

HOW TO ADDRESS THE WATER SECTOR CHALLENGES IN TIMES OF MULTIPLE CRISES

Keynote by Gustavo Saltiel

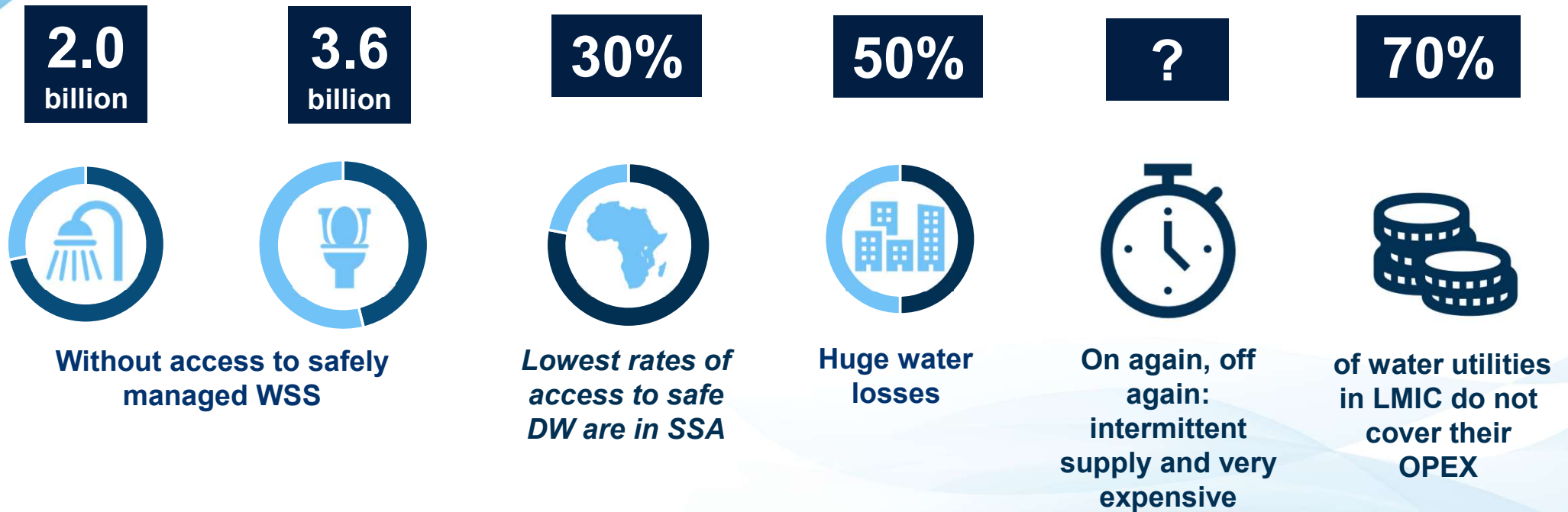
Global Lead Water Supply and Sanitation

2023
DANUBE WATER CONFERENCE

NAVIGATING
CHANGING
WATERS



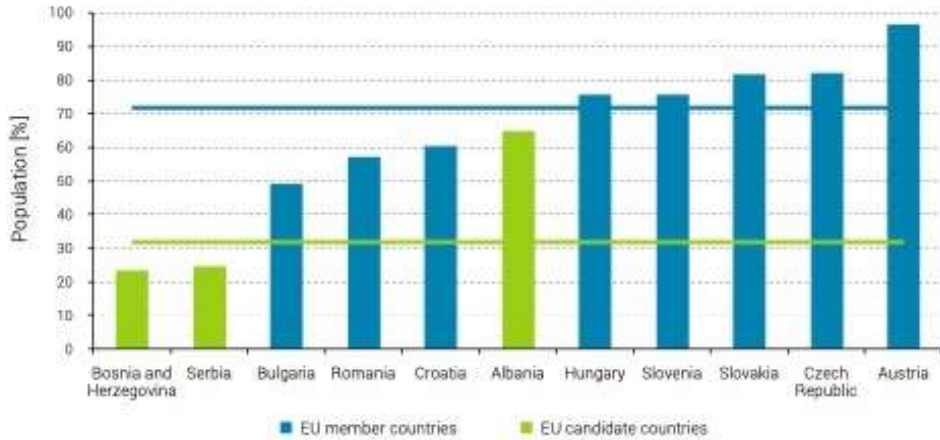
Sustainable Development Goal #6: *Not on Track*



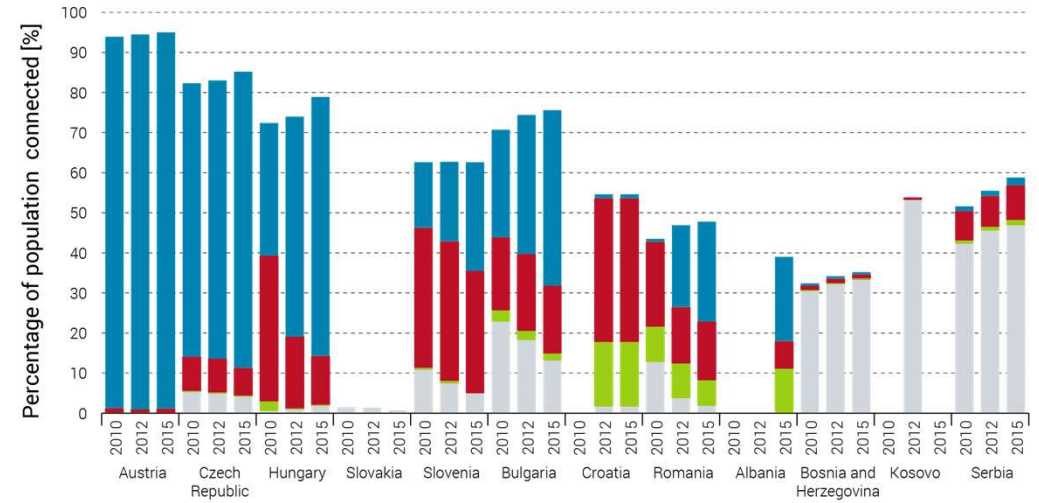
Danube Basin Access Gaps

SHARE OF POPULATION USING SAFELY MANAGED SANITATION SERVICES

~28 million without flush toilets

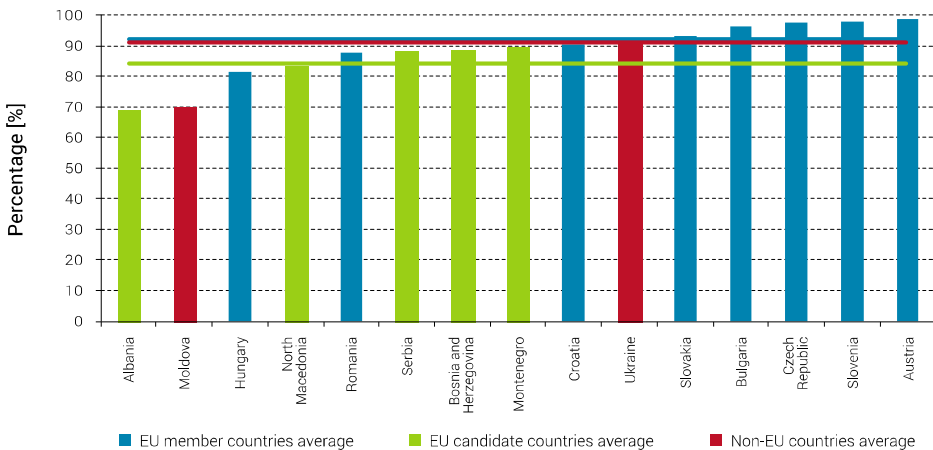


SHARE OF POPULATION CONNECTED TO SEWAGE COLLECTION SYSTEM



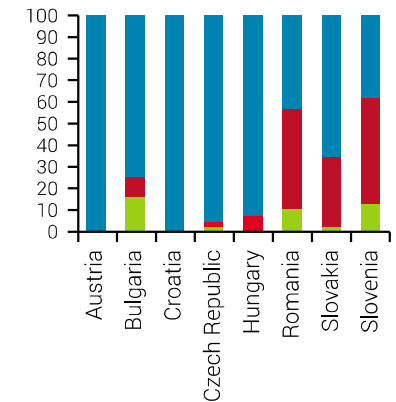
SHARE OF POPULATION USING SAFELY MANAGED WATER SERVICES

~22 million without piped water



- More stringent treatment
- Secondary treatment
- Less than secondary treatment
- Collected without treatment

WASTEWATER TREATMENT LEVELS



A combination of structural, institutional and regulatory challenges lead to downward spiral in utility performance

Balancing market and government failure...

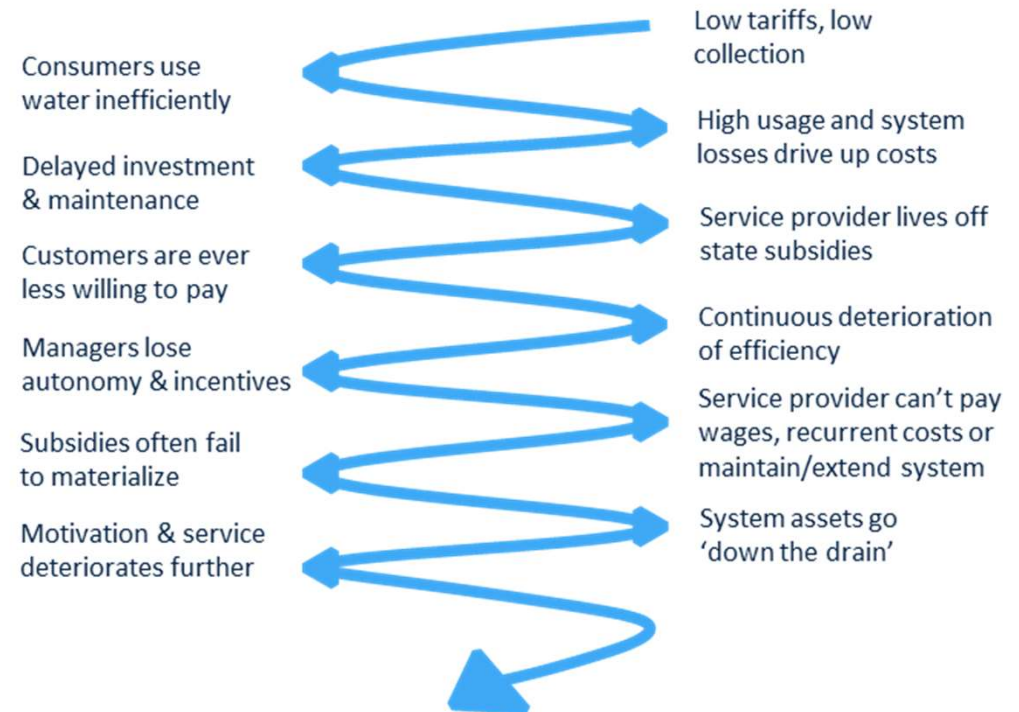
Market failure

- Natural monopoly with very high fixed costs and very long-lived assets
- Sector with significant environmental footprint
 - Water is a natural resource
 - Large consumer of energy (80% of OPEX)
 - Poor sanitation key driver of stunting, infant mortality and pollution

Government failure

- Weak financial and operational capacity of SOEs
- Poor intergovernmental coordination
- Ineffective regulatory and pricing systems
- Poor targeting of subsidies
- Limited oversight and performance reporting

... Utilities “slippery slope”



Market Trends Affecting Public Water Utilities



Traditional Public Administration

Expansion of role of state to rising expectations and demand for services

- Hierarchical
- Professional public servants
- Merit-based appointments
- Process-oriented

- Rule of law
- Separation of political and administration functions

New Public Management

Refocus on efficiency & result based performance due to lack of resources & questioning role of state

- Efficiency and result based
- Markets and competition
- Decentralization
- Private sector management principles

- Accountability
- Consultation
- Consolidation

'New Public Governance' and other alternative approaches

Shift towards **incentive creation**, tailored solutions based on identified problems due to admission that 'one-size-fits-all' does not work.

