy
among stakeholders

Policy & Countermeasures of Iranian Government



Water-saving Irrigation

Education for Environment

Establishment of ULRP



Plantation

Progress of the Countermeasures and Challenges

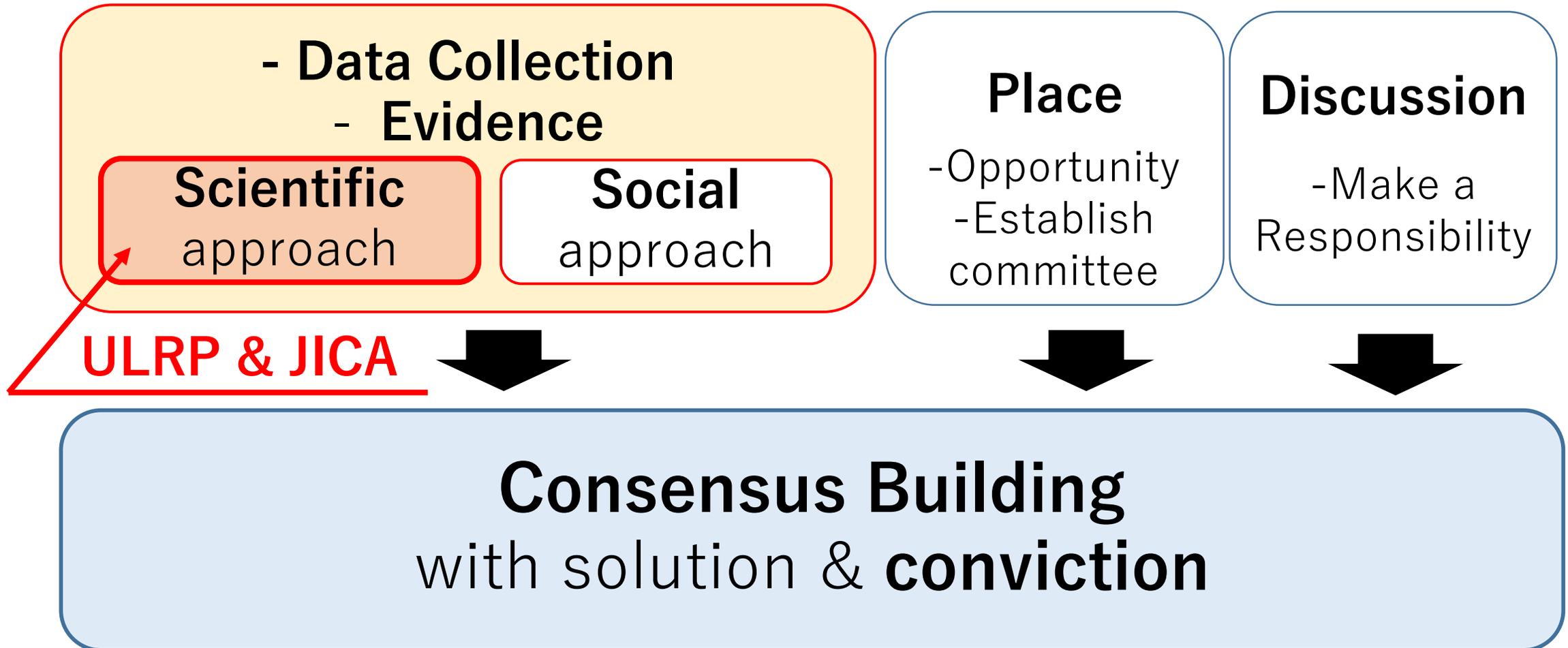
Progress

- Fortunately recovering water level of the lake
- Never know whether it results from the countermeasures or not.

Challenges

- Data Collection
- Residents' Awareness
- Wide-Spread Regulation and Rules

Scientific & Social approach for “Conviction”

