

## Environment

### IMPROVING CLIMATE ADAPTATION AND WATER MANAGEMENT

- ▶ Mexico is highly vulnerable to the effects of a changing climate and exposed to hydro-meteorological events. Over the past sixty years, the amount of water available for each person has declined drastically due to climate change and population growth.
- ▶ Mexico has undertaken a broad range of policy and institutional reforms in support of climate change adaptation, but it lacks a monitoring and evaluation system to assess progress.
- ▶ In spite of having a well-developed system for managing the consequences of natural hazards, Mexico needs to reinforce risk prevention by re-focusing funding from response to prevention.
- ▶ Increasing the benefits from freshwater resources will require more robust and flexible water allocation policies and removing perverse subsidies.
- ▶ Substantial investment will be needed to provide and sustain water security and safeguard economic activities, urban centres, and freshwater ecosystems that depend on water resources in a changing climate.

#### What's the issue?

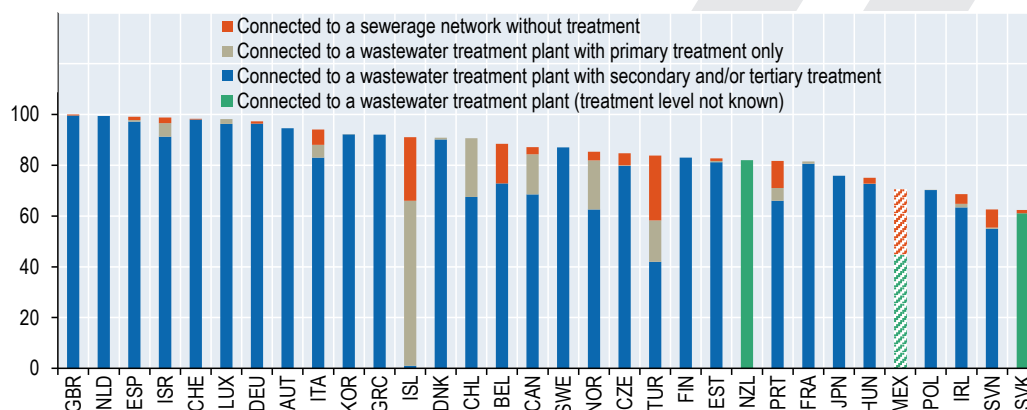
Mexico has committed to strengthening its resilience to climate change through its Climate Change Law and its Nationally Determined Contributions. The Special Climate Change Programme 2014-18 sets out an ambitious and wide-ranging set of measures to achieve this. There has been progress in strengthening the evidence base and implementing institutional reforms. However, progress in those areas is not necessarily translating into increased resilience. Barriers to progress include capacity constraints particularly at the local level, weaknesses in land-use planning, and financing constraints.

Climate change, combined with Mexico's growing population, reduces the amount of water available per

person, making good water management critical for the country. Currently, water policy implementation is uneven. River basin councils are not fully operational twenty years after their creation, the regulatory framework for drinking water and sanitation is scattered across multiple actors, and harmful subsidies in other sectors (energy, agriculture) create a perverse incentive for over-exploitation. Moreover, electricity subsidies for groundwater pumping mostly accrue to the richest farmers, making this a particularly regressive subsidy. Efforts have been made to protect environmental flows and the ecosystem services they support, but the lack of coherence in national water legislation poses challenges to implementation. Mexico also needs to increase

#### Only two in three Mexicans are connected to a public wastewater treatment plant, one of the lowest shares in the OECD

Share of national population connected to a wastewater treatment plant, 2013 or latest available year



Source: OECD Environment Statistics Database.

the financing for, and cost recovery of, water supply and sanitation infrastructure, including by mobilising private finance through public-private partnerships.

