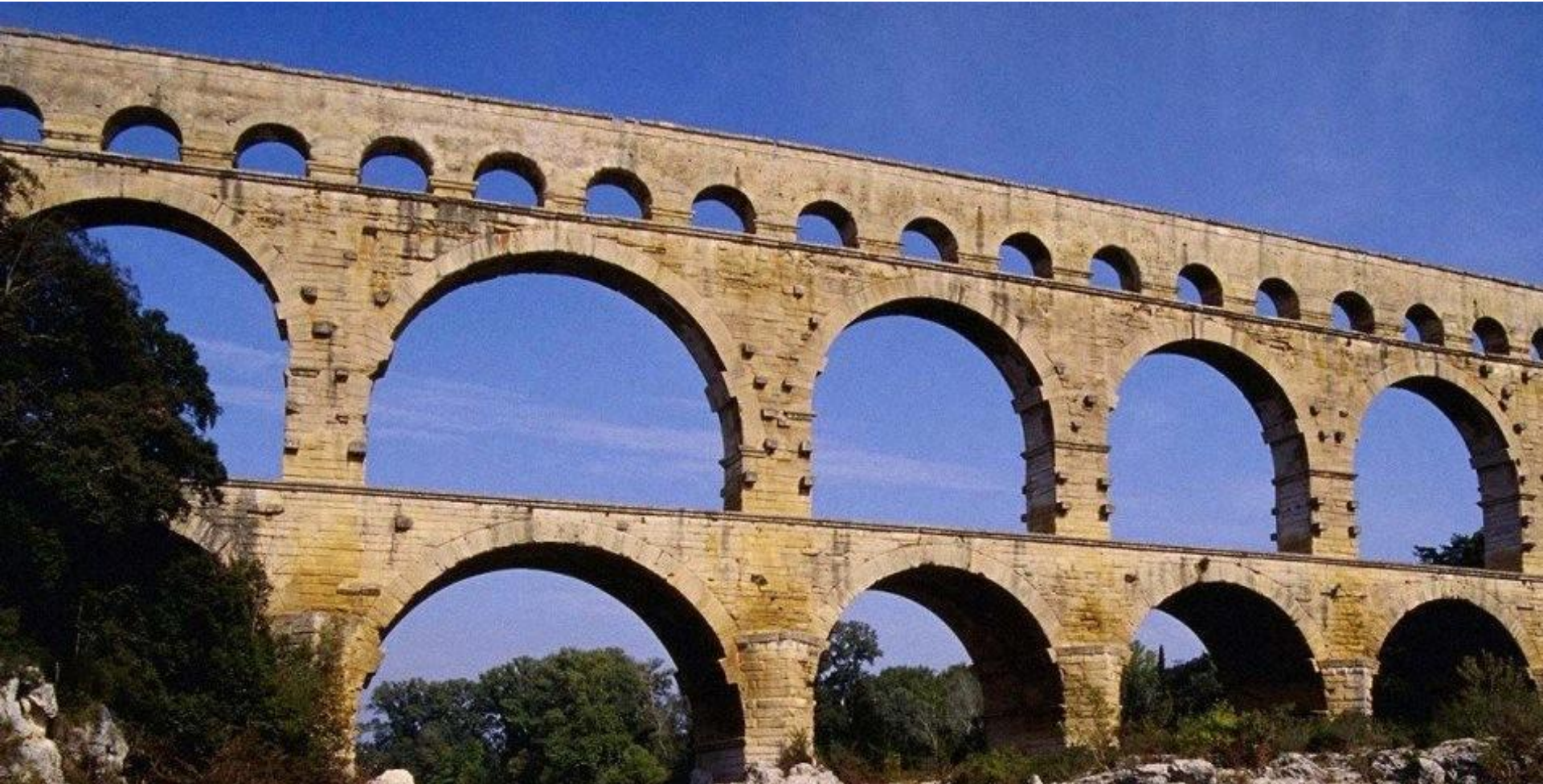


AQUEDUCT

Measuring and Mapping Water Risk



WORLD
RESOURCES
INSTITUTE



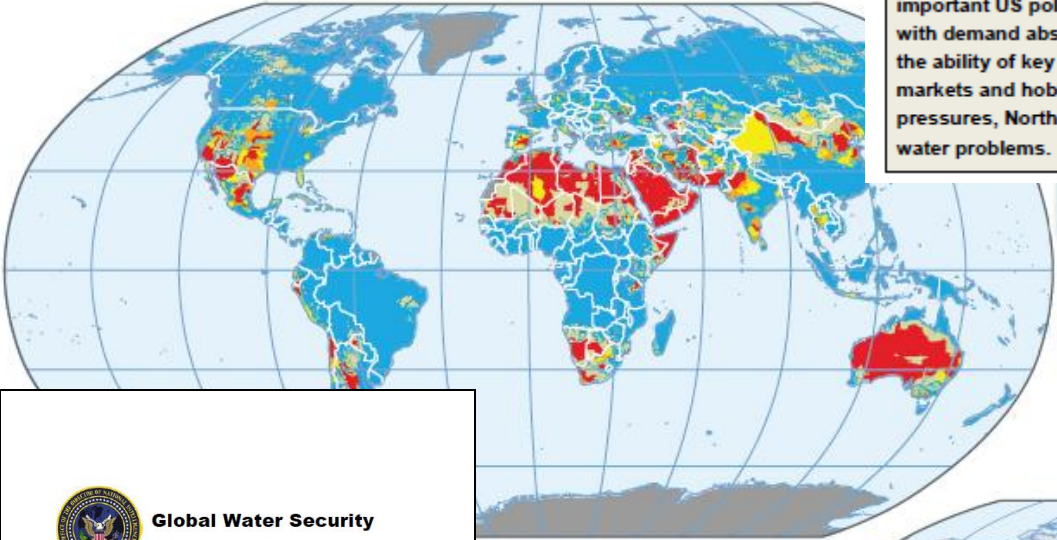
Emerging Scarcity in a Land of Plenty: Water and Water Policy in Canada

Charles Iceland, CFA

April 17, 2012

U.S. Intelligence Community Assessment on Global Water Security

Global Water: Present to 2025



Our Bottom Line: During the next 10 years, many countries important to the United States will experience water problems—shortages, poor water quality, or floods—that will risk instability and state failure, increase regional tensions, and distract them from working with the United States on important US policy objectives. Between now and 2040, fresh water availability will not keep up with demand absent more effective management of water resources. Water problems will hinder