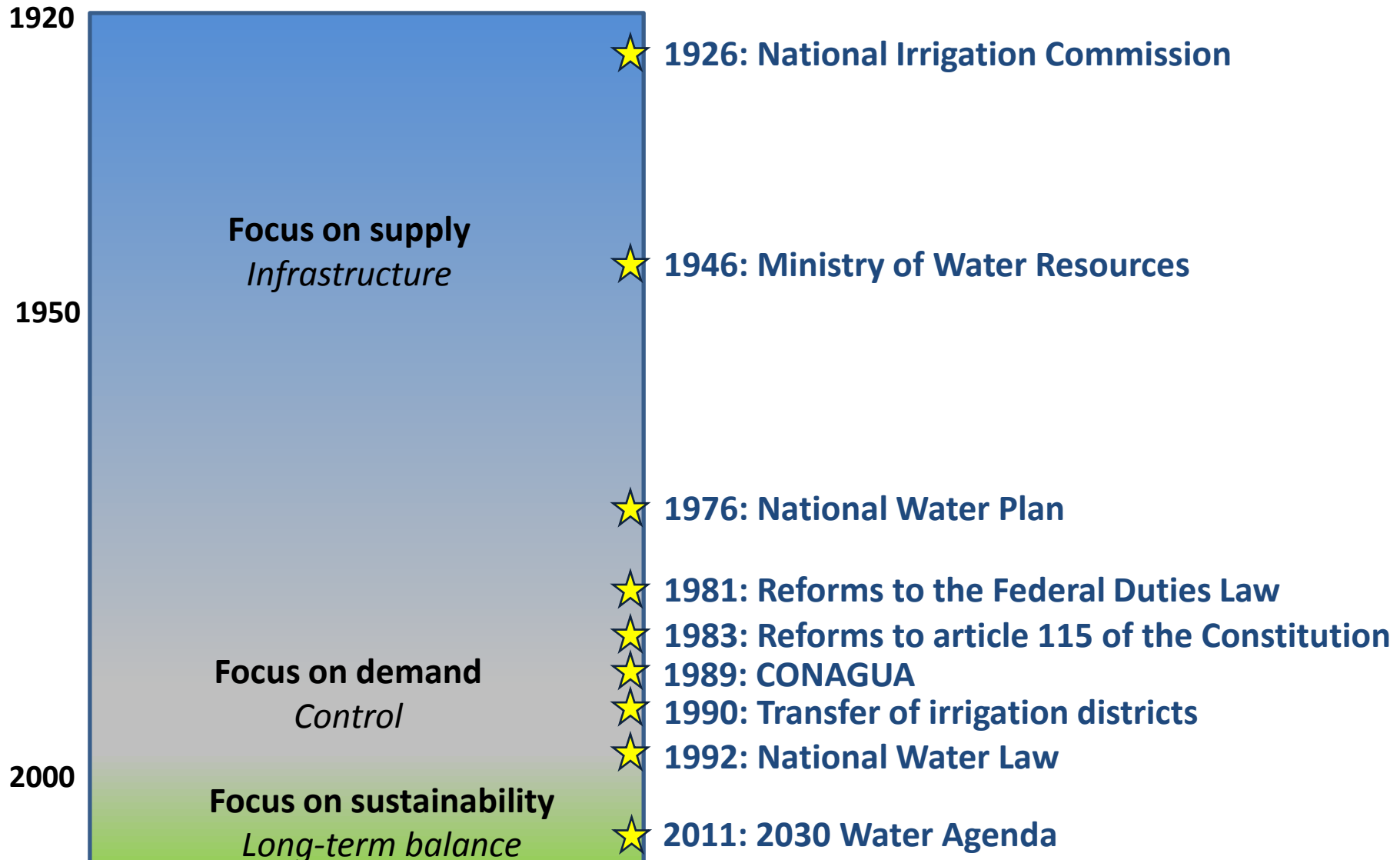


# 2030 Water Agenda



Jun 2011

# The Agenda seeks to consolidate a sustainable water policy



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Pass on to the next generation a country with clean water bodies, balanced supply and demand for water, universal access to water services and cities safe from catastrophic floods



# Vision

All municipal wastewater treated

Trash-free rivers and lakes

Non-point sources of pollution under control

All industrial wastewater treated

Suburbs connected to water supply and sanitation networks

Rural communities with improved water supply and sanitation

Efficient water utilities

All irrigation surfaces with appropriate technology

Self-managed basins

Reuse of all treated wastewater

Aquifers in equilibrium

Sustainable land-use management

Flood zones free from human settlements

Warning and prevention systems with state-of-the-art technology

Clean water bodies

Balanced supply and demand for water

Universal access to water services

Settlements safe from floods

- Sustainability
- Long-term vision
- Basin-based vision
- Local control
- Subsidiarity

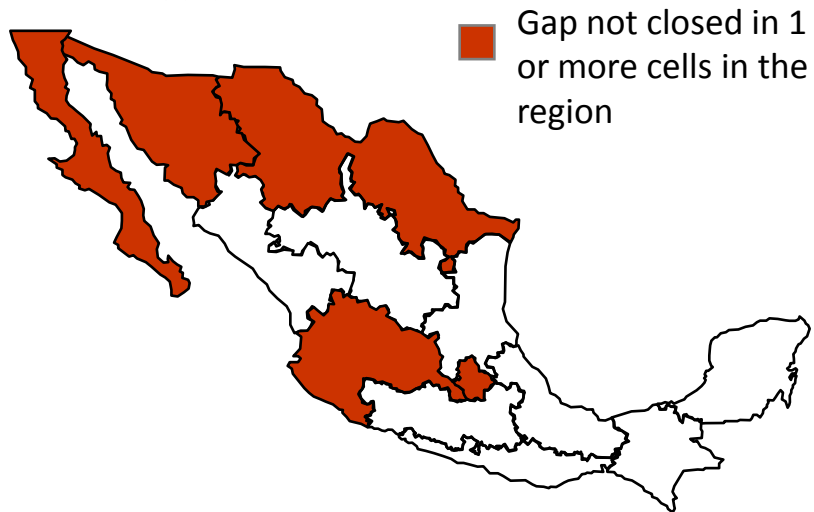


- Ensuring that all the country's catchments have a sound governance structure, and
- Ensuring a better and more balanced distribution of competences to foster, regulate and provide water and sanitation services