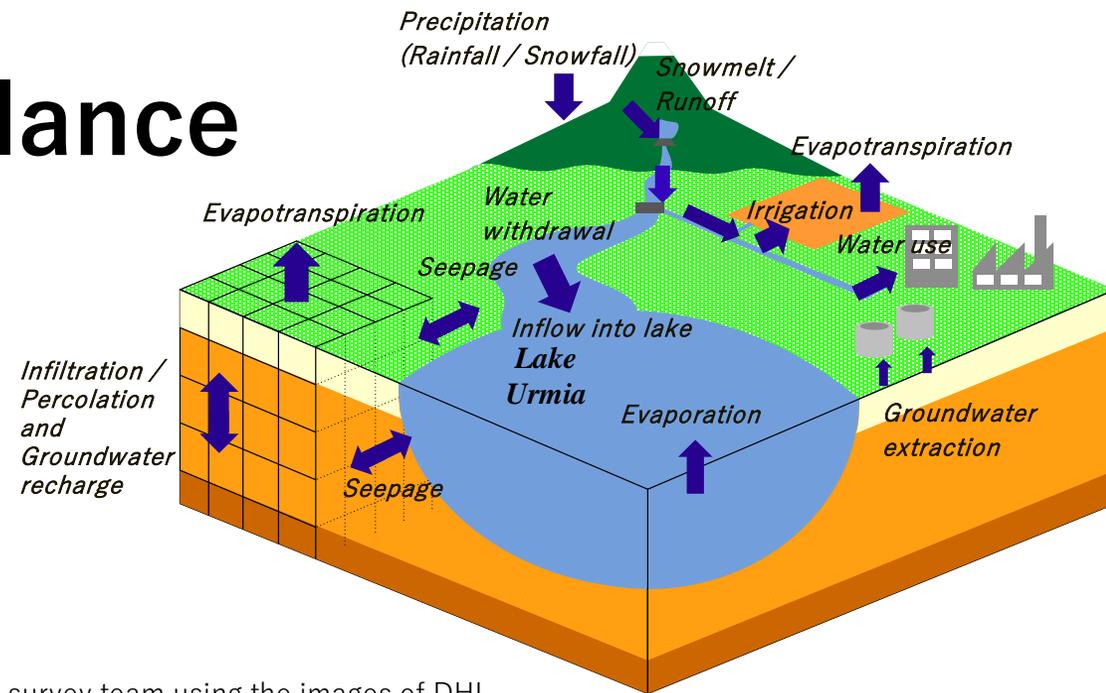


JICA's SURVEY: Data Collection

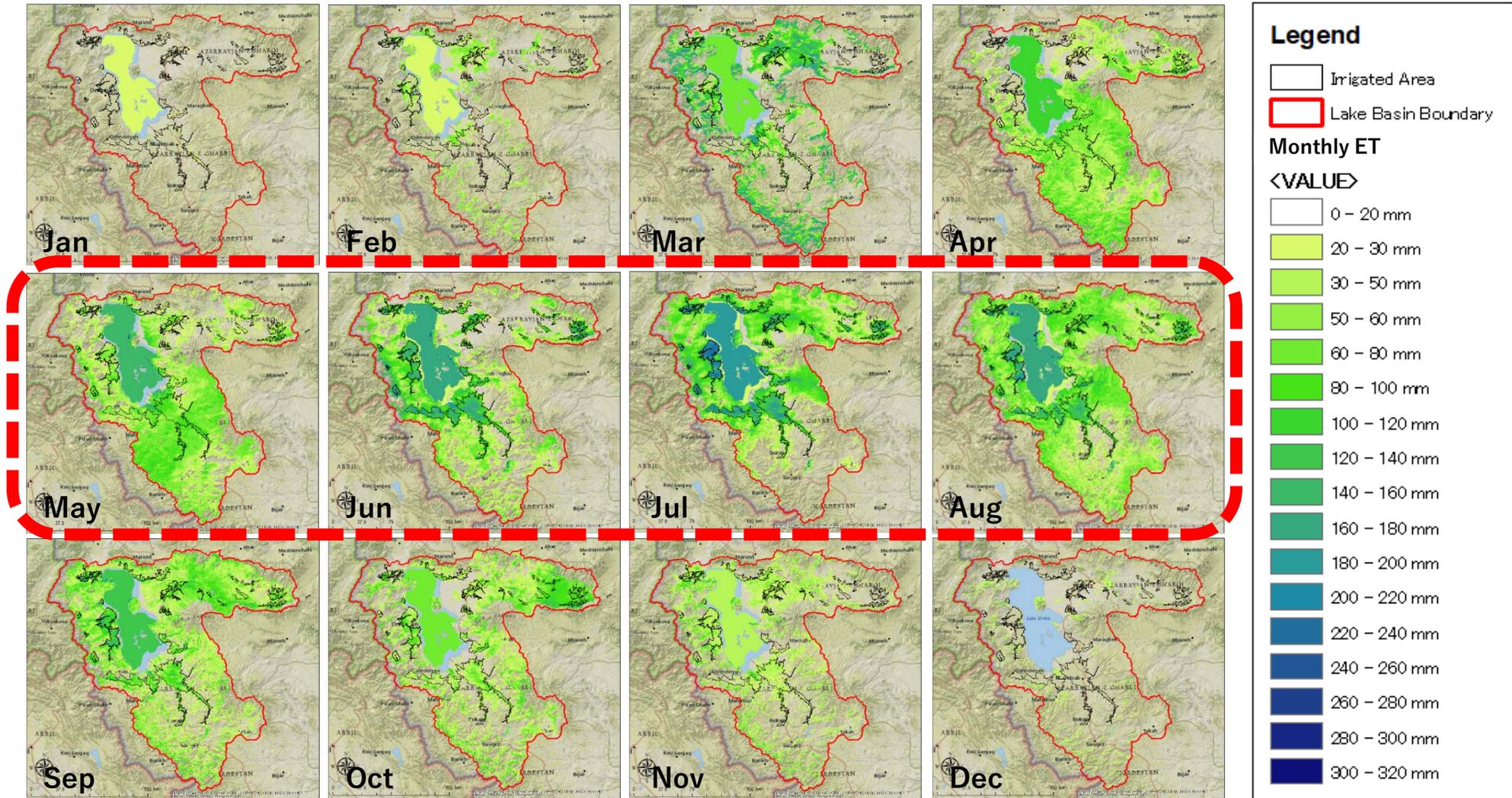
Create a **water circulation model** using water **evapotranspiration** analysis through **satellite images** and data of precipitation, dam and weir etc.

➤ **Clarification of water balance**

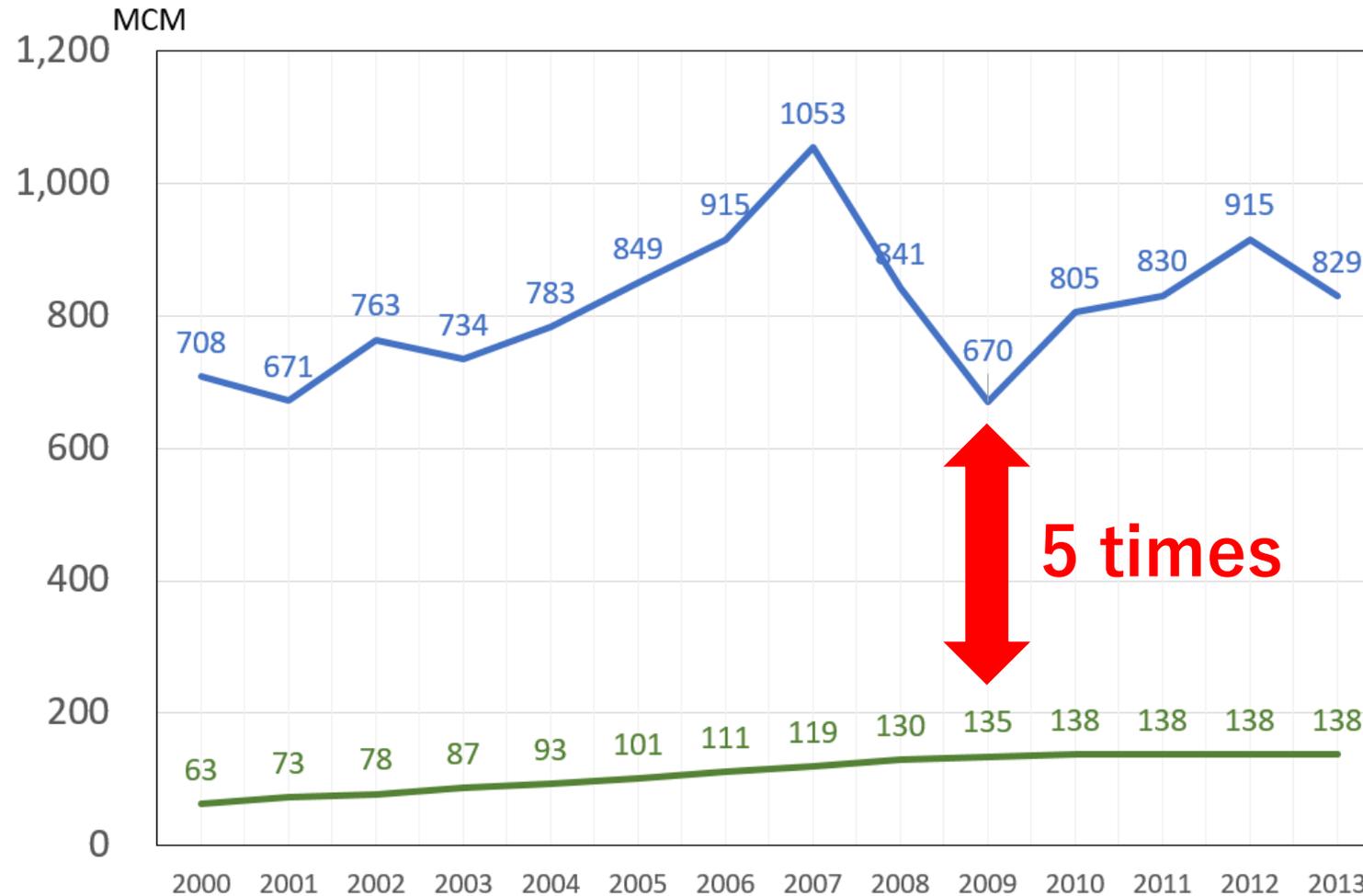
➤ **Making Case Scenario**



Changes of water use volume revealed by evapotranspiration



Finding : Significant Illegal Groundwater Use



(blue) Groundwater Extraction calculated in the survey

(green) Legal and illegal well extraction grasped by Water Resource Management Company