the ability of key countries to produce food and generate energy, posing a risk to global food markets and hobbling economic growth. As a result of demographic and economic development pressures, North Africa, the Middle East, and South Asia will face major challenges coping with water problems.

■ And and low water use
■ No data or out of area

Projected Change in Water Stress to 2025

■ Significantly less stressed	■ Extremely more stressed
■ Moderately less stressed	■ Exceptionally more stressed
■ Near-normal conditions	■ Uncertainty in magnitude
■ Drier but still low stress	■ Uncertainty in direction
■ Moderately more stressed	■ No data or out of area
■ Severely more stressed	

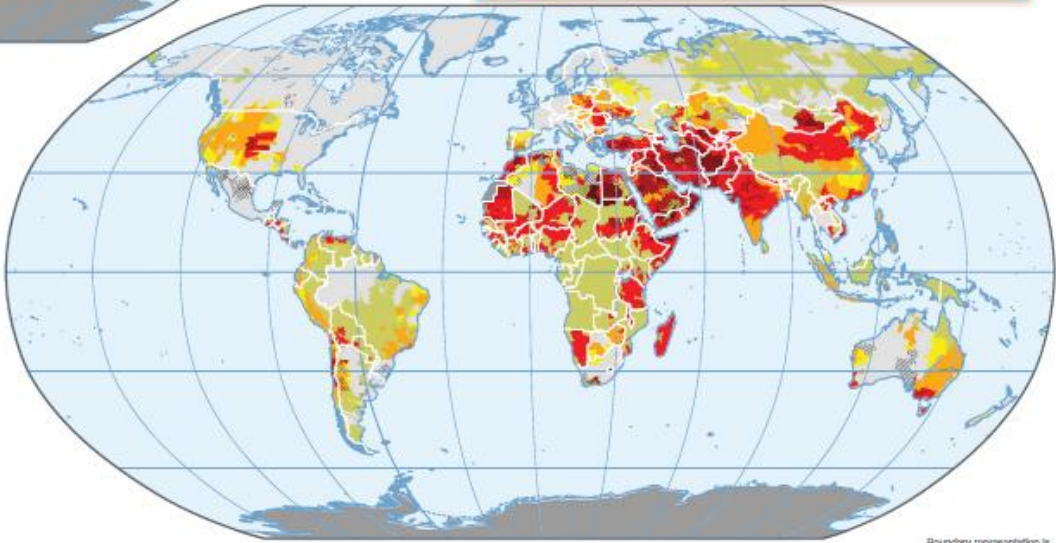
Global Water Security

INTELLIGENCE COMMUNITY ASSESSMENT
ICA 002-09, 2 February 2012
This is an IC-coordinated paper.

