



Collaborative Modeling for Water Security and Resilience for the Valley of Mexico

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With the support:



LOCATION OF BASINS

Area of work

- IV: Balsas (Cutzamala System)
- VIII (Alto Lerma)
- XIII: Valley of Mexico (CDMX)

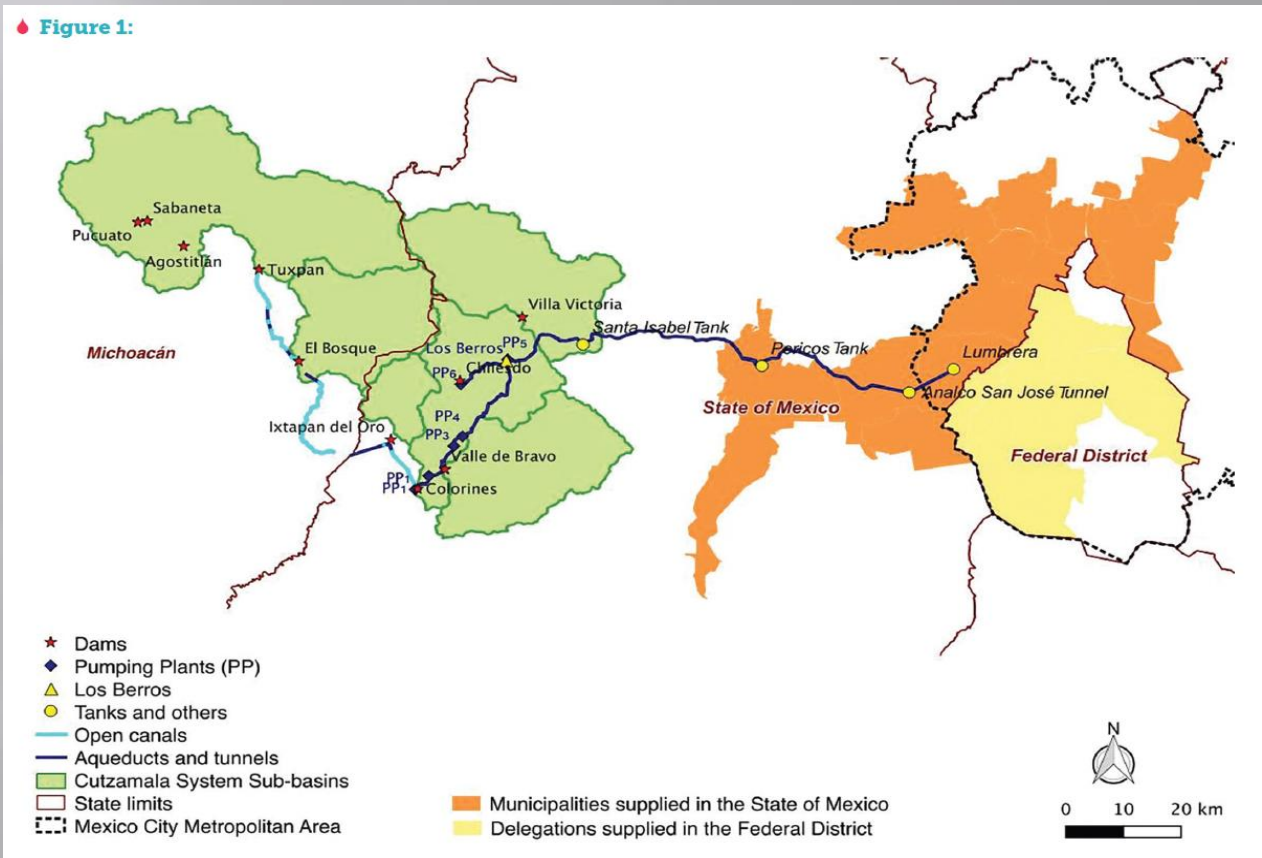
REGIONES HIDROLOGICAS ADMINISTRATIVAS



AN INTERBASIN AQUEDUCT SYSTEM

Cutzamala System

- Interbasin transfer
- 6 sub basins
- 322 kms of canals and tunnels
- Pumping of 15 m³/sec to 1.100 mts of elevation
- Provision of water supply to a region that represents 38% of Mexico's GDP
- 30% of water supply of the city (6 million inhabitants)