Thank You for Your Kind Attention

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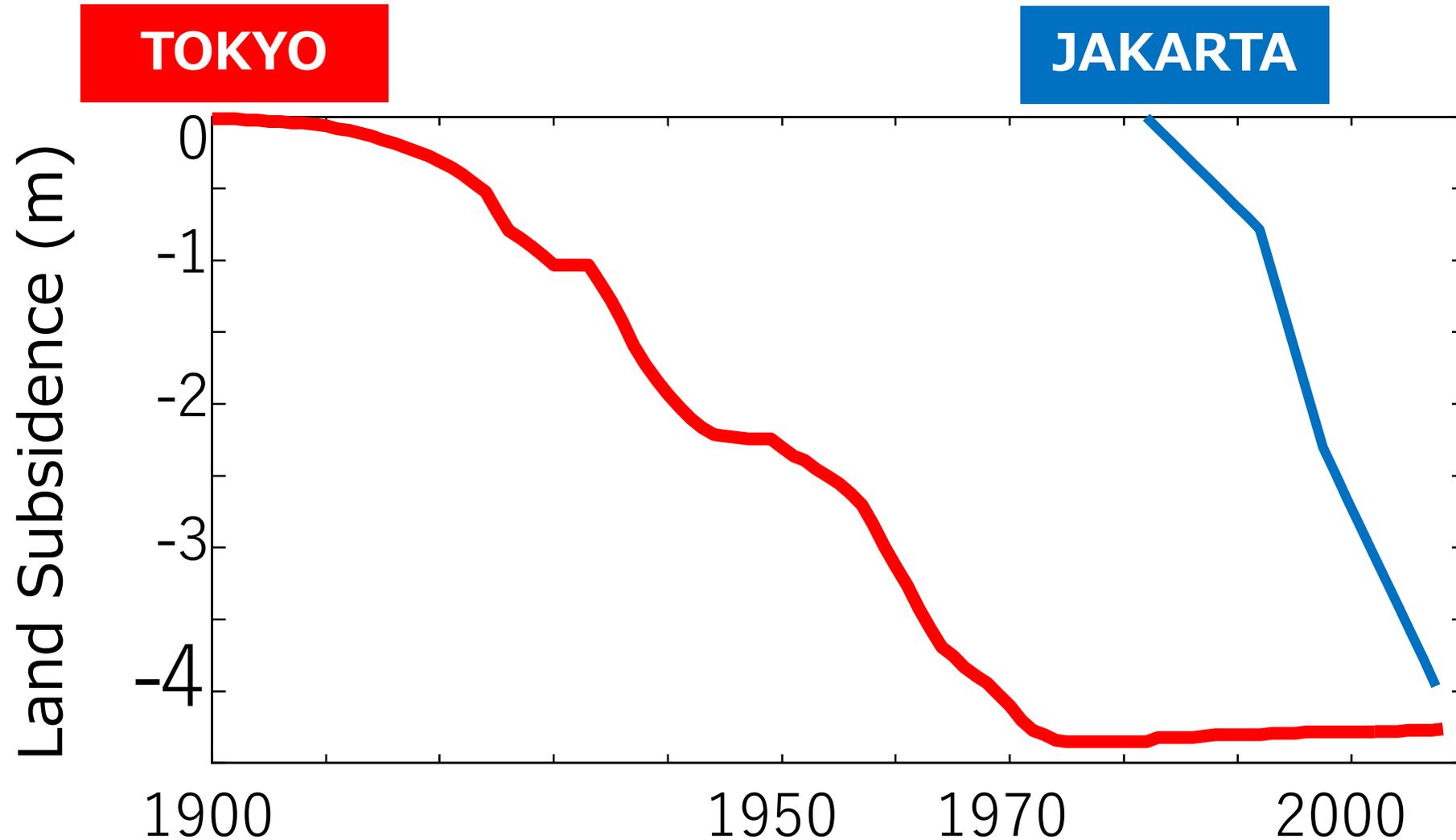
Consensus building in the sinking megacity Jakarta

- Stop the land subsidence -

Jarot Widyoko, Ministry of Public Works and Housing in Indonesia
Miha Matsubayashi, JICA



The fastest-sinking city in the world : JAKARTA



CURRENT SITUATION COASTAL AREA IN JAKARTA

October 2015



TIDAL FLOOD (ROB) AT MUARA BARU

Dec
2017

Sea Water Elevation
+255 cm*

Peak Dike Elevation
+240 cm



Nov
2007

Sea Water Elevation
+233 cm*

Peak Dike Elevation
+220 cm



** measured from Peil Priok*

LAND SUBSIDENCE COUNTERMEASURES IN JAKARTA

The efforts that already and will be made to overcome Land Subsidence countermeasure in Jakarta :

1. Law Enforcement

- Well registration need to be expanded
- Groundwater conservation area
- Groundwater management in Groundwater Basin and River Basin

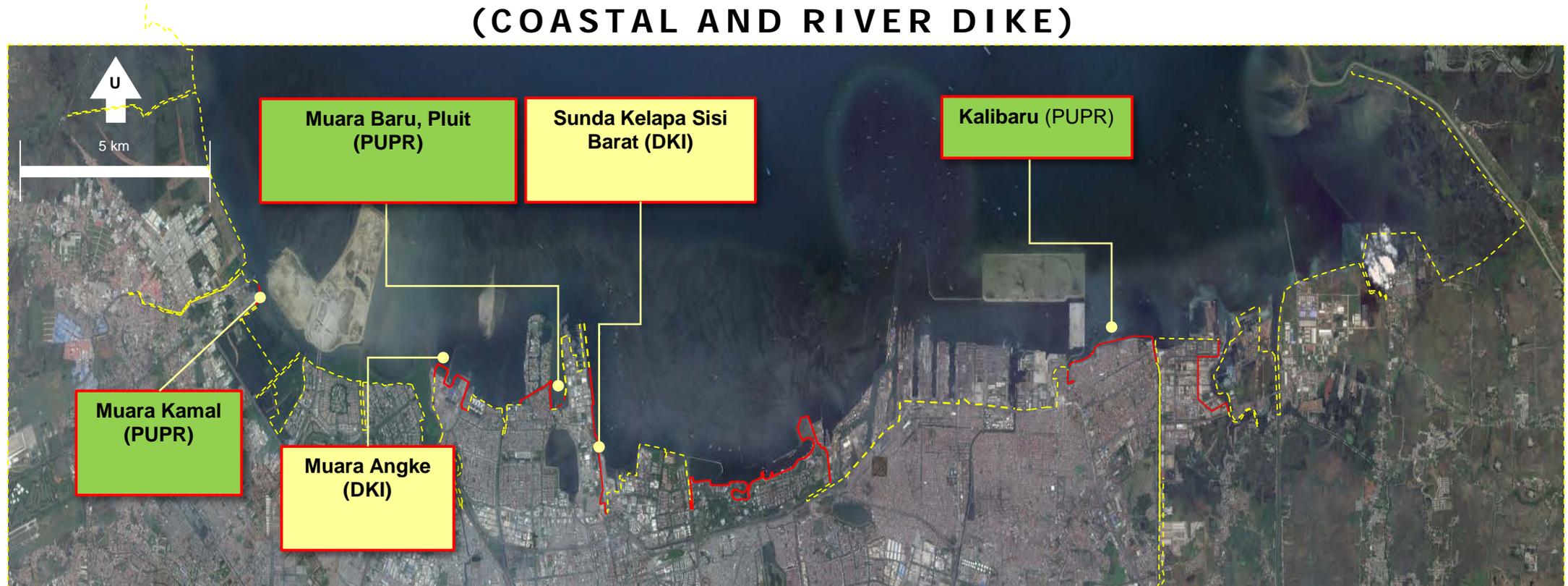
2. National Capital Integrated Coastal Development (NCICD) Project As Adaptation Measures

3. Water Supply Planning

2. NATIONAL CAPITAL INTEGRATED COASTAL DEVELOPMENT (NCICD) PROJECT AS ADAPTATION MEASURES



PRIORITY PROGRAM (COASTAL AND RIVER DIKE)