- Results
- Professional public servants
- Merit-based appointments
- Process-oriented

Leading to Complex Policy and Institutional Structures

Decentralization

- Transfer of service provision to local governments
- Role of national government in WSS (eg policy and financing)

WSS sector institutional organization

- Separation of functions (or not) within the WSS sector. eg:
 - National agency – responsible for policy making
 - Regulatory agency/unit – responsible for economic and technical regulatory functions
 - Service providers – responsible for providing services
 - Assets ownership
- Coordination and accountability mechanisms

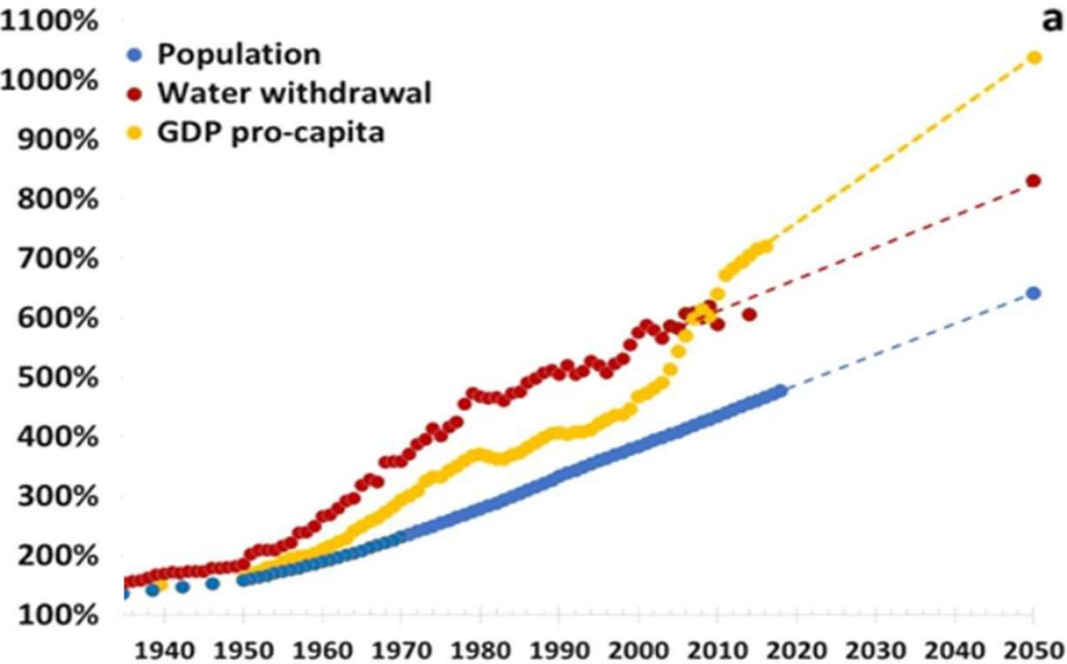
Government targets and programs

- National targets for WSS service performance or coverage
- Specific pro-poor policy/targets for the WSS sector

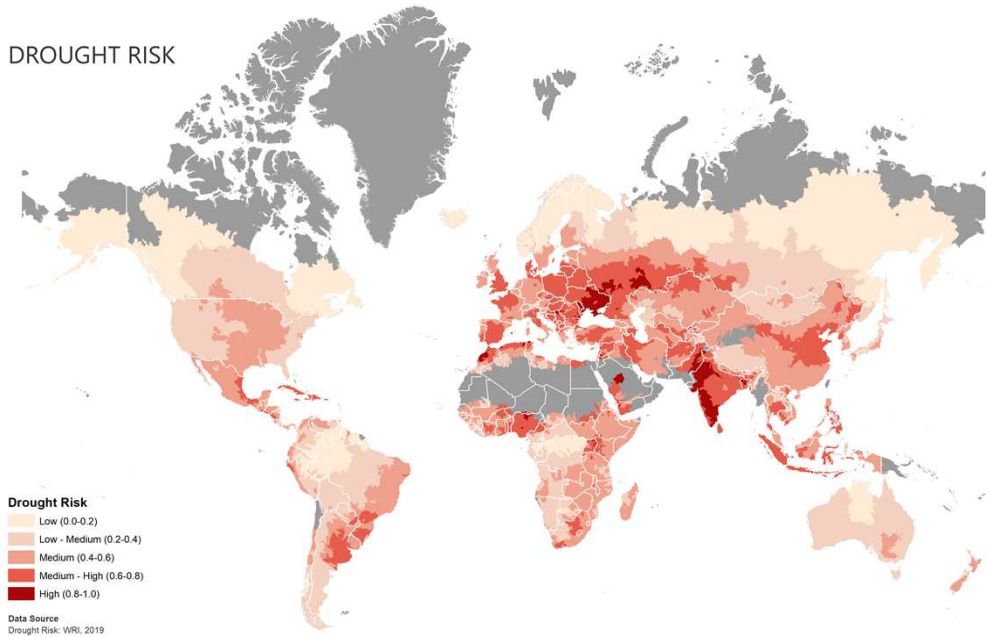
Private sector participation

- Government policies allowing PPP in the WSS sector
- Definition of roles the private sector can play
- Government capability to work with the private sector in the WSS sector?

Megatrends: Water Stress is Increasing Globally

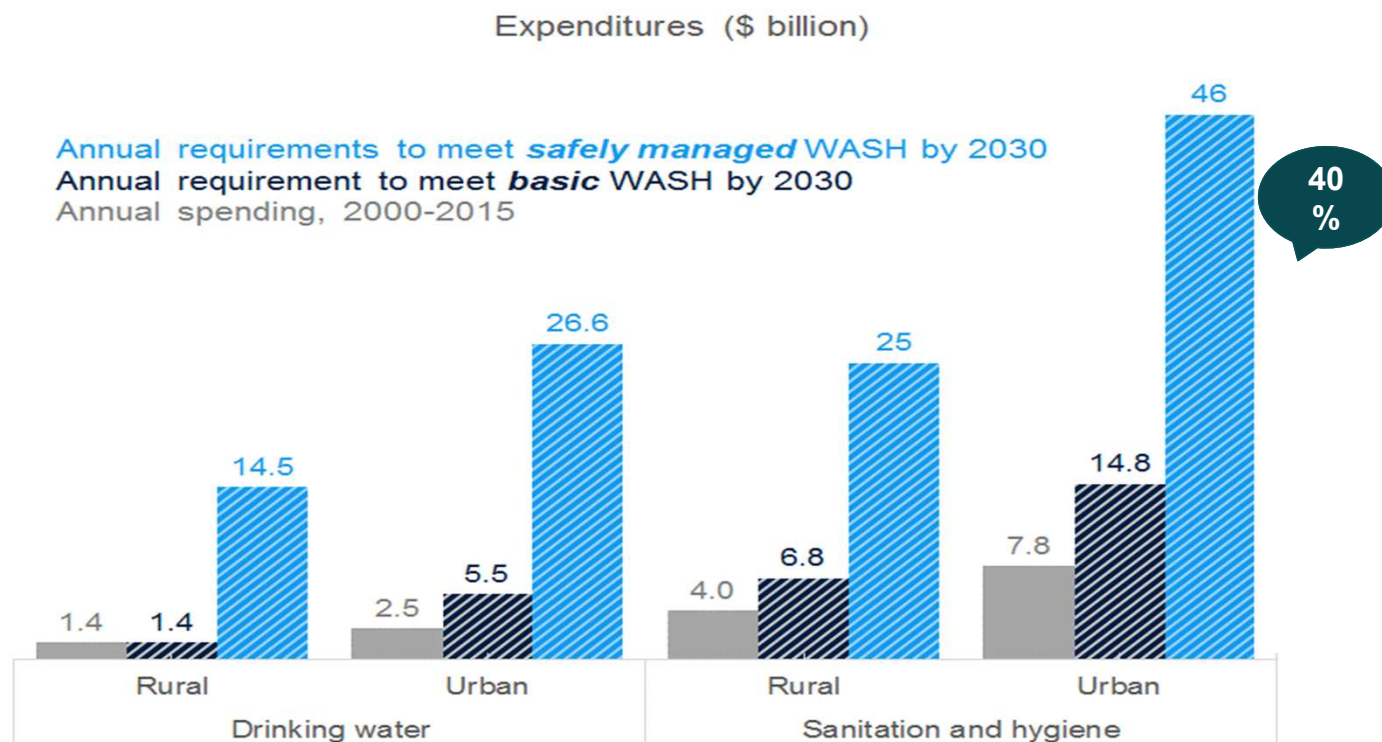


DROUGHT RISK



Resulting in an Important Global Challenge

To meet the SDGs WSS sector expenditure will need to increase 5-6 times



Achieving SDG #: Business As Usual Is **NOT** an Option

“Doing more, doing it better, doing it differently”

1. Improved policies, institutions, and regulations
2. Utilities that provide inclusive, resilient, sustainable and innovative services
3. Integrated, circular and resilient approaches to urban water management aligned with the global climate agenda



1. Improved policies, institutions, and regulations



Policies, Institutions and Regulation: Concept Framework

WHAT IS THE PIR FRAMEWORK?

