

# **Mission 2017**

## **Water Security**

**Friday September 6, 2013**

**“tragedy of the commons”**

# First “assignment”

Water security is defined by the UN as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.

Re-write this definition and email to [sbowring@mit.edu](mailto:sbowring@mit.edu) before 2 PM Friday

A) Water security is a population's capacity to ensure a sufficient amount of good quality water for supporting human needs and socio-economic development, for offering protection against water-related dangers and threats, and for maintaining healthy and prosperous ecosystems in a well-balanced political climate."

B) Water security- the population's ability to use and subsequently conserve and replenish a steady water supply in order to sustain life, human well-being, development and protection and to preserve a peaceful, environmental and political climate

Water security is a peoples' ability to maintain a constant and sufficient supply of safe, clean water without negatively impacting the peoples and environment around them.

Water Security is a population's ability to protect and maintain enough access to clean, use-able water necessary for human health, economy, safety, and stability.

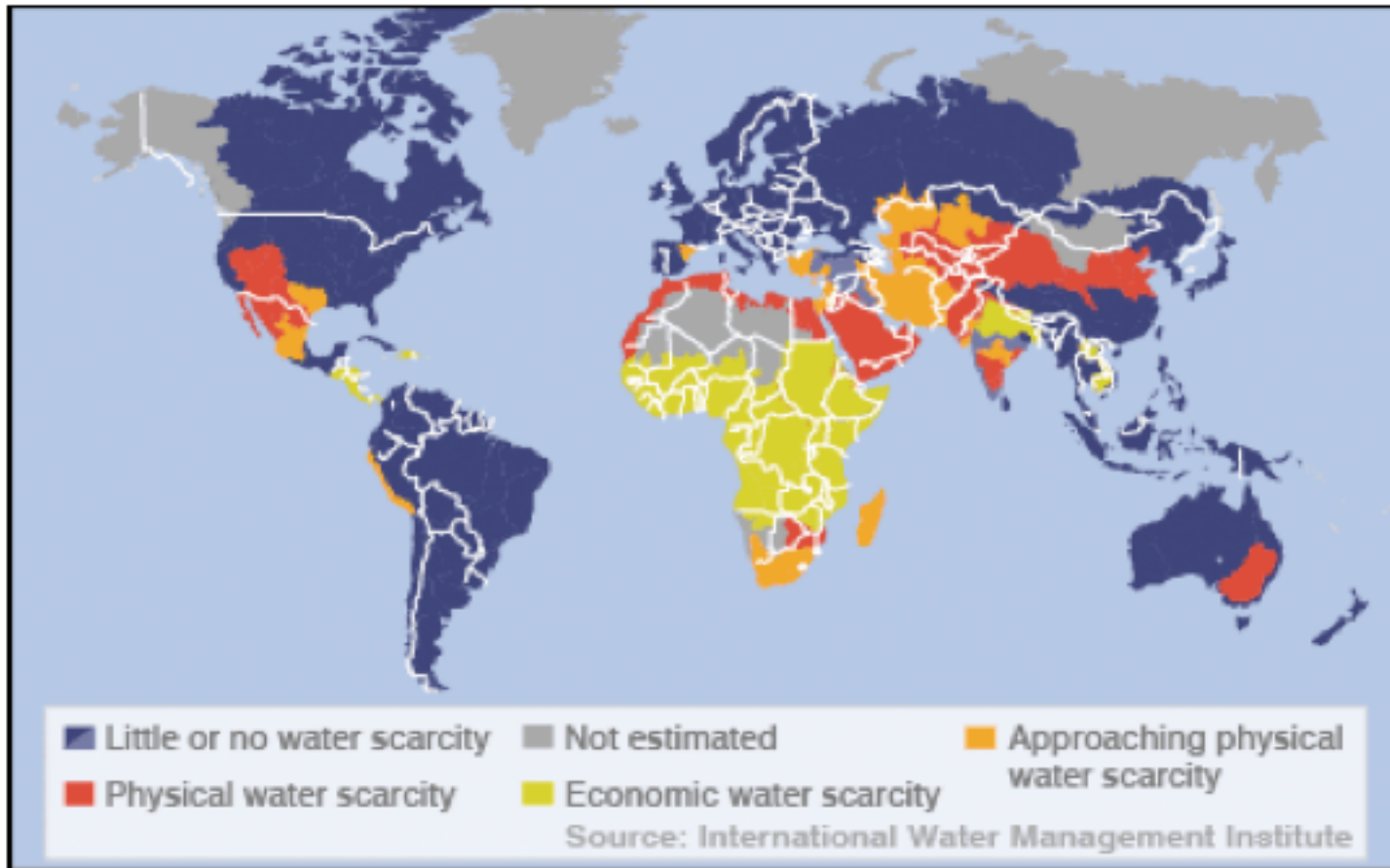
# WIKIS

Take it away Annie

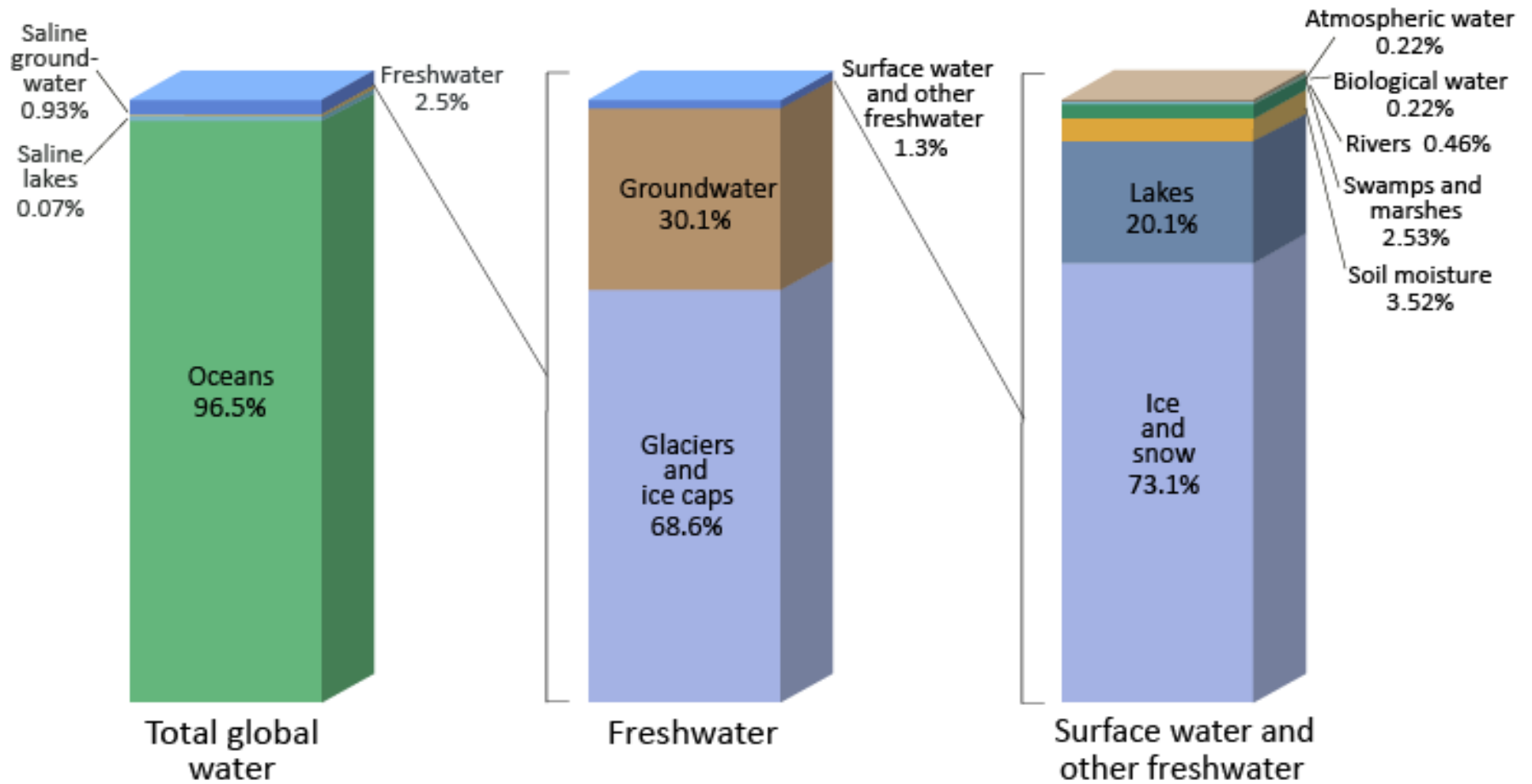
## **Additional Exercise for Monday, September 9**

- On the class website under “reading& info” there is a list of news articles as .pdfs. Chose at least one, read it, and write about it. Briefly summarize it and then write your reaction to it. No need to be lengthy
- On the Wiki page, make a child page for the article you selected (or add to an existing one) and post what you have written. Make sure to include your name so we know you did it!

# PEAK WATER ?



# Distribution of Earth's Water

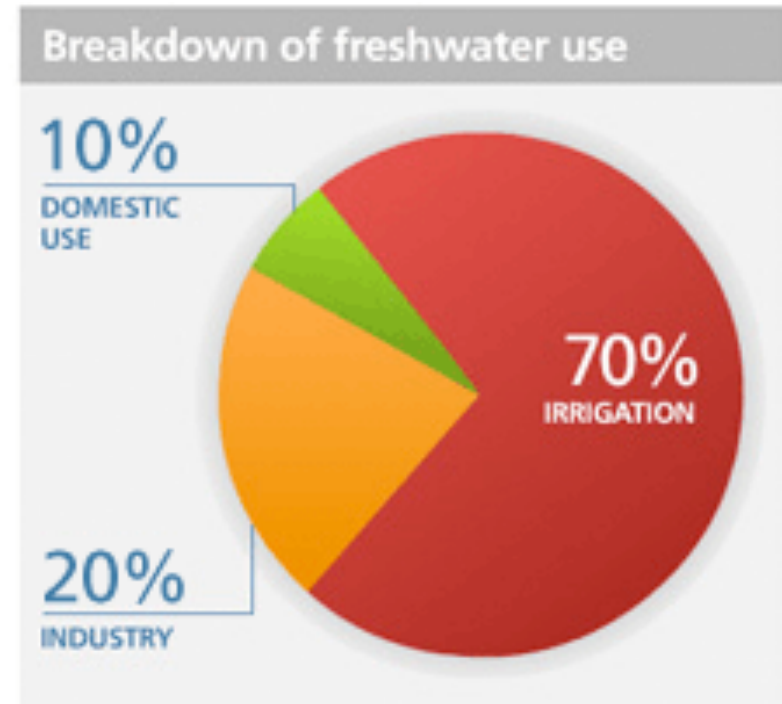
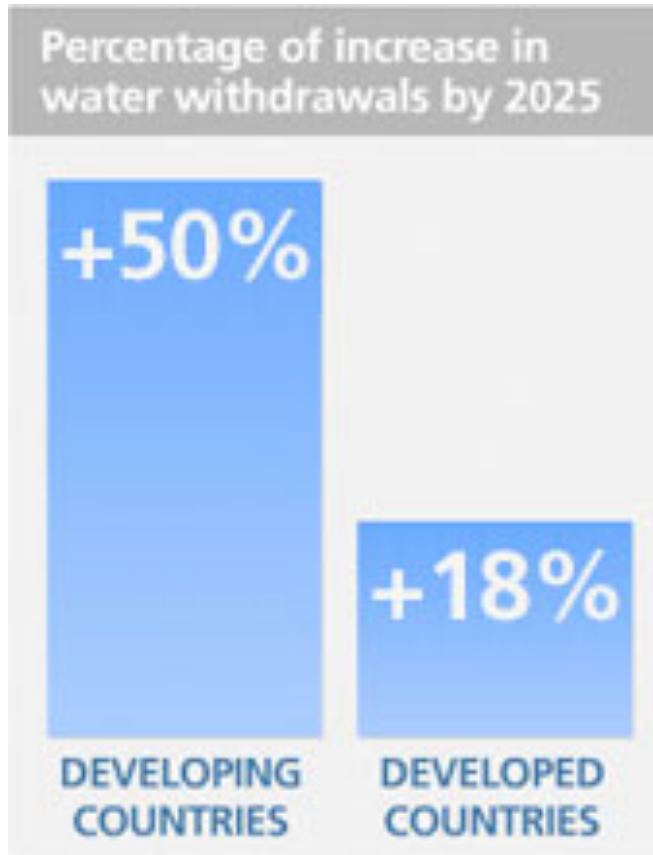


