



Global Safety and Security: Water Shortages in Barcelona, Bengaluru, Cape Town, and Mexico City



EXECUTIVE SUMMARY

CURRENT SITUATION



Multiple cities worldwide are experiencing water shortages, with possible impact to **Airbnb** offices, in-country employees, Nomad workers, and leisure travelers.



Shortages are likely to intensify over time due to a combination of factors, including population growth and climate change.



TIMELINE OVER 10 YEARS

WATER SHORTAGE RECAP

2015-2018: Cape Town experienced a severe drought that almost depleted the city’s water supply, which was a “one in 400 years” event.

2020-2022: California experienced its three driest years on record before the shift from La Niña to an El Niño cycle brought heavy rainfall. Drought conditions sparked wildfires. The pattern is expected to shift back to La Niña in mid-to-late 2024.

2021-present: Catalonia (which includes Barcelona) continues to experience a three-year drought, causing the regional government to declare an emergency with restrictions in February 2024.

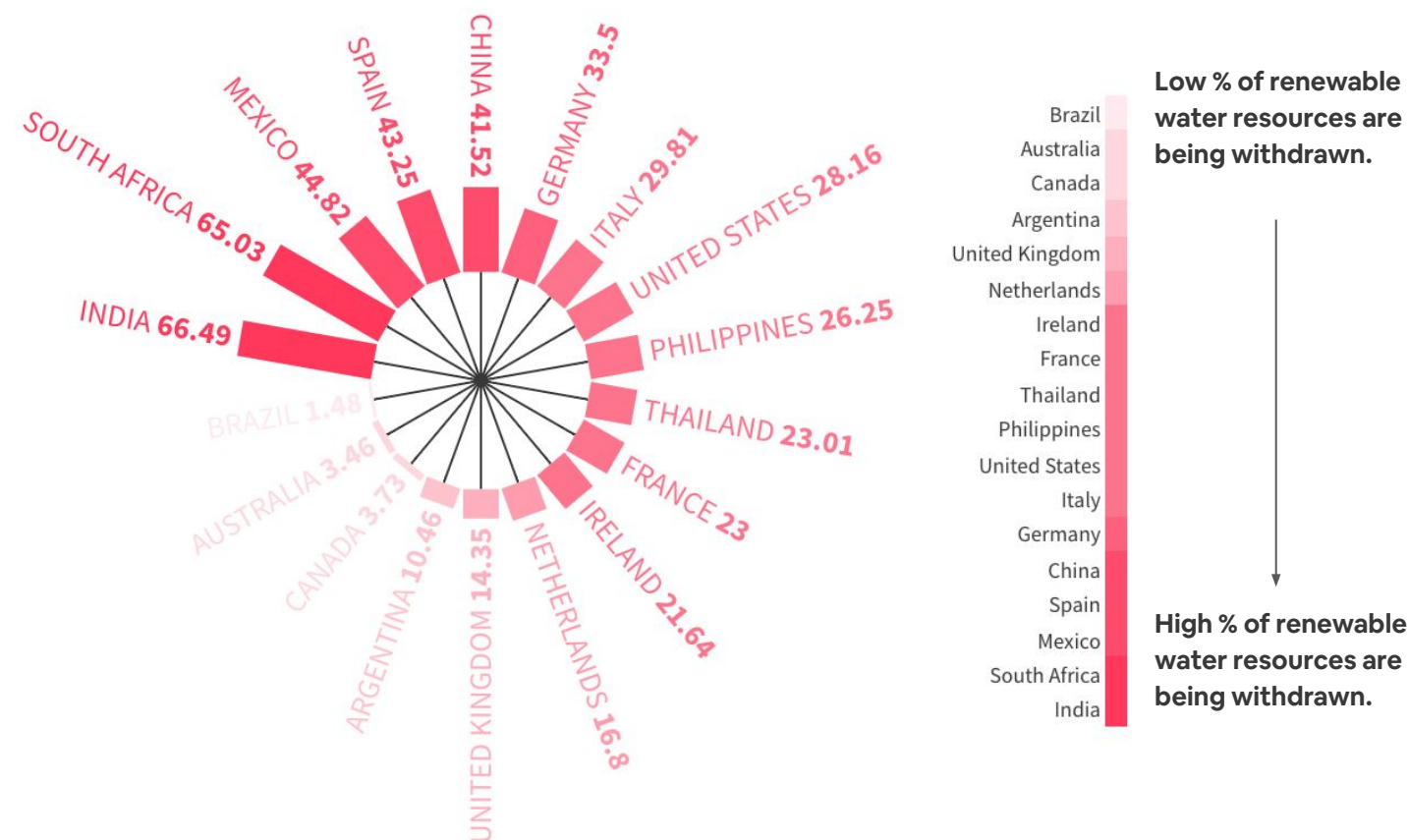
2023-present: Mexico City officials imposed water restrictions due to low reservoir levels in October 2023, which they continue to tighten.