Best-fit

Holistic

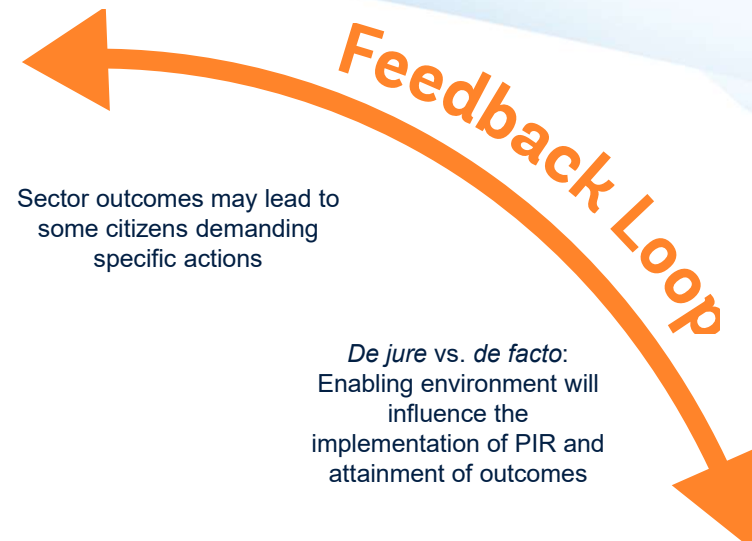
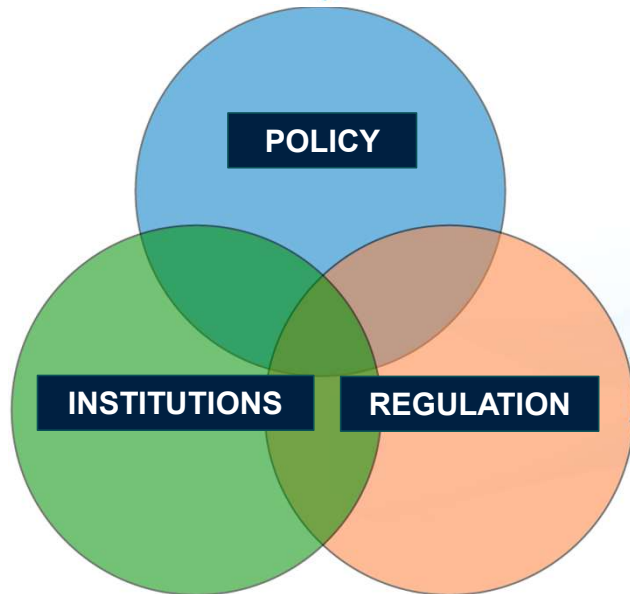
Incentives

Enabling Environment

Current State of the Sector/ Political Economy/Governance Structures



Provides the drivers for reform, removal of binding constraints, determining the P, I, and R



Sector outcomes may lead to some citizens demanding specific actions

De jure vs. de facto:
Enabling environment will influence the implementation of PIR and attainment of outcomes

WSS Outcomes?

Provides the incentives for specific actions to deliver WSS services



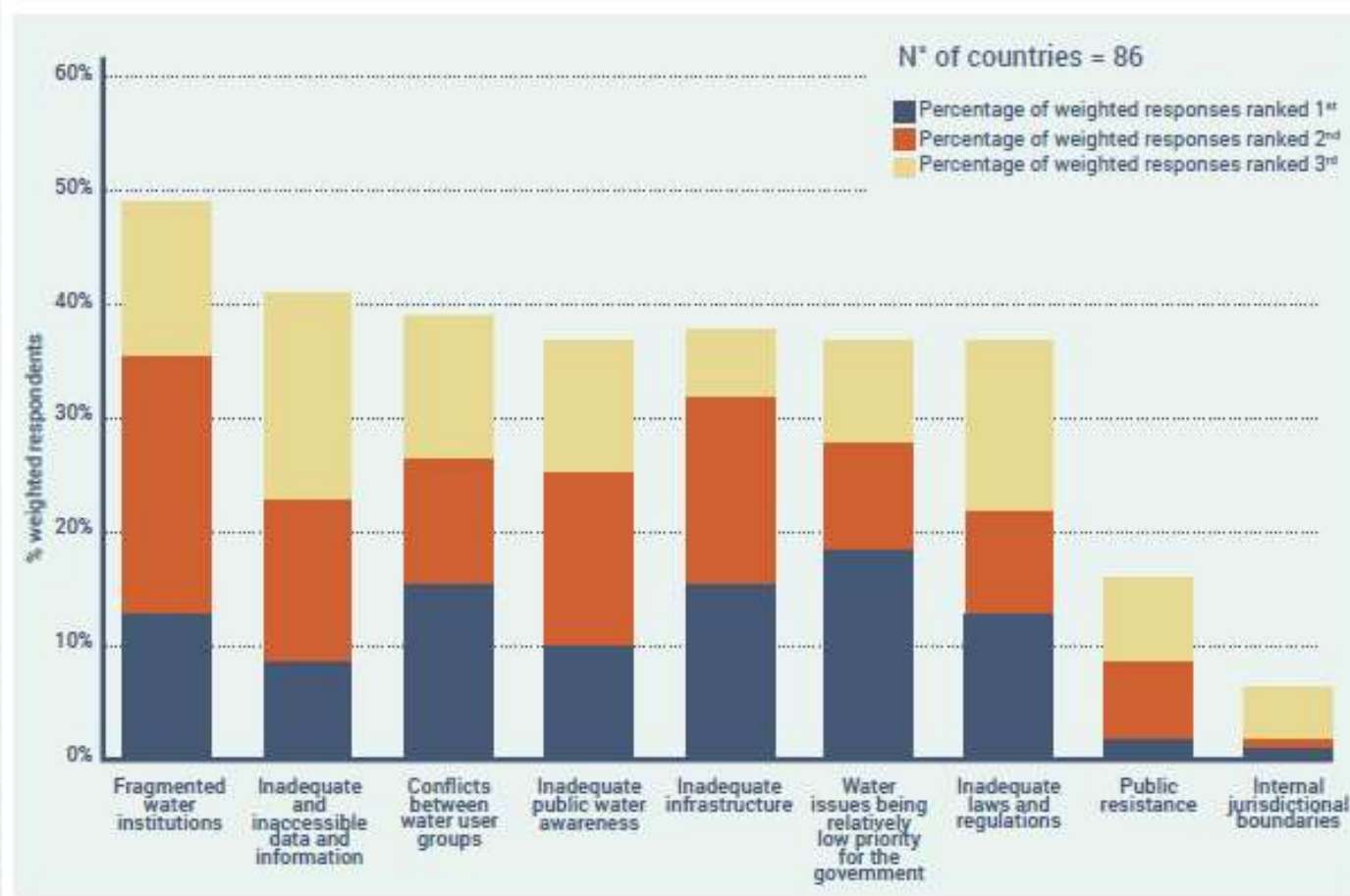
Sustainable Water Supply and Sanitation Services

(if binding constraints are removed & enabling environment allows for implementation of appropriate P, I & R)

1. Improving policies, institutions, and regulations

Policies, Institutions and Regulation (PIR) are the precondition for resolving some of the chronic challenges undermining WSS and achieving universal WSS

Policymakers rank PIR-related issues as the top water sector challenge



Global Water Policy Report: Listening to National Water Leaders, Water Policy Group, 2021

GSO

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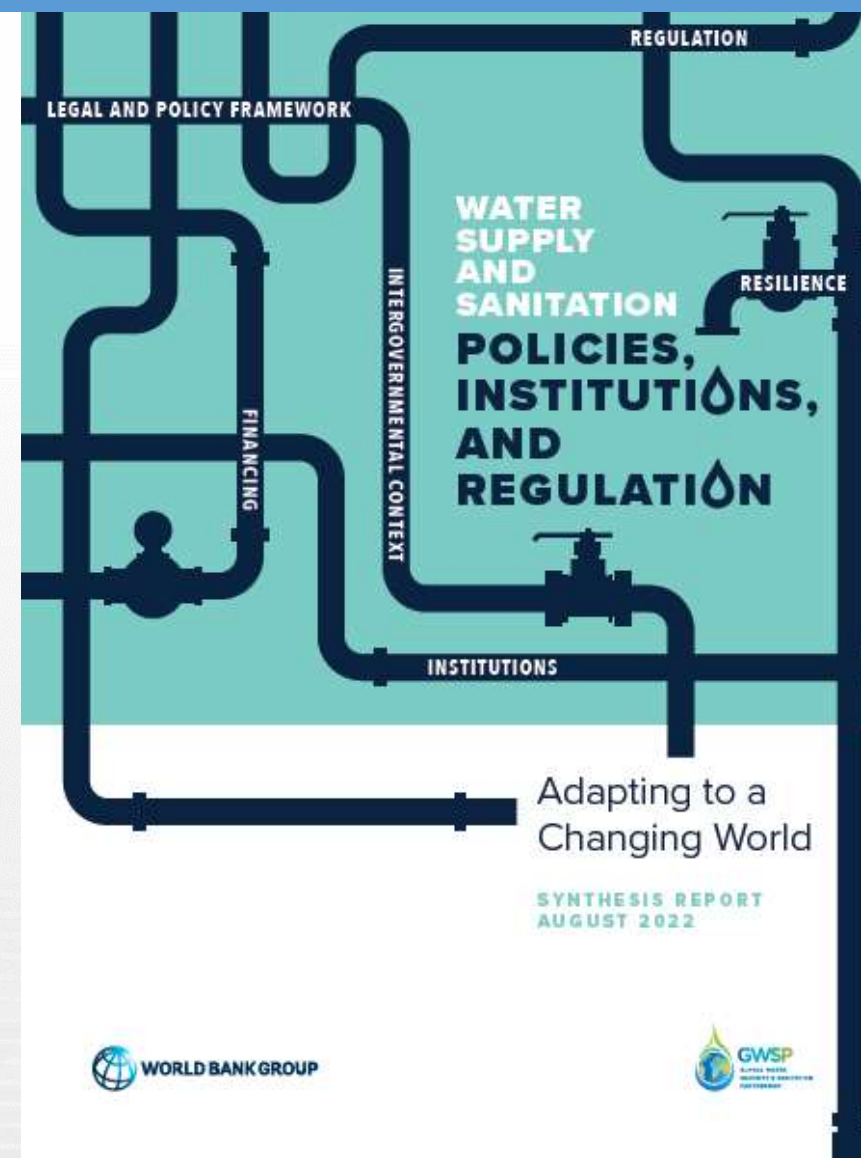
1. Improving policies, institutions, and regulations

Key Messages:

1. PIR is a precondition for resolving some of the chronic challenges undermining WSS and achieving universal WSS
2. Progress in achieving meaningful PIR reforms starts with a rigorous assessment of the root causes of water supply and sanitation service bottlenecks.
3. PIR reforms are long-term in nature and require mechanisms that foster evaluation, learning and adjustment.