- 15% of the current water demand comes from overexploitation, a gap which shows a trend to double by 2030
- 6.7 billion m<sup>3</sup> of wastewater generated today will amount to 9.2 billion by 2030
- In the next 20 years, drinking water coverage should be extended to 36.8 million people and sanitation services to 40.5 million
- The last 30 hurricanes and droughts have affected 8 million people and caused 130 billion pesos (10.8 billion USD) worth of damage; the vulnerability is increasing

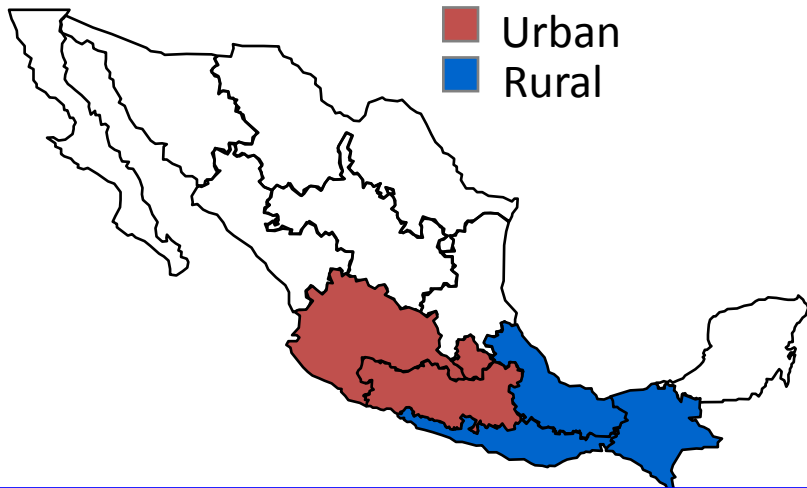
Balanced supply and demand for water



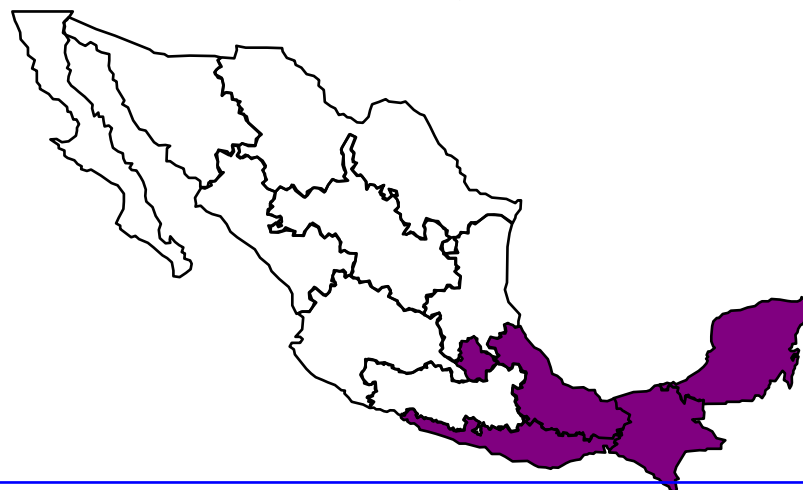
Clean water bodies



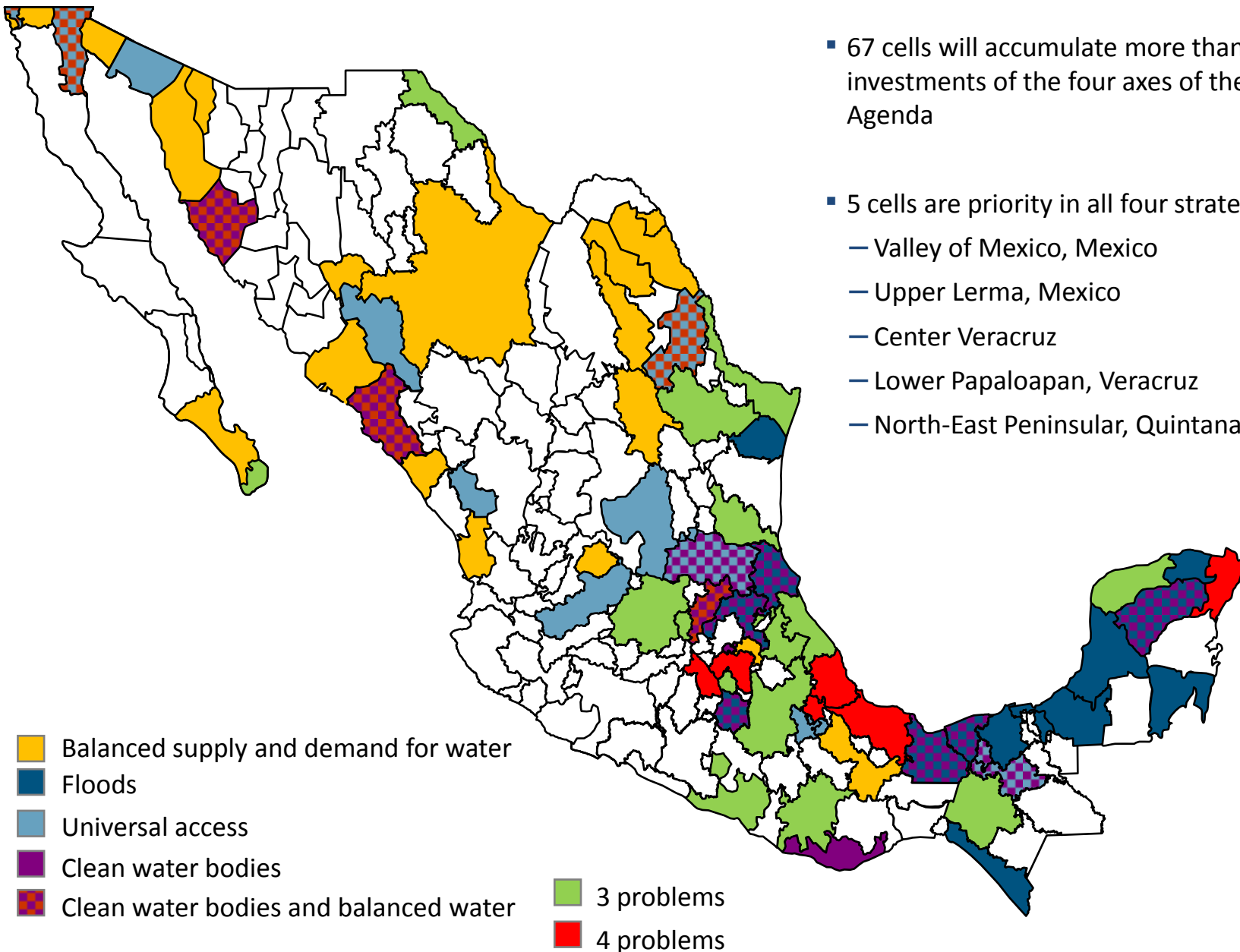
Universal access to water services



Settlements safe from catastrophic floods



