GWSP
GLOBAL WATER SECURITY & SANITATION PARTNERSHIP

Session 4. The importance of the right Policy, Regulation and Institutional Environment and Stakeholder engagement in WICER projects

WORLD BANK GROUP
Water

SCHEDULE AND CONTENTS

TIME	SESSION
9:00 – 10:30	**Session 1. Overview of the principles of circular economy and resilience in the water sector** ▪ Presentation of the Water In Circular Economy and Resilience (WICER) Framework ▪ Is your project WICER? Use the WICER quick assessment online tool ▪ Discussion by table and reporting to the whole group
10:30 – 11:00	Coffee break
11:00 – 12:30	**Session 2. Presentation of real case studies and good practices examples** ▪ Presentation of cases showcasing different approaches to circular economy ▪ Discussion by table and reporting to the whole group
12:30 – 13:30	Lunch break
13:30 – 15:00	**Session 3. Interactive session to prioritize and apply the WICER principles** ▪ Presentation to set up the scene ▪ Hands-on exercise to prioritize WICER interventions to solve a challenge working in teams
15:00 – 15:30	Coffee break
15:30 – 16:45	**Session 4. The importance of the right Policy, Regulation and Institutional Environment and Stakeholder engagement** ▪ Presentation to set up the scene ▪ Presentation on the Australian example ▪ Hands-on exercise on PIR and stakeholder mapping exercise.
16:45 – 17:00	Closing and next steps

An enabling policy, institutional, and regulatory (PIR) environment is needed to achieve full circularity and resilience in urban water

Currently there are many barriers

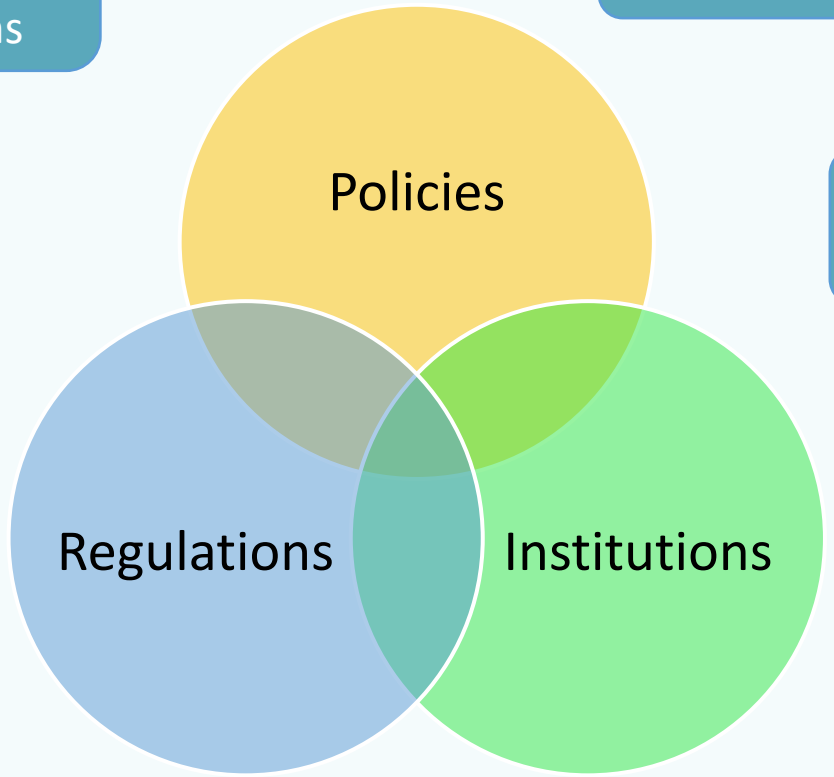
- **No clear policy goals or targets** (on circular economy, efficiency in the water sector, restore ecosystems, etc) → Lack of support to municipalities/utilities
- **No clear regulations or guidelines** on the use and sale of resources recovered from wastewater → discourages municipalities and specially the private sector to develop projects with circularity in mind (too much risk)
- **Low tariffs for freshwater or energy** → no incentives to make efficient use of water, reuse treated wastewater, generate energy in wastewater treatment plants or implement energy efficiency measures
- **Low wastewater discharge fees or pollution charges, or lax enforcement** → no incentives by industries to minimize water pollution