Source: Igor Shiklomanov's chapter "World fresh water resources" in Peter H. Gleick (editor), 1993, *Water in Crisis: A Guide to the World's Fresh Water Resources*.

<http://ga.water.usgs.gov/edu/earthwherewater.html>

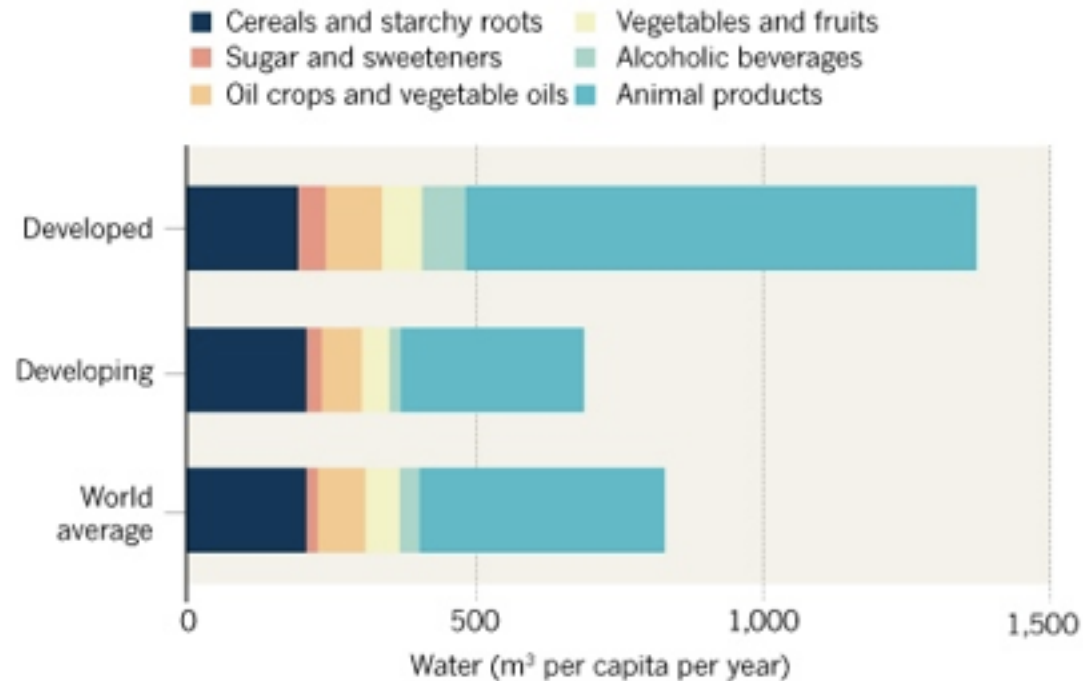


# Global water use



## ON THE FARM

Agriculture consumes almost 70% of all extracted water. Animal husbandry is the most water-intensive aspect of farming, and causes the greatest disparity in water consumption between the developed and developing worlds. The United States leads the world in per capita water use attributable to animal products, with each person consuming the equivalent of about 1,200 m<sup>3</sup> per year.



Goals and Targets	Africa		Asia				Oceania	Latin America & the Caribbean	Caucasus & Central Asia
	Northern	Sub-Saharan	Eastern	South-Eastern	Southern	Western			