2023-present: Low rainfall in 2023 caused severe water shortages in Bengaluru. The state government introduced plans to use private water trucks and borewells to meet demand.

WATER STRESS LEVELS

GLOBAL OUTLOOK

Several metrics attempt to quantify the human cost of shortages of freshwater resources. Notably, data is reported at the national level, and obscures regional and subregional shortages or excess water supply. This graphic represents the internationally recognized standard of ‘Water Stress’ as defined by the UN Sustainable Development Goal 6.4.2.



The data show how much freshwater is extracted from a country’s water system for human use. It does not include water that has been recycled and reintroduced to the consumption cycle. This is why arid countries like Australia record low levels of water stress - local authorities treat and recycle water, and most residents do not live in the severely drought affected areas.



AREAS OF CONCERN

- Serious water shortages are impacting numerous cities and states around the world as of March 2024. This includes multiple cities with **Airbnb** offices and employee populations.
- Currently, **Barcelona**, **Bengaluru**, and **Mexico City** are at high risk of water shortages, while **Cape Town** continues to face long-term vulnerability despite recent precipitation.
- Municipal water shortages mostly occur in the context of regional or national droughts, amplifying their impact. In some cases, e.g., Cape Town, water shortages are mostly due to infrastructure maintenance and repair.



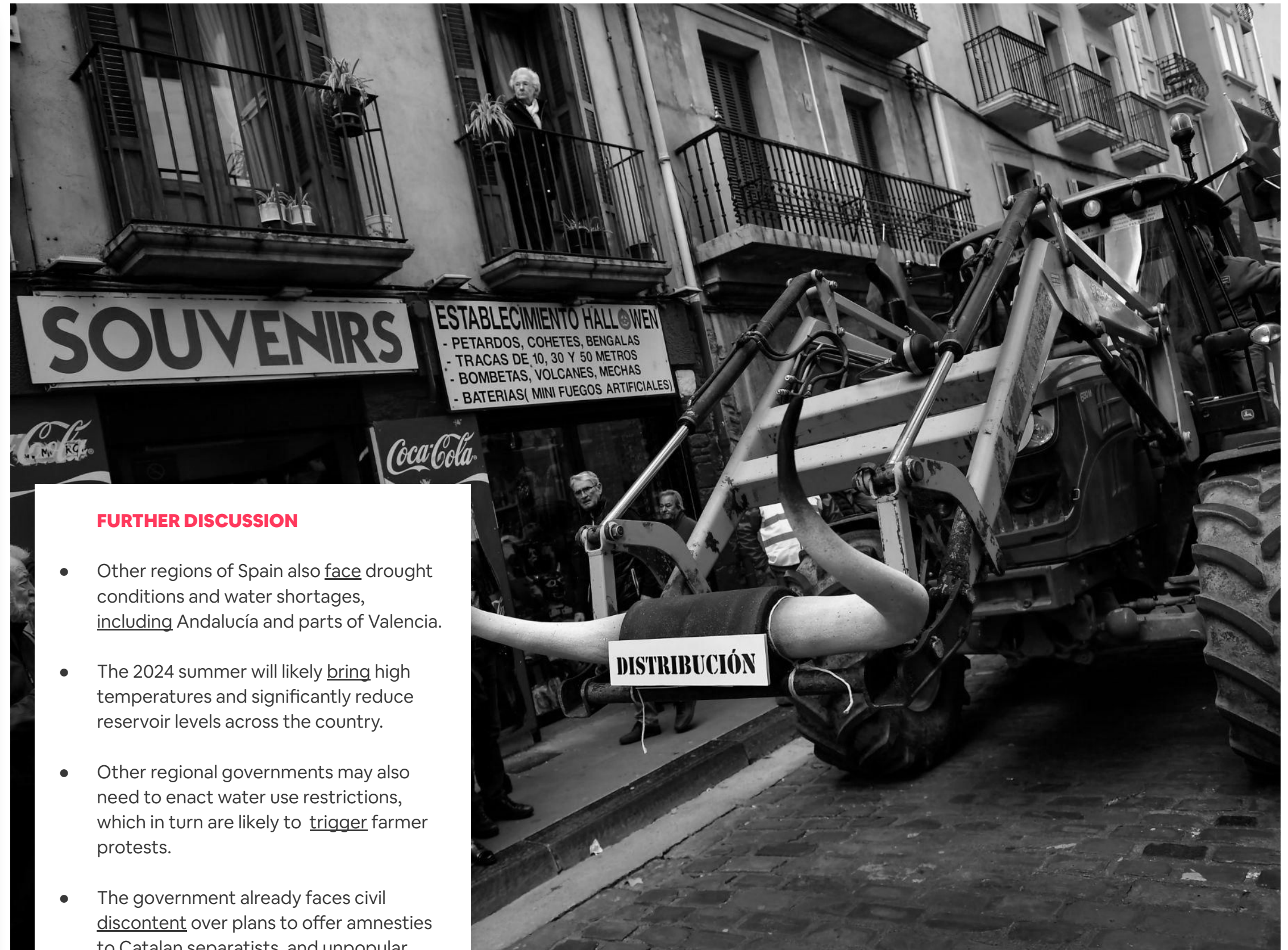
CAUSES OF WATER SHORTAGES

- Prolonged drought associated with climate change has reduced precipitation and available resources.
- Rapid population growth contributes to water shortages in some cities, with more residents and businesses competing for the same resources.
