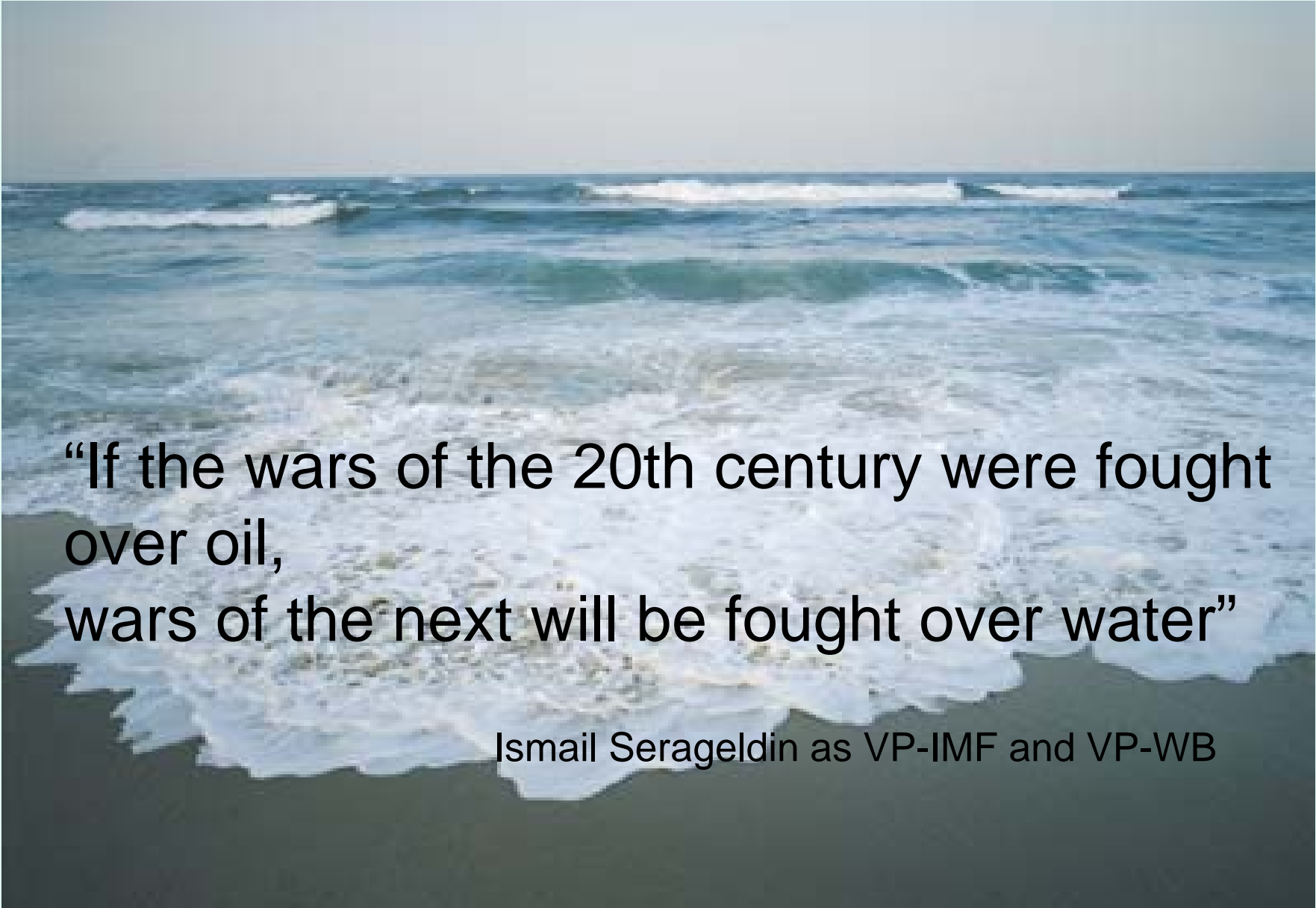


Water Security: Threat Multiplier or Catalyst for Cooperation?

Symposium on Water in Israel and Middle East:
Transboundary Disputes and Collaborative Solutions
Northwestern University 2018

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“If the wars of the 20th century were fought
over oil,
wars of the next will be fought over water”

Ismail Serageldin as VP-IMF and VP-WB

Water Scarcity and Water Wars

US Intelligence reports 15 communities in which war could break out immediately over water, mostly in Middle East and Africa.

Afghanistan, China, Ethiopia, India, Iraq, Israel, Kenya, Kosovo, Nepal, Pakistan, Palestinian Territories, Somalia, Sudan, Syria, and Yemen.

Terrorist attack on water pipeline in Iraq 2003.



Over 3000,000 people without water.