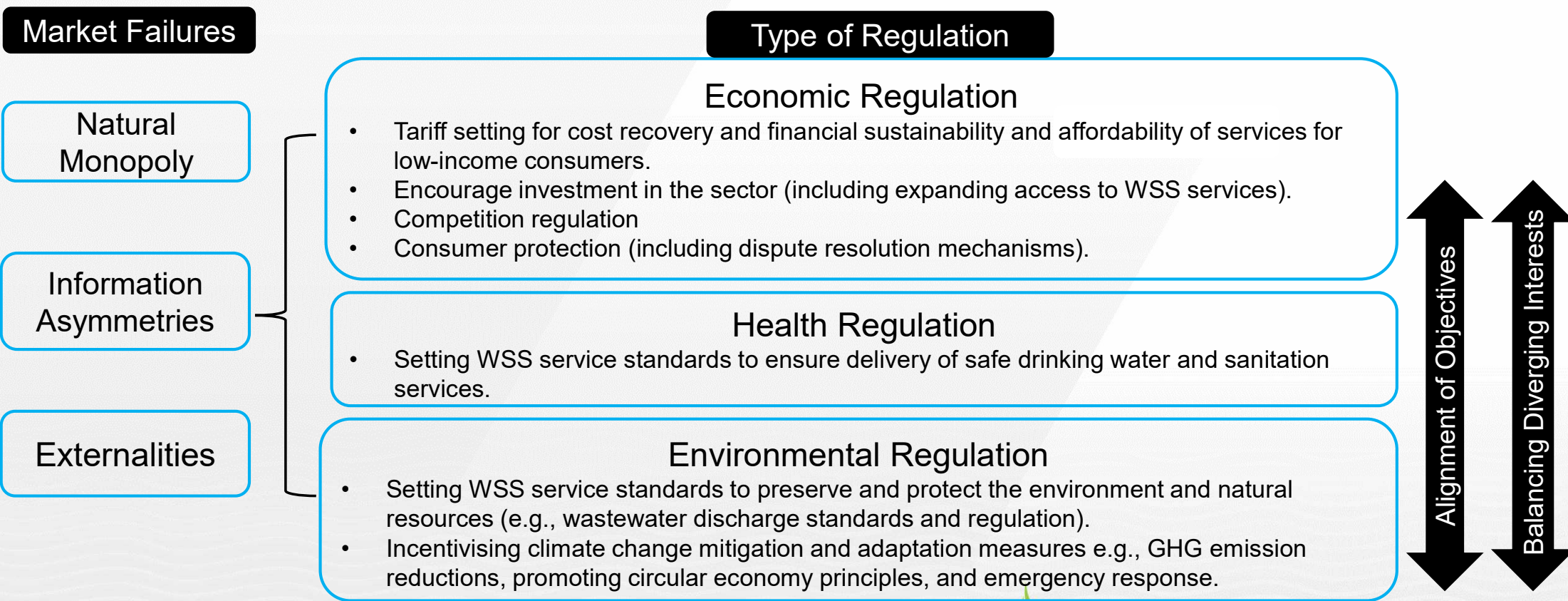


 Learn more



1. Improving policies, institutions, and regulations

Regulation for Economic Efficiency, Consumer Protection, Health, and Environment: Addressing Market Failures and Promoting Sustainability



Folie 14

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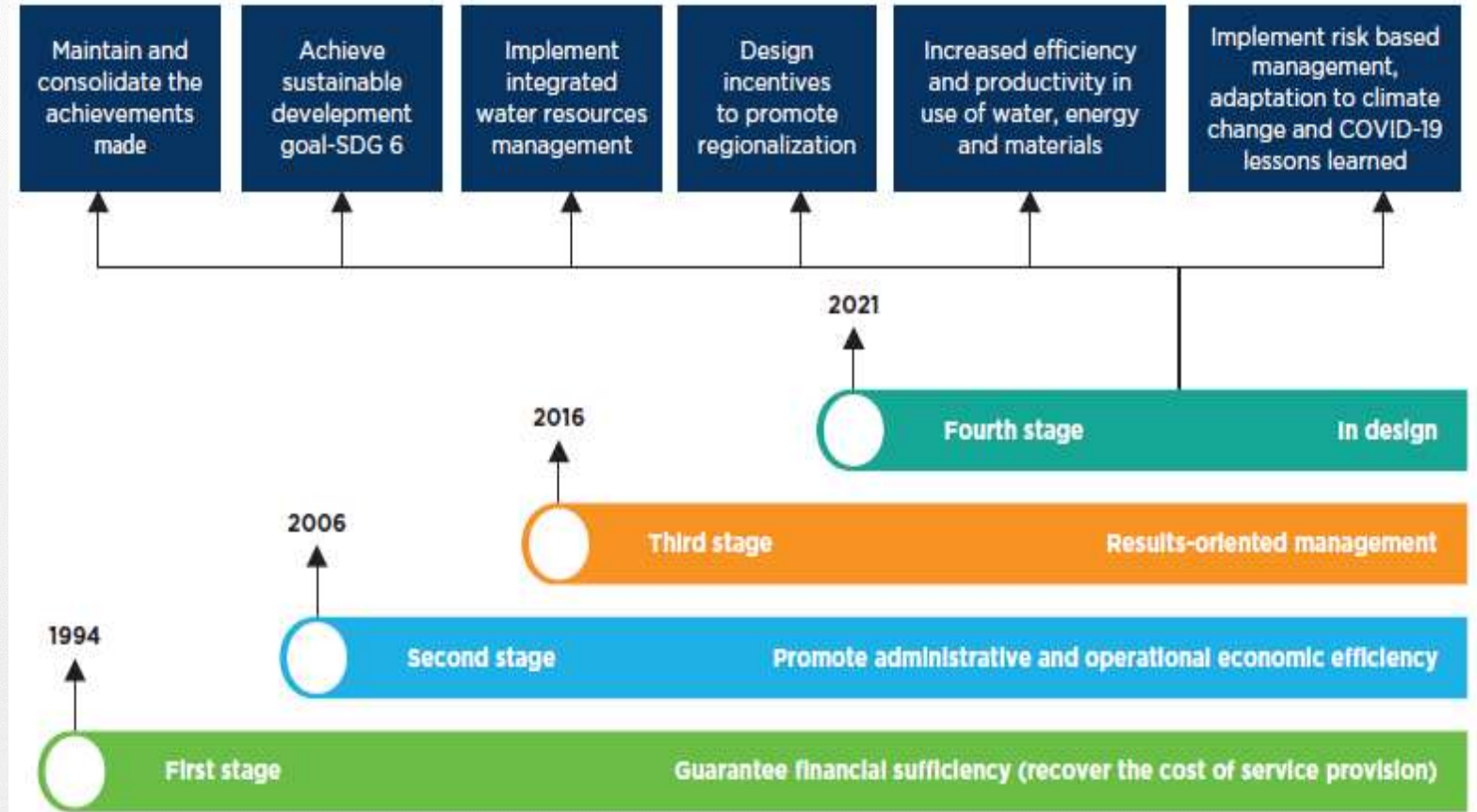
GS1 This slide should have a subtitle around "Regulation"
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Case 1: Colombia: Gradual, sustained sector reforms

Too many one-off, short-term measures with limited impact

Little attention paid to risks and emergency plans

Evaluation, learning and course correction is key



Case 2: Burkina Faso: wave of reforms leading to significant improvements in access and performance

► Focus on improving public utility management (ONEA)

- 1990-2000
- ❖ **Corporatisation** with legal autonomy
 - ❖ Allowed to set **cost-reflective tariffs** (initial tariff increase of 30% in 1990)
 - ❖ Rolling **3 year performance contracts b/w the State and ONEA**– 34 indicators, periodic independent monitoring arrangements, no rewards or penalties.
- 2001-2007
- ❖ **PSP** without Formal Management Delegation (**5 year** performance-based service contract) - fee for “services” with a bonus/penalty
 - ❖ Independent auditing of service contract execution to evaluate progress
- 2006-
- ### ► Decentralisation
- ❖ Incremental implementation
 - ❖ WSS management to communes (municipalities), with service provision by ONEA (in existing service area), local private suppliers.