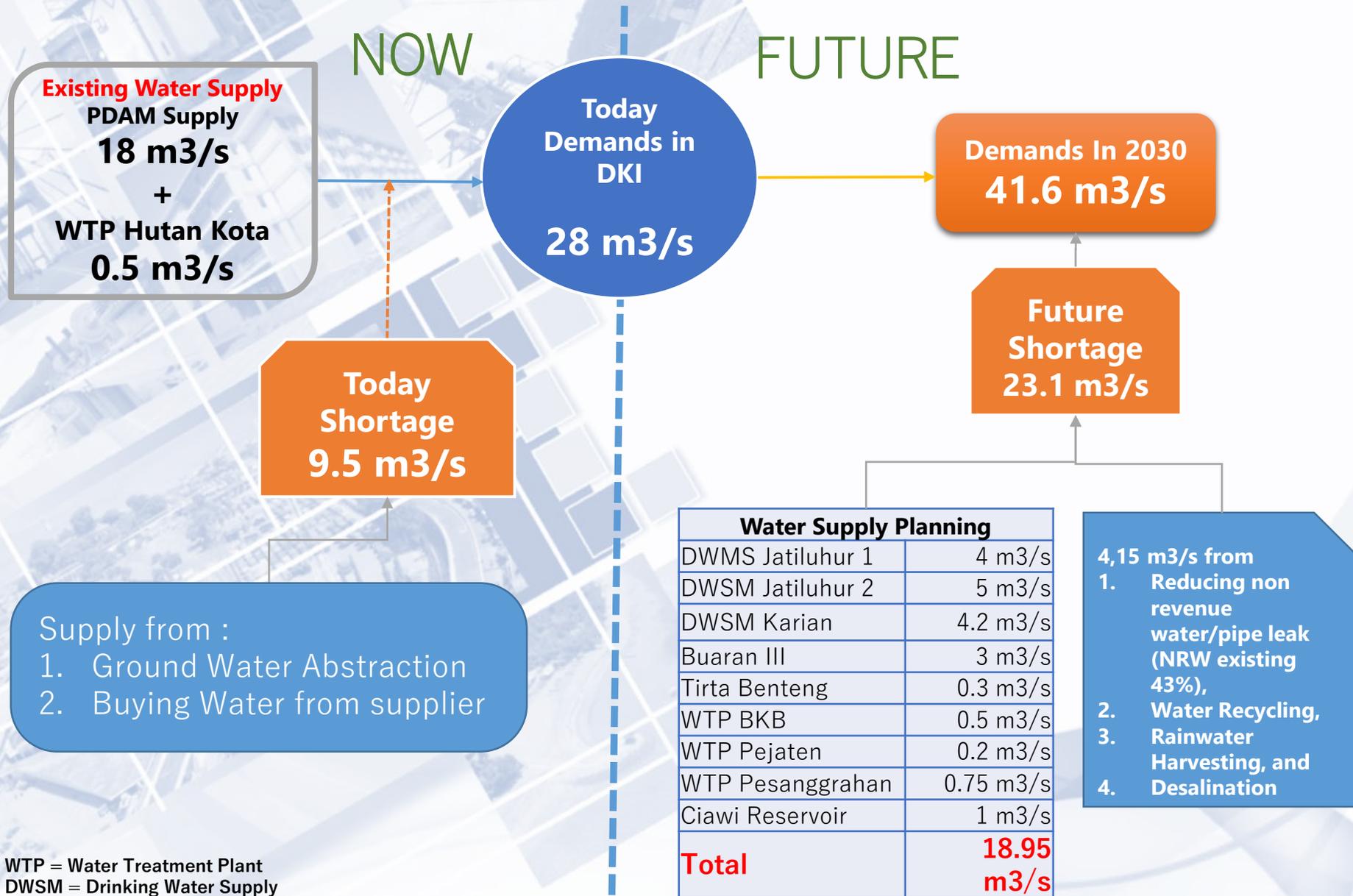


PUPR Authority = 7,2 Km
Realization = 4,5 Km
Remaining Progress = 2,7 Km
Target 2023 completed

DKI Authority = 7 Km
Realization = 4,6 Km

No	Stakeholders	Project Location	Length (m)	Realization
			DED PUPR	(m)
1	Kementerian PUPR	Total	7,223	4,500
		PPI Kamal Muara (Beach)	813	-
		Pluit (Muara Baru, Utara Waduk Pluit)	2,300	2,300
		Kalibaru	4,110	2,200
2	Pemprov. DKI Jakarta	Total	7,030	4,675
		PPI Kamal Muara (Sungai sisi Barat)	810	475
		Pelabuhan Muara Angke	2,520	-
		Pelabuhan Sunda Kelapa (Sisi Timur Pelabuhan Perikanan Nizam Zachman)	3,700	4.200
Grand Total			14,253	9,175

3. WATER SUPPLY PLANNING



WTP = Water Treatment Plant
 DWSM = Drinking Water Supply Management

“Bring Back Water To The Earth”



How important IWRM is in Jakarta

Lack of water resources in Jakarta

Over-abstraction of the groundwater

Land subsidence

IWRM

- Establishment of coordination mechanism:
with National government and local government
- Diversification of water resources:
rainwater utilization, Recycled Water(sewage),
Dams are outside of Jakarta, etc.

Various stakeholders make consensus building difficult

**Local Government :
DKI Jakarta e**



**Relevant Donor Agencies:
World Bank,
Other country's
donor, etc.**

Companies:
Around the
world based
in Indonesia

**Academic
researchers in
Indonesia**

National Government:

- PUPR
- BAPPENAS
- ESDM (Ministry of Energy and Mineral Resources)
- KLHK (Ministry of Environment and Forestry)