# Priority cells



- 67 cells will accumulate more than 70% of the investments of the four axes of the Water Agenda
- 5 cells are priority in all four strategic directions:
  - Valley of Mexico, Mexico
  - Upper Lerma, Mexico
  - Center Veracruz
  - Lower Papaloapan, Veracruz
  - North-East Peninsular, Quintana Roo

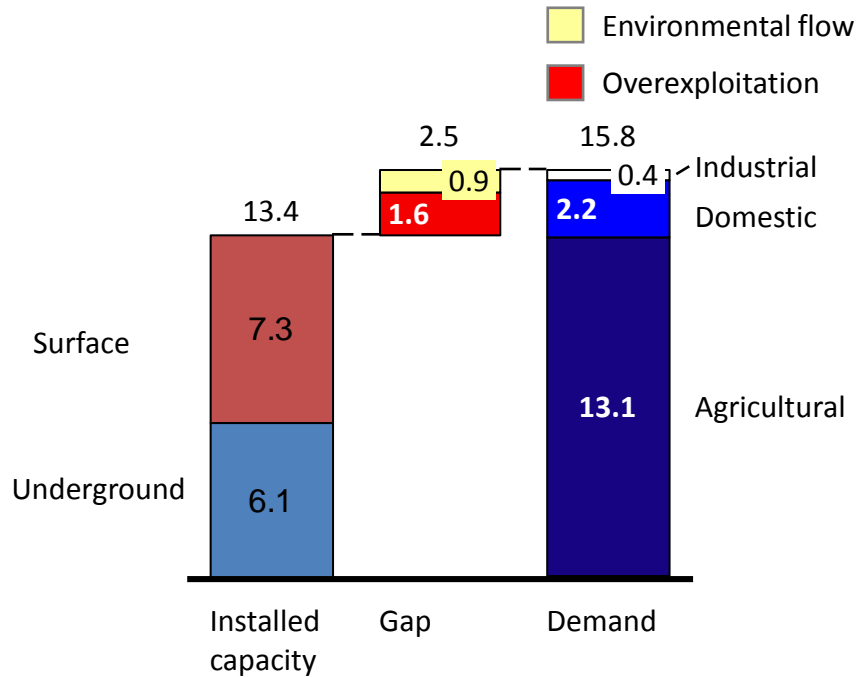
- Balanced supply and demand for water
- Floods
- Universal access
- Clean water bodies
- Clean water bodies and balanced water
- 3 problems
- 4 problems



# Cost Curve Example. Lerma-Santiago-Pacifico Region

2006

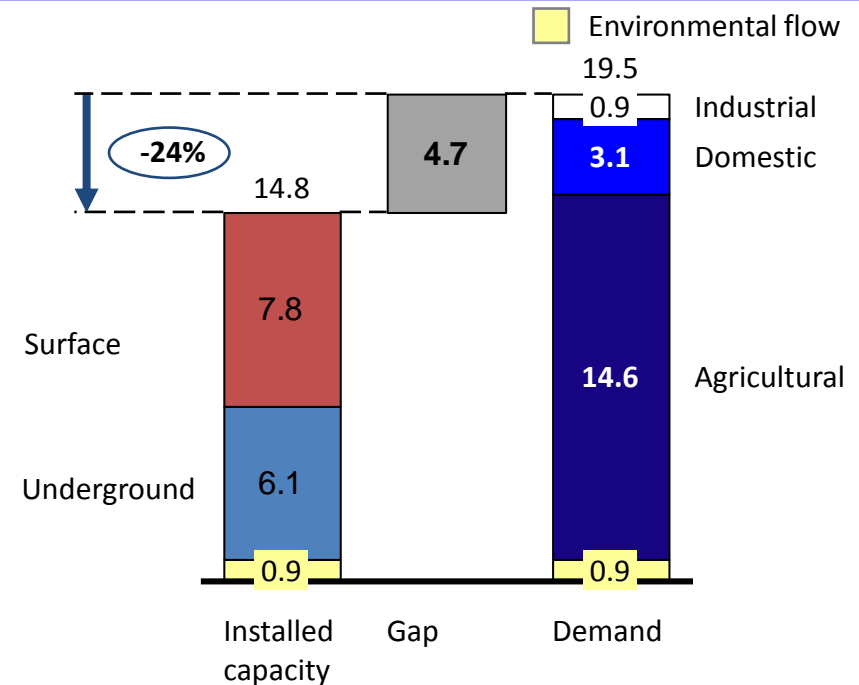
Thousands of millions of cubic meters



- ~2 500 hm<sup>3</sup> of current demand water is supplied in a non sustainable way
- At present, supply constraints limit agricultural activity