Example of an enabling environment

Guidelines for resource recovery, clarifying risks, roles, opportunities, regulations

National targets for efficiency in the water sector

Clear water discharge standards



Clear policy goals regarding circular economy and water

Clear regulations and legal framework for:
- Reuse of wastewater
- Biosolids and other byproducts
- Energy generation in the water sector

Strong capacity to enforce water quality standards and other relevant regulations

Coordination mechanisms and accountability between different sectors and different levels

Right tariffs for water and adequate pollution fees

Key aspects of an enabling PIR environment for Circular Economy (CE)

- Allow for cross-sectoral collaboration → we can't operate in silos for CE solutions (i.e. energy genearation, biosolids for agriculture, NBS for environment)
- Address the new risks that appear from WICER solutions and business models → health and environmental risks of reuse, etc
- Create a market for resources recovered from water and wastwater → clear regulations, guidelines and other enabling environment for biosolids, reuse, energy, etc.
- Ensure and promote stakeholder and community engagement to increase acceptability and awarenees of WICER solutions
- Adequate tariff for water and adequate pollution fees (and enforcement)
- Clear policy targets and strong leadership

Wastewater reuse example

Rationale for a clear regulatory framework (Clear responsibilities/rights, accountability & risk mitigation strategies)

- **World:** In the several case studies analyzed for "waste to resource" and "WICER" initiatives, besides physical factors, **strong institutions, a clear regulatory framework** or clear roles, rights and responsibilities via contracts were key factors for the successful implementation of reuse and resource recovery.
- **In the EU:** Lack of a supportive and coherent framework for water reuse was identified as a major barrier preventing a wider spreading of this practice. (now there is a new regulation on wastewater reuse: *EU-Regulation on minimum requirements for water reuse)*

Clear long-term contracts and agreements between stakeholders can be incorporated into the project implementation arrangements to mitigate some of the issues

Stakeholder Engagement - rationale

- International experiences* show that resource recovery projects can be delayed or can fail if the negative perceptions of reclaimed water and reuse products have not been adequately assessed and addressed
  - There is low social acceptance of the use of products made from recycled human waste. **Risk: people rejecting to buy vegetables and fruits irrigated with treated wastewater, impacting the farmers.**
  - Both farmers using freshwater and farmers using untreated wastewater might not be willing to switch to treated wastewater without additional incentives. **Risks: End-user not willing to use treated wastewater once tertiary treatment is built, farmers opposing the project**
  - Farmers might not have clarity on who is responsible to monitor the water quality, which crops they can use and what happens to their existing water rights. **Risk: the expected environmental benefits are not realized if farmers continue using both freshwater and treated wastewater**

- Engaging key stakeholders before the implementation of the project, will help mitigate these risks

* 10 international case studies from Wastewater: from waste to resource and WICER initiatives

Stakeholder Engagement - examples

- Information and awareness campaigns on: the benefits of using treated wastewater to mitigate water scarcity, safety of consuming vegetables irrigated with wastewater, etc.
- Stakeholder engagement workshops at the basin level to inform project design and implementation
  - Identify end users of treated wastewater and recovered resources (type (farmers, industry, other private sector users), location, quality of wastewater needed, etc.).
  - Identifying the end users before the implementation of the projects also allows to potentially choose the location of the WWTP and treatment technology according to the end users (not the other way around) – fit to purpose – to reduce costs (for example, if end user grows non-edible crops such as cotton, treatment requirements might be lower, lowering capital and O&M costs).
  - Identify opportunities and challenges and/or initiate needed actions to promote wastewater reuse and resource recovery
  - Communicate benefits, risks and mitigation measures of using treated waster water.
- Legal Agreements to supply treated wastewater
  - Clarify roles and responsibilities for each party (water monitoring, tariff, water rights, CAPEX and OPEX, etc).