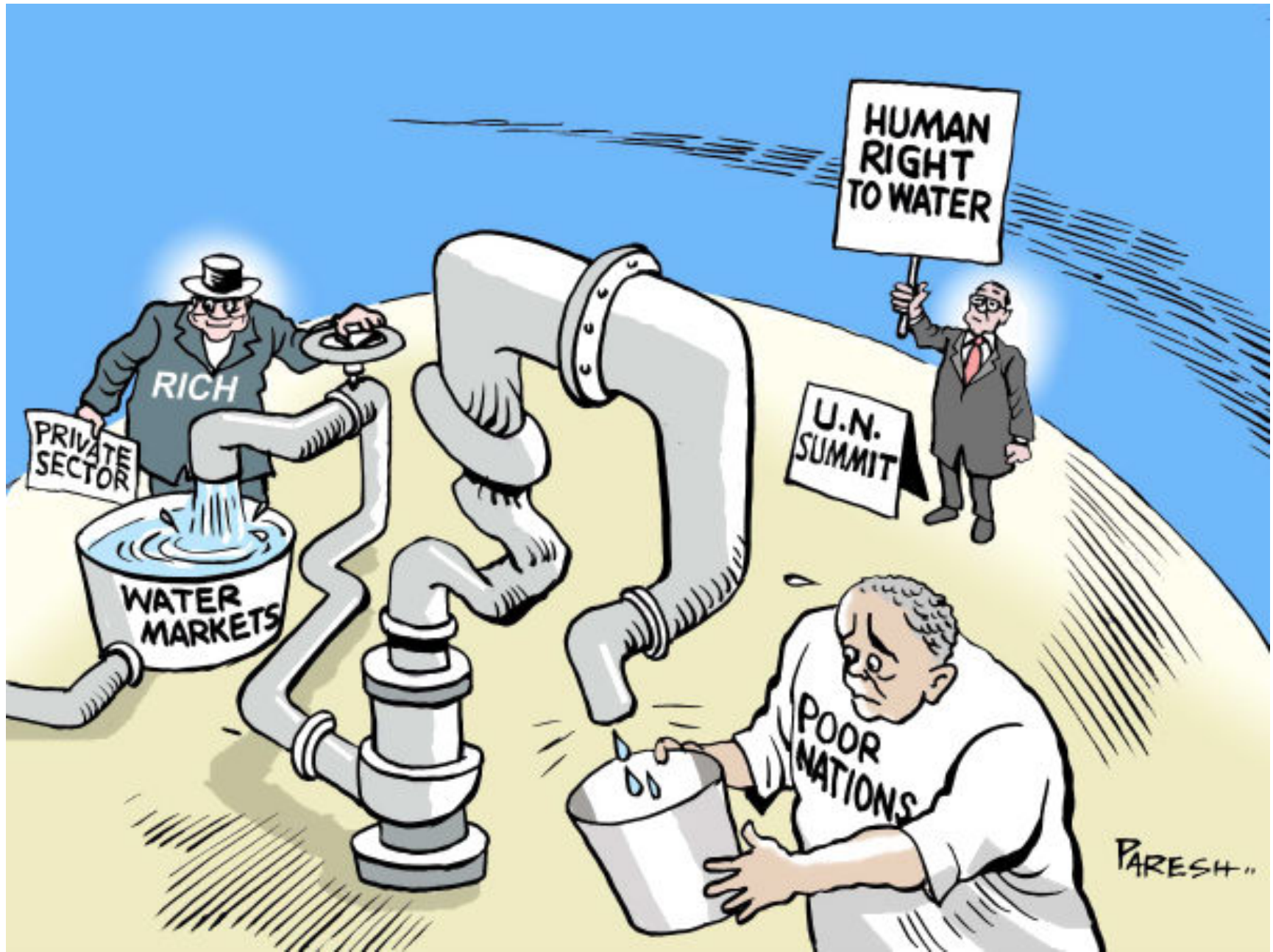
## GOAL 7 | Ensure environmental sustainability

Halve proportion of population without improved drinking water	high coverage	low coverage	high coverage	moderate coverage	high coverage	high coverage	low coverage	high coverage	moderate coverage
Halve proportion of population without sanitation	high coverage	very low coverage	low coverage	low coverage	very low coverage	moderate coverage	very low coverage	moderate coverage	high coverage
Improve the lives of slum-dwellers	moderate proportion of slum-dwellers	very high proportion of slum-dwellers	moderate proportion of slum-dwellers	high proportion of slum-dwellers	high proportion of slum-dwellers	moderate proportion of slum-dwellers	moderate proportion of slum-dwellers	moderate proportion of slum-dwellers	—

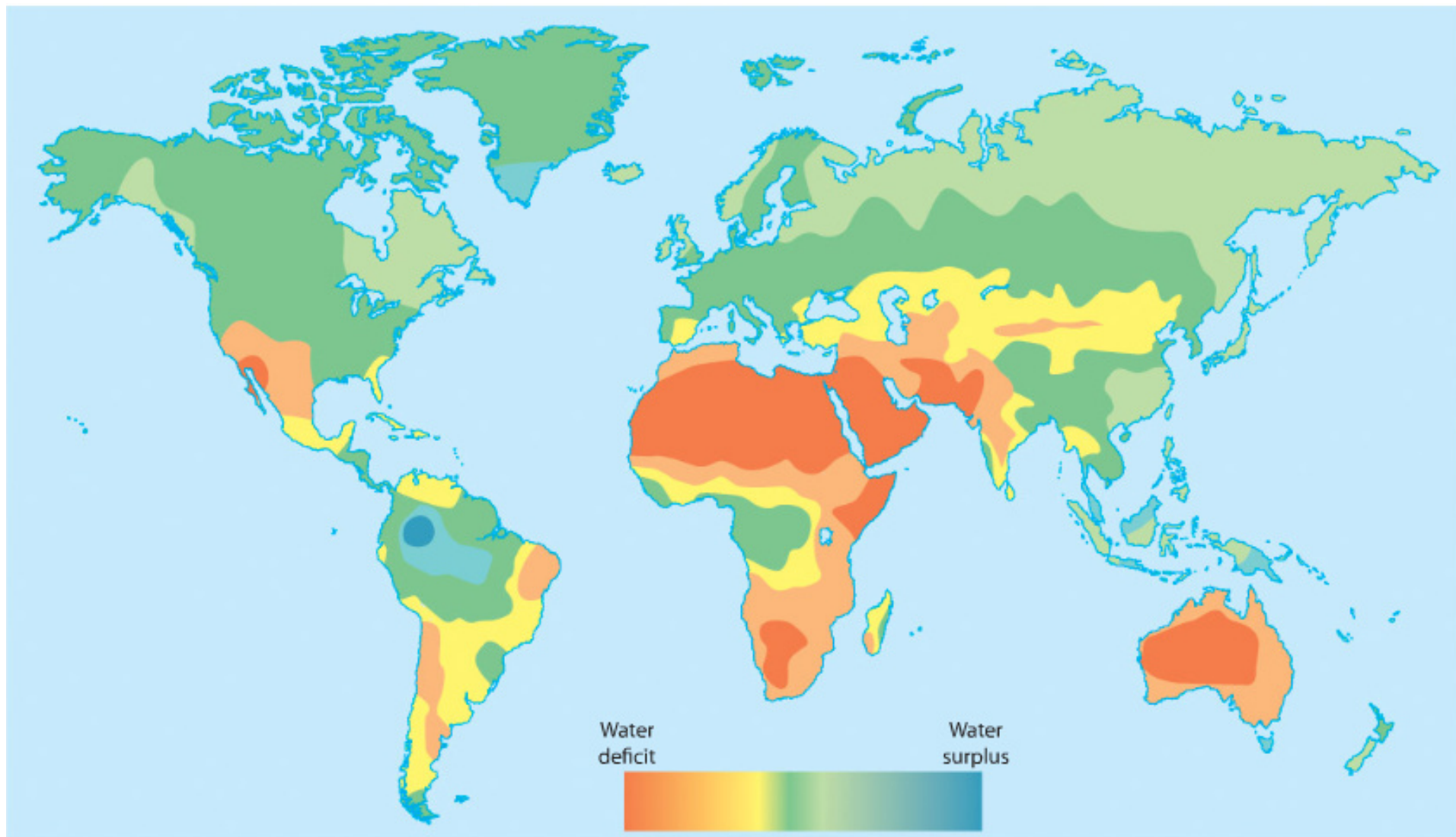
The progress chart operates on two levels. The words in each box indicate the present degree of compliance with the target. The colours show progress towards the target according to the legend below:

- Target already met or expected to be met by 2015.
- Progress insufficient to reach the target if prevailing trends persist.
- No progress or deterioration.
- Missing or insufficient data.

\* Poverty progress for Eastern Asia is assessed based on China's data only.







Problem areas and examples

China and Trans-boundary issues

Nile River

Aral Sea

# The Mekong River Basin

## Characteristics:

Area: 795,000 km<sup>2</sup> (21)

Length of mainstream: 4,400 km (12)

Average discharge: 15,000 m<sup>3</sup>/s (8)







# CHINA and TRANSBOUNDARY RIVERS

**Headwaters:** China is the largest source of transboundary river flows, including many, such as the Brahmaputra River, that flow from the Tibetan Plateau to much of South Asia.

**Dams:** No country in history has built more dams than China, and it has built more dams than the rest of the world combined. Having saturated its internal rivers with dams, China is increasingly orienting its dam building toward rivers that flow out from China into neighboring countries

**Environmental practice:** China's use of rivers has been ecologically unsafe, which has had devastating consequences for the environment.

**Unilateral approach:** China has increasingly taken a unilateralist approach to its use of rivers and its dam construction, Chellaney noted, as shown by its unwillingness to consult with other countries about how a new dam might affect them.

**Water agreements:** While Chinese participation is critical to establishing any multinational water management institutions, and while almost all of China's neighbors have water agreements among themselves, not one has a water agreement with China. China is involved in water disputes with almost all of its neighbors, including friendly states such as North Korea and Pakistan.

# CHINA AND INDIA: POTENTIAL FOR CONFLICT

**Brahmaputra River:** Although denied for many years —many fear the Chinese still plans to build a megadam on the Brahmaputra River, one of the major rivers in Asia. This river is one of India's and Bangladesh's largest sources of water, and any water diversions could be devastating to both countries. Brahmaputra River supplies water to the Indian state of Arunachal Pradesh, which is China's largest territorial dispute.