2030

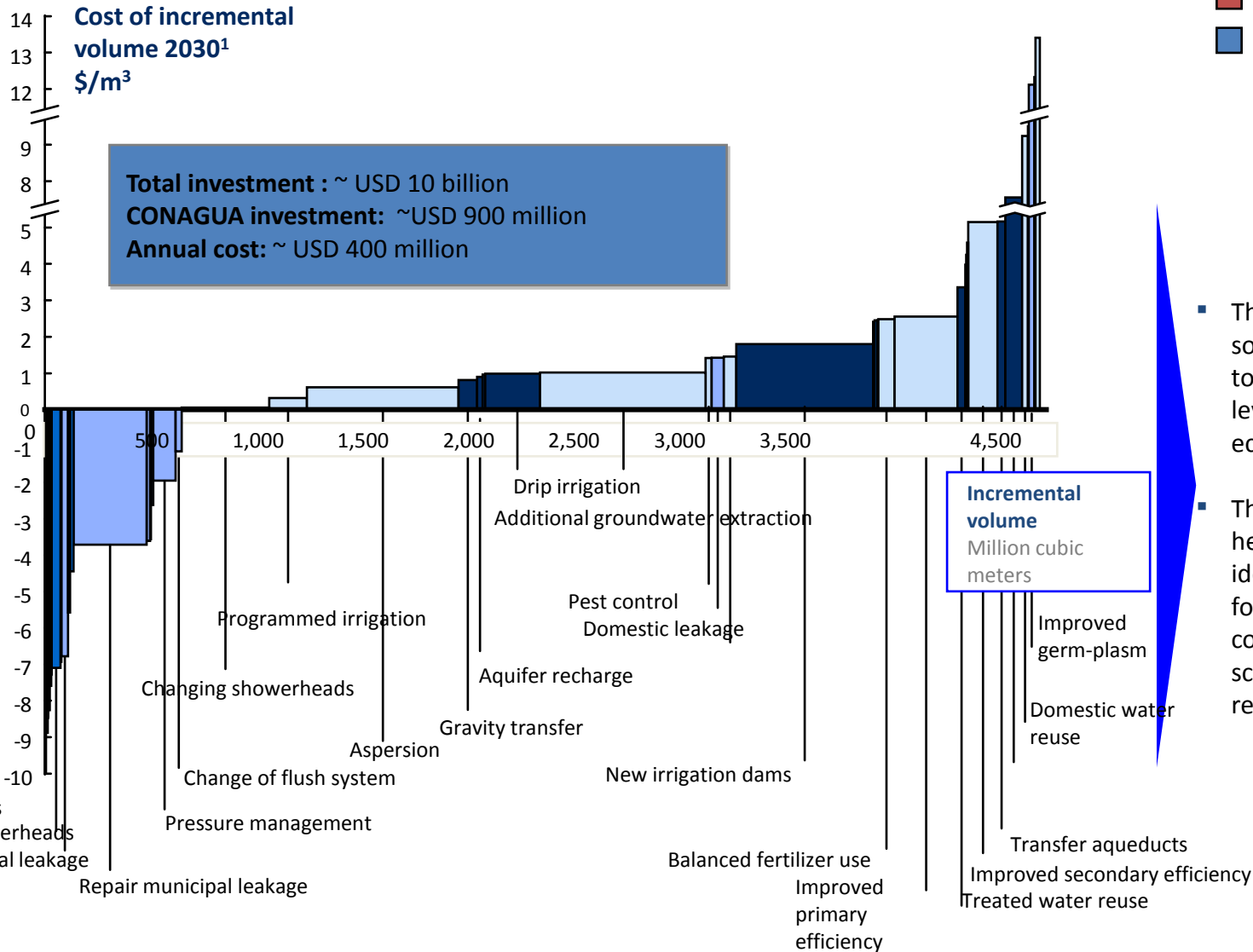
Thousands of millions of cubic meters



- The gap for 2030 grows to ~4 700 hm<sup>3</sup> for two reasons:
  - Non sustainable volume: 2 500 hm<sup>3</sup>
  - Difference between growth of supply and demand: 2 200 hm<sup>3</sup>