Iraq 's Water Shortage and desalinization plant



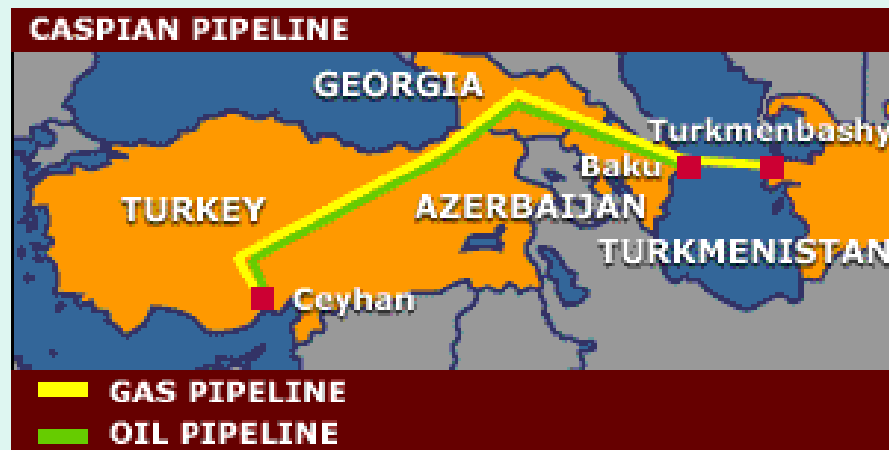
Water Truck in India



Water-can Waiting-line in Sudan



Turkey Water pipeline, oil pipelines, and “cascading” series of dams.



Scarcity and pollution in Jordan River Valley



Water Security Framework

Main Axes

Sufficiency (economic and environmental, including sustainability)

Governance (political economy and geopolitical security, including equity)

Main Indicators

Political (governance indicators, asymmetry, dynamic apportionment)

Economic (production volumetric sufficiency, primary commodity dependence)

Geographic (riparian status, level of dependence, geopolitical stability)

Environmental (water quality, quantity, water stress, climate variability)

Water Security

Hydropolitical Security Complexes

Riparian States create security complex to prevent conflict and promote water as a catalyst for cooperation.

What works:

1. Increasing Economic Growth

Three instruments:

domestic policies (reforms),
international aid,
access to global markets.

Water Security

2. Diversifying out of Trouble

Diversify the economy, reduce dependence on primary commodities.

Water Security

3. Reducing Exposure to Price Shocks

Reduce risk to natural disasters and international price shocks - rapid decline in prices (such as sugar and coffee)

Water Security

4. Operating on the edge of the Evolution of Cooperation

A. Adaptation and Reciprocity

Question: Why cooperate when non-cooperative behavior is rewarded?

Prisoners' Dilemma

Single game vs. repeated game.

B. Coercion

Is it cooperation if part of the cooperation is coerced?

Evolutionary learning has exposed that not all cooperation is free from coercion.

Evolutionary learning suggests that in repeated games, it is better to cooperate/reciprocate positive outcomes.

Evolutionary learning suggests cooperation should be a form of adaptation, not a form of coercion.

Hydropolitical Security Complex

Nile Region

“National security of Egypt is... a question of water”