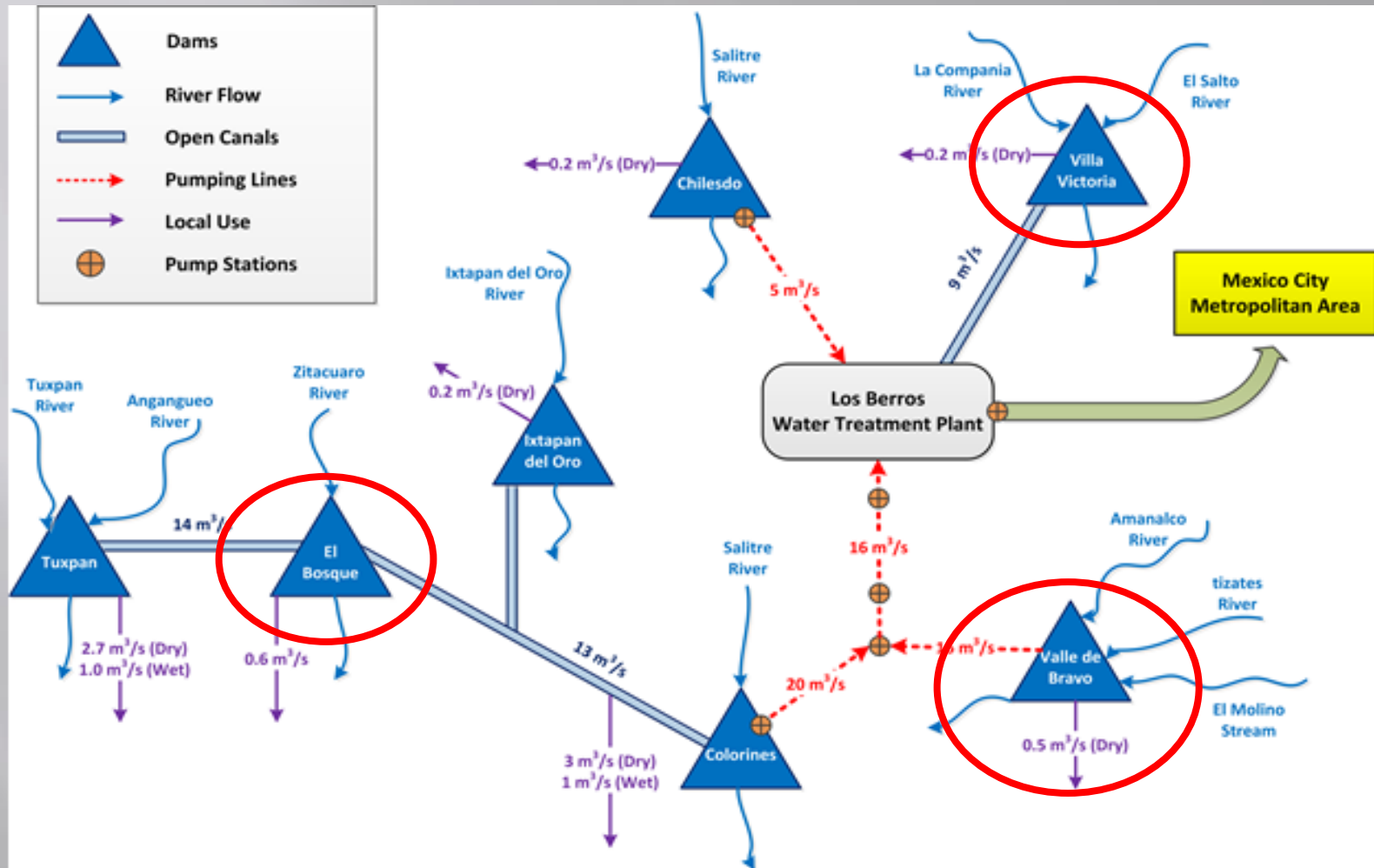


39 % of Mexico City's water is from basin transfers