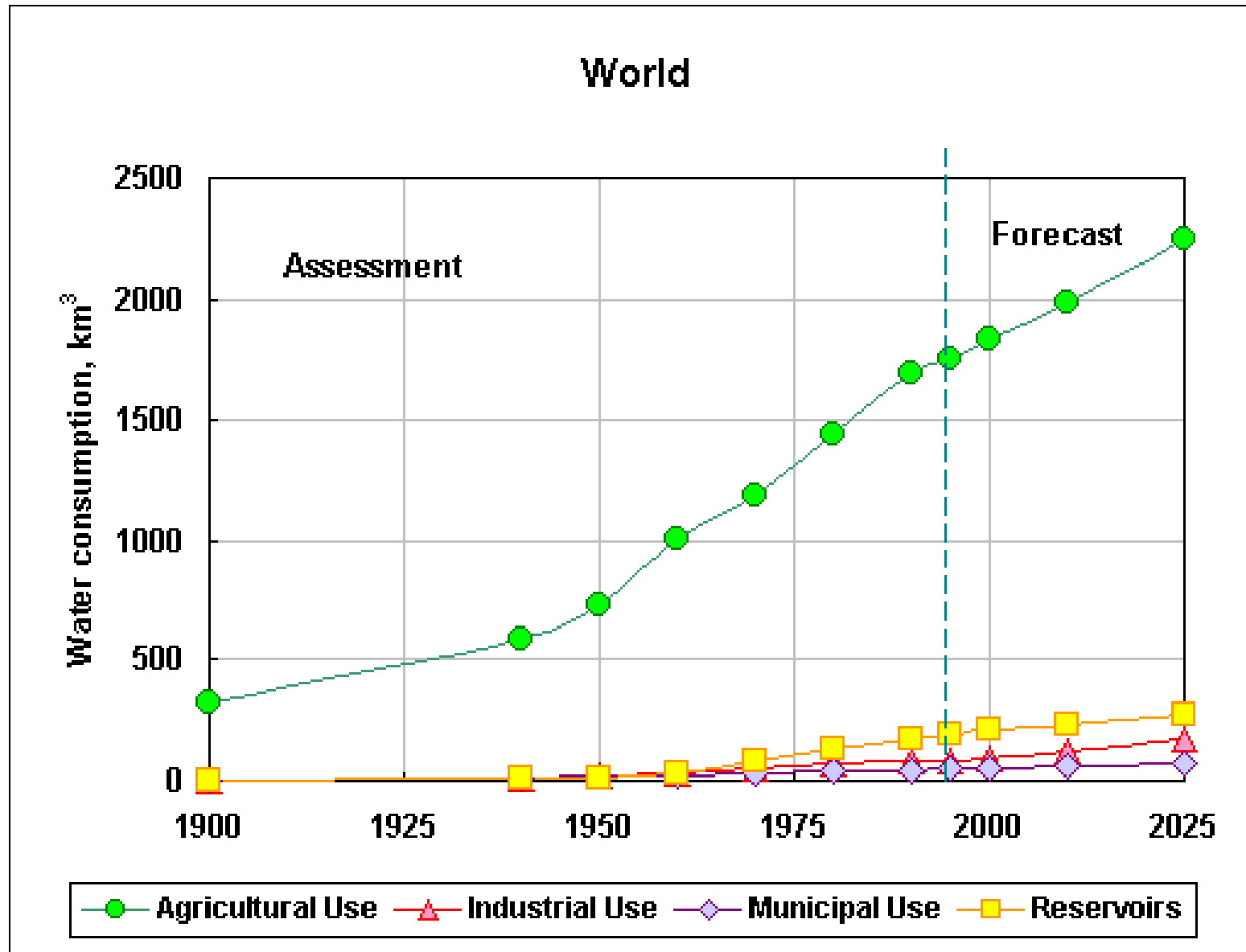
freshwater withdrawals
1960-90 climatological
rawal ratio (WWR). This
a typical year relative to
ter. High levels of water
water approaches (or

