

# Lessons on Implementing Integrated Urban Water Management Projects

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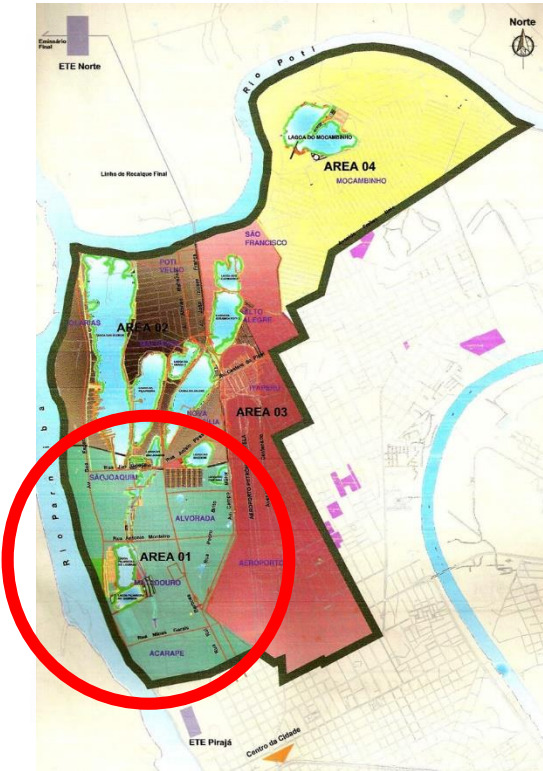
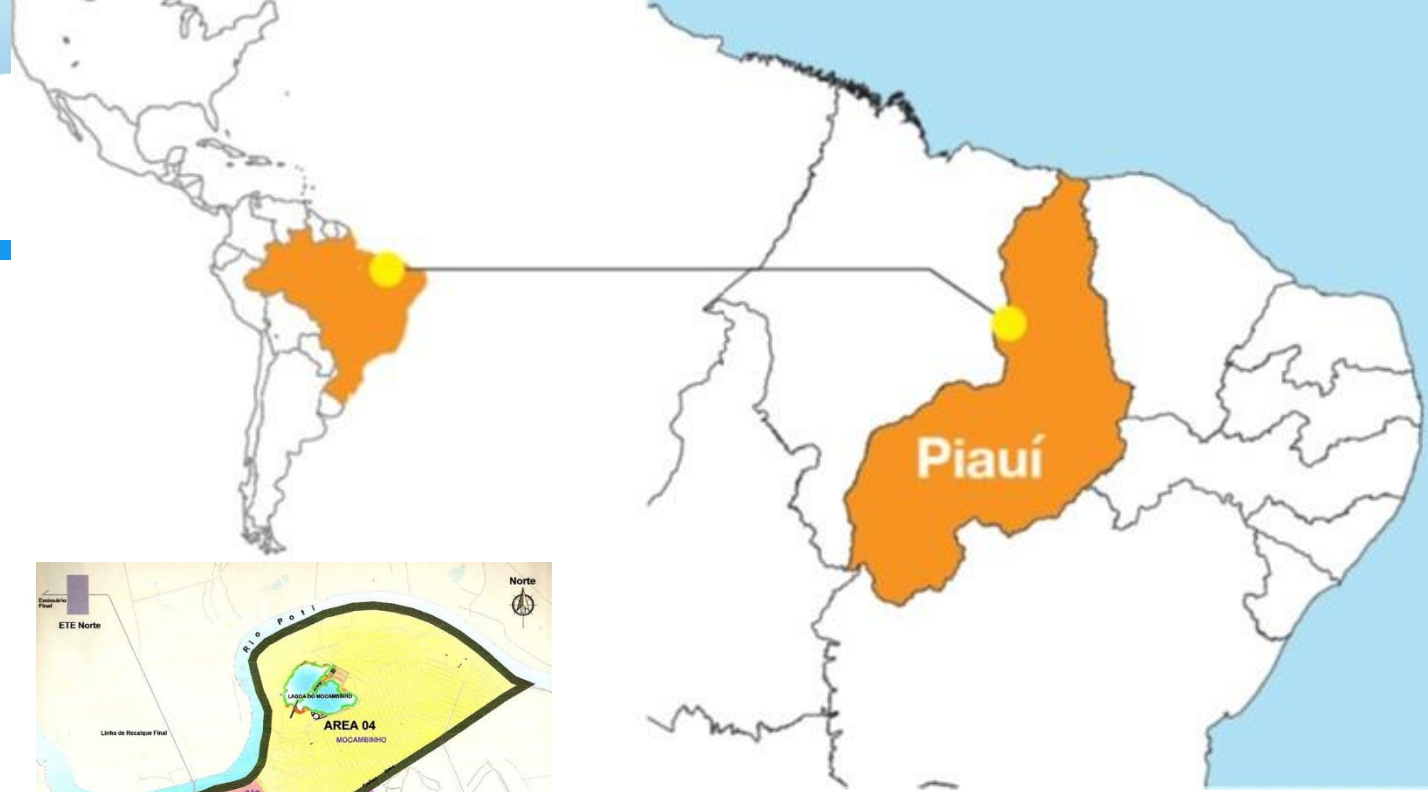
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## Example – Brazil: Teresina