Kemen PUPR



Bappenas



Kemen ESDM



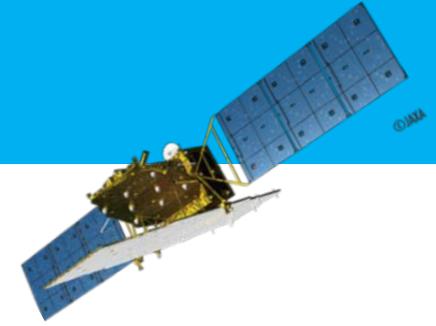
Kemen
LHK



**Related
Project by
Other
institutions:
NCICD**

**Local people:
10,171,000
(2015)**

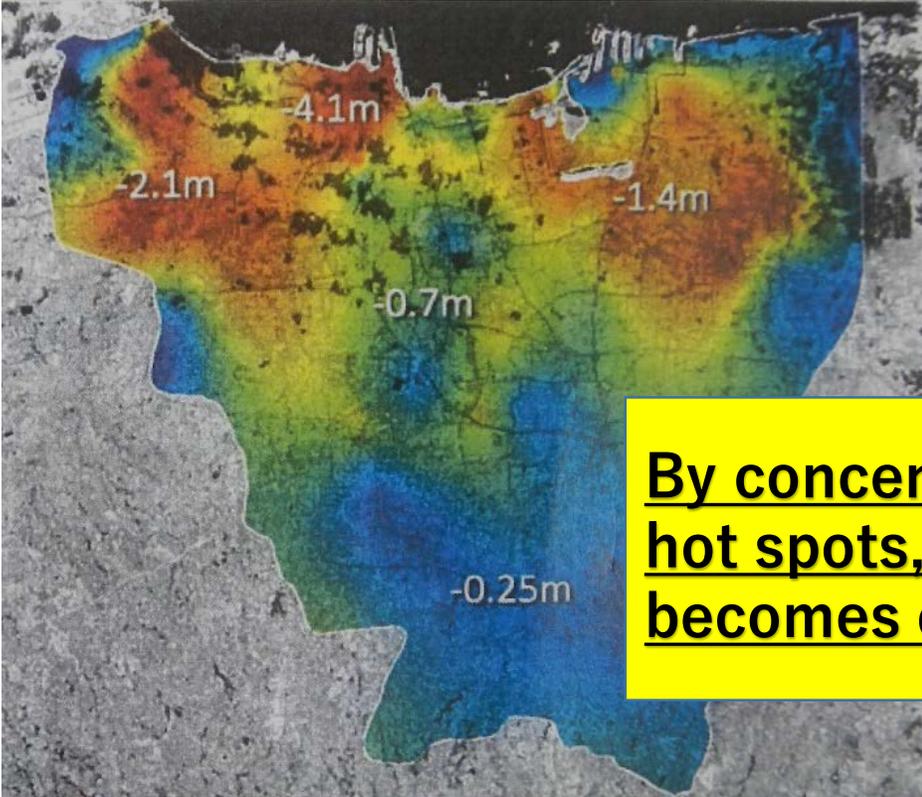
Actions to solve problems



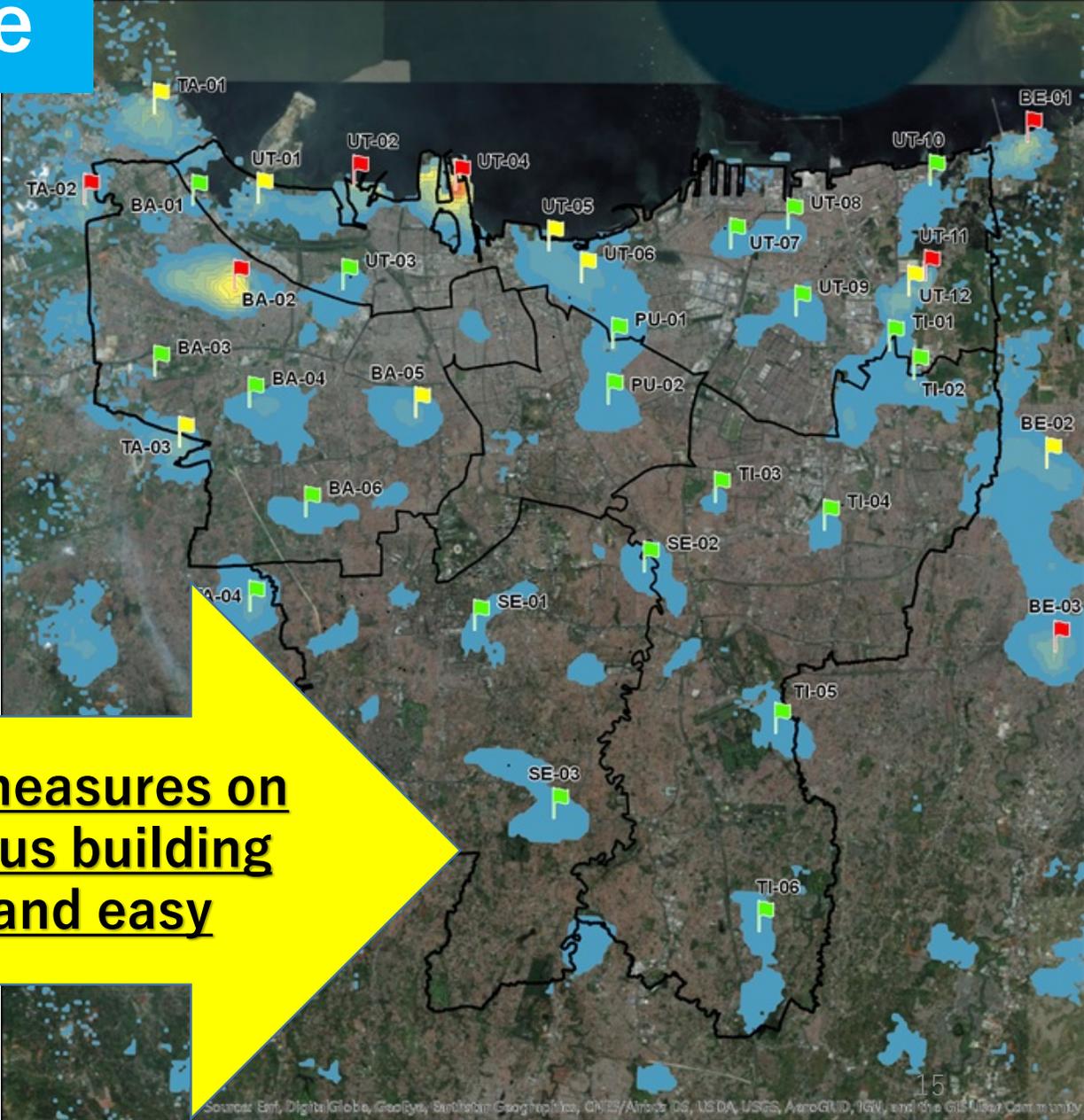
- ① Reliable data(Satellite and observation well) is effective for consensus building.
- ② Making action plans for practical solution with national government and local government