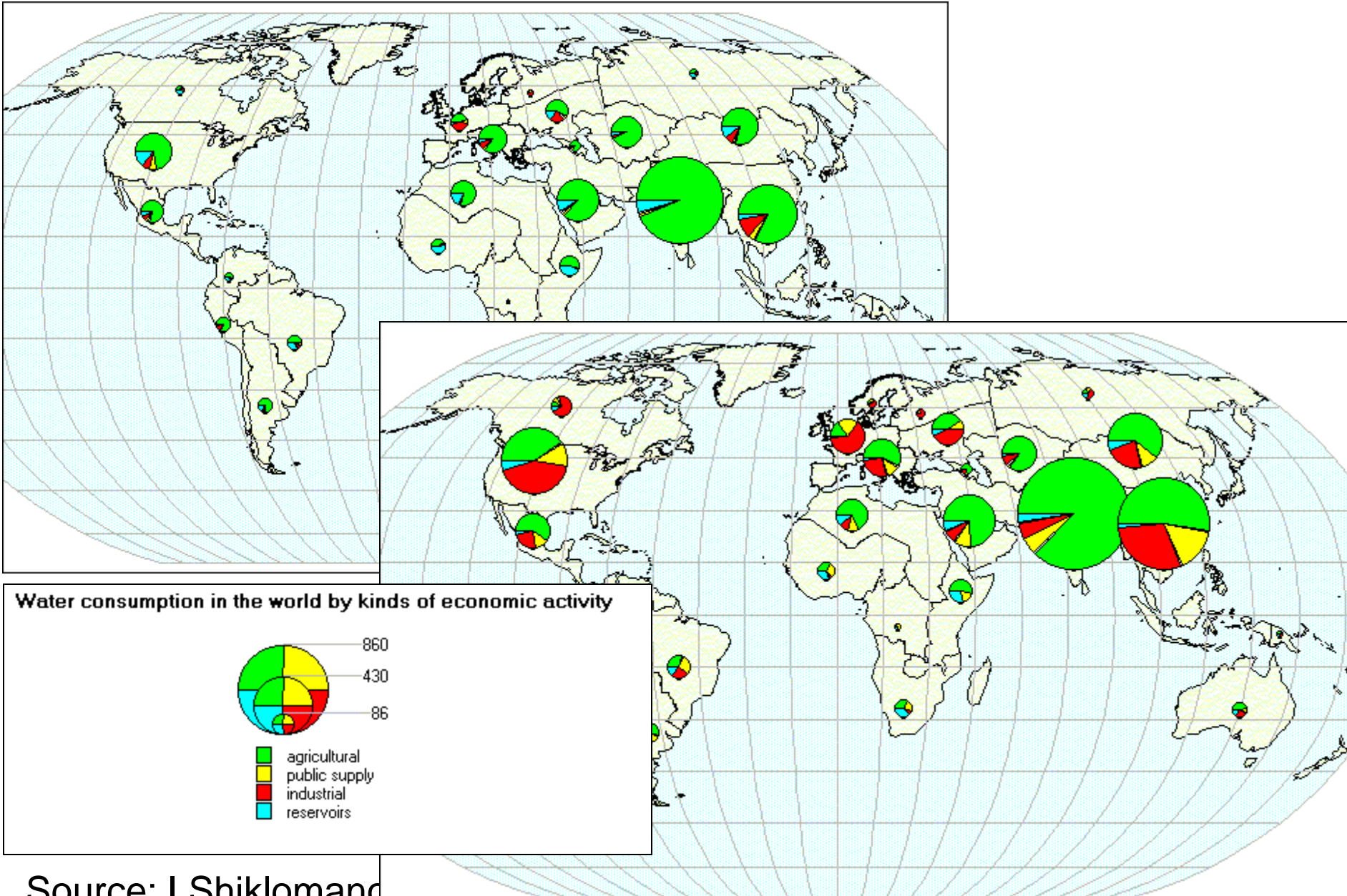
is the ratio of projected
time frame centered on
o of economic and
al Panel on Climate
ected change in water
to a drought severity
of "extremely more
of water stress as areas

r large countries (e.g.
n of stress at the
tion at local levels.