# Cost Curve Example

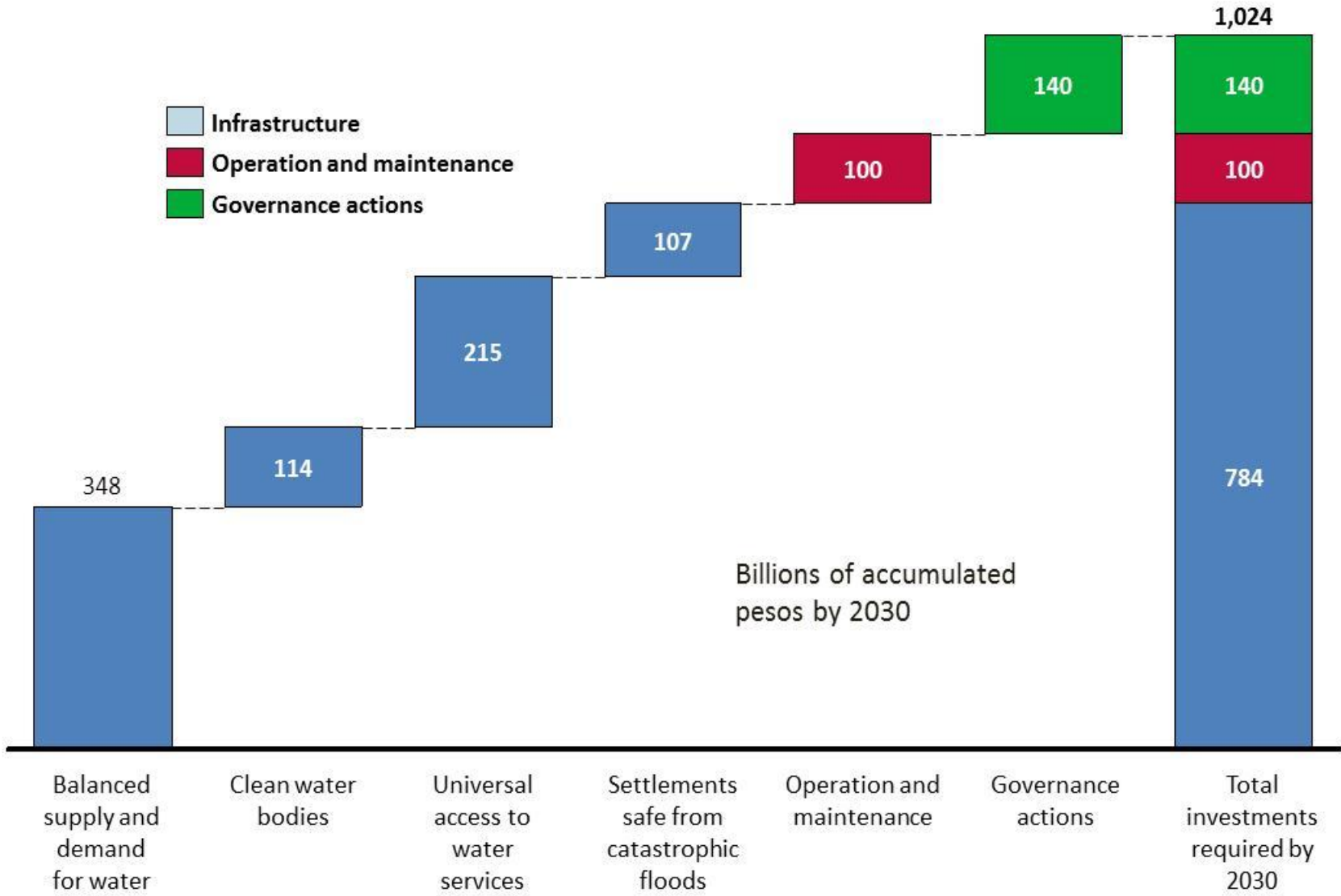
- Infrastructure
- Industrial
- Municipal
- Agriculture



- The proposed solution gives priority to the viability of the levers over the economic aspect
- The cost curve has helped CONAGUA identify areas of focus and where to concentrate the scarce investment resources

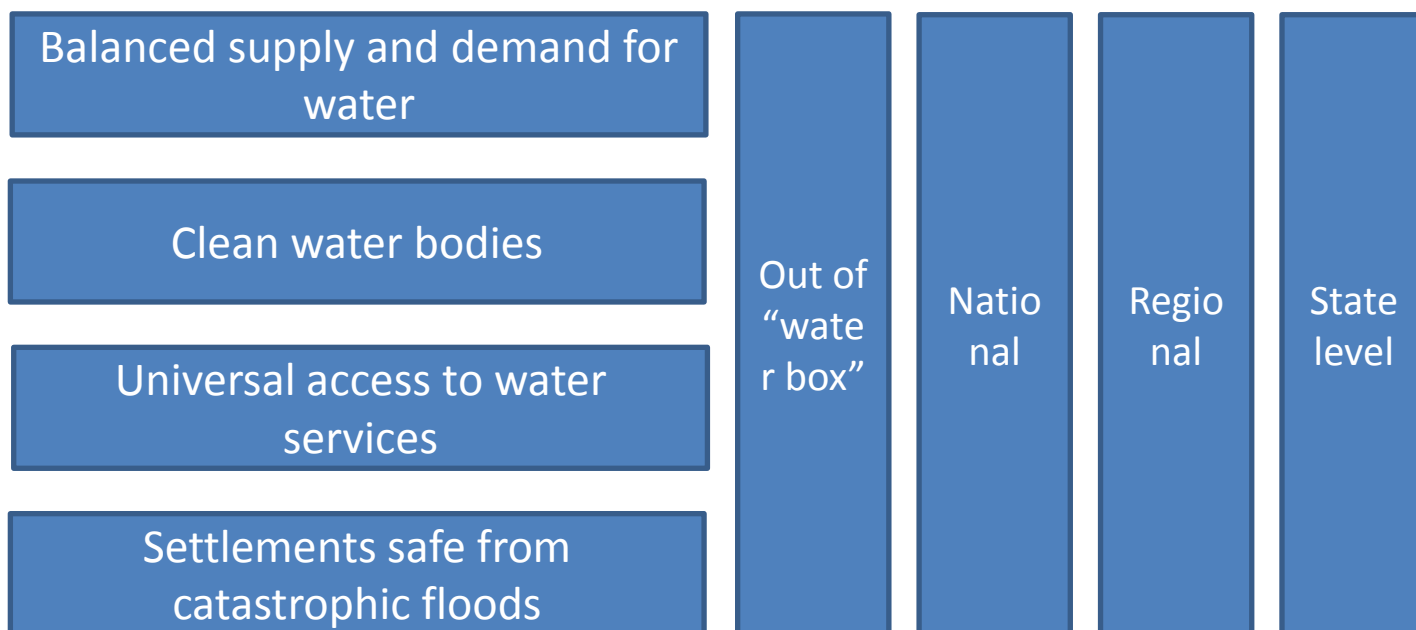
<sup>1</sup> Includes the annual investment, operational costs and benefits for the users and savings on water tariffs  
 SOURCE : Team Analysis