Getting reliable and high resolution data using satellite

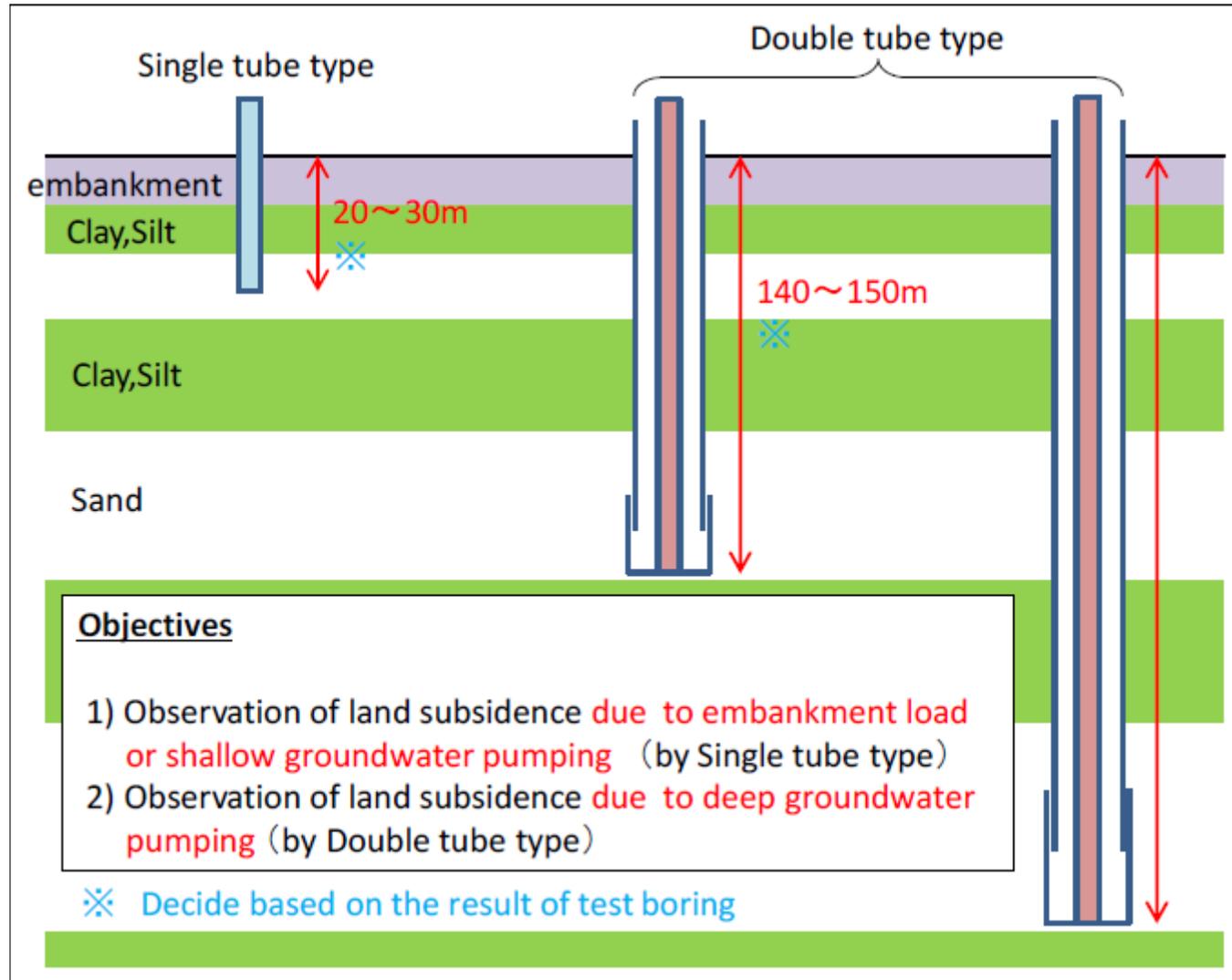
Land Subsidence in Jakarta 1974 - 2014



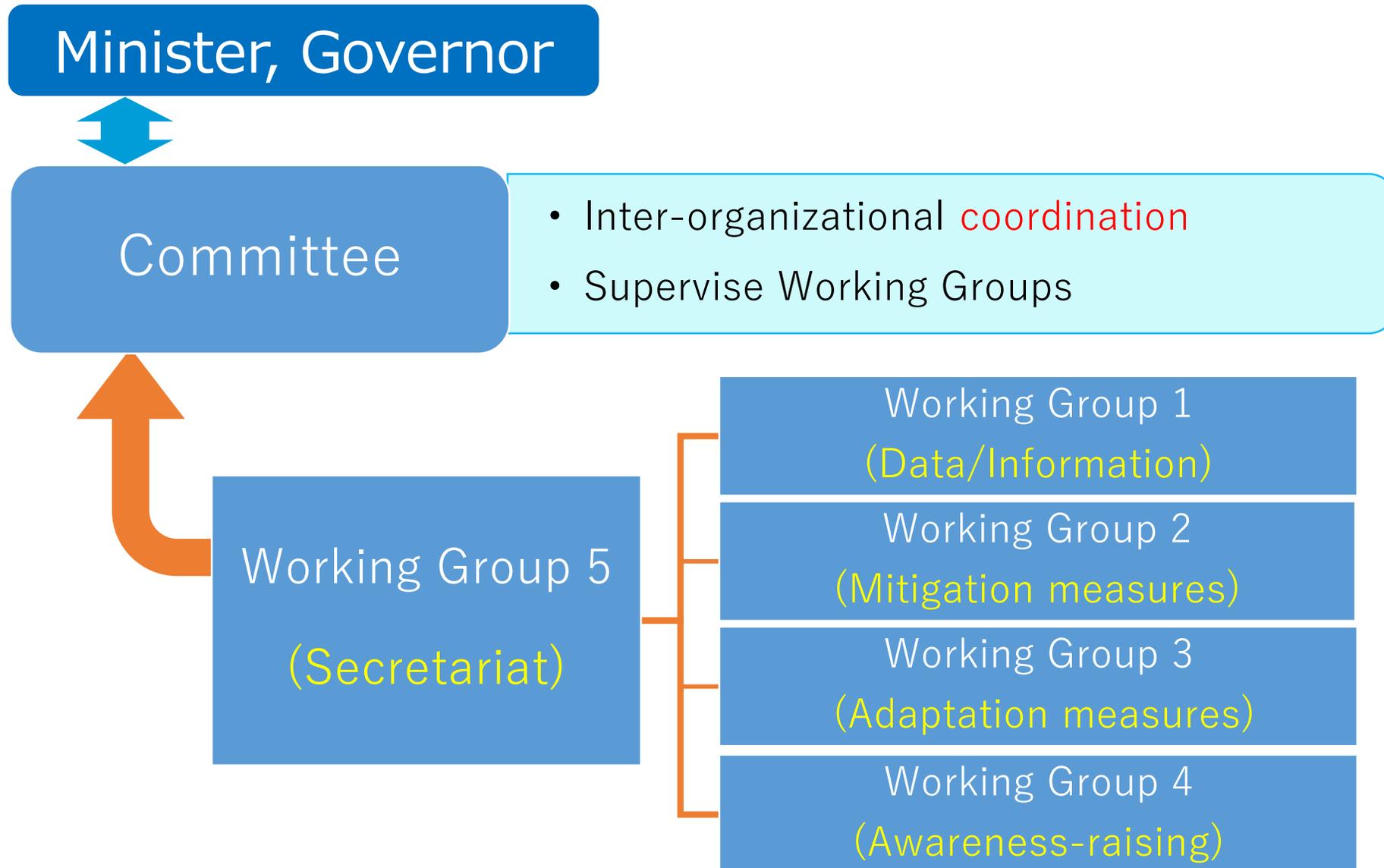
By concentrating measures on hot spots, consensus building becomes efficient and easy



Identify which layer is causing the land Subsidence by using observation well



Establishment of coordination mechanism



Awareness raising

Achievement so far

- Establishing implementation team
 - directly under governor and minister
- Succeeded in making a common understanding that groundwater pumping regulations are effective countermeasures
 - among national and local government, and academic researchers

Next Step

- Engagement of local people, including industries to be affected by strengthened regulations

Execute action plan step by step



THANK YOU

TACK and GOD EFTERMIDDAG

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TERIMA KASIH

Programme “Practical IWRM” : How it works in different context
Sunday 25 August | 11.00-12.30 | Room: L12