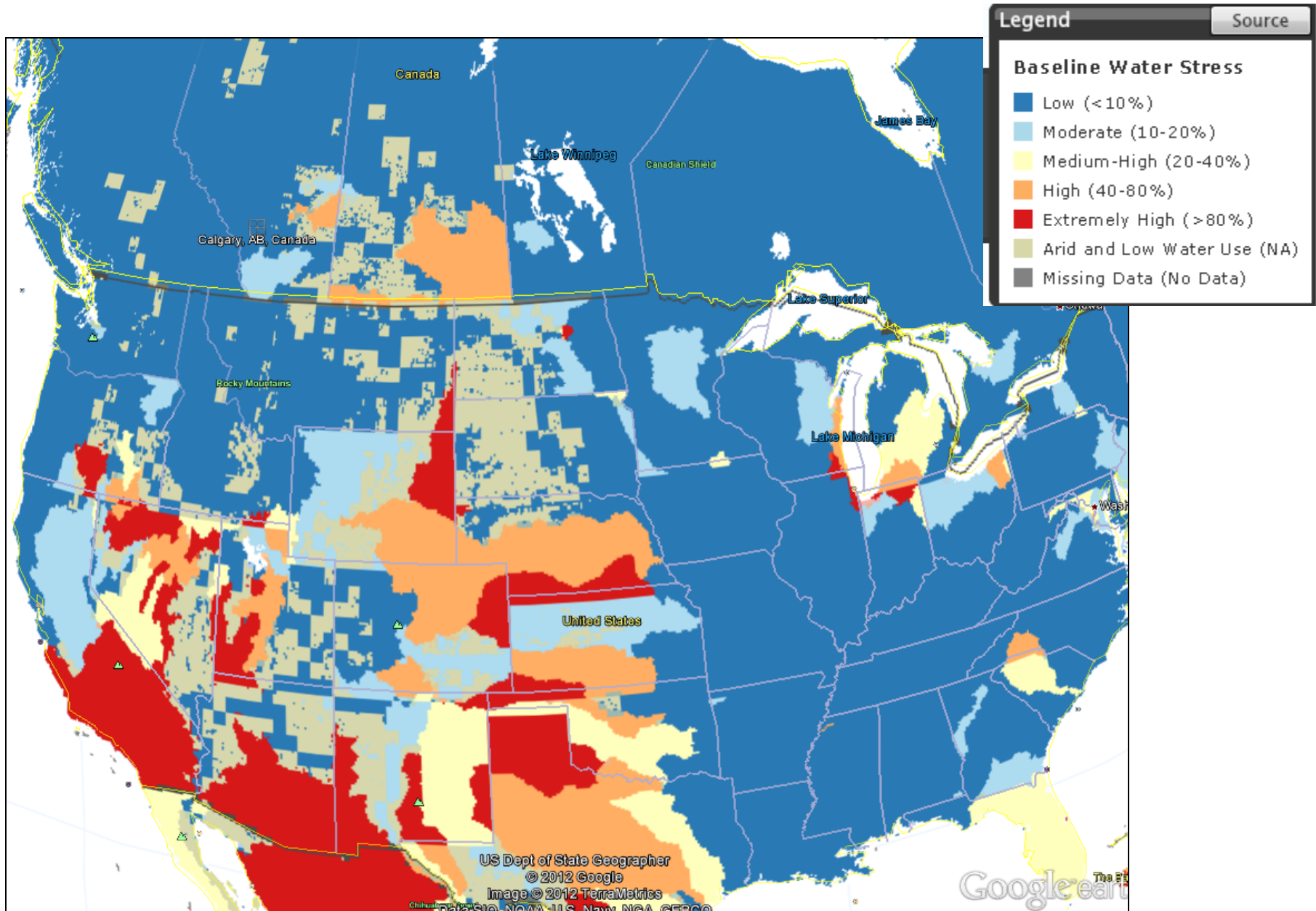


Source: World Resources Institute and ISciences, LLC.