- Water intensive agricultural irrigation competes for available resources.
- Aging water catchment and distribution infrastructure reduces available resources, while poor urban planning impacts aquifers' ability to recharge amid heavy exploitation.

CITY FOCUS BARCELONA

CURRENT STATUS

- Catalonia is amidst a three year drought. Currently, reservoirs are at just 15.1 percent of their capacity.
- In February 2024, the Catalanian government imposed a state of emergency, limiting households to 200 liters (52 gallons) of water per day and restricting agricultural and business use. Water use for pools and recreational infrastructure was also restricted.
- Residential consumers can be assessed fines of up to EUR 3,000 (USD 3,255) at present for serious water use offenses.
- Farmers blocked major highways and ports with tractor sacross Catalonia in opposition to agricultural water limits.
- In Barcelona, farmers disrupted access into the city, and protested in the center of Barcelona (around 2 km/1.2 mi from the **Airbnb** Barcelona office.)
- The Catalanian government eased agricultural water restrictions in response, but maintained stricter residential thresholds. However, tighter agricultural and household consumption limits are likely if rainfall is insufficient to refill reservoirs.



FURTHER DISCUSSION

- Other regions of Spain also face drought conditions and water shortages, including Andalucía and parts of Valencia.
- The 2024 summer will likely bring high temperatures and significantly reduce reservoir levels across the country.
- Other regional governments may also need to enact water use restrictions, which in turn are likely to trigger farmer protests.
- The government already faces civil discontent over plans to offer amnesties to Catalan separatists, and unpopular policies can result in wider anti-government demonstrations.