While a fact-based analysis based on internationally comparable statistics is essential to monitor domestic efforts to achieve nationally determined contributions, Mexico is complementing it with qualitative assessments of mitigation and adaptation policy responses. For example, Mexico has launched the special climate change programme, geared towards reducing emissions of green-house gases and short lived climate pollutants. While the goals for emissions reduction are ambitious, there is still a need to implement actions in different sectors and in local governments to achieve what is being proposed. Under the adaptation dimension of its Nationally Determined Contributions, Mexico considers processes to safeguard water for social and ecosystem purposes as well as for infrastructure and productive systems. Still, it needs to establish strategies and measuring standards to counterbalance the reducing availability of water.

### Why is this important for Mexico?

Effective and efficient climate change adaptation policies are needed to ensure that Mexico can sustain inclusive growth over the longer-term. Mexico is already being affected by climate change, with average temperatures having risen 0.85°C from the 1960s to the 2010s. Projections show that temperature in northern Mexico could rise by 3-4°C by the end of the century under a high emissions scenario. Precipitation is projected to decline by 10% in most of the country, and by even 40% in Baja California. This will pose challenges for agriculture, water supply and health. Mexico's vulnerability to those changes is exacerbated by persistently high levels of poverty and inequality, with the poor disproportionately affected by the consequences of extreme events. Development choices made today, such as the location of new infrastructure, will shape Mexico's longer-term vulnerability to climate change.

Improving the management of water is also crucial for the country, especially since climate change will increase future uncertainty about water availability and demand. Groundwater depletion due to uncontrolled pumping has resulted in substantial land subsidence, increased costs of urban and rural water supply and deteriorating water quality. Already today, it is estimated that 18% of the population in Mexico City is subject to water rationing. Wastewater services typically lag behind water supply, leading to deteriorating water quality. Mexico has one of the lowest shares of the population connected to public wastewater treatment plants in the OECD (see Figure) and a significant proportion of wastewater is treated at the primary level only. Access to and reliability of water services is more limited in low-income settlements, informal settlements and rural areas. Inadequate water supply and sanitation, together with a rise in pollution, increase mortality and morbidity, raise water treatment costs, lower productivity and inhibit freshwater ecosystems' capacity to deliver valuable ecosystem services (including their ability to process pollutants). A study by Conagua and the World Bank estimated the economic costs of deficiencies in water services in Mexico Valley at almost USD 2 billion annually, about 1% of Mexico Valley's GDP.

### What should policy makers do?

- ▶ Prevent the accumulation of climate-related risks by supporting effective land-use planning, and increasing investment in risk prevention activities.
- ▶ Implement a robust system for monitoring and evaluating progress on climate change adaptation.
- ▶ Review and reform water resources allocation policies by enforcing limits on the amount of water abstracted and improving how water is re-allocated among competing uses.
- ▶ Set tariffs based on supply, pollution and resource costs (reflecting the scarcity of water resources) and address affordability issues outside the water bill through targeted measures.
- ▶ Minimise operating costs and investment needs of water supply and sanitation infrastructure through targeted maintenance (i.e. reducing leakage), demand management (i.e. by well-designed tariffs), and infrastructure options that avoid costly technical lock-in failures and future liabilities.



### Further reading

OECD (2017), OECD Council Recommendation on Water, forthcoming.

OECD (2016), *Policy Perspectives on Water, Growth and Finance*, OECD Publishing. <https://issuu.com/oecd.publishing/docs/water-growth-finance-policy-perspec>

OECD (2015), *National Climate Change Adaptation: Emerging Practices in Monitoring and Evaluation*, OECD Publishing. <http://dx.doi.org/10.1787/9789264234611-en>

OECD (2015), *Climate Change Risks and Adaptation: Linking Policy and Economics*, OECD Publishing. <http://dx.doi.org/10.1787/9789264234611-en>

OECD (2015), *Water Resources Allocation: Sharing Risks and Opportunities*, OECD Publishing. <http://dx.doi.org/10.1787/9789264229631-en>

OECD (2013), *Making Water Reform Happen in Mexico*, OECD Publishing. <http://dx.doi.org/10.1787/9789264187894-en>