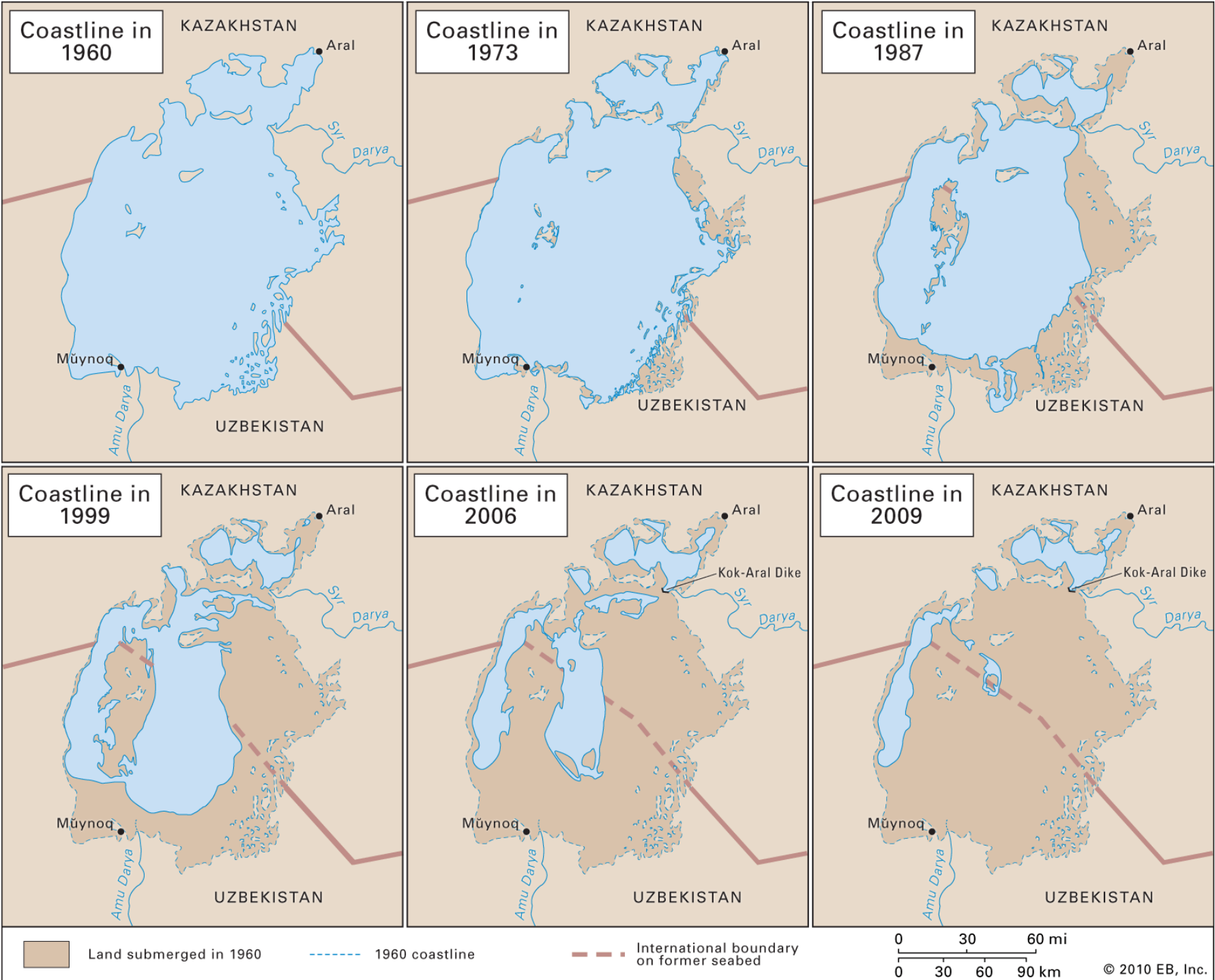


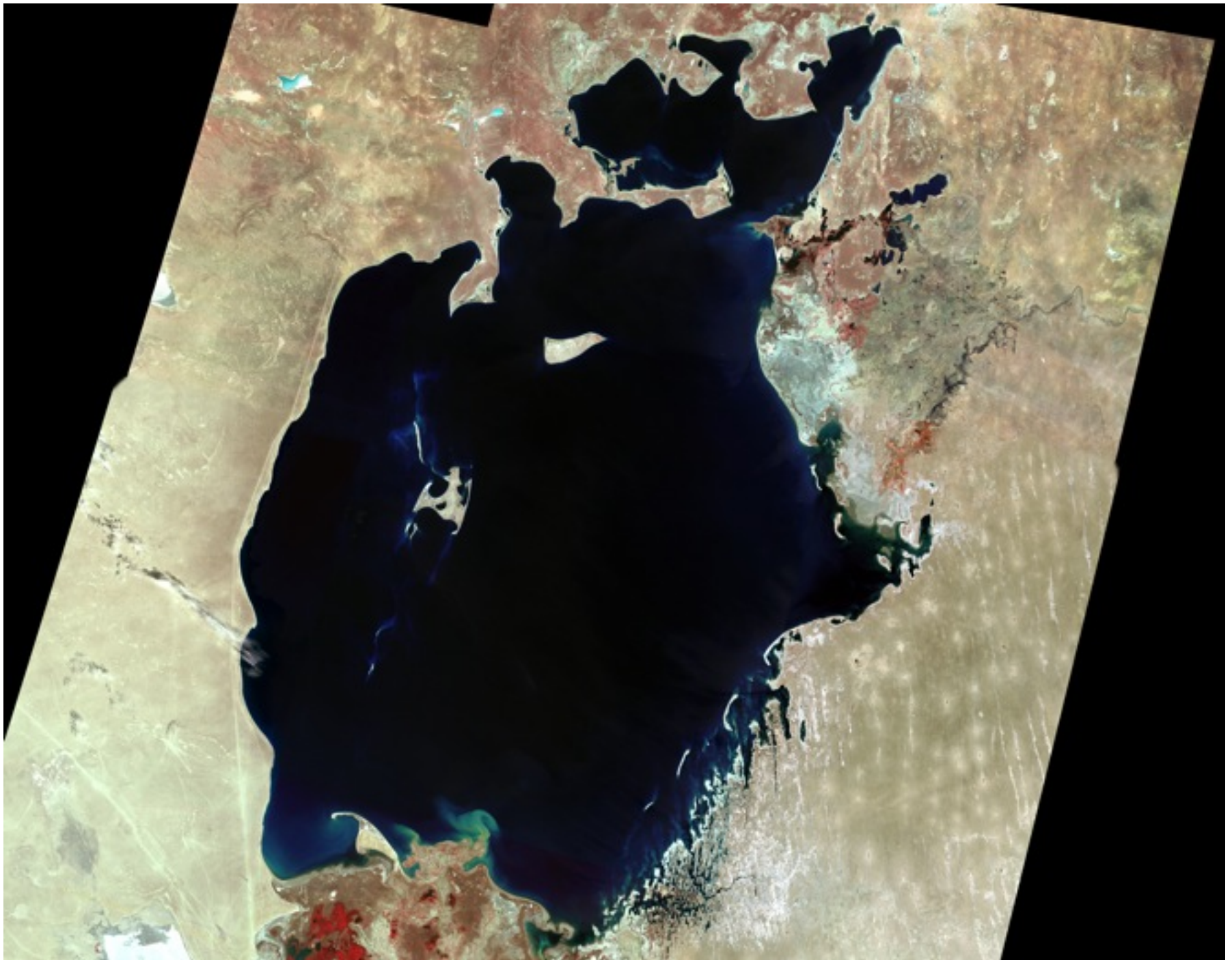