Case study: San Luis Potosi, Mexico

Challenge:

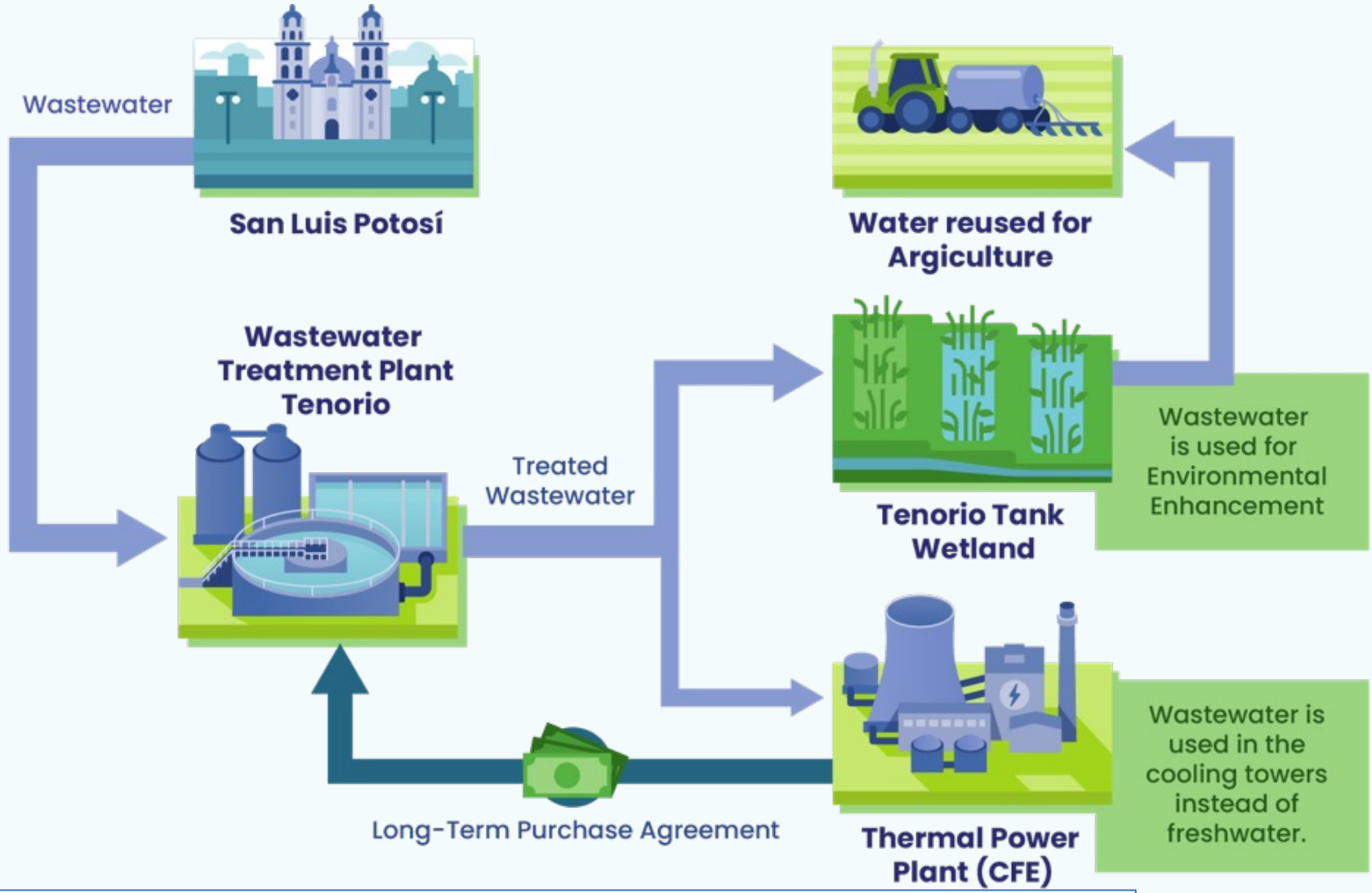
Over-extraction of the aquifer (double of its natural recharge). The economic development and social stability of the area depend on the aquifer.