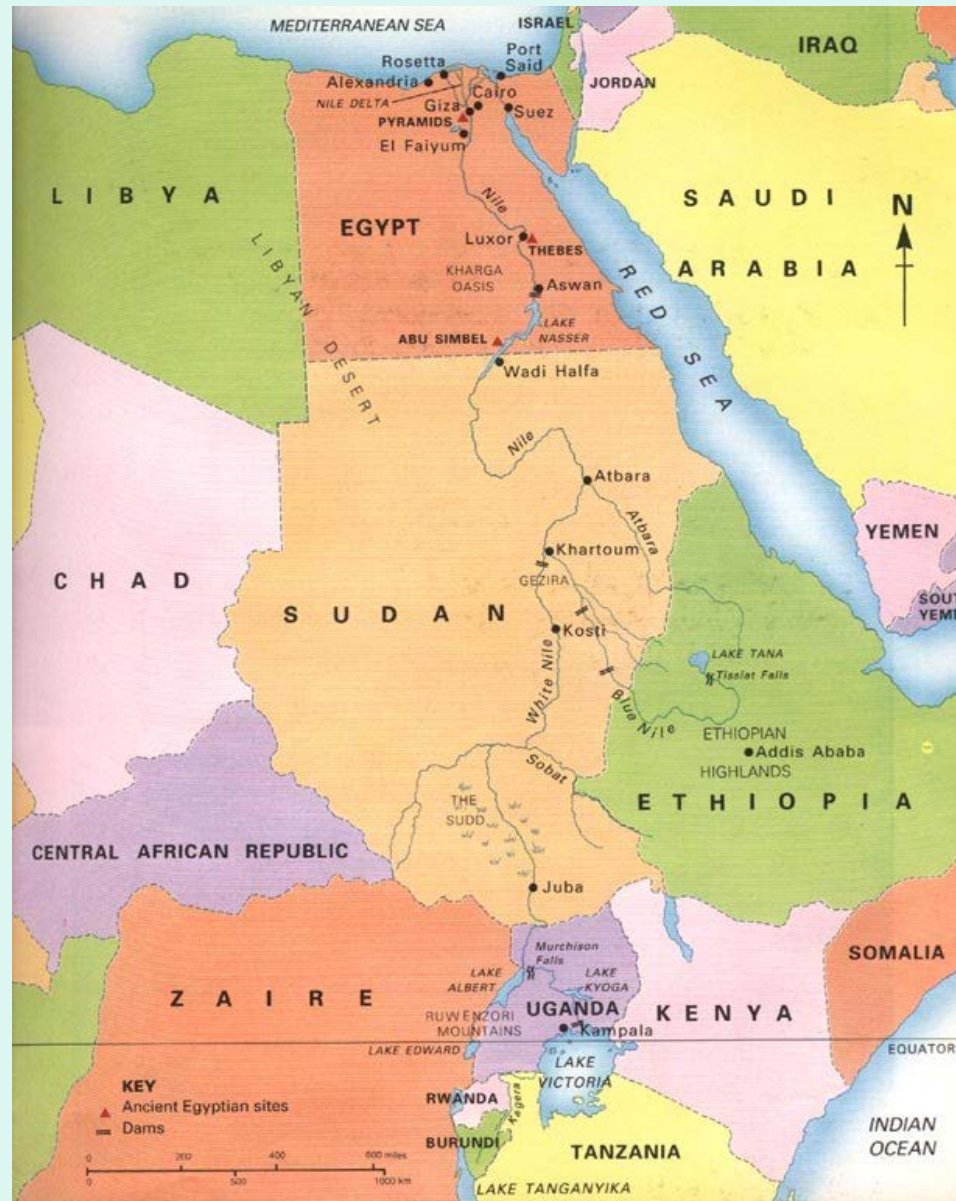
(Boutros Ghali 2000)

Egypt has power over the region, thus it can control the use of the Nile in other countries.

Egypt's Undugu Plan: build hydroelectric dams in Uganda, Sudan, Zaire/Congo and sell the electricity.

World bank Development Financing: WB will not give \$ unless all riparians agree to the project.

Riparians in Nile Watershed



An unresolved case of conflict v.
cooperation: The Nile and the Nile Basin
Initiative (NBI)

NBI: A water-sharing policy to promote
hydropolitical complex security, stability,
productivity and economic development.

Example: Nile Basin Initiative

Cooperative agreement to share the Nile waters between 9 riparian states.

Problems:

- Hydro-hegemony of Egypt
- Asymmetry of power
- 1929 prior treaty with riparians' colonizers.

Hydro Politics of the Nile

Egypt depends on the Nile for 95% its water.

“The only matter that could take Egypt to war again is water.” Former Pres Anwar Sadat

“The next war in our region will be over the waters of the Nile, not politics.”

Former Minister of Egyptian Foreign Affairs, Later
Sec Gen of UN, Boutros Boutros-Ghali

Hydro Politics of the Nile:

Egypt politically and militarily controls region, uses most of the water.

Security in the region depends on whether:

1. weaker countries increase their use of the water, and risk angering Egypt
2. Egypt continues asserting dominance to continue to control its allocation of water.

Map of Nile



Potential Conflict between Egypt and Sudan:
Sudan also has water scarcity.

If Sudan ends its deference to Egypt:

- Egypt might fund rebel forces in Sudan (SPLA)
- Egypt might use air strikes and overwhelming force

“Our response will be beyond anything they can imagine” (Former Pres. Mubarak 1995)

Alternative Actions (possible game theoretics):

- Egypt and Sudan could unite against Ethiopia or other riparians.
- Sudan and Ethiopia could unite against Egypt.
- A functional hydro political security complex – all riparians would have to cooperate to build reservoirs where evaporation would be lowest.

Potential internal problems within complex:

- One could defect from the cooperative arrangement.
- Civil and regional violence (Sudan, Ethiopia, Rwanda, Kenya)
- Countries would have to subordinate their needs to the needs of the hydro security complex.

Nile Basin Initiative

Water-sharing policy in which each country gets a specific entitlement to water.

Problems:

1. The entitlement is a specific amount, not a percentage (allocation) of total water available.
2. The 1929 agreement between Egypt and colonial governments gives Egypt the final say in all riparians water-use.
3. Cooperation in NBI is allegedly coerced.

The positive outcome of the NBI is that countries that have fought over the Nile for decades, and regularly threaten the use of force and carryout acts of violence, have not actually devolved into war. The costs of war are perceived, for now, to be more costly than cooperation, from the perspective of Egypt.