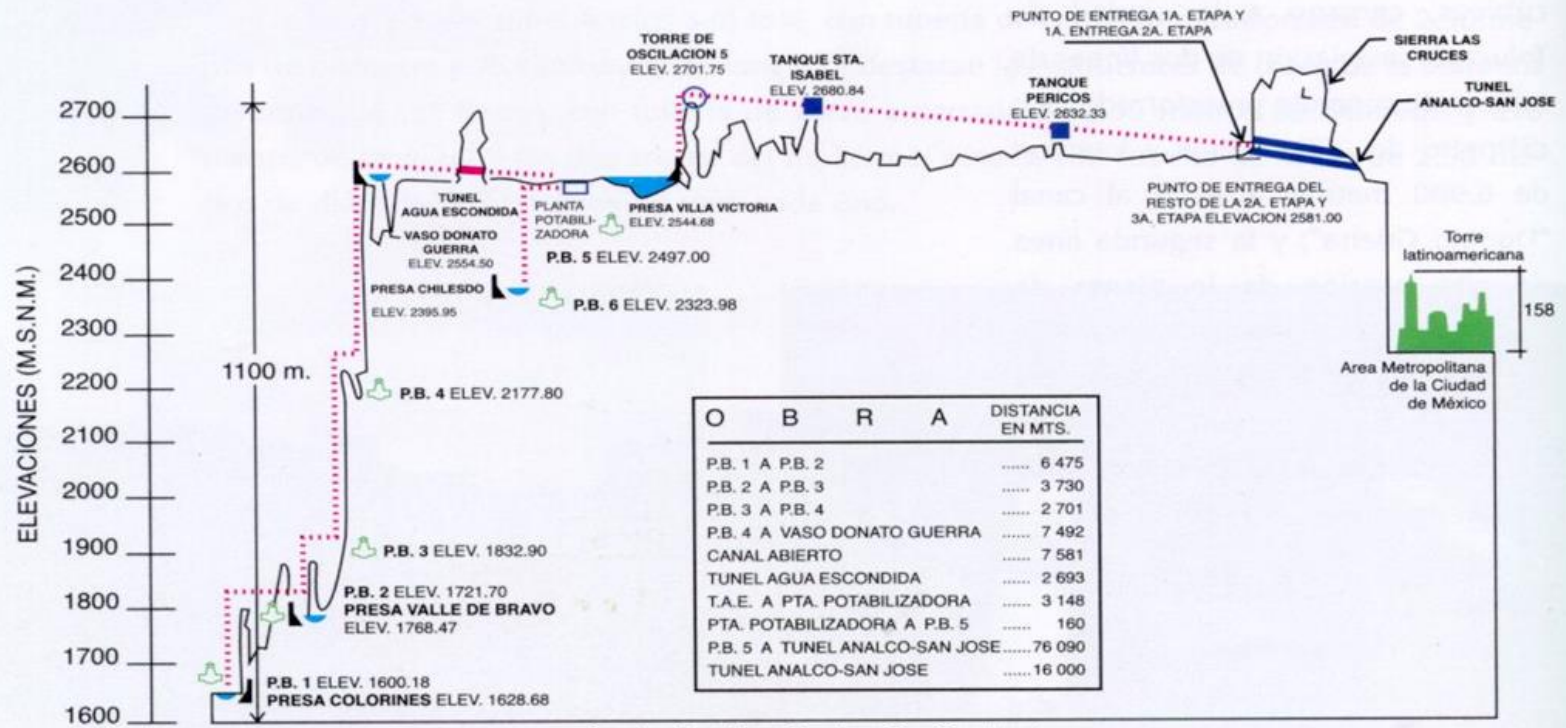
Remaining 61% comes from an overexploited aquifer with significant impact on subsidence