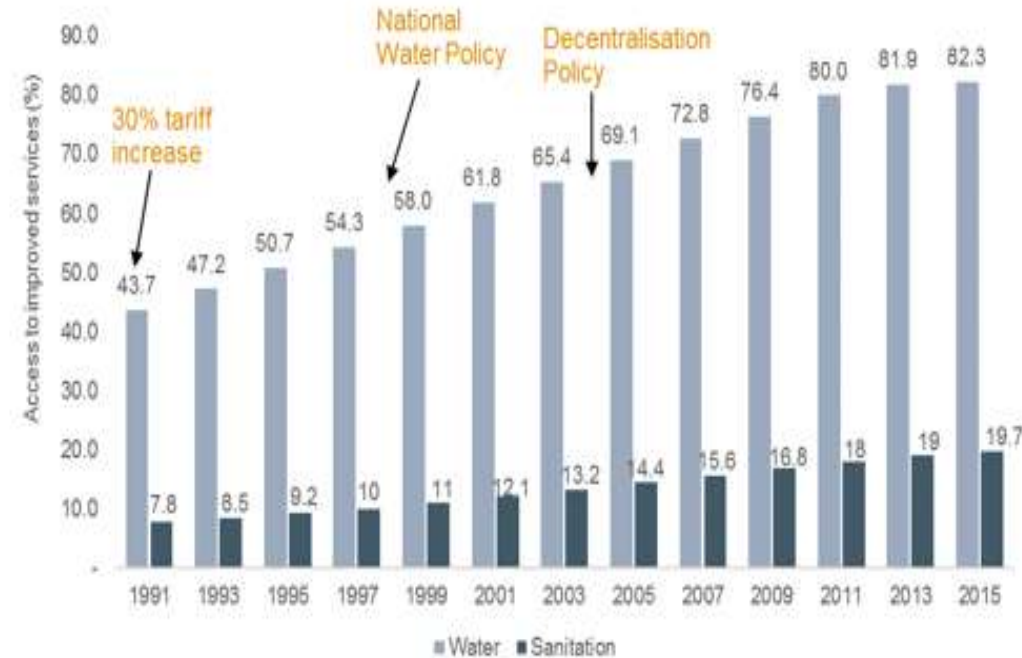
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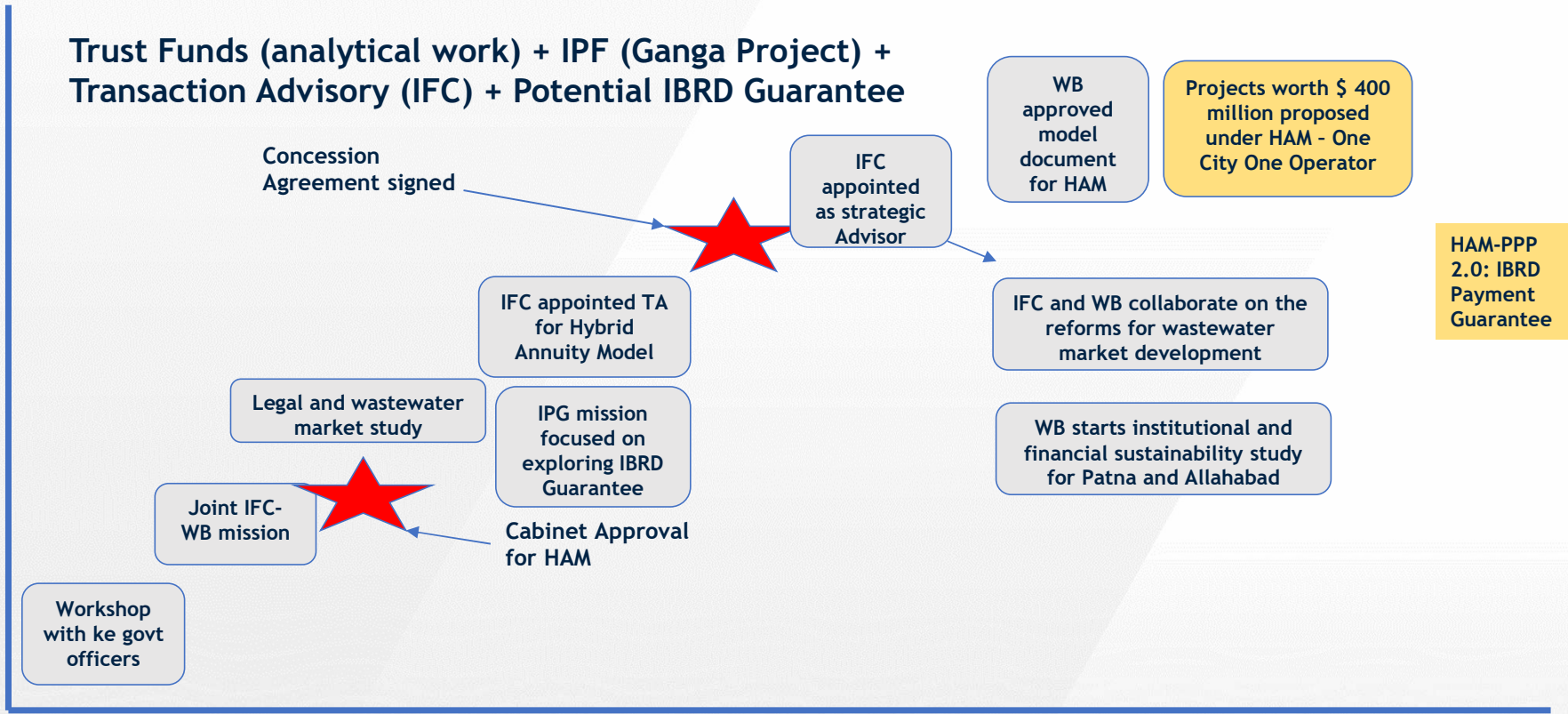
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One of highest levels of drinking water access in SSA. (Sanitation lags behind).
Financially viable public utility. Sustained improvements over 20+ years.

Staff productivity improved by 60%, continuity of service (24/7 in the capital), collection of bills increased by 11%, profitable throughout the period.

Case 3: India's Ganga Basin Cleanup Hybrid Annuity Model (HAM) based on close WB-IFC collaboration



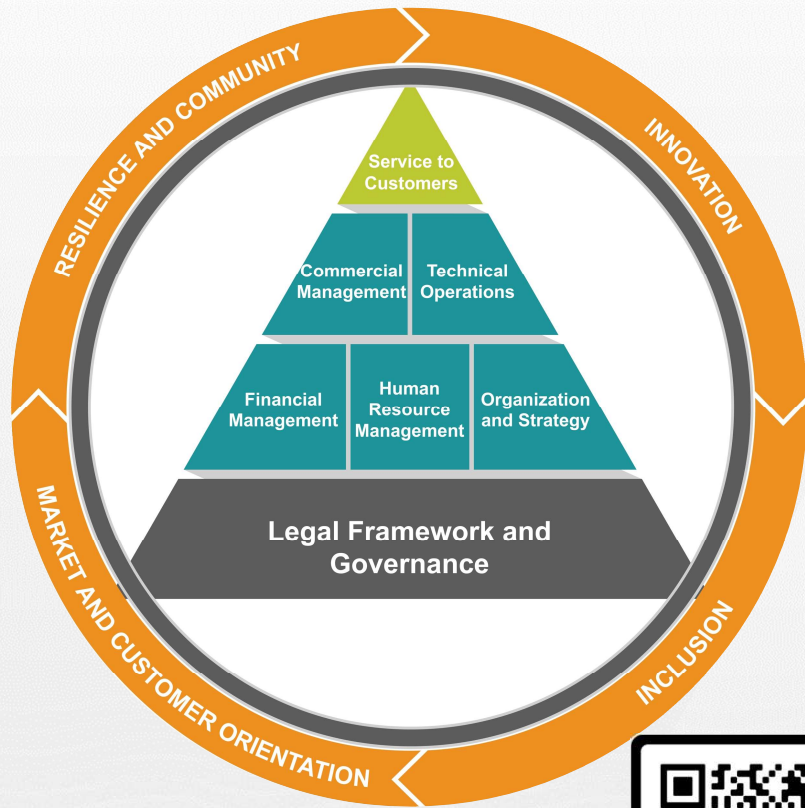
June 2015 Sept 2015 April 2016 Jan 2017 Oct 2017 Nov 2017 Feb 2018 Sept 2018 2022



2. Utilities that provide inclusive, resilient, sustainable and innovative services



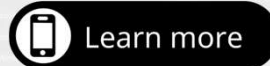
2. Utilities that provide inclusive, resilient, sustainable and innovative services



A future-focused utility, which provides reliable, safe, inclusive, transparent, and responsive WSS services through best-fit practices that allow it to operate in an efficient, resilient, innovative and sustainable manner.

A new approach - 4 new elements of utility performance improvement:

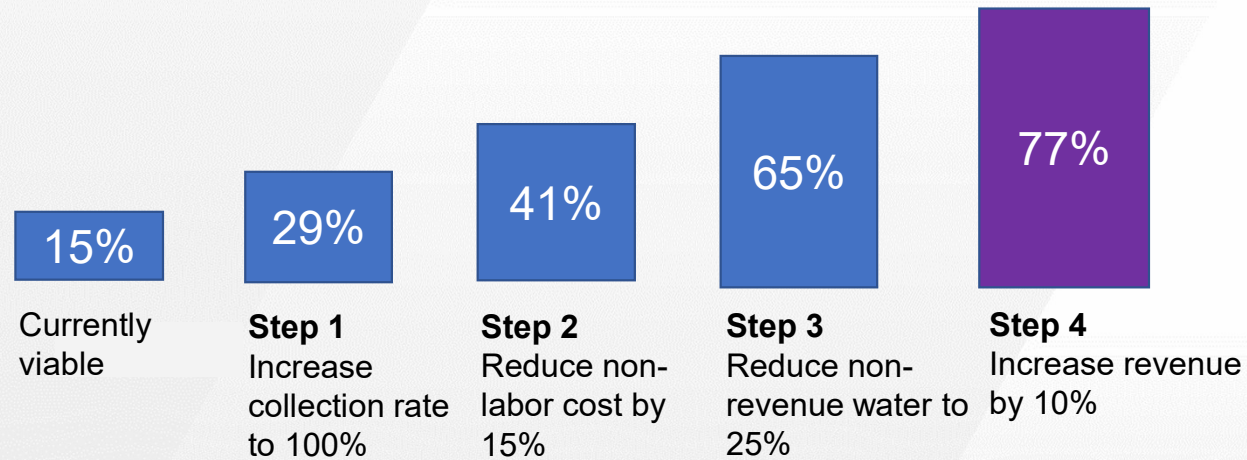
1. resilience and continuity;
 2. Innovation/digitalization;
 3. market and consumer orientation; and
 4. inclusion.
- **Results-Oriented:** delivers 100-day performance improvement action plan and 5-year strategic plan.
 - **Scale:** Franchise implementation approach strengthens capacity of local organization and promotes implementation at scale.
 - **Participatory:** implemented in a participatory approach o secure ownership of reform



For more details visit worldbank.org/UoF

Some important “Quick Wins”