Two phases of integrated interventions focused in Lagoas do Norte, an environmental and socially vulnerable area of the city (13 km<sup>2</sup> and 100,000 inhabitants)

- 👤 Drainage, roadways and access ways
- 👤 Parks, leisure and cultural spaces
- 👤 Public service improvement: sanitation, schools, health posts
- 👤 Housing
- 👤 Municipal planning and modernization
- 👤 Citizen engagement
- 👤 Crime and violence prevention
- 👤 Local Economic Development



**Phase 1 - Implemented**

Source: Municipality of Teresina

# First Phase Results

**Before**



Source: Municipality of Teresina

**After**



# First Phase Results

**Before**



Source: Municipality of Teresina

**After**



# First Phase Results

**Before**



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**After**



# First Phase Results

**Before**



**After**



Source: Municipality of Teresina

# Lessons

- **Territorially-focused integrated interventions** (specific neighborhoods/areas in the city, basin, sub-basin) tend to work best
- **Water resources management planning** a key component
- **Land use is a key driver**; the earlier you integrate the urban planning process, the bigger the pay-off:

– At the very least, lowers resettlement costs, but also ...

– **Lowers costs of storm water solutions:**

Development with sustainable solutions (public spaces solutions)



US\$ 200 to 400 thousand/km<sup>2</sup>

Correction with detention (storage) and water quality control, avoiding flow increase