Water supply system has 40% losses

Complex infrastructure system



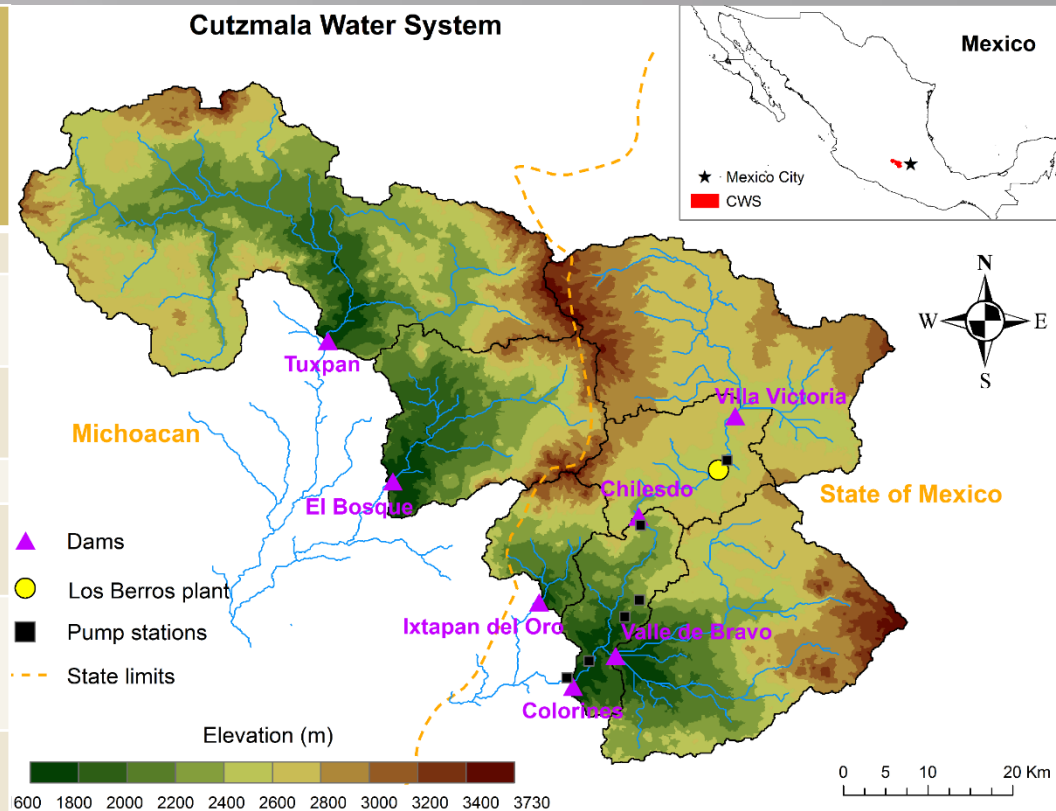
System's snapshot



- S I M B O L O G I A**
- Presas o lagunas
 - Poblado
 - Planta de bombeo (P.B.)
 - Area metropolitana
 - Torre de oscilación (P.B.)
 - Línea piezométrica
 - Tanque de almacenamiento
 - Túnel
 - Planta potabilizadora