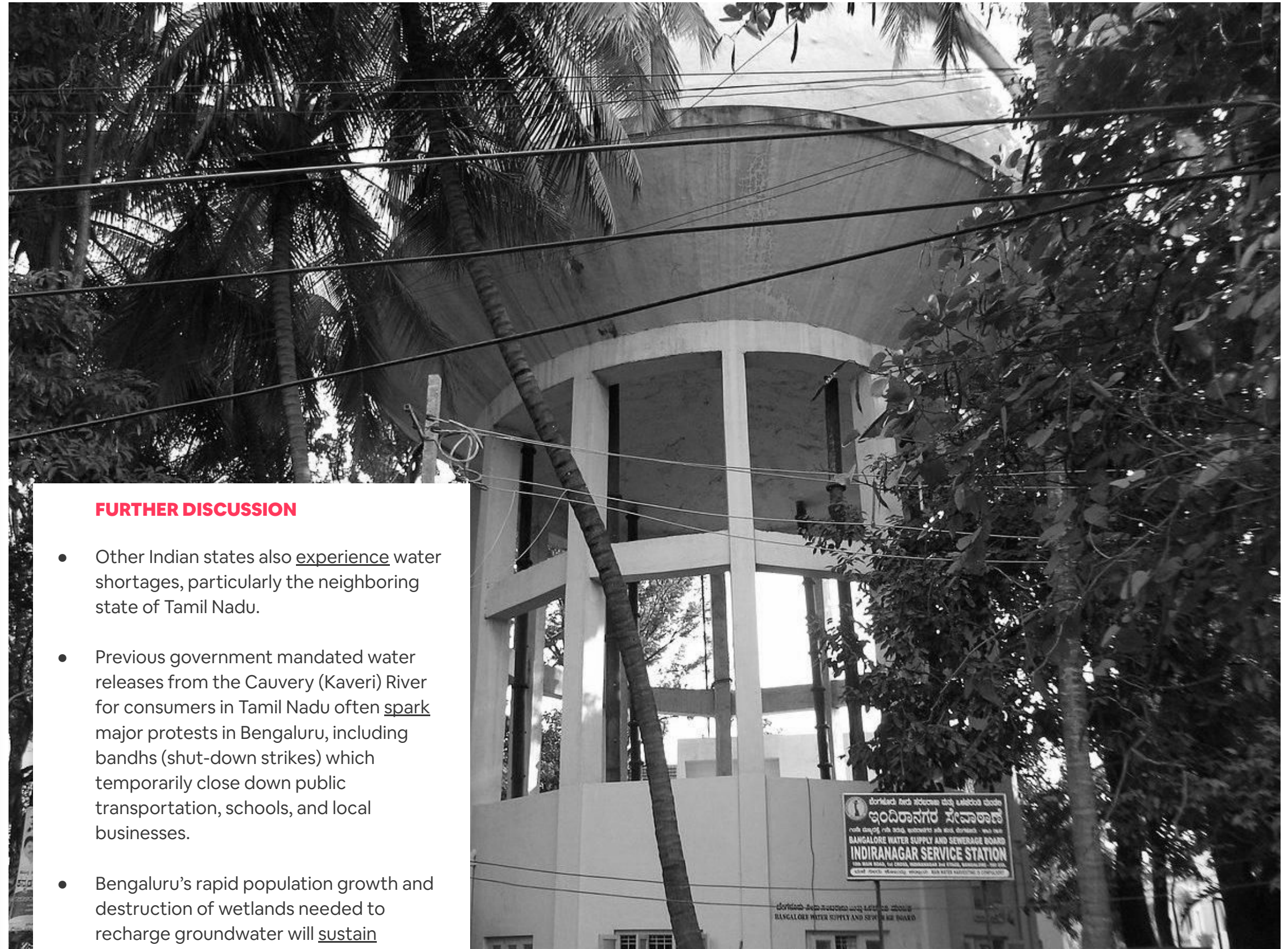
CITY FOCUS BENGALURU

CURRENT STATUS

- Bengaluru is experiencing severe drought after an El Niño weather pattern reduced monsoon rainfall in 2023.
- In March 2024, Bengaluru's water board ordered bulk consumers to reduce water usage by 20 percent, restricted the use of potable water for non-drinking purposes, and fixed the price for water tanker trucks. (As of mid-March 2024, a benchmarking survey by the security vendor MitKat indicated that the majority of corporate respondents had not experienced challenges with water access to date.)
- A major opposition party staged protests in March 2024 regarding water shortages, accusing the state government of prioritizing political expediency over local residents. The issue is likely to remain politically charged ahead of parliamentary elections in April-May.
- Meanwhile, the drought will likely intensify during the hot spring months before the advent of the monsoon.

FURTHER DISCUSSION

- Other Indian states also experience water shortages, particularly the neighboring state of Tamil Nadu.
- Previous government mandated water releases from the Cauvery (Kaveri) River for consumers in Tamil Nadu often spark major protests in Bengaluru, including bandhs (shut-down strikes) which temporarily close down public transportation, schools, and local businesses.
- Bengaluru's rapid population growth and destruction of wetlands needed to recharge groundwater will sustain long-term water challenges even as a shift to La Niña may ease near-term shortages in late 2024.



CITY FOCUS CAPE TOWN

CURRENT STATUS

- Cape Town's current water situation has improved due to permanent water conservation measures and increased rainfall, marking a significant improvement from severe shortages in 2023.
- Intensive water infrastructure maintenance continues to cause temporary disruptions, alongside power outages which disrupt water treatment and distribution operations.

FURTHER DISCUSSION

- Other South African provinces face significantly worse water processing and distribution infrastructure, amplifying disease and protest risks, particularly in lower income townships. As of March 2024, Gauteng province (where Johannesburg and Pretoria are located) is experiencing a severe water shortage.
- In the longer term, climate change-induced shifts to precipitation will combine with population growth and underinvestment in critical infrastructure, aggravating water shortages and prospects for unrest.



CITY FOCUS MEXICO CITY

CURRENT STATUS

- As of February 2024, 90 percent of Mexico City's geographic area was experiencing severe drought due to consecutive years of abnormally low rainfall.
- In October 2023, low reservoir levels led officials to implement water restrictions; approximately 284 of Mexico City's 1,800 neighborhoods are under water restrictions.
- Ongoing water restrictions have sparked protests, causing localized disruption (within 1.2km/0.8mi of the **Airbnb** Mexico City office). Water shortages will likely increase amid the upcoming La Niña cycle.

FURTHER DISCUSSION

- Reporting from February 2024 indicates that 60 percent of Mexico is experiencing moderate to exceptional drought. In the long term, climate change will intensify heatwaves and decrease rainfall, combining with population growth to aggravate water shortages nationwide.
- Social tensions related to water access will drive sporadic protests in both urban and rural areas, although significant violence will remain rare.





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