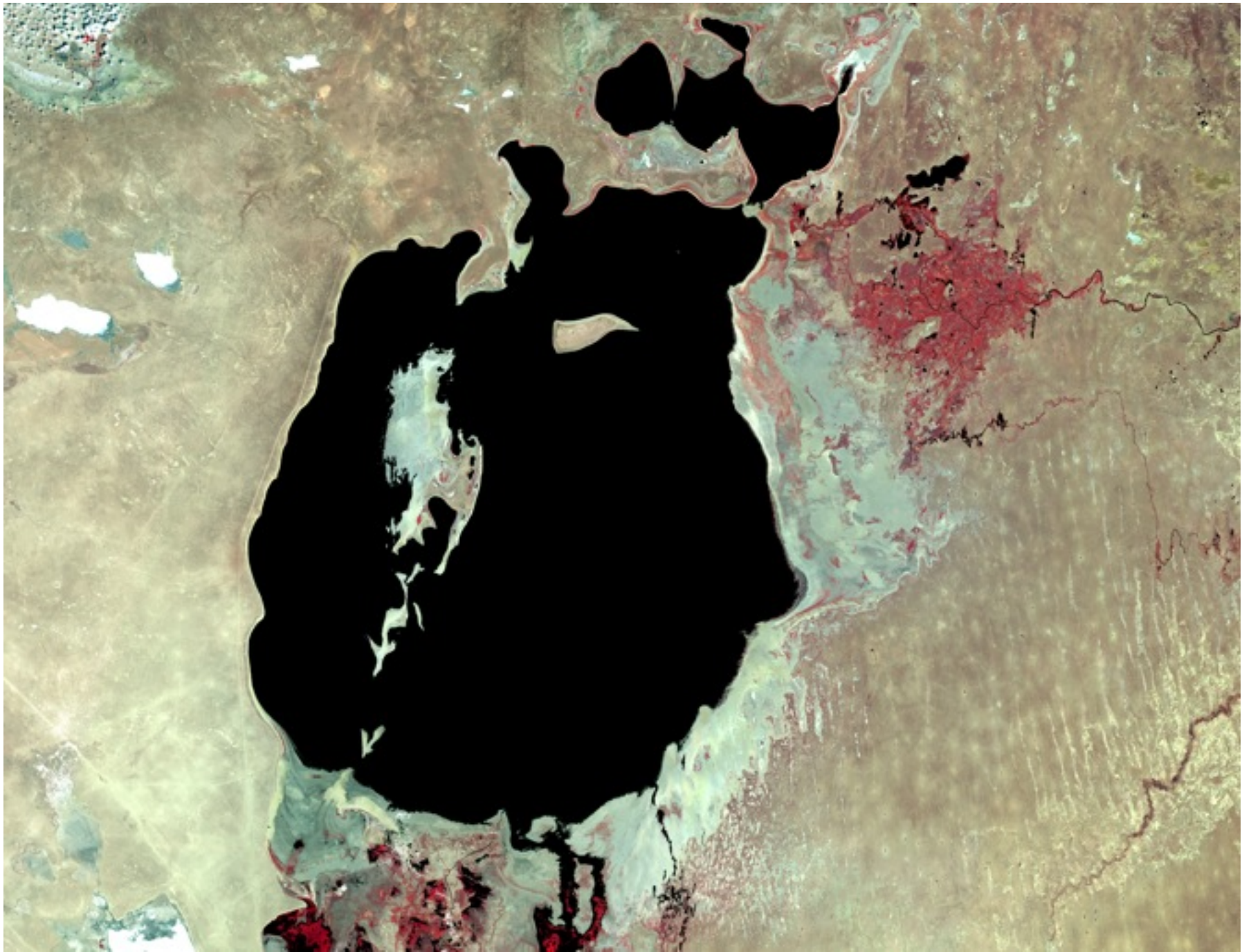




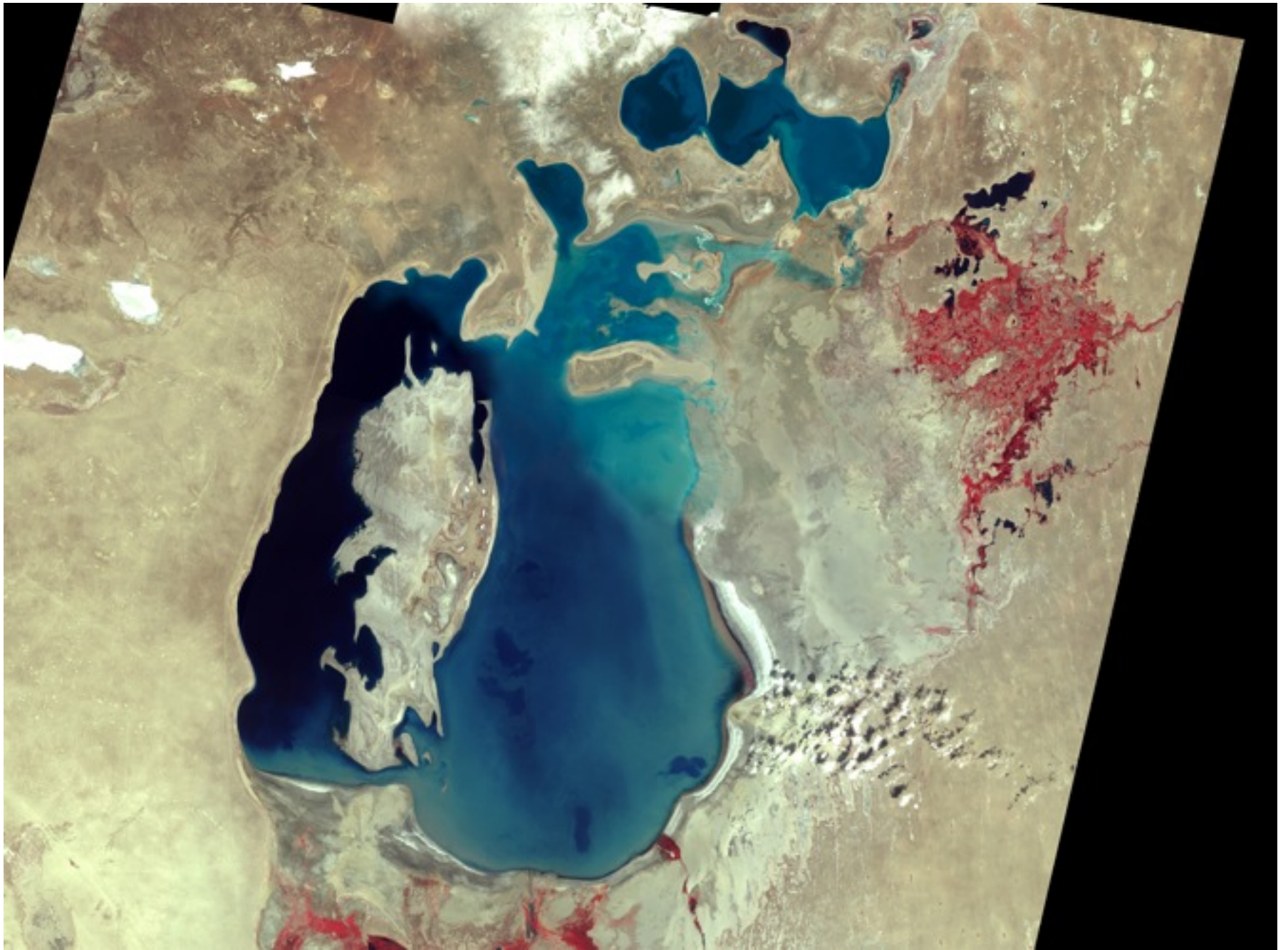