US\$ 2 to 3 million/km<sup>2</sup>

Correction with channels and conduits, transferring impacts downstream

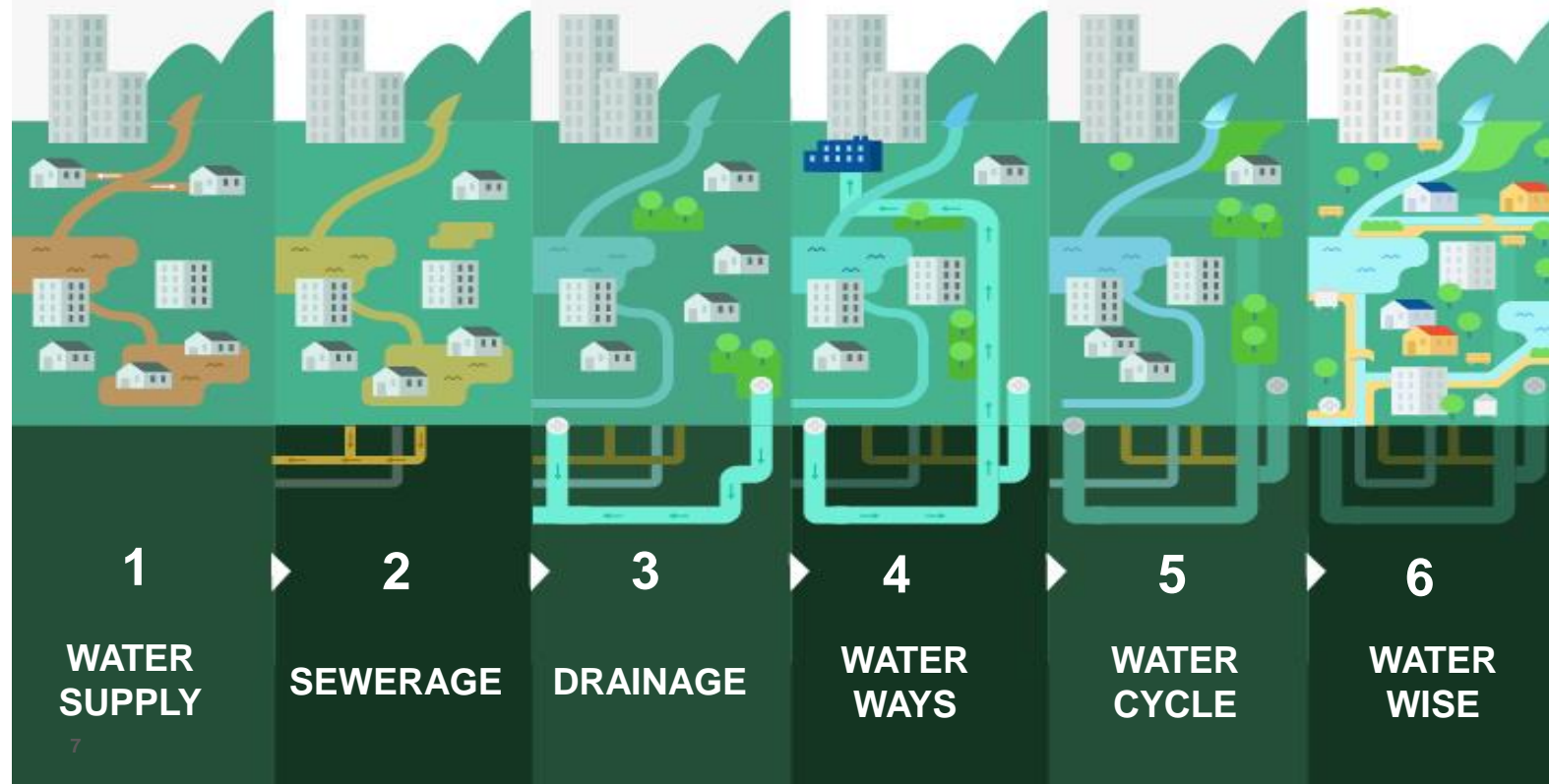


US\$ 6 to 7 million/km<sup>2</sup>

Source: Carlos Tucci

# Lessons

- Interventions in high/density consolidated urban areas can **expect high resettlement costs** (Teresina it is projected to be 40% - normally between  $\frac{1}{3}$  to  $\frac{1}{2}$ )
- This is where the opportunity for significant economic benefit lies **for medium sized cities to leapfrog through proper land-use and integration in the planning process** – i.e., at a minimum planning for public space solutions





# Lessons

- **Start small** so you can build on success and your own lessons
- **Bringing different actors and stakeholders together** to build an integrated vision is a key challenge, and it does not happen overnight
  - The beauty is that you only need two to get started!
- In Metropolitan regions/areas there needs to be **articulation between municipalities... and with state and national governments**
  - Governance structure, political economy
  - Land-use
  - Local policies: permits, housing, solid waste, drainage



# Lessons

- Implementation of **non-structural measures** can have a big impact long-term
- There is no magical formula – **solutions have to be tailored and specific** to each local context
- Focus on finding **green, sustainable solutions**
  - Minimize use of concrete
  - Affordability of services, operation & maintenance costs + institutions



Source: Monica Porto

# Lessons

- **Integrated** interventions are complex and should be part of a long process developed step-by-step, which **requires vision, persistence and commitment**
- Integrated planning and implementation **takes time and resources** (\$\$ and people) ...
- ... but **it pays off**: integrating actions and measures in the urban space is more efficient to achieve economic, social and environmental gains
- **Institutional strengthening and capacity building** are an essential part of the process
- Active **stakeholder and community engagement** is vital to success

# Community Engagement – Critical to Success

## Active Engagement with Local Residents

- **Consultations** – first point of contact with the community
- **Resettlement** – clear and transparent process
- Establishment of a **‘social project unit’** in the project area, with the following key objectives:
  - Lead the resettlement process
  - Grievance redress
  - Help the community organize (committee/forum, monthly meetings)
  - Promote environmental social activities