Operating Cost Coverage Ratio >120% of O&M

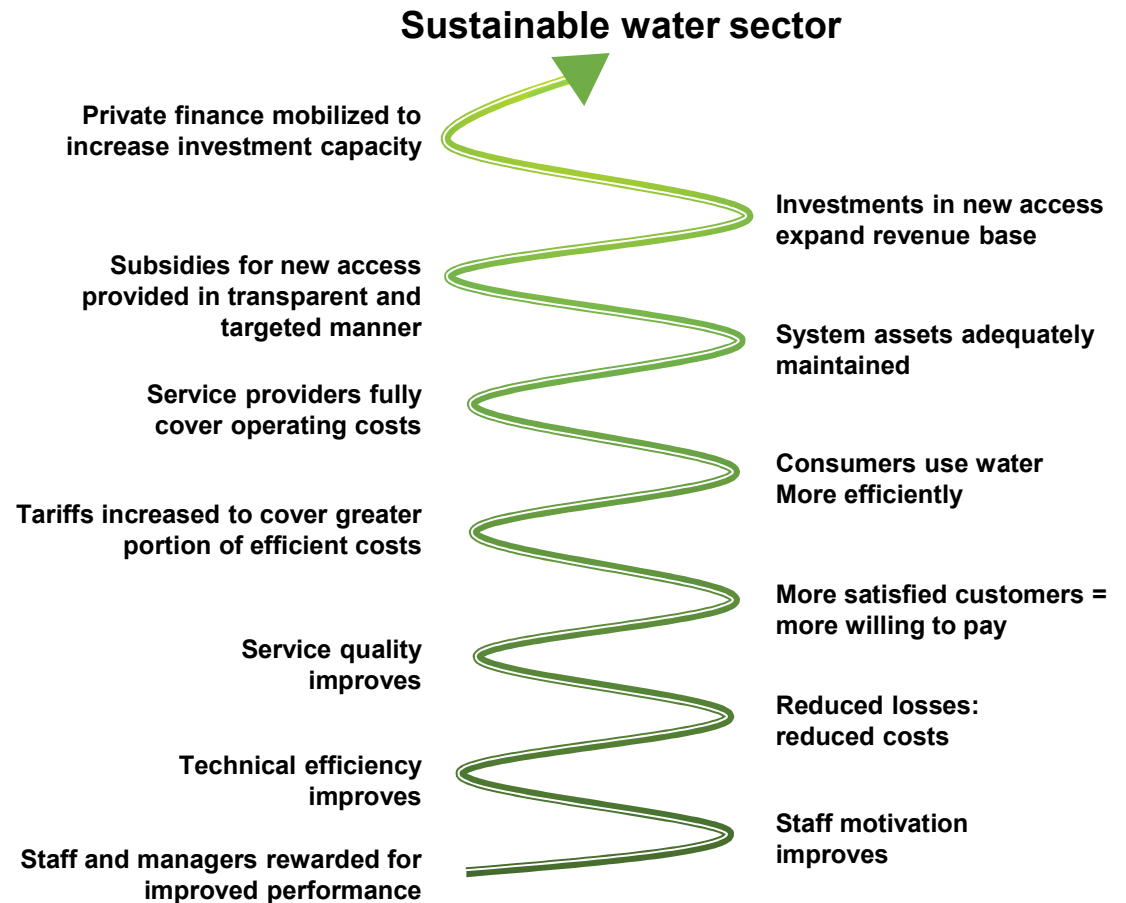


2. Utilities that provide inclusive, resilient, sustainable and innovative services

With the focus on operations and governance, the “slippery slope” can start to be reversed

Service providers must reduce costs and free-up wasted resources

- ✓ Invest in more capital-efficient solutions
- ✓ Implement asset-management systems
- ✓ Reduce non-revenue water
- ✓ Improve collection rates
- ✓ Reduce energy costs
- ✓ Maximize reuse and resource recovery
- ✓ Professionalize staff
- ✓ Enhance governance arrangements

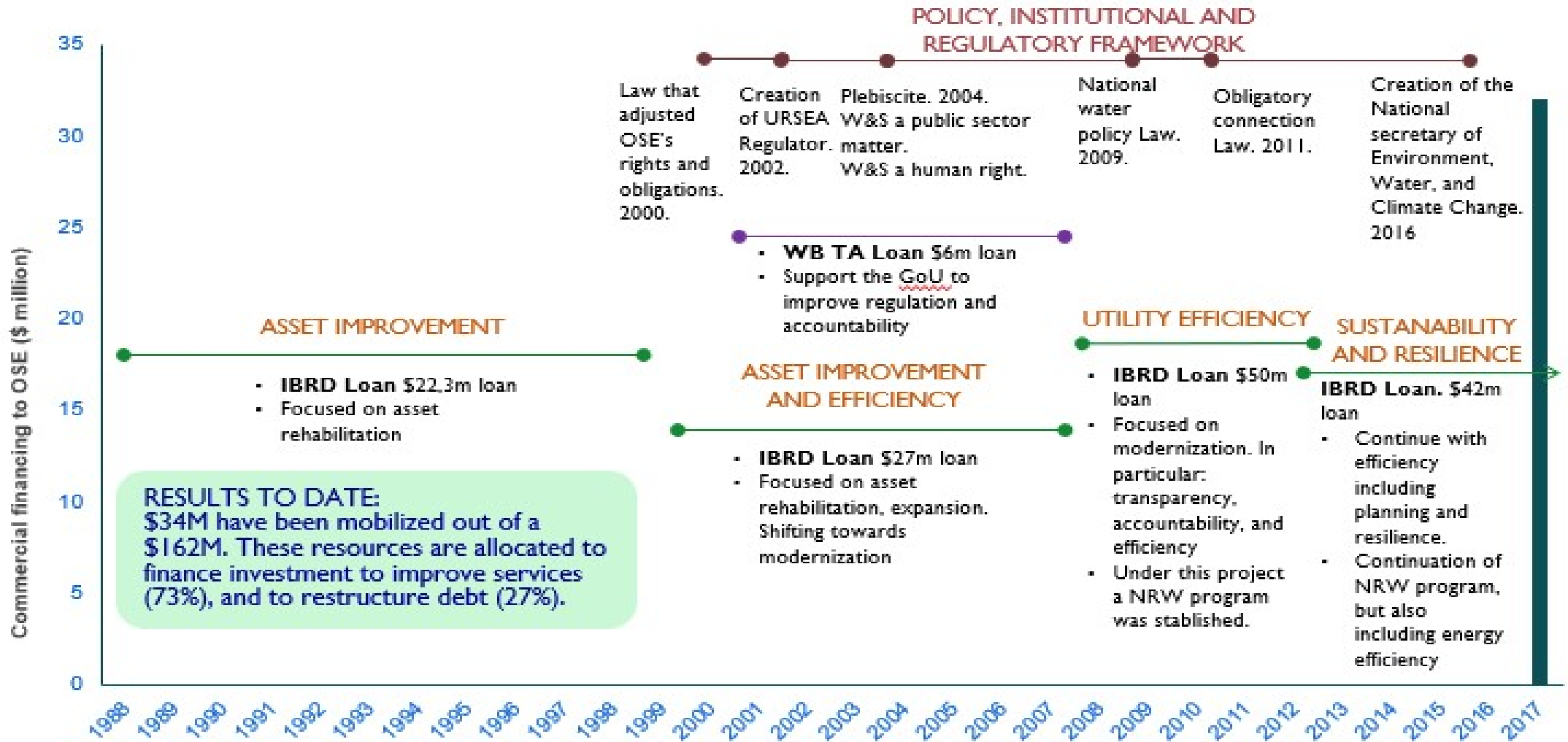


Case 1: Shimla (HP, India) combining institutional, financial and operational reforms

Shimla's Water Supply and Sanitation sector is operated by a WSS Company: SJPNL is a corporate entity owned by the Government and the Municipal Corporation

Sector challenges	Solutions	Outcomes																									
<p>Institutional Program</p> <ul style="list-style-type: none"> • Fragmented, overlapping responsibilities <p style="text-align: right; background-color: white; color: #002060; padding: 2px;">DPF</p>	<ul style="list-style-type: none"> • Institutionalization of ring-fenced fully corporatized WSS Utility • Corporate governance program • Formal structure and HR Policy 	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Increased Meter Coverage</p> <table border="1"> <caption>Increased Meter Coverage Data</caption> <thead> <tr><th>Fiscal Year</th><th>Metering %</th></tr> </thead> <tbody> <tr><td>FY19</td><td>18</td></tr> <tr><td>FY20</td><td>100</td></tr> <tr><td>FY21</td><td>100</td></tr> <tr><td>FY22</td><td>100</td></tr> </tbody> </table> </div> <div style="width: 48%;"> <p>Reduced Non-Revenue Water (System Losses)</p> <table border="1"> <caption>Reduced Non-Revenue Water Data</caption> <thead> <tr><th>Fiscal Year</th><th>Transmission Losses %</th><th>Distribution Losses %</th></tr> </thead> <tbody> <tr><td>FY20</td><td>28</td><td>35</td></tr> <tr><td>FY21</td><td>15</td><td>30</td></tr> <tr><td>FY22</td><td>8</td><td>28</td></tr> <tr><td>FY23</td><td>5</td><td>28</td></tr> </tbody> </table> </div> </div>	Fiscal Year	Metering %	FY19	18	FY20	100	FY21	100	FY22	100	Fiscal Year	Transmission Losses %	Distribution Losses %	FY20	28	35	FY21	15	30	FY22	8	28	FY23	5	28
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<p>Efficiency and Reliability</p> <ul style="list-style-type: none"> • High technical & commercial losses • Lack of performance targets <p style="text-align: right; background-color: white; color: #002060; padding: 2px;">DPF</p>	<ul style="list-style-type: none"> • Adoption of Non-Revenue Water (NRW) reduction policy and program • Adoption of energy-efficiency policy and improvement program 	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Increased Energy Efficiency</p> <table border="1"> <caption>Increased Energy Efficiency Data</caption> <thead> <tr><th>Fiscal Year</th><th>Energy Consumed (KWH/KL)</th></tr> </thead> <tbody> <tr><td>FY19</td><td>13.0</td></tr> <tr><td>FY20</td><td>11.8</td></tr> <tr><td>FY21</td><td>11.5</td></tr> <tr><td>FY22</td><td>11.0</td></tr> </tbody> </table> </div> <div style="width: 48%;"> <p>Increased O&M Cost Recovery</p> <table border="1"> <caption>Increased O&M Cost Recovery Data</caption> <thead> <tr><th>Fiscal Year</th><th>O&M Cost Recovery %</th></tr> </thead> <tbody> <tr><td>FY20</td><td>100</td></tr> <tr><td>FY21</td><td>100</td></tr> <tr><td>FY22</td><td>160</td></tr> <tr><td>FY23</td><td>160</td></tr> </tbody> </table> </div> </div>	Fiscal Year	Energy Consumed (KWH/KL)	FY19	13.0	FY20	11.8	FY21	11.5	FY22	11.0	Fiscal Year	O&M Cost Recovery %	FY20	100	FY21	100	FY22	160	FY23	160					
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<p>Financial Sustainability</p> <ul style="list-style-type: none"> * Low-cost recovery, huge subsidies, lack of metering * Failed to implement volumetric tariffs <p style="text-align: right; background-color: white; color: #002060; padding: 2px;">DPF</p>	<ul style="list-style-type: none"> • Metering and volumetric tariffs • Cost recovery and subsidy policy • Tariff reform with annual indexation • Ring-fencing of budget 	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Increased Sewage Collection and Treatment</p> <table border="1"> <caption>Increased Sewage Collection and Treatment Data</caption> <thead> <tr><th>Fiscal Year</th><th>Effluent Treatment (M3/d)</th></tr> </thead> <tbody> <tr><td>FY19</td><td>12</td></tr> <tr><td>FY20</td><td>16</td></tr> <tr><td>FY21</td><td>19</td></tr> <tr><td>FY22</td><td>20</td></tr> </tbody> </table> </div> <div style="width: 48%;"> <p>Increased Water Access</p> <table border="1"> <caption>Increased Water Access Data</caption> <thead> <tr><th>Fiscal Year</th><th>Water Availability (LPCD)</th></tr> </thead> <tbody> <tr><td>FY19</td><td>80</td></tr> <tr><td>FY20</td><td>85</td></tr> <tr><td>FY21</td><td>100</td></tr> <tr><td>FY22</td><td>115</td></tr> <tr><td>FY23</td><td>120</td></tr> </tbody> </table> </div> </div>	Fiscal Year	Effluent Treatment (M3/d)	FY19	12	FY20	16	FY21	19	FY22	20	Fiscal Year	Water Availability (LPCD)	FY19	80	FY20	85	FY21	100	FY22	115	FY23	120			
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<p>Water Supply and Sewerage Services</p> <ul style="list-style-type: none"> • Water quality issues, jaundice epidemics • Water crisis, unreliable services • Lack of performance-based incentives <p style="text-align: right; background-color: white; color: #002060; padding: 2px;">PforR</p>	<ul style="list-style-type: none"> • Changed procurement to performance-based contracts • Increased water availability through efficiency improvements • Water supply increased to daily from every other day (24x7 in demo zones) • Increase in sewage collection by 200% 																										