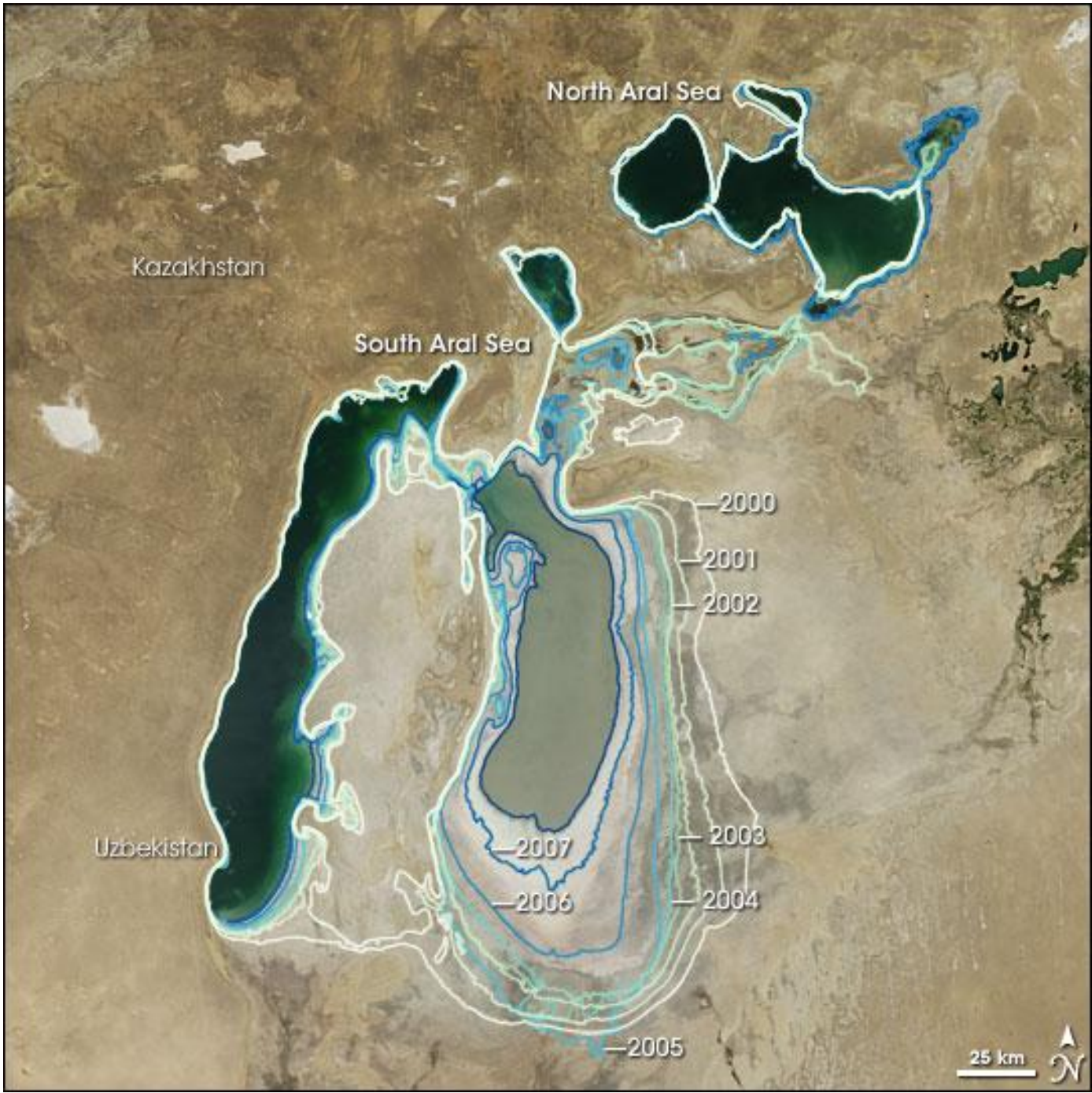
















# Water resources of the Aral Sea basin