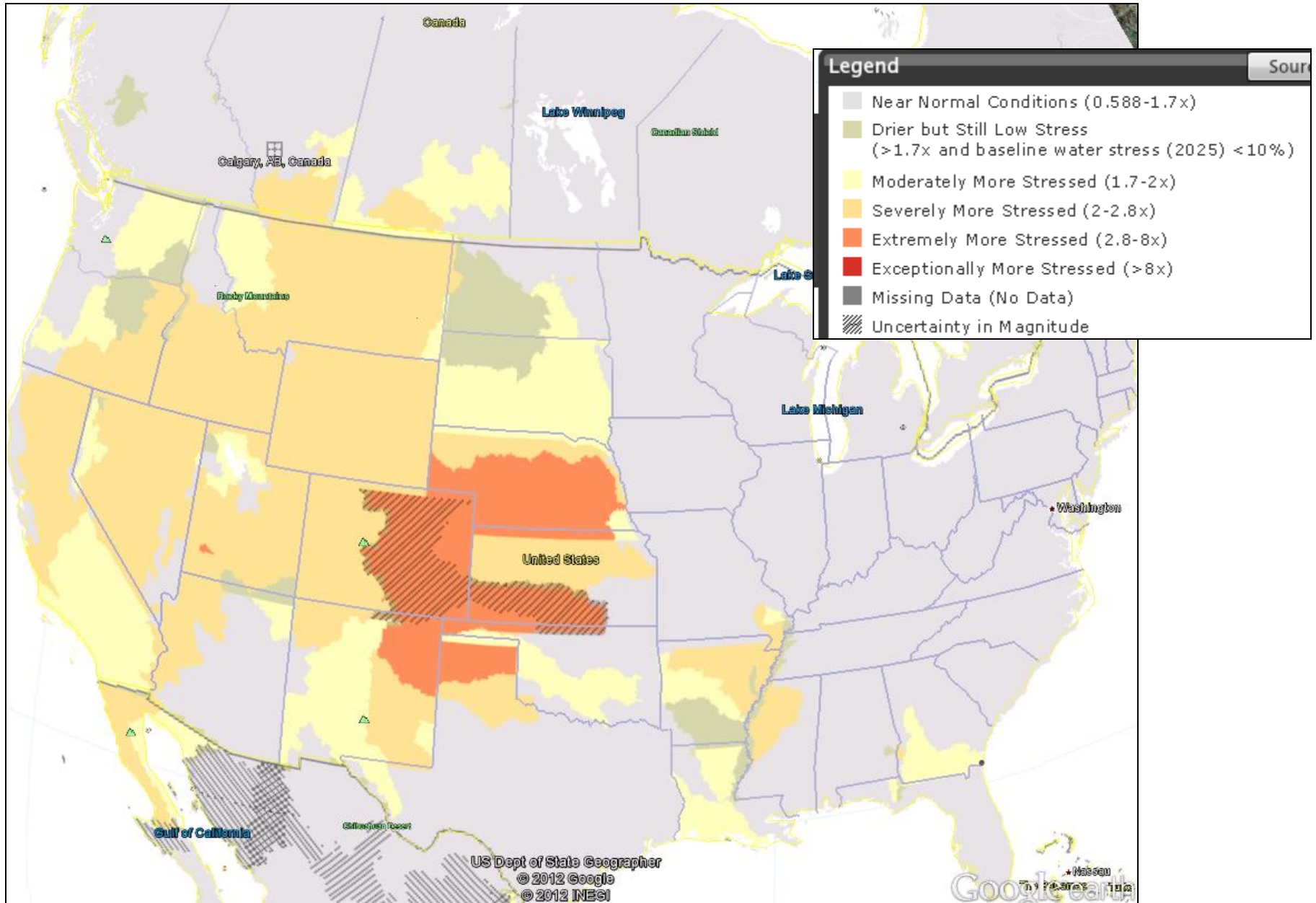




Baseline water stress – ca. 2000



Projected change in water stress – 2025 (A1B scenario)