Source: Municipality of Teresina

# Community Engagement – Critical to Success

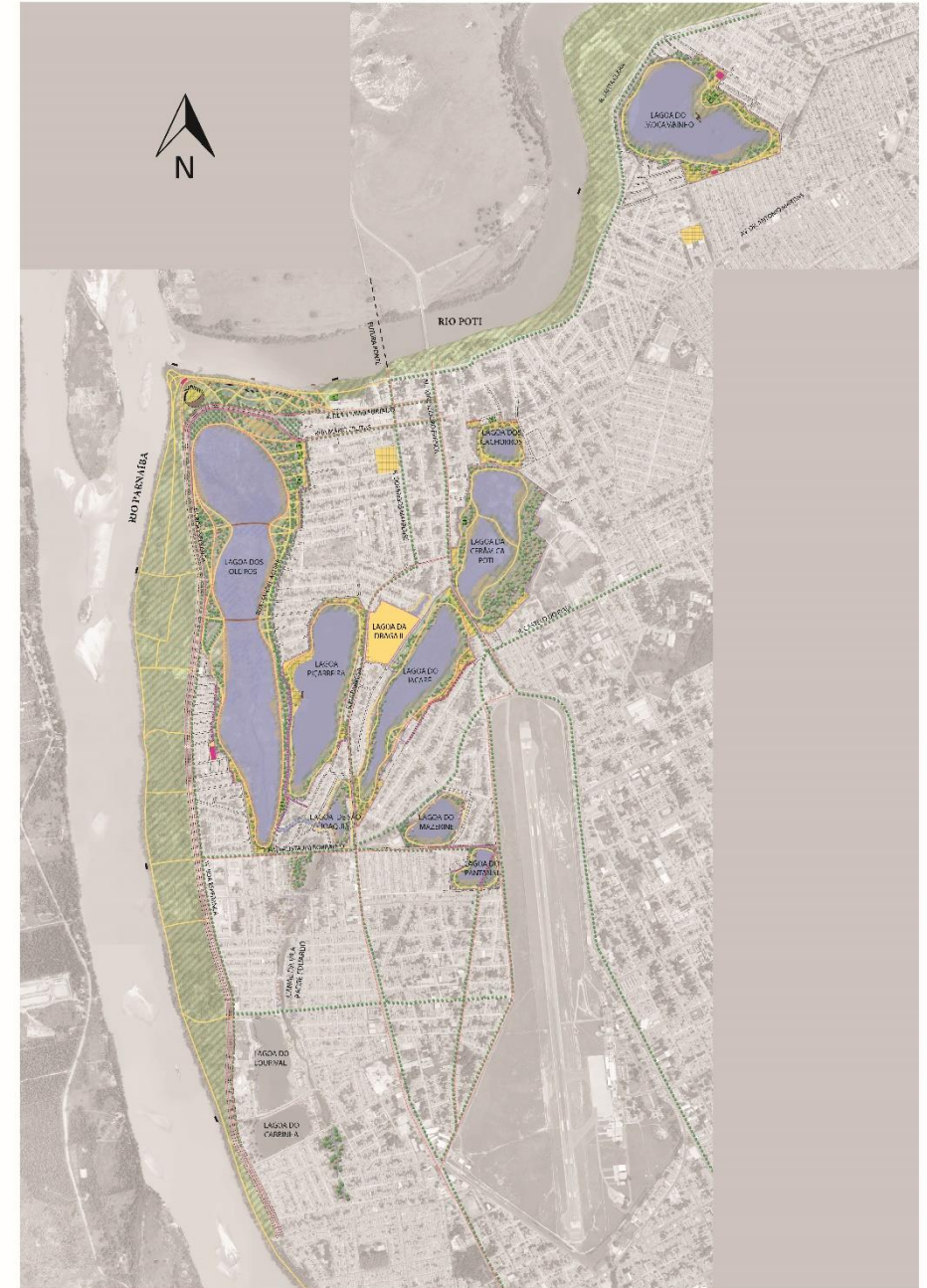
## Results: Smoother Implementation – Credibility for Second Phase

- **Active community buy-in and engagement** throughout project implementation (community becomes advocate for the project) – help ensure sustainable management of services
- **Smooth resettlement process** (500 families)
  - Post-resettlement follow up
- **Regular events designed to foster community engagement and participation** – graffiti wall, environmental education, summer camps
- Skateboard park designed by the city's Association of Skateboarders
- Community oversight of works: speedy and direct resolution of construction-related issues