Low wastewater treatment capacity

OBJECTIVE:

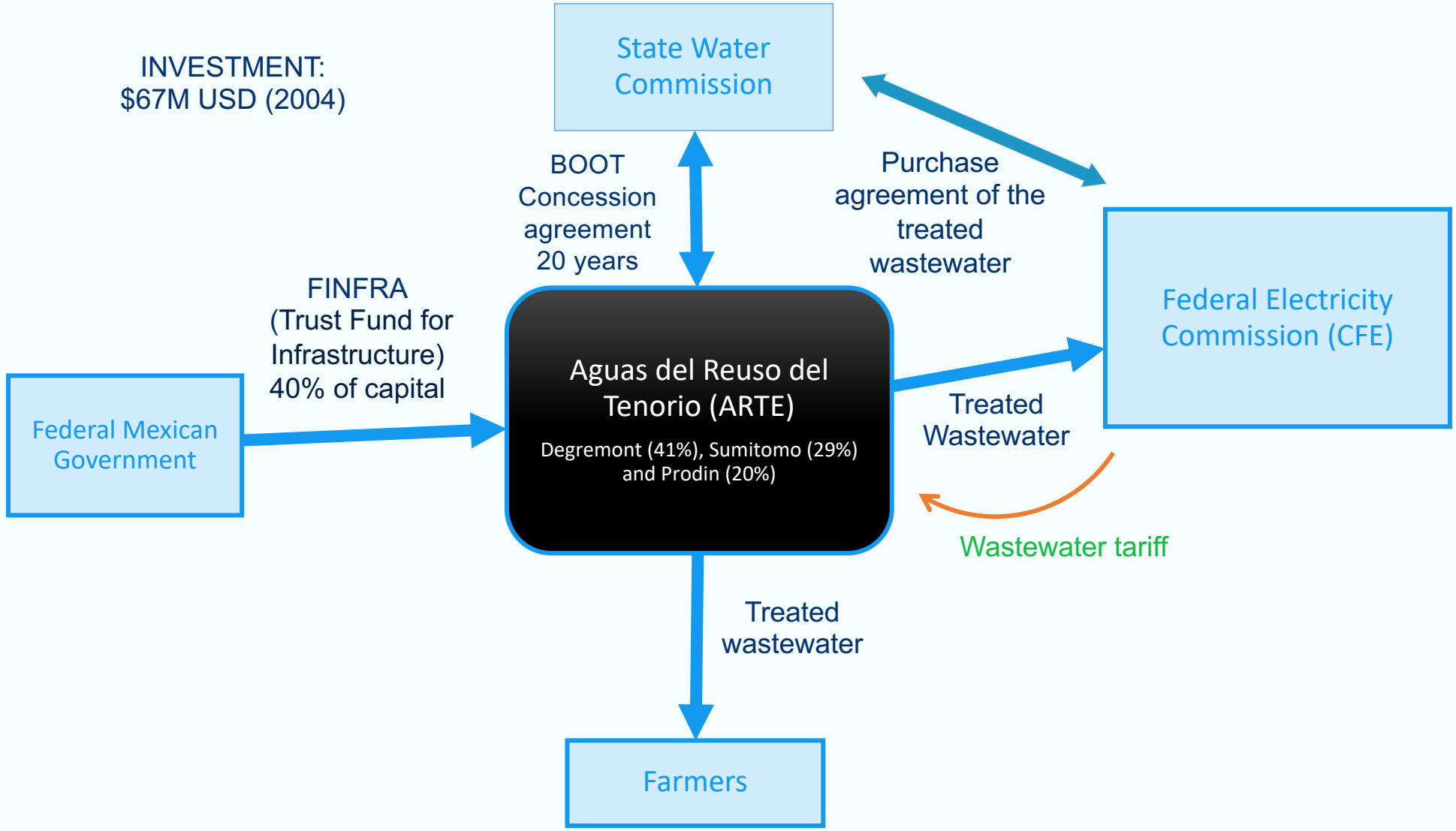
- Restore the aquifer
- Diversification of water sources – Use of treated wastewater for non potable uses – REUSE
- Increase the amount of wastewater treated
- Health improvement of citizens
- Improve water efficiency in agriculture