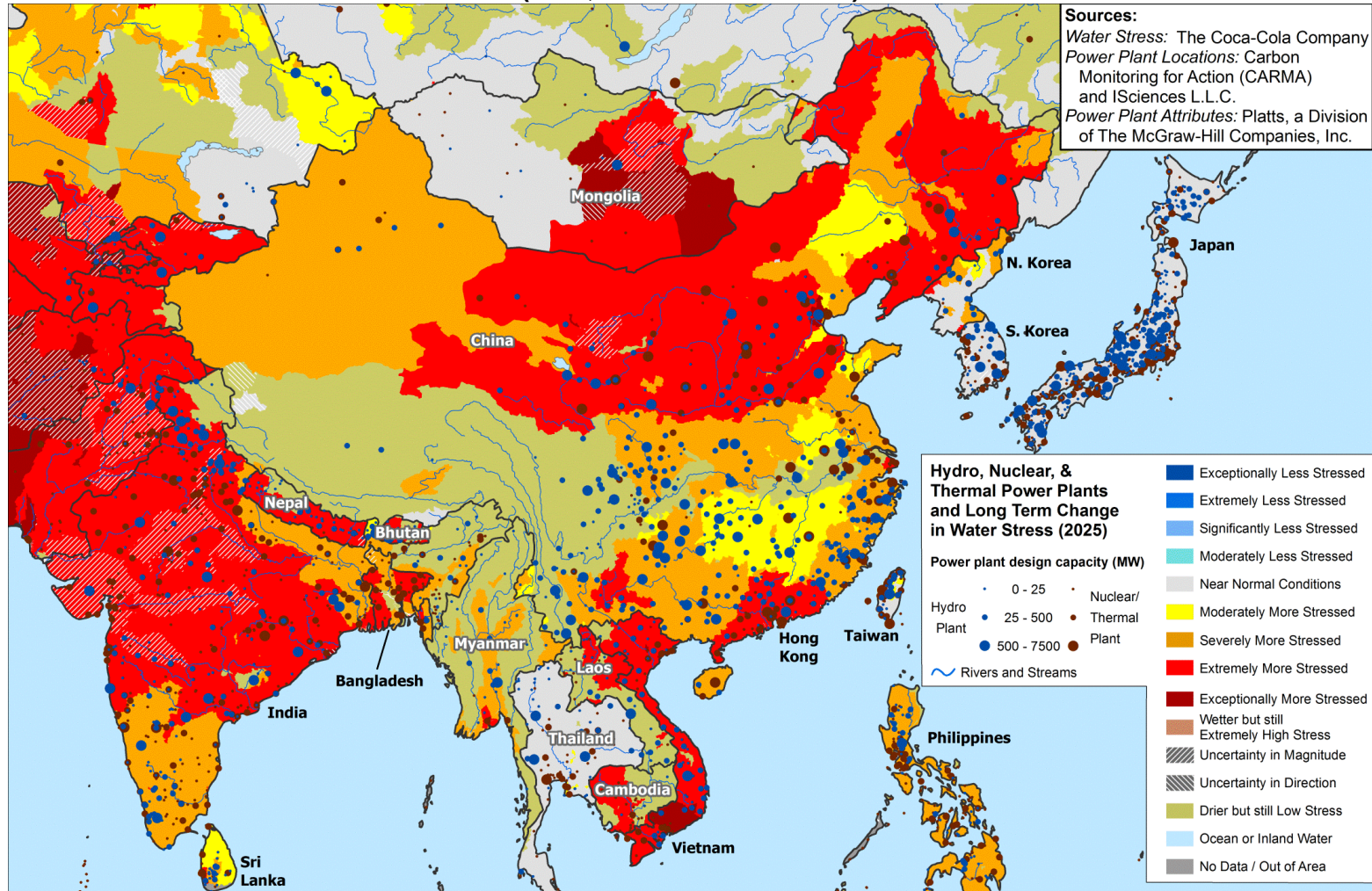


- Seasonal water stress
- Drought
- Flood
- Pollution

We will add a number of scarcity, pollution, and governance indicators to our global maps by Dec. 2012

55% of SE Asian current power plant design capacity would see water stress grow 2 to 8 times worse by 2025

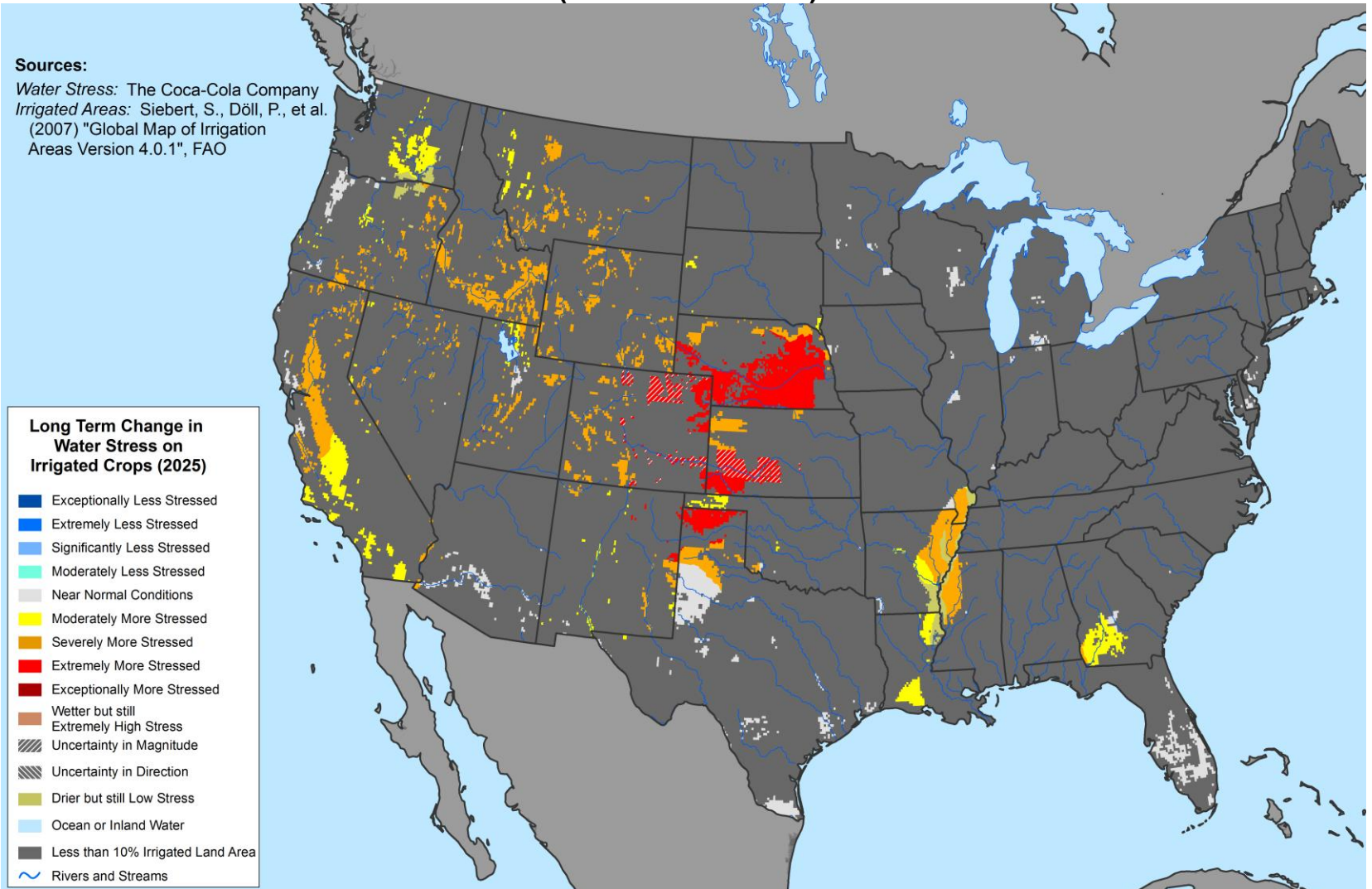
Southeast Asia, Long Term Change in Water Stress and Power Plants (2025, IPCC Scenario A1B)