# Global investment required



Action	Investment (billions of pesos / USD)
Reducing water demand	248 (20.7)
Increasing water supply	100 (8.3)
Building wastewater treatment infrastructure	114 (9.5)
Extending drinking water networks	127 (10.6)
Extending sewerage networks	88 (7.3)
Increasing investment for protection infrastructure	107 (8.9)
Governance actions and operation and maintenance	240 (20.0)

The initiatives are **changes** which will improve in a relevant way the capacity of the National Water Management System



- ANNEXES



- The initiatives that could support in a more relevant manner the achievement of balanced supply and demand for water:
  - ✓ Giving a more prominent role to the Technical Groundwater Committees (COTAS in Spanish) in aquifer management
  - ✓ Strengthen the organization and functioning of the River Basin Councils and their auxiliary bodies
  - ✓ Consolidating the governance functions and regional organization of the CONAGUA
  - ✓ Involving civil society associations of irrigations users and Technical Groundwater Committees in driving for the saving of water and the technification of irrigation
  - ✓ Formulating regulations for the distribution of surface water by catchment and by aquifer
  - ✓ Reinforcing systems to measure and ensure compliance with the volumes allocated and authorized in agricultural year

- To achieve clean water bodies, the following initiatives should be implemented:
  - ✓ Reinforcing available institutional mechanisms to discourage polluting behavior by different users
  - ✓ Developing a specific normativity for the assessment, monitoring and control of non-point source pollution
  - ✓ Promoting and reinforcing intensive reforestation programs associated with soil conservation in priority catchments



- It is also necessary to:
  - ✓ Give a more relevant responsibility to state governments as regards drinking water and sanitation
  - ✓ Promote the systematic certification of management and technical staff of drinking water and sanitation utilities
  - ✓ Promote the definition of water tariffs that obey technical criteria, dissociated from political aspects
  - ✓ Strengthen the capacities and attributions of the CONAGUA and the State Water Commissions in order to promote, supervise and regulate drinking water and sanitation services

- Reducing vulnerability to catastrophic floods requires significant institutional changes such as:
  - ✓ Creating the Ministry of Land-Use Planning, which would implement a long-term Land-Use Planning Strategy
  - ✓ Gradually implementing a mandatory Ecological Land Management Program in all municipalities in Mexico, and extending its scope to urban areas
  - ✓ Creating the National Observatory of Sustainable Land-Use Planning
  - ✓ Broadening the scope of the Ministry of National Defense's DN-III-E Emergency Plan, to evacuate people in situations of imminent risk

(continues)

- Reducing vulnerability to catastrophic floods requires significant institutional changes such as (continued):
  - ✓ Increasing the investments in the generation of flood risk maps, outlining of rivers, federal zones and flood plains, construction of protection infrastructure, and maintenance and custody of existing water infrastructure
  - ✓ Strengthening the capacities of municipalities as regards civil defense
  - ✓ Consolidating regional and national hydrological services
  - ✓ Accelerating the modernization program of the National Meteorological Service, and
  - ✓ Increasing the fines to civil servants who allow the non-compliance of land use plans in urban development

## Initiative outside the “water box”

- ✓ Creating the National Development Planning Institute, which would ensure the due long-term harmonization between the different sectorial and territorial development policies in Mexico



## Initiatives inside the “water box”, nationally

- ✓ Creating an authority to guarantee budgetary adequacy and its clear use for studies and projects, in such a way as to put together a robust and strategic portfolio
- ✓ Applying a results-oriented evaluation to all public programs that have an impact upon or that affect the pursuit of water sustainability
- ✓ Assigning payments of duties for the use of the nation’s water to the financing of water governance functions
- ✓ Establishing a clear and transparent system of bulk water prices and tariffs, which considers costs and externalities

(continues)

**Initiatives Inside the “water box”, nationally**

(continued)

- ✓ Abolishing the Law on the contribution to the improvement of Public Federal Water Infrastructure, and assimilating the equivalent amount to a tariff for services, with the aim of recovering the investments
- ✓ Boost resources destined to the modernization and technification of hydro-agricultural infrastructure
- ✓ Creating a national fund for the maintenance and rehabilitation of dams and large water infrastructure
- ✓ Facilitating the increasingly effective contribution of the scientific and technical community to the formulation and deployment of sustainable water policy

(continues)

## Initiatives Inside the “water box”, nationally

(continued)

- ✓ Creating an information system on investments in the water sector made by the three branches of government and by users
- ✓ Providing incentives and strengthening long-term water culture processes
- ✓ Creating the climate change adaptation contingency fund

## Initiatives within the “water box” at the regional level

- ✓ Strengthening the process of formulation, follow-up and evaluation of long-term water programs by hydrological region aimed at water sustainability
- ✓ Developing regional information systems in order to reinforce water management by catchment and aquifer

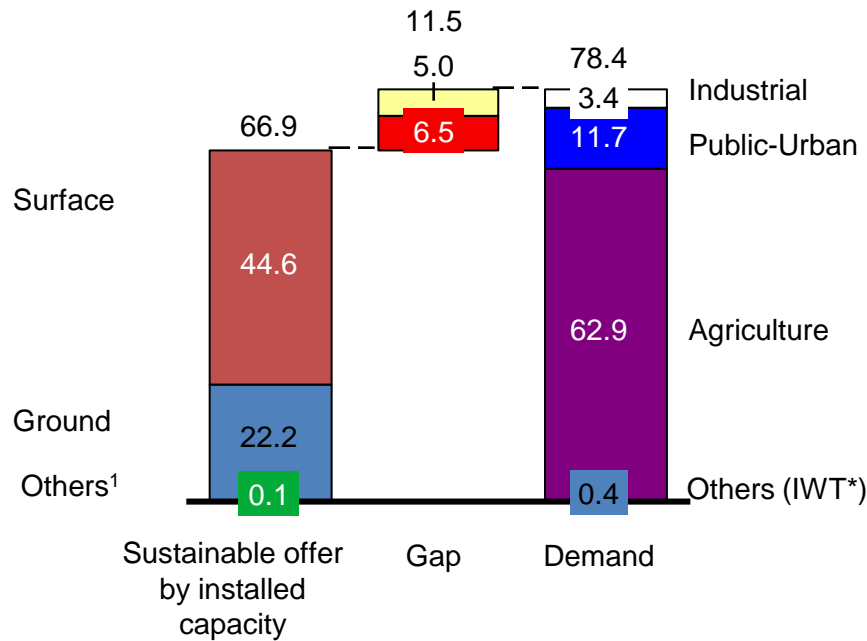
## Initiatives within the “water box” at the state level