Case 2: Uruguay: Longstanding support leading to performance improvement and private financing



3. Integrated, circular and resilient approaches to urban water management aligned with the global climate agenda



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3. Integrated, circular and resilient approaches to urban water management aligned with the global climate agenda

ADOPTING A **CIRCULAR APPROACH** TO DO AWAY WITH THE UNSUSTAINABLE MODEL OF 'TAKE, MAKE, CONSUME, AND WASTE'



3. Integrated, circular and resilient approaches to urban water management aligned with the global climate agenda

Benefits of developing circular infrastructure and services, including on wastewater treatment and reuse, are well documented in the work of the WB

- Better public health and natural conservation as a result of improved water quality, reduced pollution and great water quantity.
- Significant climate mitigation and adaptation benefits, including reduced methane emissions, reduced energy and water use, and resource recovery

www.wicer-tool.com

From Waste to Resource
Shifting paradigms for smarter wastewater interventions in Latin America and the Caribbean
Diego J. Rodríguez, Hector Alexander Serrano, Anna Delgado, Daniel Nolasco and Gustavo Sabal

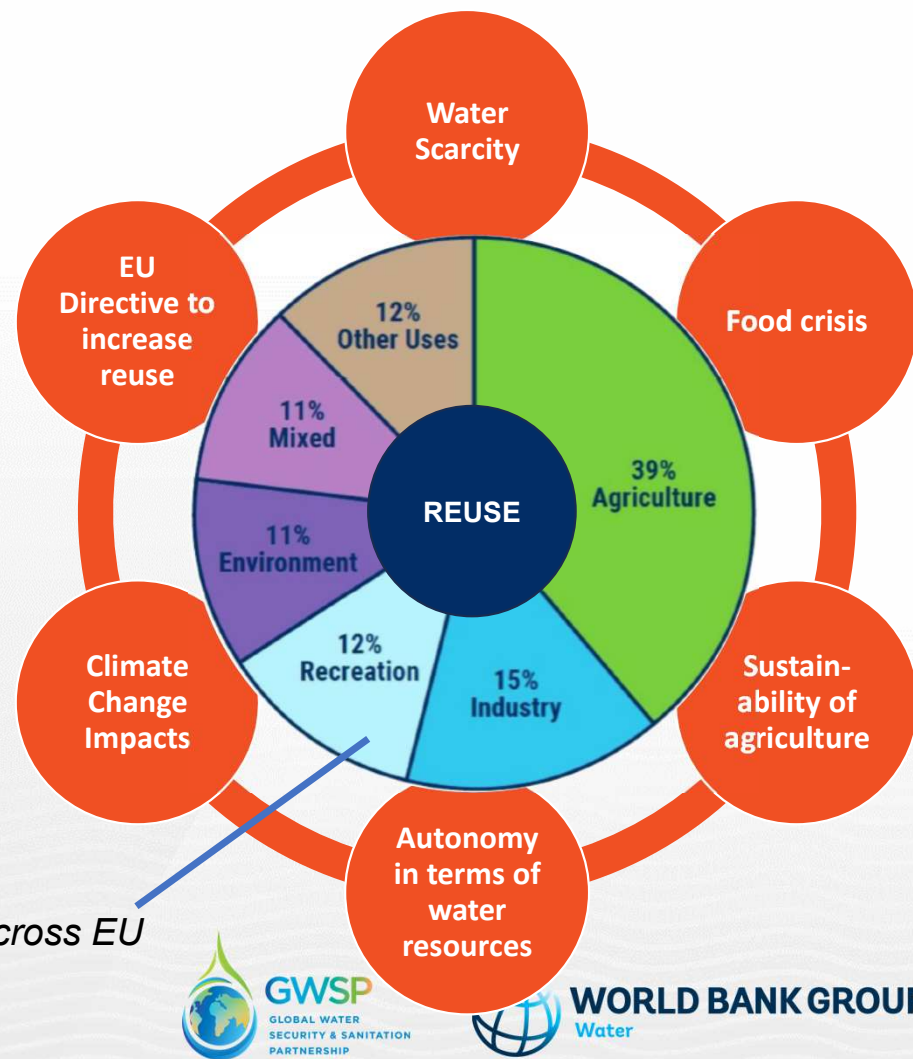
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Water

3. Integrated, circular and resilient approaches to urban water management aligned with the global climate agenda

Share of water reuse

- In the EU, 1 billion m³ of treated urban wastewater is reused annually, but 6 times more treated water could be reused than current levels
- EU average – 2,4%
- United States – 6,6%
- Cyprus – 90%
- Malta – 60%
- Spain – 15%
- Greece, Italy – 5 - 10%
- Portugal – 1,5%



3. Integrated, circular and resilient approaches to urban water management aligned with the global climate agenda

Case 1: Wastewater Reuse for Agriculture and Industry, Durban, South Africa

- Build-Own-Operate-Transfer (BOOT) 20-year concession which implemented project-specific technologies in line with water quality requirements of the industrial clients and infrastructure re-use prospects.

Industry

- Treated wastewater is almost 50% cheaper.
- Reduced risk related to water availability in case of droughts.

Durban Recycling Plant

- Long term revenues from industry (Build-Own-Operate-Transfer contract 20 years).

Durban

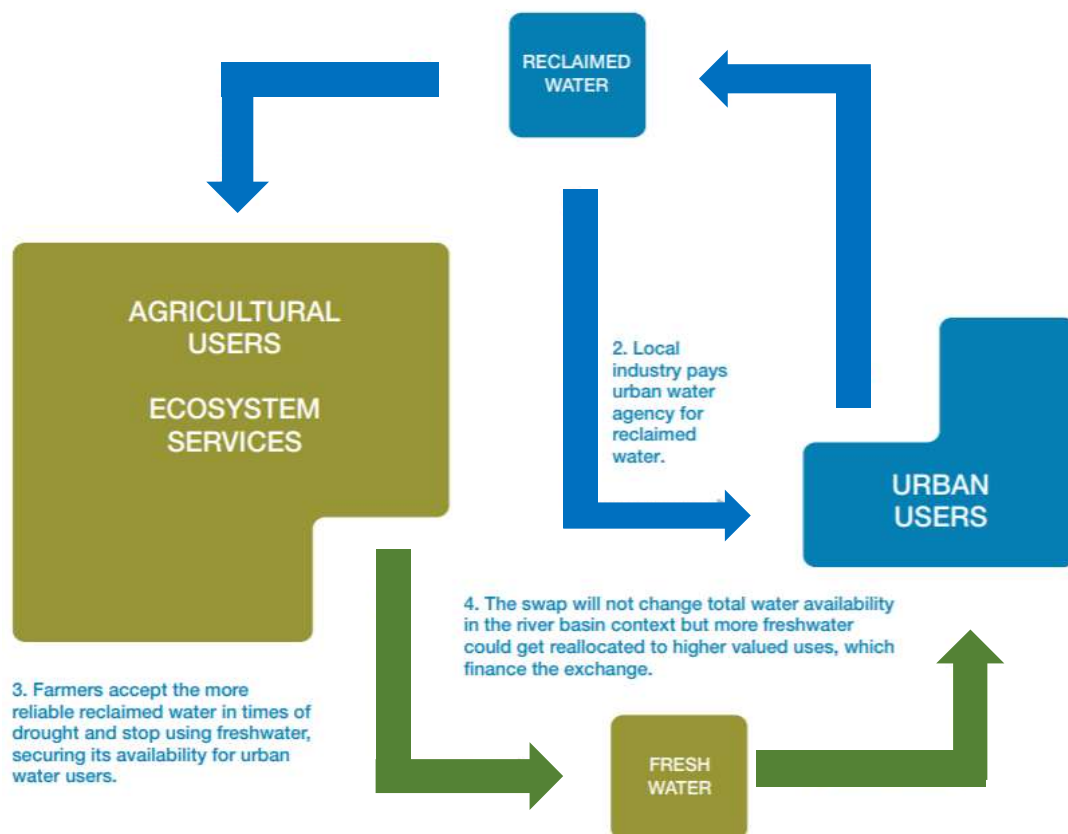
- Potable water supplied to 400,000 extra people
- Postponed investments in new water treatment infrastructure.
- 10% reduction of wastewater discharged into ocean.