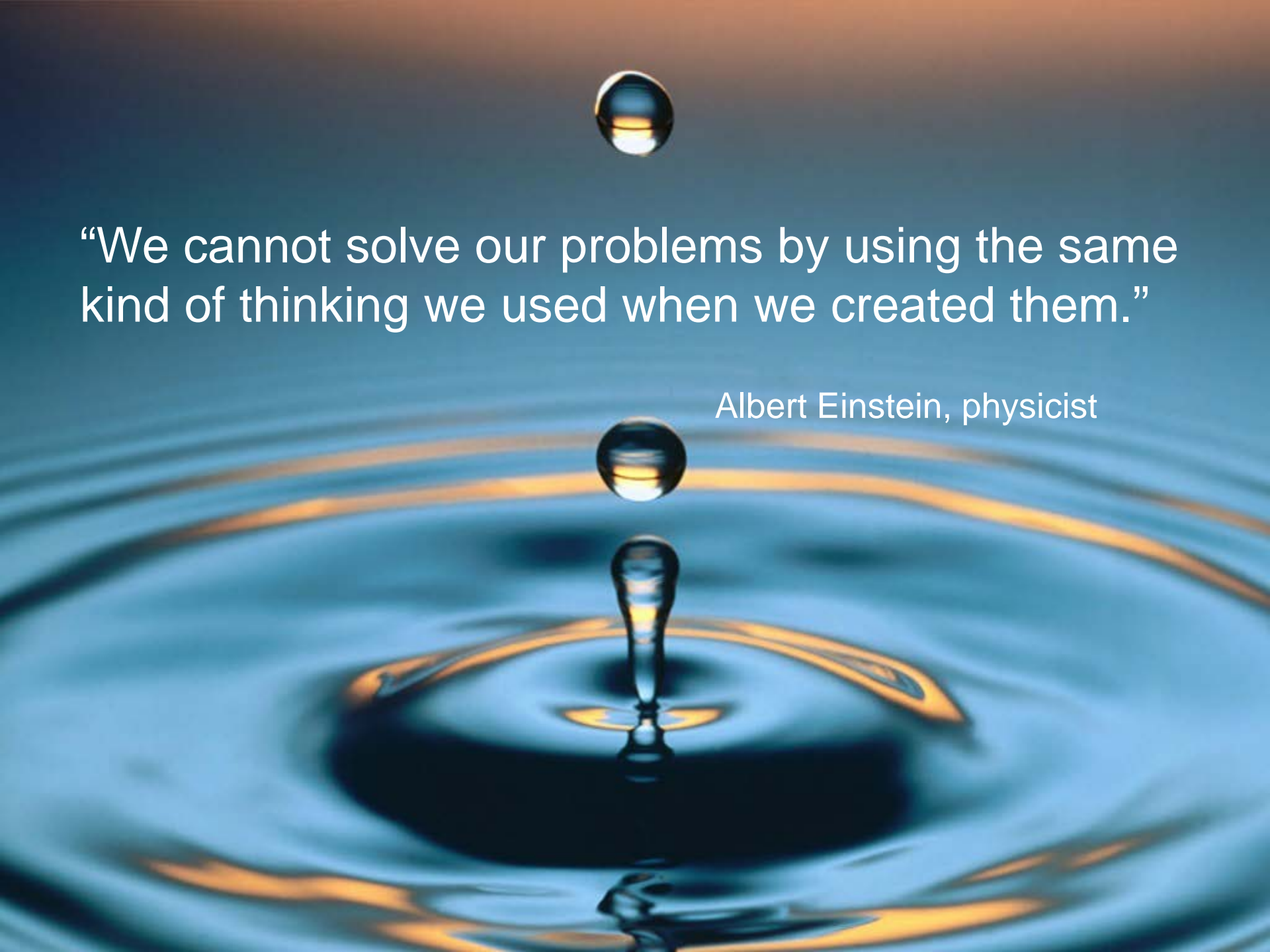
Negative outcomes

Extensive inequality and relative instability
[“low-intensity conflict” with the potential (the
promise in some cases) to erupt into
violence.

Coercion to cooperate.

Conclusion:

Increasing economic growth, external incentives and access to global markets, diversifying out of primary commodity dependence and water-intensivity, reducing exposure to price shocks, and operating on the edge of the Evolution of Cooperation: hydropolitical security complexes.

A high-speed photograph of a water droplet suspended in mid-air above a pool of water. The droplet is perfectly spherical and reflects the surrounding light. Below it, the water surface is disturbed, creating concentric ripples that spread outwards. The lighting is soft, creating a blue and white color palette.

“We cannot solve our problems by using the same kind of thinking we used when we created them.”

Albert Einstein, physicist

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