

**Eye on Latin America and the Caribbean**

**Fostering a  
Wastewater Treatment  
Revolution  
- Keynote -**

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# Fostering a ~~VAV Treatment~~ Revolution

*“To create a revolution, you need to unite people around a shared purpose.”*

1. **Identify** the **NEED**, have concrete **GOALS**, and secure **RESOURCES** (getting the right people involved: partnerships, scientists...)
2. **Get the message out**
3. **Choose the right strategy:** the power-in-place will defend itself, so gain decision-making positions at key institutions. Study past revolutions...

# Let's plan this Revolution

Understand  
**needs &**  
Regional  
Challenges

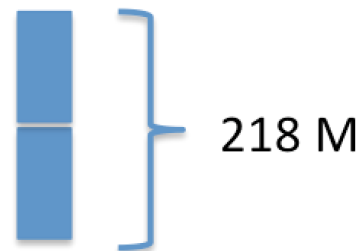
Get the right  
people  
involved: Case  
Studies (in  
Region & outside)

Develop a  
**strategy:**  
policies



Nueva población a servir al 2030: 104 M

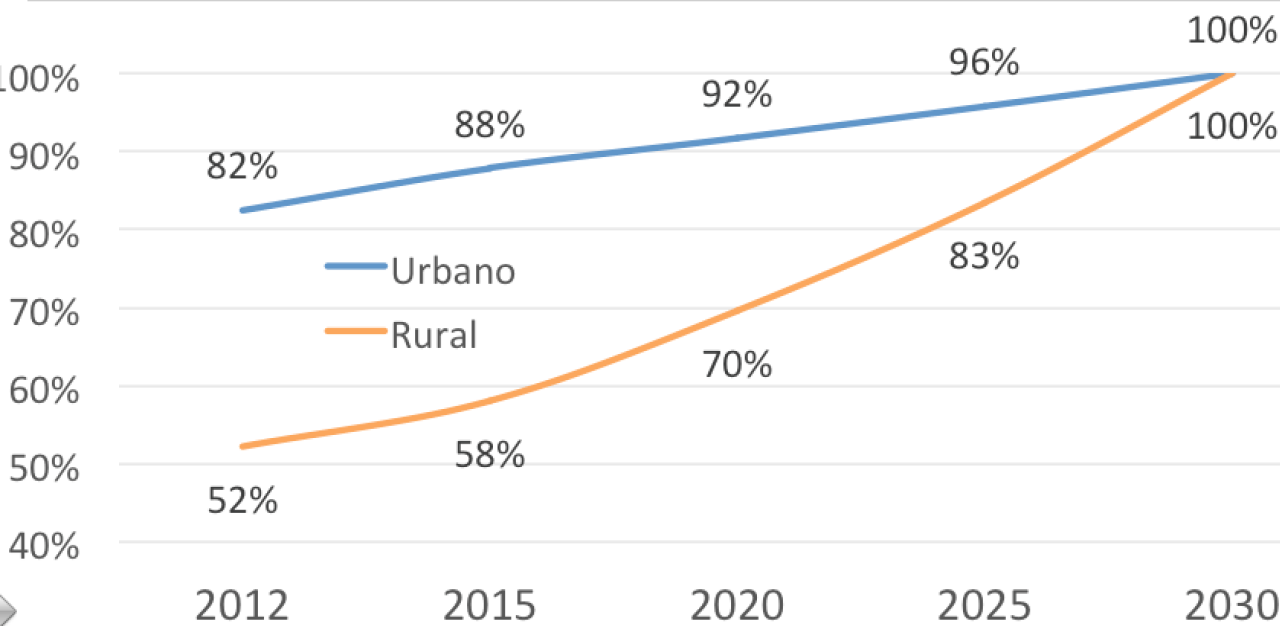
Población sin servicio al 2015: 114 M



### Inversión estimada en saneamiento (redes y tratamiento)

	PER CÁPITA*	REGION
	USD\$/cap	USD\$ Million
URBANA	600	<b>96.000</b>
RURAL	500	<b>30.000</b>
<b>TOTAL</b>		<b>126.000</b>

(\*): Estimada a US\$300/hab para redes, más US\$300 para tratamiento en urbano (US\$250 + US\$250 en rural). No incluye costos institucionales ni sociales.



Inversión anual promedio:  
Urbana: **US\$ 6,800 mill.**  
Rural: **US\$ 2,000 mill**  
Total: **US\$ 8,800 mill**

# Money alone will not do it: inefficient investments in WW in LAC

Why?