# An Example of Going Forward

- A **'city for the people'** through integrated interventions
- Focus on **more vulnerable segments** of the population with interventions focused on **gender and crime and violence** prevention
- **Local and specific consultations** of each sub-project before construction starts (i.e., integrated contract package with surrounding residents)
- Special focus and planning on resettlement (2,000 families in the second phase)... **credibility built** during the first phase has already paid off
- Focus on **local economic development** and higher participation of the private sector
- **Integration of additional sectors** and goals for the region: education, health, crime and violence prevention



# Example: Brazil – Espírito Santo Integrated Sustainable Water Management Project



## Loss of forest



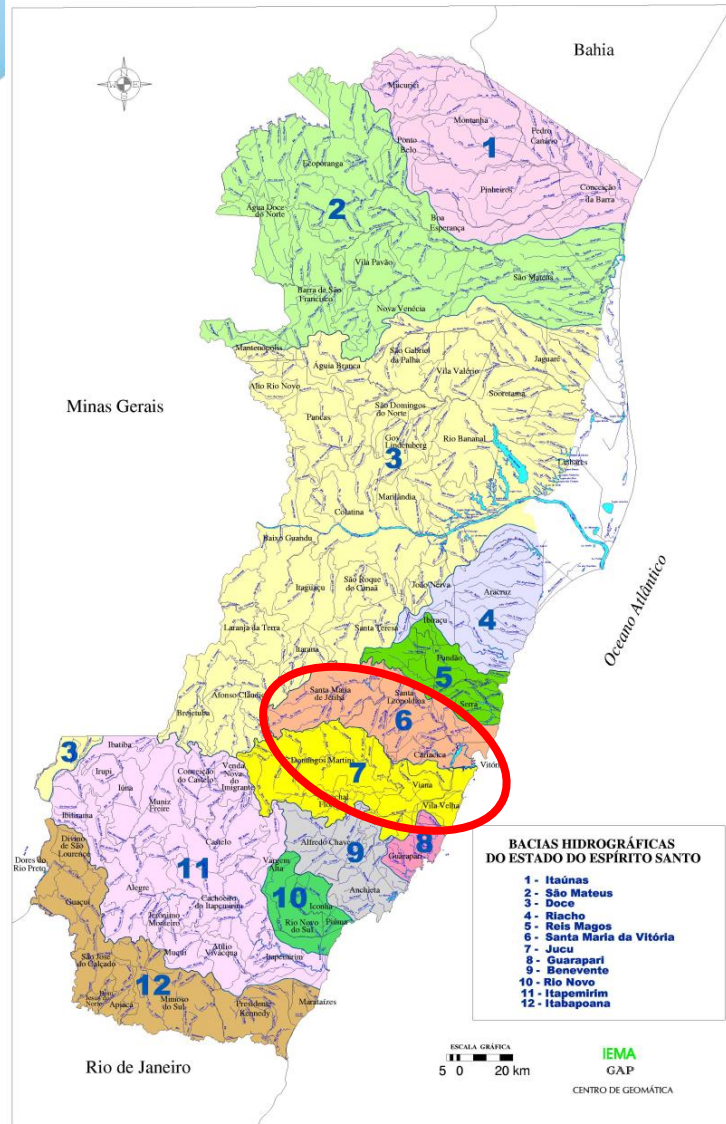
- Desertification (northern region)
- Reduced groundwater recharge
- Erosion, high levels of sedimentation in water

## Rapid unplanned urban growth



- Increased pollution
- Water quality and availability under pressure
- Increased recurrent flooding