WRTO, Sudan /JICA

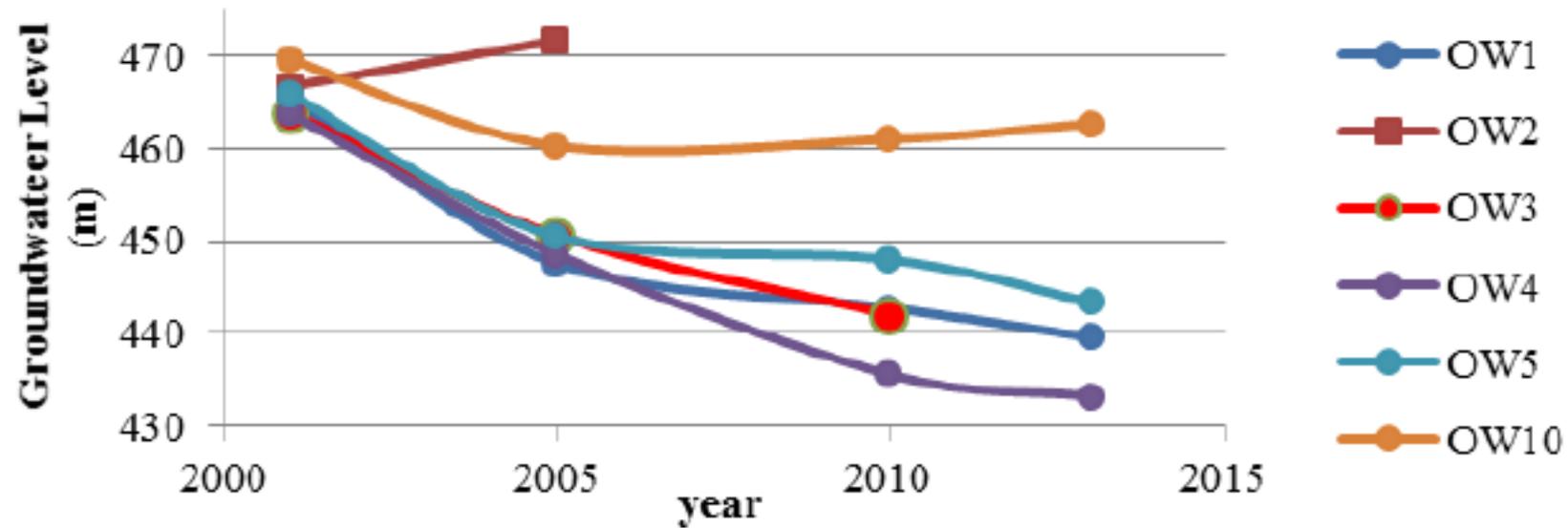


Drying Groundwater, Sudan

- four keys to break through the situation-

Groundwater is at Risk

Deep wells



Note) OW1 to OW10: monitoring wells
Source: DIP

Groundwater is at Risk

Shallow wells



Pumping



Watering farmland with hose

Groundwater is at Risk

Stakeholders use groundwater as they want and need more

- ◆ Drinking water service provider
- ◆ Irrigation farmers
- ◆ Investors

Causes of over pumping of groundwater

1. Lack of **data** (natural / social)
2. Lack of **understanding by stakeholders**
3. Lack of **coordination mechanism**

Actions in the past

Federal Government

- IWRM Strategy (2007)
- Regulation of license of using groundwater for the year (2016)

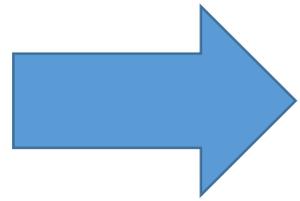


not fully implemented yet

Actions in the past

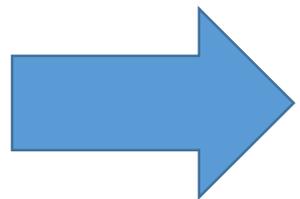
North Kordofan State

- Monitoring system after 1990's



weakened

- Plan to use surface water in south area (2010)



partly implemented



4 Keys to break through the situation

**Capacity
Development
(Fed. / State)**

**Reveal local
context**

**Awareness
raising of
stakeholders**

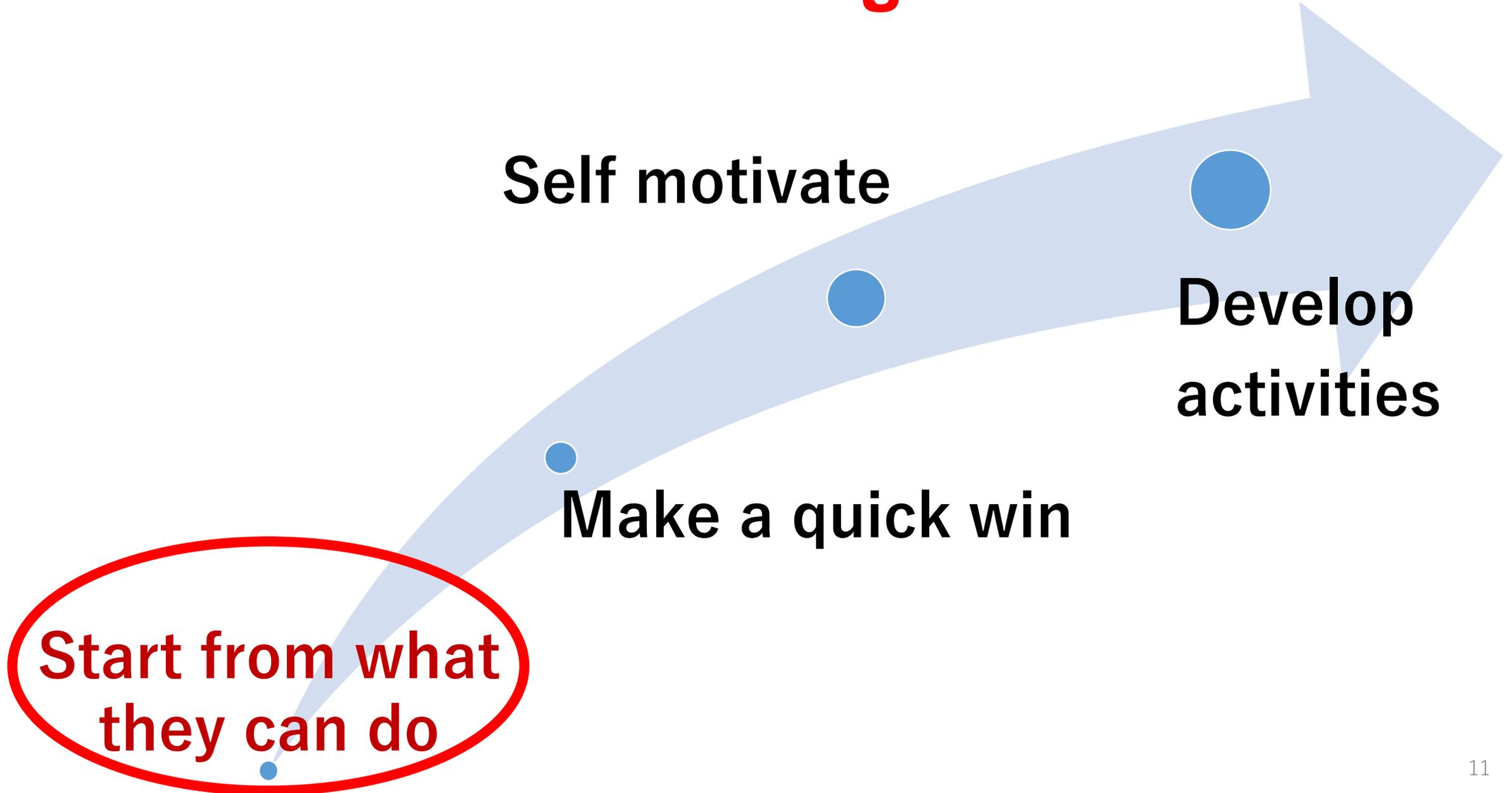
IWRM unit

4 Keys' Contribution to the challenges

Challenges	4 keys			
Data	Capacity Development		Reveal local context	
Stakeholders' understanding	Awareness raising		Reveal local context	
Coordination mechanism	IWRM unit	Capacity Development	Awareness raising	Reveal local context



Process to break through the Situation



Thank you for your kind attention

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Global Environment Dept., JICA, Japan
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Rebuild trust beyond Cochabamba Water War ~Rocha River, Bolivia~

Gonzalo Muñoz, Secretary, Departmental Secretariat for the
Rights of Mother Earth, Autonomous Government of
Cochabamba Prefecture, Bolivia

Noriko Yamada, Ex-Project Formulation Adviser, JICA

Tomohiro Arima, Global Environment Department, JICA

Challenges in Cochabamba

- Environment of Rocha River Basin is seriously getting worse. Main contamination source is sewage.
- Not enough and effective countermeasures (e.g. Construction of Wastewater Treatment Plant)
- No functioning Platform among stakeholders
- Master Plan (Plan Director de la Cuenca del Rio Rocha) is not implemented fully.



Cochabamba and Rocha River Basin

- One of the three major metropolitan areas in Bolivia (Population: 1.8million).
- Rocha river basin include Cochabamba metropolitan area and is selected as one of the 14 priority basin in Bolivia.