USA, Change in Water Stress by 2025 in areas with Irrigated Agriculture (IPCC Scenario A1B)

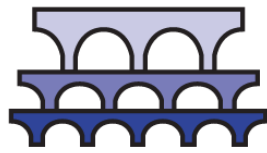
Sources:

Water Stress: The Coca-Cola Company
Irrigated Areas: Siebert, S., Döll, P., et al. (2007) "Global Map of Irrigation Areas Version 4.0.1", FAO



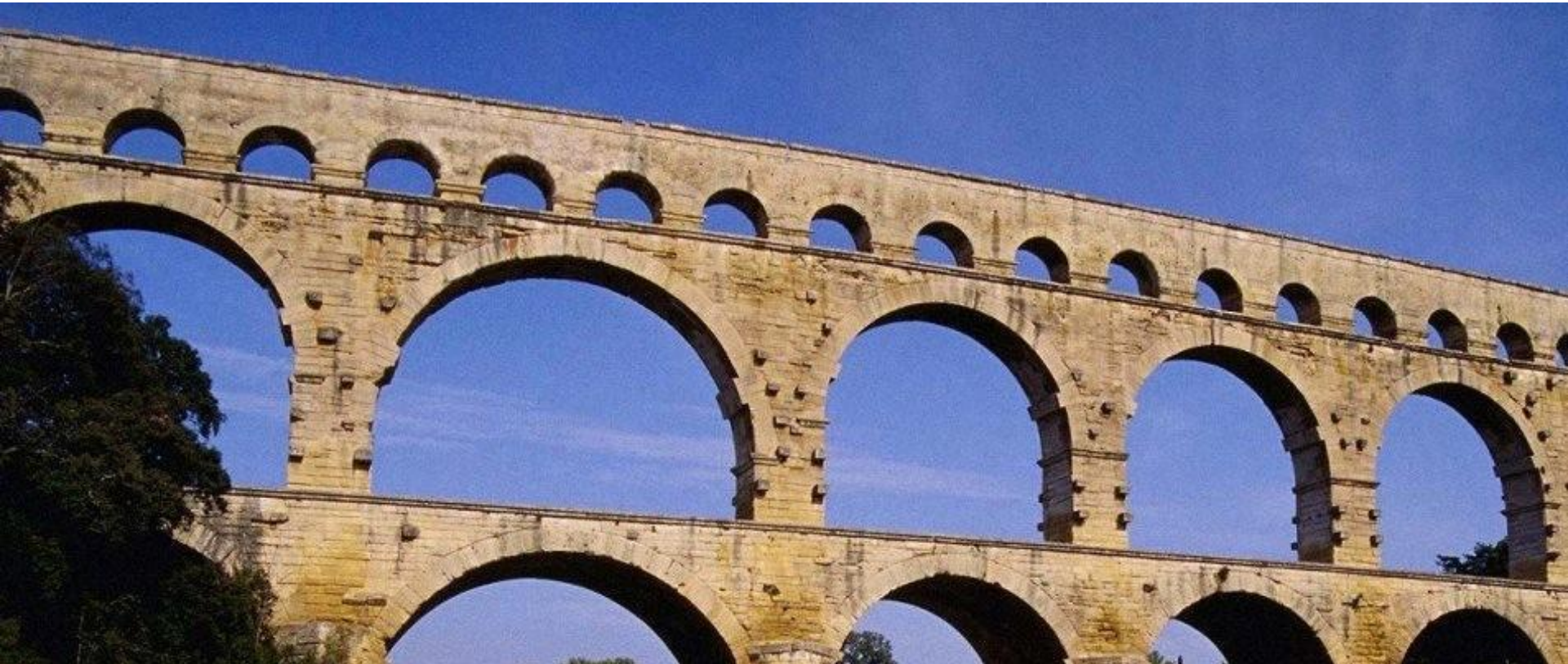
2050 global energy requirements. The World Energy Council estimates that energy supplies must **double** by 2050 to meet energy demand.

2050 global food requirements. FAO estimates that feeding a global population of 9 billion people in 2050 will require a **70% increase** in total food production.



AQUEDUCT

Measuring and Mapping Water Risk



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