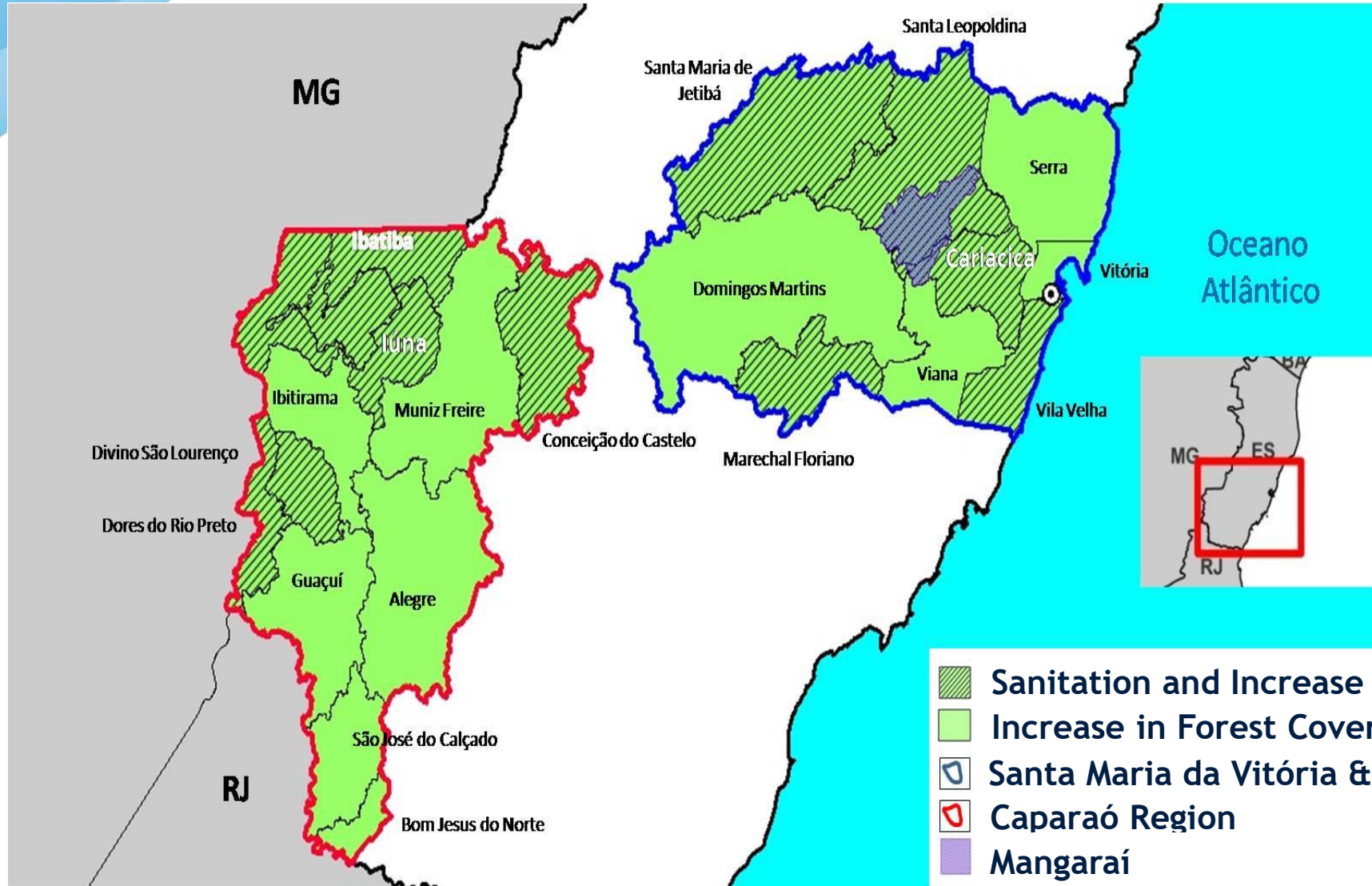
# Example: Brazil – Espírito Santo Integrated Sustainable Water Management Project



- Population: ~ 4 million, ½ in the Metropolitan Region of Vitória
- The Jucu and Santa Maria watersheds provide 95% of the water to the metropolitan region and have more than 1/3 of the remaining forest cover in the State.
- Levels of sediments in these watersheds is high and increasing due to environmental degradation, requiring additional investments in upgrading water treatment processes.