3. Integrated, circular and resilient approaches to urban water management aligned with the global climate agenda

Case 2: Inter-Sectoral Water Transfers, Llobregat delta, Barcelona, Spain

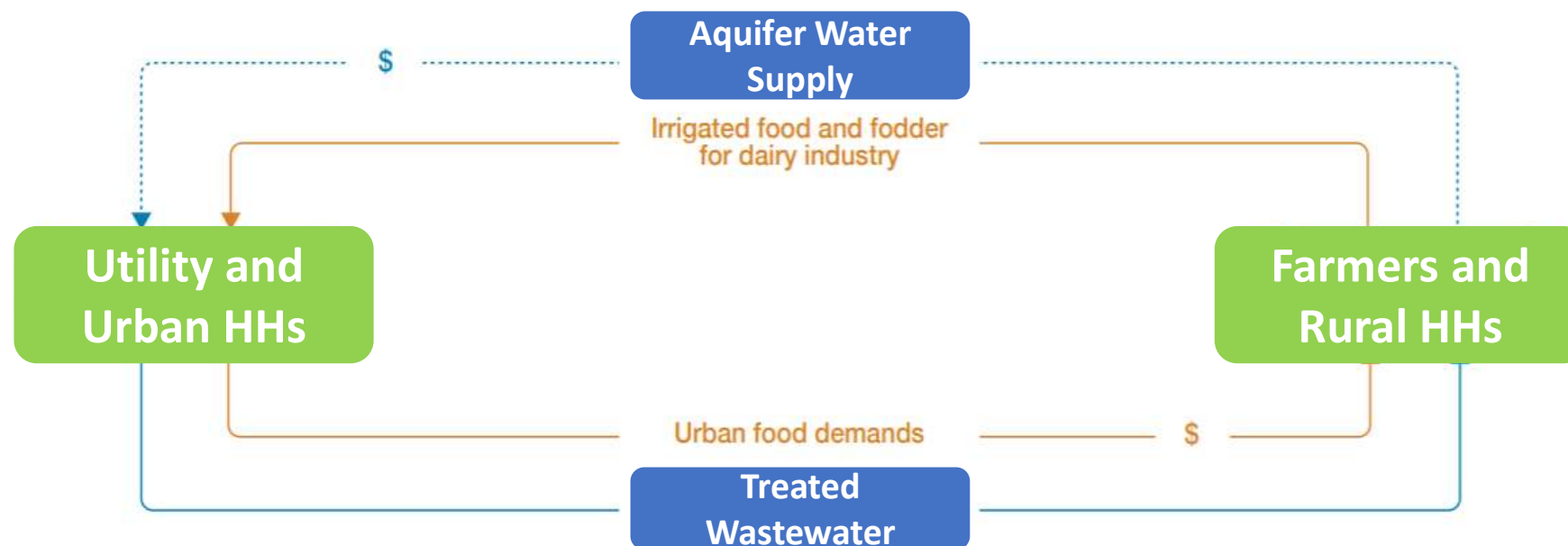
1. Farmers are encouraged to use treated urban wastewater which also supports the local aquifer and wetland functions. Farmers' payments for water conveyance is being discussed but might be a disincentive while the swap costs are easier recovered via the urban water bill.



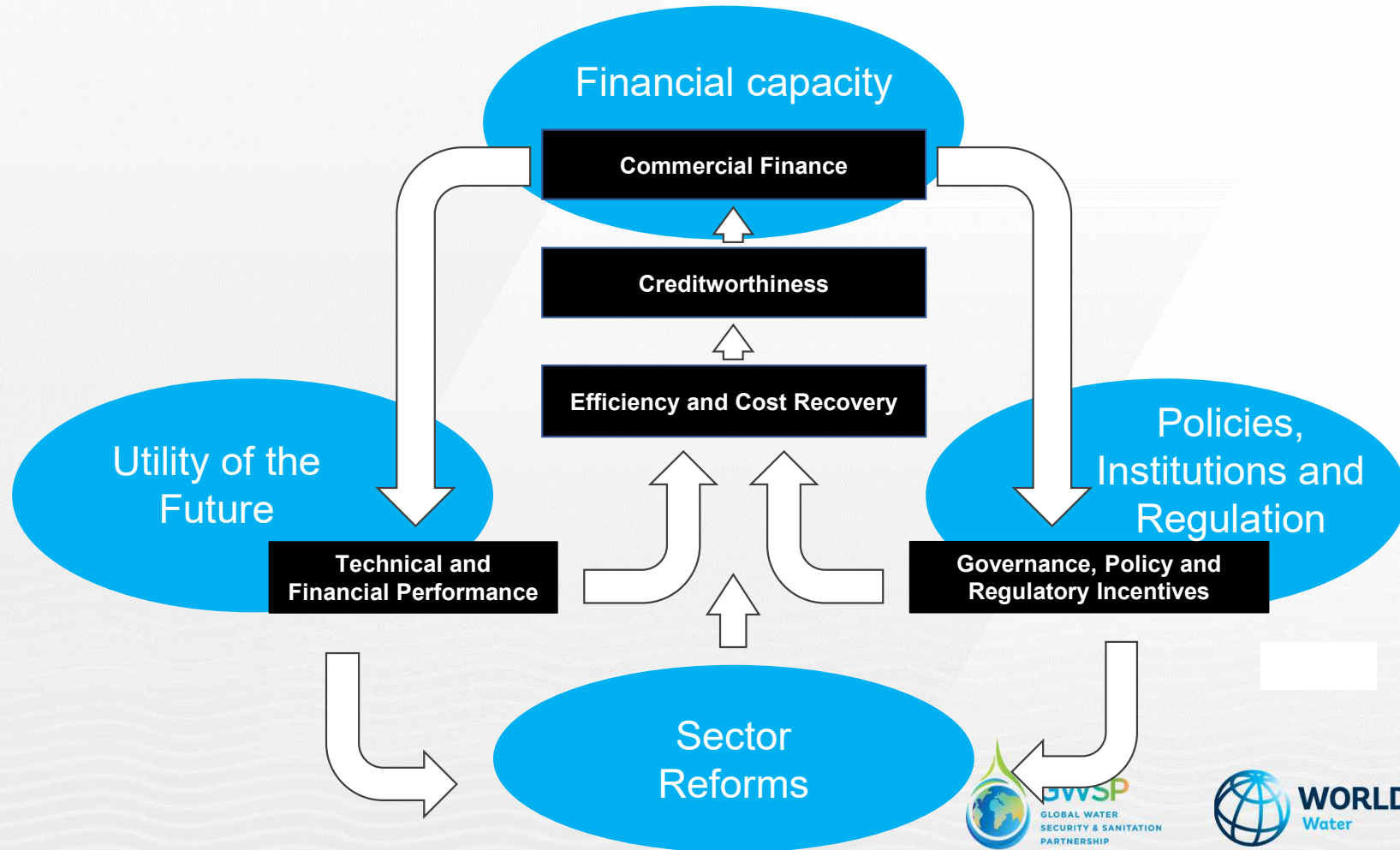
- Water exchange between local farmers and the Catalan Water Agency (ACA) in the Llobregat River basin delta.
- ACA treats urban wastewater to defined reuse levels.
- Farmers use reclaimed water to meet agricultural demands and are obliged to stop using surface water.
- The city obtains the protected freshwater for aquifer recharge.

3. Integrated, circular and resilient approaches to urban water management aligned with the global climate agenda

Case 3: Urban – Rural – Urban Water Transfers, Mexico City, Mexico



- The Mezquital (or Tula) Valley of Mexico is well-known for its large-scale wastewater irrigation on about 90,000 ha.
- New wastewater treatment plants were built, including the 800 million gallon/day - Atotonilco Mega Plant - one of the largest in the world.
- 60% of the urban wastewater released from a population of over 21 million in Greater Mexico City is treated.



- **Reform processes are inherently political** and requires the full commitment of Its policy makers to correctly balance performance and political objectives.
- **Strengthening corporate governance, managerial practices, the external policy, institutional and regulatory environment** (using Utility of the Future or similar approaches) is a prerequisite for effective utility turnaround.
- **Financial sustainability objectives must be prioritized.**
- **Customers are an important voice** for improving performance
- The multiple objectives or mandates of utilities may create governance and management challenges, including reducing incentives for performance and difficulties in oversight
- **Reform is not an event or linear process** and its success relies on a long-term engagement incorporating a high degree of learning.

Contribution to climate change mitigation and adaptation

- Energy efficiency and NRW reduction programs to reducing emissions, save water and energy and increasing the amount of people with access to services.

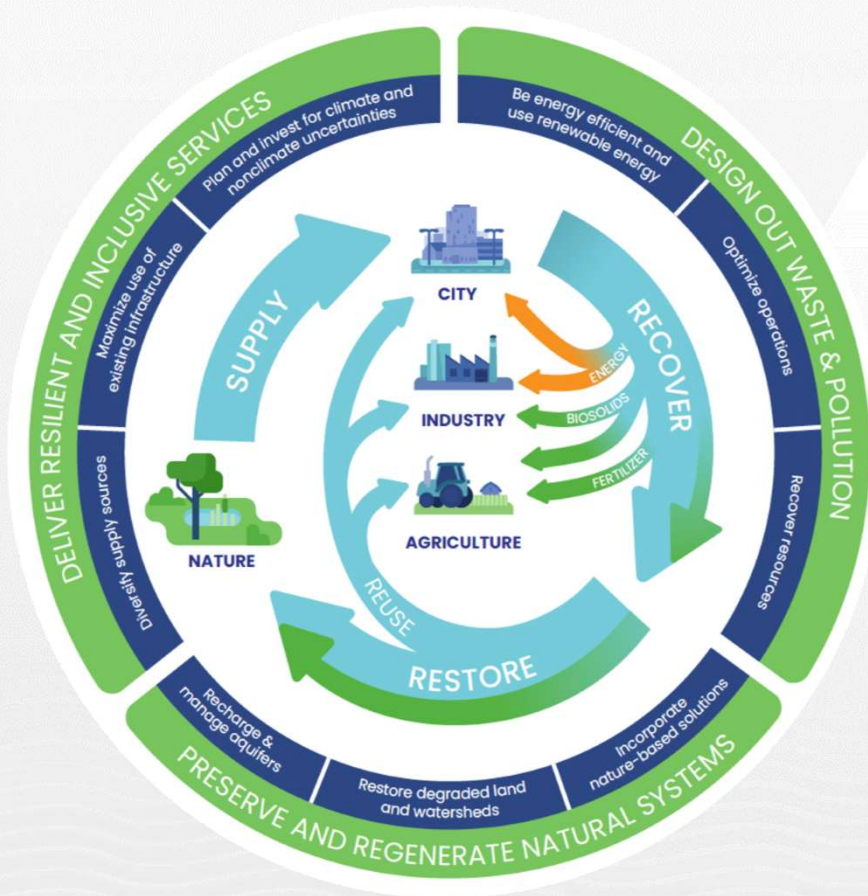
Creation of new revenue streams

- Recovery of resources from wastewater and sale of energy, water, and fertilizers to cover operating costs.

Carbon neutrality, water reuse and preservation of the environment

- Application of circular economy and resiliency principles in long-term strategies

Delaying large CAPEX programs by using the full potential of existing infrastructure,



THANK YOU

Keynote by Gustavo Saltiel

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NAVIGATING
CHANGING
WATERS

