



Ministry of Foreign Affairs

# *Water in Mexico*

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# Water in Mexico

## Geography

Mexico has a total area of 1,9 million square Km, that is 47 times bigger than the Netherlands. Mexico has nearly 120 million inhabitants. Part of the country is located on the same latitude as the Sahara Desert; therefore, the central-northern region is semi-arid and arid. However rainfall is abundant in the south-east and in the watersheds of the Gulf of Mexico and Pacific regions. The mean annual precipitation is 760 mm, equivalent to 1,489 square kilometers per year. In most areas of Mexico, precipitation occurs mainly between June and September.

Given the country's geographical location, it is regularly exposed to severe hydro-meteorological hazards, such as hurricanes and intense rainfall. Although this increases the availability of surface water and the natural recharge of aquifers, it also causes damages to the population, infrastructure and services. Between 1980 and 2010, intense rainfall affected more than eight million people.

## Water management

Currently, 94% of the population has access to drinking water services, and 89% has sanitation coverage. Mexico has an existing and well-developed policy framework for water resource management. However, the implementation of the policy framework is uneven. Municipalities are responsible for providing public services for water distribution and sanitation. The most common organizational form is the provision of water services through a local water utility.

Since 1970, the population has changed from being predominantly rural to predominantly urban, green areas in cities are increasingly being paved over, preventing proper infiltration. According to national estimations, in 2050 Mexico will have a population of 150.8 million, which will increase the pressure on water resources.

## Challenges

Governance is the main challenge to tackle water problems in Mexico. The sector lacks important long-term planning capacity across government levels. Even if the best solutions are already available, the lack of water governance makes that every 3-6 years programs are priorities are restarted and progress is interrupted. More so, each year federal and local financial resources become scarcer, many utilities lack financial strength and institutional capacity to operate.

Agriculture is Mexico's first water user, followed by energy generation and industrial usage. Unlike the Netherlands, México's drinking water distribution systems are not centralized. This causes disruption in the service which is partially resolved with water storage tanks. Every Mexican urban household has one or more water storage tanks. This means that drinking water is not flowing or being aerated properly, thus it cannot be drink directly from the tap.

Rivers, lakes and aquifers in Mexico have adverse environmental (water quantity, water quality and ecosystems), health and economic (additional costs for water services, sustainability of farming) consequences, and improving their quality is critical. Aquifers are the main water supply for urban and industrial users, 105 of the 653 aquifers in the country are being overexploited beyond their capacity to recharge.

Generally speaking, in Mexico only 30 percent of water is treated and only 1 % of waste water is recycled. This ratio varies in every region.

## Successful investment schemes

### Public-Private Partnerships (PPPs)

There is an increase in private initiatives and public-private partnerships (PPPs) working trying to come up with creative solutions for the system and ensure the healthy development of infrastructure and water projects. Dutch companies can have an easier way in the market by being part of these initiatives.

One successful example can be found in the feasibility studies to decontaminate Rio Hondo River in central Mexico. The water utility near to the River is working with FMO to fund the studies that will lead to a long term project for waste water treatment.

## **B2B**

Business to business has also proven to be a successful way to begin working in Mexico. A good example in that area is the project in Ciudad Guzman Jalisco, to change the drinking water system in the city. This project is supported by the Mexican company MGB Victoria, the Dutch research institute KWR, and the local authorities in Mexico.

## **Business Opportunities**

### **Urban water**

- Water-treatment and recycling technology are growing. Northern states like Tamaulipas are looking to Dutch solutions that can be effectively implemented through PPPs. They have stated to need isolated water treatment systems either for industrial waste or to attend distant communities.
- Non-revenue water. Large utilities such as the ones operating in Mexico City or Monterrey are demanding sectorization studies to better manage water and avoid water losses.
- Pipe retrofitting. Drinking water pipeline systems and sewage systems is usually over 30 to 40 years old and lacks maintenance.
- Resource planning: Software solutions paired with geo-spatial information provide useful tools to model better solutions for water problems. Examples of successful cooperation to build blue-green solutions in Mexico city to reduce flooding, are find in the Dutch Institute Deltares and the Water Fund of Mexico City.

### **New water sources: desalination**

As mentioned before Mexican territory suffers from very dry seasons. Northern states tend to rely either on rivers or aquifers, but alternative sources of water are needed. States like Baja California are investing water desalination.

### **Industrial applications**

Mexico holds large industrial parks, particularly in the northern and central states like: Queretaro, San Luis Potosí and Nuevo León. Companies manufacture and process all kinds of products, from agricultural goods up to sophisticated appliances for aerospace. All of these industries need to comply with water treatment legislation by building private water treatment facilities. Compact water plants are preferred in this case.

Water treatment facilities are also built near to agricultural lands so crops can be watered with reused water. This practice needs to have a larger water coverage. Also power generation facilities demand water treatment for cooling.

Often companies are looking into cost savings solutions to recycle water and lower their water footprint. Examples of very efficient water usage can be found in the newest Heineken brewer in Chihuahua. Multinational companies abide to the 2030 SDGs and are seeking to make their processes more sustainable.

### **Drinking water**

Mexico is the country with the highest consumption of bottled water. Even though on a national scale Mexico's infrastructure drinking water reach about 94.5% of the population, only 70% has access to freshwater. Today, there's people in rural areas of Mexico need to walk at least 3 miles to obtain freshwater. Isolated drinking water facilities might be widely spread in rural communities.

In addition, in urban areas, water filters are becoming more and more popular, this filters are normally cheaper and more practical than buying a big water bottle twice a week.

## To keep in mind

- Business opportunities exist in several key areas, however is recommended to go with a local partner.
- Having Spanish speakers in your team makes work so much easier, because public information such as biddings or project descriptions are only available in Spanish. Likewise, if you participate in bidding rounds, clarifications are in Spanish only.
- Business culture in Mexico is very different from Dutch culture, so patience and hard work is advised. Business relations are usually built along with a friendship and they take time.
- Not all water operators have adequate financial, commercial and technical resources. While a trend towards corporatization can be observed, the lack of funding is a main barrier, so if you have access to other sources of funding you are more likely to be successful.

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