# The Integrated Sustainable Water Management Project



Total Cost: US\$323 million

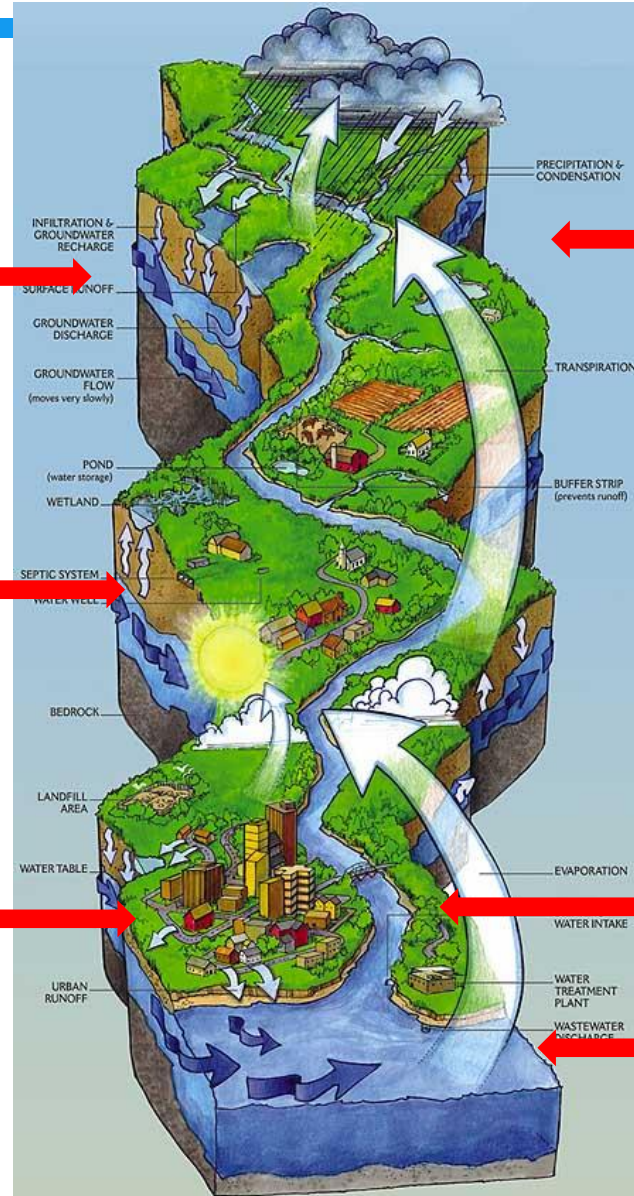
WB Loan: US\$225 million

# Example: Brazil – Espírito Santo Integrated Sustainable Water Management Project

Basin Planning and Management

Wastewater collection and treatment  
Small towns upstream of Metro Vitória  
and Caparaó - CESAN

Wastewater collection and treatment  
Metropolitan Vitória - CESAN



Watershed Management  
(Scaling up Payment for Environmental Services)



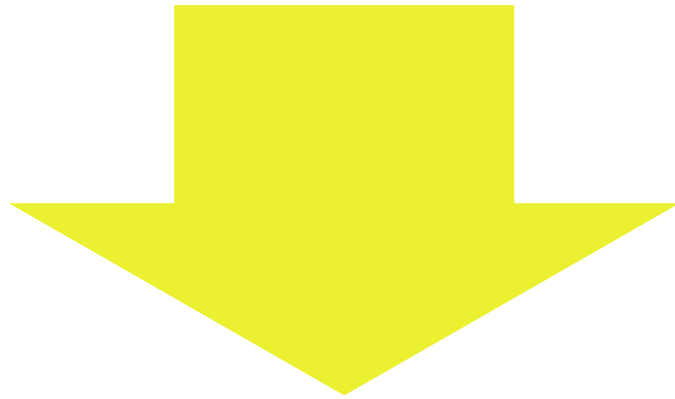
Strengthening institutions for  
integrated planning and management,  
including monitoring of risks,  
contingency planning and response to  
disasters, and continued work on  
utility efficiency improvements

Urban Drainage in Metro Vitória

Coastline management



# Key Ingredients



## Enabling Environment

- WSS and Water quality – key entry point for dialogue, continued/expanded by exposure of key government officials to successful international experiences
- Policies and institutions aligned to achieve state vision
- Ownership at all levels
- Strong utility – convener
- Water Crisis – worst drought in 40 years

## Key Challenges

- Varying capacities of participating institutions
- Managing conflicting interests
- Metropolitan governance, adequately addressing the challenge of rapid urbanization
- Water crisis – worst drought in 40 years



THANK YOU



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