Solution: Integrated wastewater management plan: reuse for industry, irrigation and environmental remediation



Full case study here: https://openknowledge.worldbank.org/handle/10986/29491

Financing and contractual agreements



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Benefits

Economic:

- For the power plant → treated wastewater is 33% cheaper, more consistent (quality and quantity), and more sustainable than groundwater. The power plant has saved US$18 million in six years.
- For the WWTP –> The extra revenue stream from treated wastewater fees covers almost all O&M costs.
- For the farmers → The treated wastewater is of better quality than the untreated wastewater that farmers used previously. That has led to an increase in agriculture production and has allowed farmers to diversify or switch to higher value crops.
- For the farmers and industry → Reduced risk due to the increased resilience to droughts

Environmental and Social:

- Aquifer has been restored: Net reduction of groundwater extractions - Preserving 14 Mm3/ year,
- Stabilization pond has been rehabilitated into a natural wetland, preserving biodiversity and providing habitat for wild birds and other animals.
- Wastewater treated - Improved living standard for the population
- Reference case of wastewater reuse, encouraging other industries to explore wastewater reuse

Success factors

- Government support and leadership:
  - Federal and State level policies that promote and regulate the use of treated wastewater
  - Local water prices for industry reflect the cost and scarcity of the area incentivizing the use of alternative sources
- Collaboration between different government agencies (energy, water, and different government levels)
- Design of treatment plant with reuse in mind - Multi-quality of treated wastewater tailored for the different uses (fit to purpose approach)
- Well design agreement and contracts between stakeholders
- Stakeholder engagement and compromise. The CEA had to engage and negotiate with the farmers because they believed that treating the wastewater would reduce the nutrient content that served as fertilizer for them.
- Education and raising awareness of uses of treated wastewater

Hands-on exercise. Discussion questions

Discussion Questions:

- CIRCULAR ECONOMY AND WATER: Are there any circular economy policies, strategies, or plans in your country? Do they include the water sector, or do they focus mostly on waste management / manufacturing, fashion, etc? Do you think the water sector needs to be included?

Hands-on exercise: Choose option A or B and continue with the following questions:

Policy, institutional, and regulatory (PIR) environment

- CHALLENGES: Identify the PIR environment in your context that would apply to the WICER project (in water, energy, environment, health, agriculture/food). For example, are there adequate to foster circular economy solutions in the water sector? Which regulations should be in place to enable the WICER projects? Which PIR barriers or challenges do you envision?
- OPPORTUNITIES: How would you overcome the PIR challenges? Can you come up with other ways to overcome the lack of clear regulations that would apply in your context? (for example, agreements or contracts between different parties to clarify the roles and rights – as discussed in some of the case studies). Are there any opportunities?

Stakeholder mapping and engagement: Engaging early with stakeholders is crucial to ensure the sustainability and acceptance of circular solutions, especially when we want to reuse products from wastewater.

- Can you identify all the key stakeholders?
- CHALLENGES: Do you envision any issues with the end user or other stakeholders? How will they react to the project?
- OPPORTUNITIES: How could you engage with them to minimize risks and ensure that the project is successful?

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Thank You!

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