Photo by Autonomous Government of Cochabamba Prefecture



Rocha River



In Cochabamba Central Area
(**Black water with white
bubble**)



Albarrancho Wastewater
Treatment Plant (Lagoon)

“Cochabamba Water War”

- “Cochabamba Water War” occurred from 1999 to 2000.
- **Protest campaign by citizens** against privatization of water supply and increasing water tariff
- As lesson learned, **importance of consensus building** among stakeholders is recognized in Cochabamba.

Challenges and Actions so far

- Many platforms but not functioning well
 - ✓ No legal personality due to lack of legitimization (No compelling power and budget management)
 - ✓ No provision of appropriate agenda toward stakeholder's interest
- Many planned projects but not implemented well
 - ✓ Distrust of residents towards government (e.g. Albarrancho Wastewater treatment plan)
 - ✓ No consensus building among stakeholders

Vicious Cycle in Cochabamba

No Consensus Building
with Stakeholders

Lose Trust

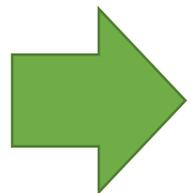
Not Effective
Countermeasures

Worse River Basin
Environment

Break the Vicious Cycle

Key Approach

- To establish space for dialogue among stakeholders with legitimacy for practical consensus building (Formulation of Platform)
- To resolve real problems and show visible outputs even small through Platform (Problem Solution)



Successful experiences to rebuild trust between Government and residents

Platform among stakeholders

~ Rocha river basin inter-organization Platform ~

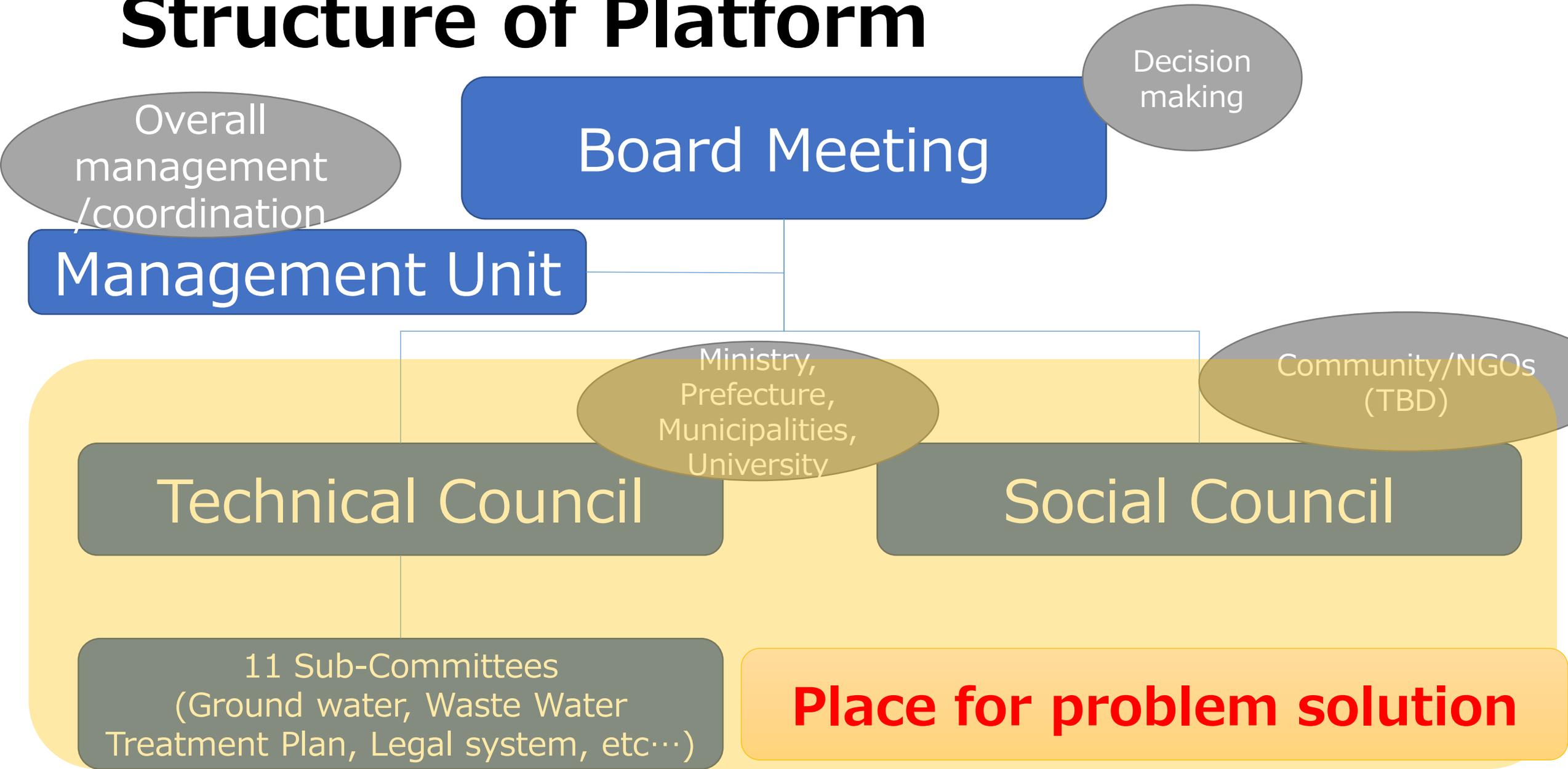
- New Platform was established in 2018 based on national policy
- Participation from 24 municipalities in Rocha river basin
- Board Meeting is chaired by the Governor and consists of 24 mayors
- Technical Council and its sub-committees were established.
- Management Unit and Social Council are under formulation

Board Meeting of Platform



Photo by Autonomous Government of Cochabamba Prefecture

Structure of Platform



Approach to functional Platform

- Legitimacy of the Platform have to be secured.
- Immediate establishment of Management Unit is needed. Management Unit plays key role for sustainable operation. (e.g. Agenda setting)
- Social Council shall be place for dialogue among stakeholders to rebuild trust with each other.

Approach for problem solution

- Platform has to be a **place for problem solution.**
- **Start from small yet practical and realistic** agenda.
- 4 pilot activities are going on to solve challenges.
 - Wastewater treatment plant (Conflict Management/Knowledge sharing)
 - Water quality improvement
 - Mutual interference of tube wells
- Achievement and lessons learned will be shared in sub-committees of the Platform



Photo by Autonomous Government of Cochabamba Prefecture

Vicious Cycle in Cochabamba



Virtuous Cycle in Cochabamba



Conclusion

- Have a functional Platform is the most important first step.
- Accumulating successful experiences even small through problem solution in the Platform
- Successful experiences will lead to rebuilding trust between Government and Residents.
- Rebuilding trust must change “Vicious Cycle” into “Virtuous Cycle”.
- Virtuous Cycle will achieve “Clean Rocha River”.



**Thank you for your
attention**

Discussion on “Practical IWRM”

1. **Iran:** What can we do to balance between the lake environment and the people’s livelihood/happiness, not being either-or?
2. **Indonesia:** What is most important to mobilize various stakeholders related and advance land-subsidence measures together in the megacity?
3. **Sudan:** How to develop and conserve groundwater aquifers where the groundwater has been decreasing?
4. **Bolivia:** What are the keys to rebuild people’s trust to the government?

“Practical IWRM” is a problem-solving-oriented approach.

- The pro forma indicators of the SDG 6.5.1 is **not enough** to evaluate the progress of IWRM Implementation.
- We might **add some indicators** of clarifying problems and moving into action to solve, in order to identify the accomplishment of IWRM implementation.

Closing Remarks