- ✓ Modifying state laws and their regulations in order for them to regulate public-private investment in water infrastructure
- ✓ Creating revolving funds to support access to the commercial financial system for a greater number of water utilities and irrigation associations

# As regards balanced supply and demand for water, the gap by 2030 is quantified at ~23 thousand hm<sup>3</sup>

**Current situation**  
Thousands of hm<sup>3</sup>

Ecological flow    Overdrafting

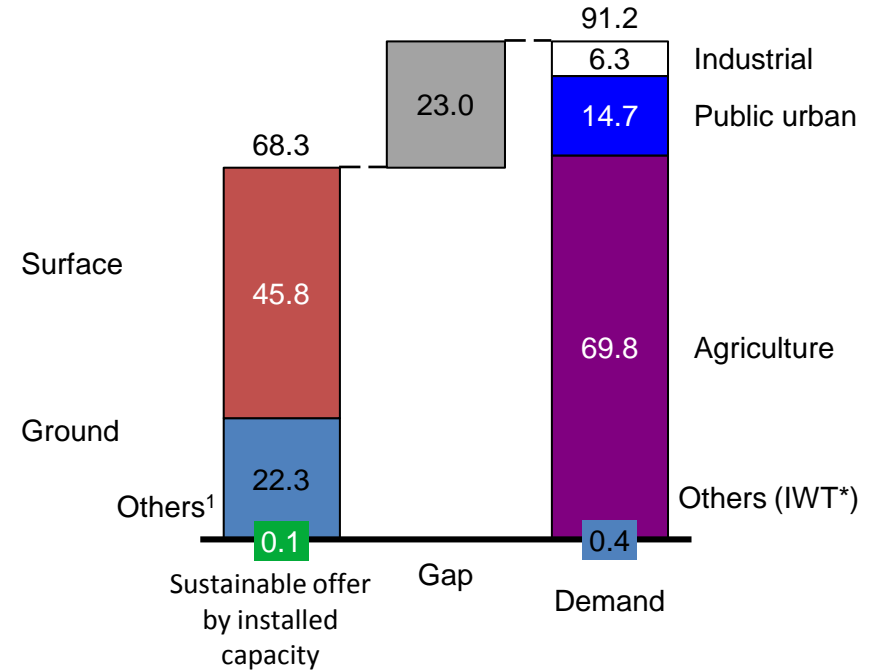


- 63% of the demand is supplied with surface water sources
- The groundwater reserves are decreasing by ~6.5 billion cubic meters per year.
- The demand from agriculture represents 80% of the total current demand

\* IWT: 1944 International Water Treaty

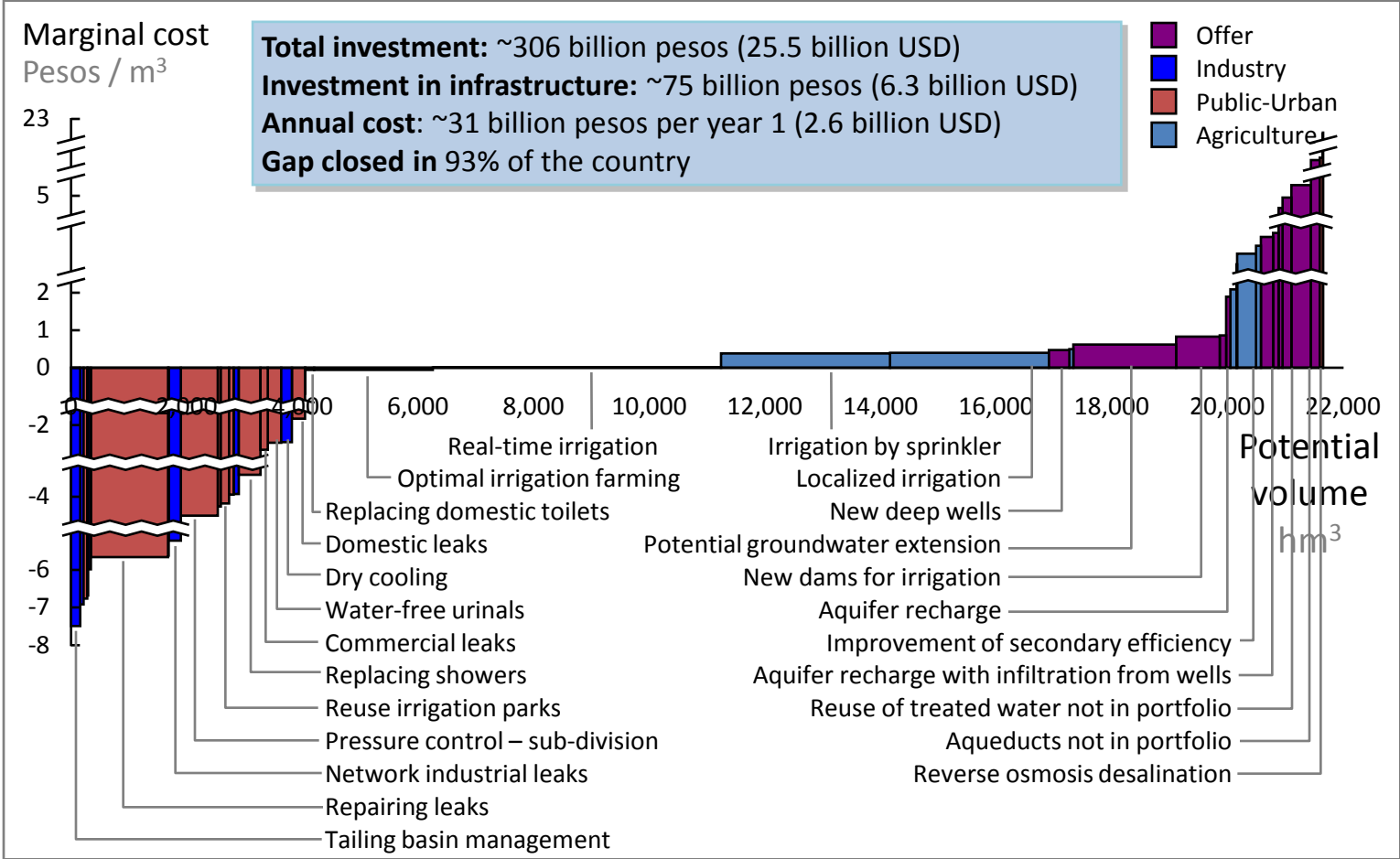
<sup>1</sup> Offer from non-traditional sources e.g. desalination plants