Excessive emphasis on developing new infrastructure

Technology selection criteria biased towards expensive technologies

Poorly developed legislation

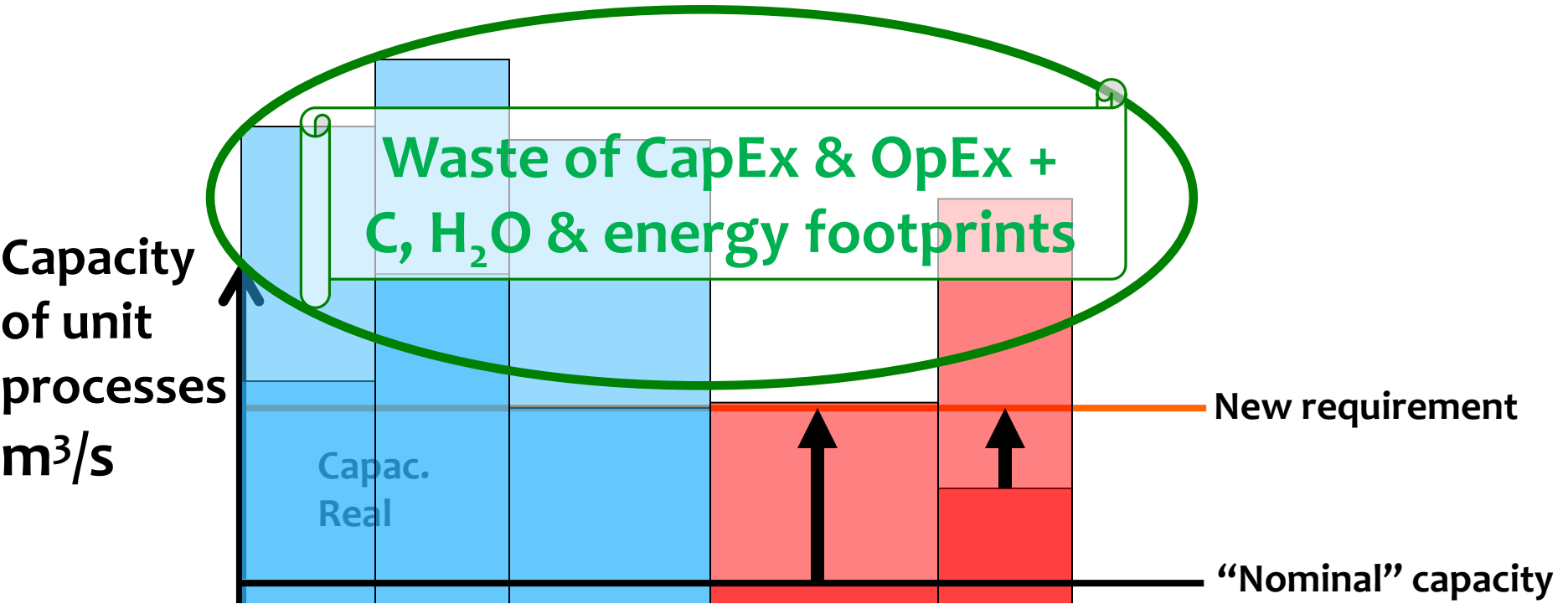
Lack of policy and regulatory frameworks to allow gradual improvement

Regulations that limit or forbid resource recovery

Lack of adequate control of industrial discharges

Reliance on conventional financing

# New infrastructure: evaluate before spend



Plant auditing & evaluation methods → improve effluent quality, reduce CapEx & OpEx (energy generation, WW reuse, biosolids application...)

Pre-treat	Prim. Treat	Aeration Tanks	Diffusers & Blowers	Sec. Clar.	Etc.
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On our way to better regional practices...

# WW reuse for sustainability

- ✓ **Atotonilco de Tula, Mx (23 m<sup>3</sup>/s) PPP** Valle del Mezquital 90,000 ha.
- ✓ **Tenorio, San Luis Potosí, Mx (1 m<sup>3</sup>/s) PPP** CEPT to irrigate agricultural areas (0.6 m<sup>3</sup>/s) + sec. treat. for reuse as cooling water in energy generation (CFE) 0.4 m<sup>3</sup>/s.
- ✓ **Enlozada-Cerro Verde, Perú (1 m<sup>3</sup>/s), PPP:** Arequipa WW treatment for mining: CapEx & OpEx covered by CV.
- ✓ **Projeto Aqualpolo (PPP: SABESP-BRASKEM).** ETE ABC sells effluent to Polo Industrial de Capuava.
- ✓ **Aguas y Drenajes de Monterrey** sells 1 m<sup>3</sup>/s sec. WW to industries, covering 60% OpEx (up to 2 m<sup>3</sup>/s ).



# PTAR Enlozada – Cerro Verde Arequipa, Perú



# Other examples of wastewater resource recovery: energy and nutrients

**SANEPAR, Curitiba, Brazil**

**Beneficial use of biosolids**

**La Farfana WWTP, Chile**

**Selling biogas to Metrogas (Santiago)**

**San Jeronimo WWTP, Guanajuato, Mexico**

**Saving and selling electricity (potential)**

**SAGUAPAC, Santa Cruz, Bolivia**

**Saving and selling electricity (potential)**



# Strategy: WWT Policies

- ✓ **Government priorities are important:** invest in WWT
- ✓ **Stable and strong institutions** w/emphasis on efficiency
- ✓ **Sensible regulation:** reasonable rent, rewards efficiency, gradual application, service-oriented...
- ✓ **Clearly defined allocation of roles** across government bodies & private sector
- ✓ **Sustainability emphasis** through life-cycle assessment (CapEx + OpEx et al), IWRM & resource recovery
- ✓ **National economies must grow** to have sustainable services. It is through salaries and taxes that govmt's obtain financial resources to support WWT (OECD, 2008).



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