AN EXERCISE TO EVALUATE VULNERABILITY AND PRIORITIZE INVESTMENTS

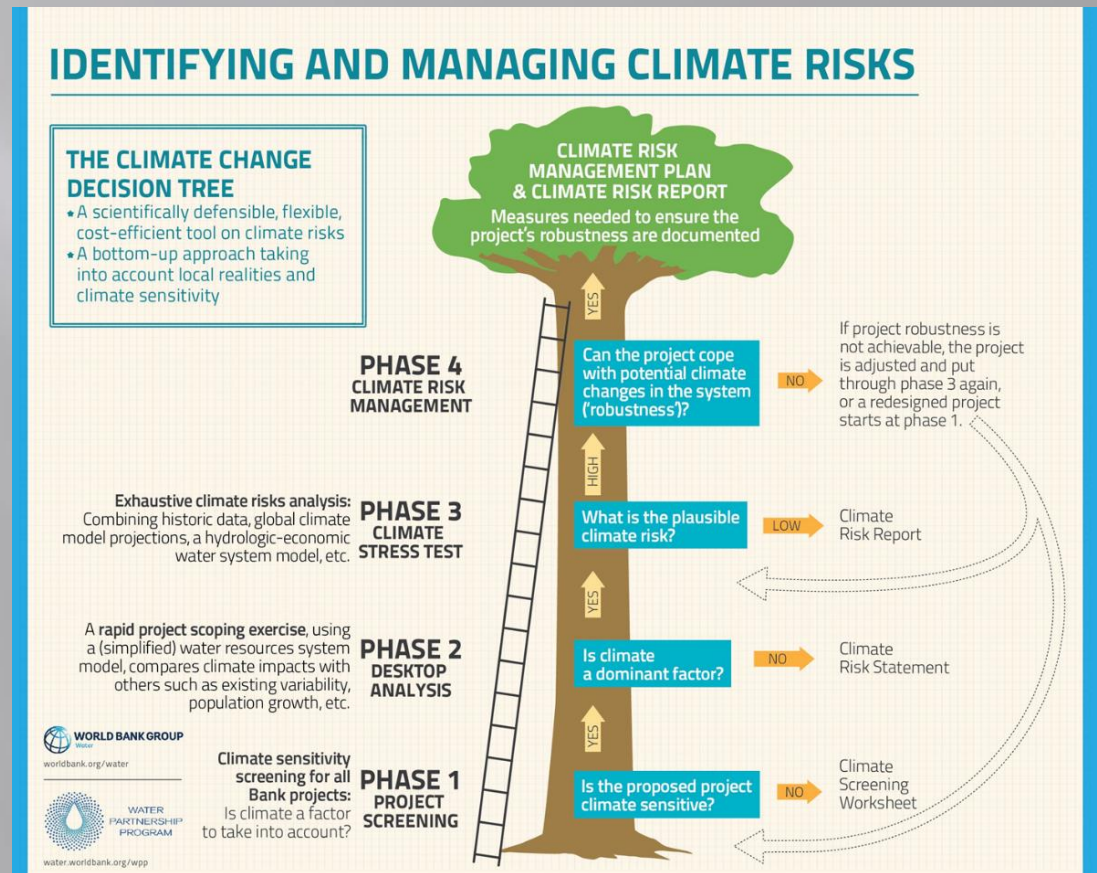
Opción	Descripción	Costos de Capital (\$MXN* 10 ⁶)	Costos anuales O&M (\$MXN* 10 ⁶)
Villa Victoria	50 MCM adicionales & 8m ³ /s canal (Hector Martinez)	700	23
Bosque-Colorines	Aumento de capacidad de canal entre Bosque and Colorines 7 m ³ /s)	10,000	20
Temascaltepec	Nueva presa (aprox. 6m ³ /s)	18,000	600
Plataforma en el Bosque	Disminución del nivel muerto en Bosque (30MMC)	20	1
Tuxpan	Bombeo agua subterránea debajo de Tuxpan (agrega 1.5m ³ /s en época seca)	1,500	50
Irrigación Tuxpan	Canal para regantes en Tuxpan (1.5m ³ /s)	3,000	15



From top down to bottom up

The decision tree framework:

- Bottom up and phased approach
- Extensive stakeholder involvement
- Direct method to assess the robustness, resilience, reliability of plans, strategies, investments



Do benefits outweigh the costs? Answer is contingent upon long term outcome of the exercise

Benefits

Costs/Challenges

Informed by those who have the knowledge of the area: users, experts, inhabitants

Trust in data

Identification of stakeholders

Objectives that take local contexts. Allows to model only what is feasible to implement.

Capacity building and training in the use of the tools

Process can increase costs and implementation time

Transparency in what goes in and what comes out

Builds ownership

Process can increase costs and implementation time



Thank you

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