**Challenges for 2030**  
Thousands of hm<sup>3</sup>



- ~ 50% of the gap in 2030 is the non-sustainable volume
- The gap in 2030 will rise to 23 thousand hm<sup>3</sup>, for various reasons:
  - Accelerated growth in industry (2.68% annually)
  - Growth in agriculture (0.5% annually)

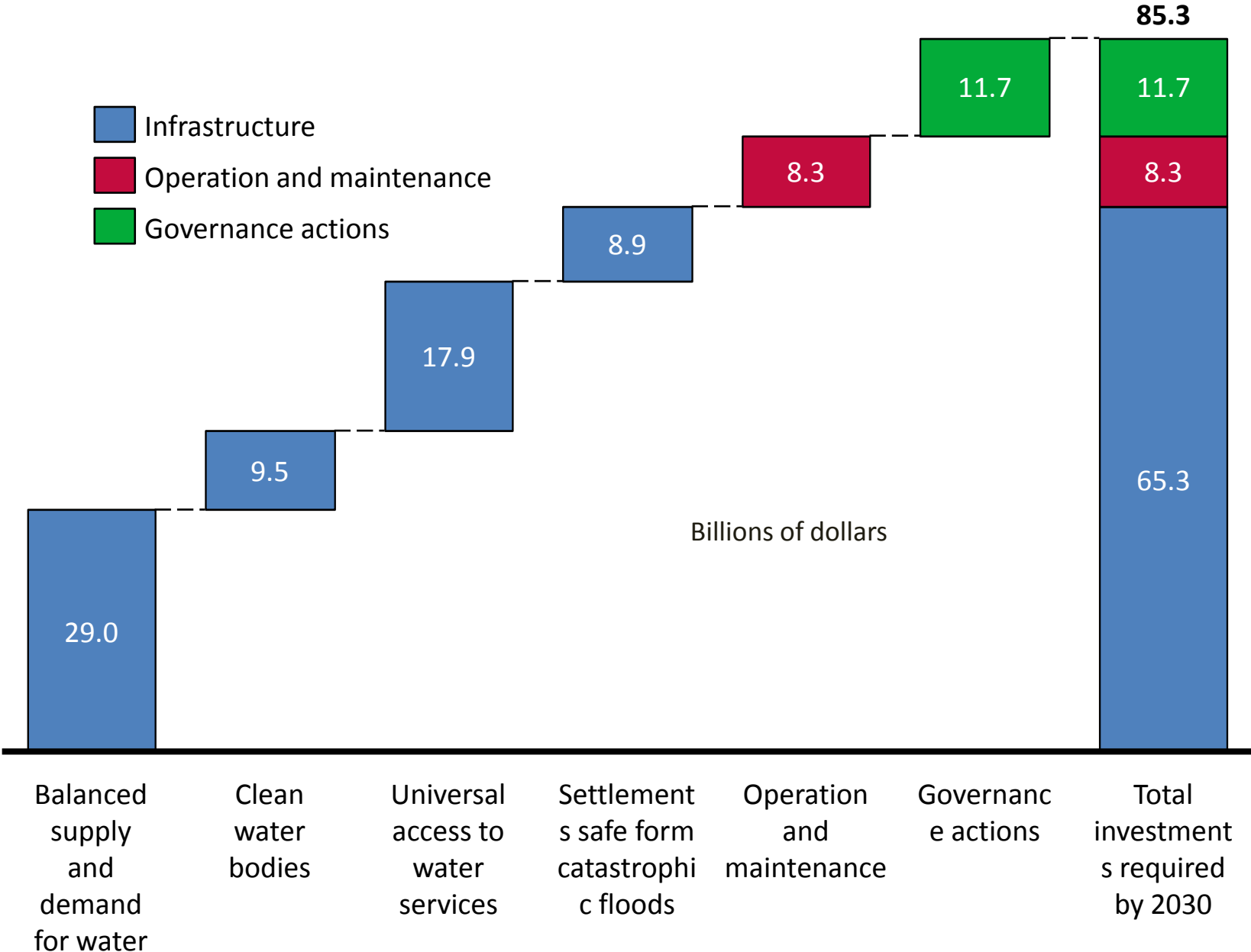
**...the most cost-effective technical solution resolves 93% of the problem by 2030 with an investment of ~306 billion pesos (25.5 billion USD) from the government and users**



- The solution would close the gap in 93% of the country's cells
- Planned and potential infrastructure measures as well as improvements in agricultural efficiency can reduce the gap by 75% by 2030
- The average cost of implementation would be -0.3 pesos (0.03 USD) per m<sup>3</sup>

1. Includes annualized investments (at a discounted rate of 12%), operating expenses

# Global investment required



\*\*\*\*\*

May 2011