

EPICENTERS OF CLIMATE AND SECURITY: THE NEW GEOSTRATEGIC LANDSCAPE OF THE ANTHROPOCENE

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THE WEAPONIZATION OF WATER IN A CHANGING CLIMATE

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Water stress across the Middle East and Africa is providing an opportunity for subnational extremist organizations waging internal conflict to wield water as a weapon. The weaponization of water also drives conflict that transcends national borders, creating international ripple effects that contribute to a changing geostrategic landscape.

Climate change-driven water stress in arid and semi-arid countries is a growing trend. This stress includes inadequacies in water supply, quality, and accessibility.⁴ These countries are consistently experiencing chronically dry climates and unpredictable, yet prevalent, droughts. Predicted future climate impacts include higher temperatures, longer dry seasons, and increased variability in precipitation. In the coming decades, these factors will continue to stress water resources in most arid regions.⁵

It is accepted wisdom that parties generally cooperate over scarce water resources at both the international and subnational levels, with a very few notable exceptions that have resulted in internal, low-intensity conflict.⁶ However, tensions have always existed: the word rivalry comes from the Latin word *rivalus*, meaning he who shares a river.⁷ Rivalry is growing at the sub-state level, leading to intractable conflicts. Social scientists have long observed a correlation between environmental scarcity and subnational conflict that is persistent and diffuse.⁸ Disputes over limited natural resources have played at least some role in 40 percent of all intrastate conflicts in the last 60 years.⁹

Recent scholarly literature and intelligence forecasts have also raised doubts that water stress will continue to engender more cooperation than conflict. For example, a key U.S. Department of Defense planning document argues “future water supply challenges could affect food production, and cause resource competition ... that will aggravate existing stressors such as social tensions – conditions that enable terrorism and other forms of violence.”¹⁰

Stressors in the form of ethnic divisions feature prominently in the conflicts in arid zones that we analyzed, including Syria/Iraq, Somalia, and Nigeria. A new study finds that coincidence of weather variations (such as droughts) and war is dramatically higher in countries with inter-ethnic social tensions. These divisions play a greater role than poverty, income inequality, or even past propensity for conflict.¹¹

Pathways of influence linking water stress and conflict in fragile Middle Eastern and North African states are becoming more visible and carry worldwide implications for states with similar characteristics. These paths are extending beyond borders, facilitating the spread of violent extremism, disrupting energy markets, and deepening human suffering.

WATER AS A WEAPON

The U.S. intelligence community suggests that as water becomes scarcer, states may begin employing water as an interstate “weapon,” even in areas where cooperative solutions had prevailed.¹² Our research finds that extremists groups are already using water as a weapon at the subnational level.

In its most basic form, a weapon is “a *means* of gaining advantage or *defending* oneself in a conflict or contest.”¹³ Wielded by a group, it can take the form of an item, action, or offensive capability used or intended to kill, injure, or coerce. We observed the use of water as a weapon by sub-state militants across a spectrum of conflict in selected countries. We classified weaponization incidents by the intentions of the perpetrator as follows:

- **Strategic Weaponization:** The use of water 1.) For virtual or actual control or destruction of large or important areas, populations or infrastructure. or 2.) As an asset to fund state-like activities such as territorial administration or major weapons acquisition.
- **Tactical Weaponization:** generally, the use of water against targets of strictly military value. Weaponization of water on a small, local scale was generally characterized as tactical.
- **Coercive Weaponization:** use of water as an instrument of subjugation through the creation of fear among non-combatants of water supply disruption or contamination.

Ironically, the earliest historical records of water weaponization are among the ancient Kingdoms of Mesopotamia, a region that constitutes the modern Syrian and Iraqi battlefield.¹⁴ Indeed, the conflict in Syria and Iraq paints the most vivid picture of subnational actors' use of the water weapon. Our extensive research shows that Islamic State (IS) was responsible for 21 of the 44 weaponization incidents we catalogued from 2012-2015. The al-Nusra Front, an al-Qaeda affiliate, was responsible for three.¹⁵

STRATEGIC WEAPONIZATION OF WATER

Islamic State's systematic and sustained deployment of the water weapon is unprecedented in modern conflict.¹⁶ However, IS's sudden strategic seizure of the Mosul and Haditha dams has received attention from concerned parties.

On August 7, 2014, IS seized control of the 3.2-kilometer-long Mosul dam on the Tigris River upstream of the cities of Mosul and Baghdad in northern Iraq. IS's action and the corresponding threat of intentional sabotage that could kill thousands and inundate Baghdad with a wall of water was a factor in prompting the U.S. to launch an aerial bombing campaign.¹⁷ From August 17-18, Iraqi and Kurdish forces fought a pitched battle that reclaimed the dam with the support of about 35 U.S. airstrikes.¹⁸

TACTICAL WEAPONIZATION OF WATER

Islamic State has also successfully wielded the water weapon at the tactical level. In 2014, IS militants intentionally diverted water from nearby rivers in the Shirwan area of the Iraqi Diyala Province. This action halted the advance of Iraqi security forces on at least two occasions. In what we call *unintentional weaponization*, the collateral damage included the flooding of nine villages and displacement of the resident populations.¹⁹

A feedback loop is discernible in Diyala and other locations where water weaponization's impact on infrastructure created desperate conditions and impetus for more conflict. The prospects of recovery remain dim. As of December 2015, 35% of Syria's treatment facilities were damaged by various combatants.²⁰

COERCIVE WEAPONIZATION

Like Syria, Somalia was hit by regional droughts in 2011. It was at this time that Somali government military forces made inroads against the Islamist extremist group al-Shabaab in the ongoing civil war, eventually retaking most major cities. As a response, Al-Shabaab changed its traditional guerilla tactics and started to cut off liberated cities from their water sources so that they could demonstrate at least some kind of power and presence. Climate change, lack of food and continued conflict involving water

weaponization took an enormous social toll.²¹ Limited access of humanitarian agencies exacerbated by al-Shabaab's actions led to more than a quarter million deaths and hundreds of thousands of displaced persons.²² Al-Shabaab's attempt to gain legitimacy and subjugate the population was ultimately unsuccessful for many reasons. However, deployment of the water weapon left enormous misery in its wake.

WATER AS AN ACCELERATOR OF VIOLENCE

In other cases water is both a means and objective of war. A protracted conflict currently pits members of the semi-nomadic Muslim Fulani tribe against predominantly Christian farmers in Nigeria's Middle Belt, an ecologically diverse but increasing arid transition zone between the relatively temperate Niger River Delta and the arid northeast. The primary conflict driver is contested access to increasingly degraded grazing lands.²³

The roots of the conflict stem from the overlap of the Middle Belt's most productive agricultural lands with the traditional migration route of the Muslim Hausa-Fulani herdsman, a large ethnic group spread across northern Nigeria and neighboring states.²⁴ Their annual search for grazing lands for their cattle encroaches farmlands plagued by drought. The food security of farmers, including members of the Christian Yoruba tribe, is increasingly jeopardized.²⁵

When cattle consume or trample crops, retaliation may involve killing of livestock or direct poisoning of water sources. Hausa-Fulani herders sometimes attempt to settle. However, they face a system of land tenure and inheritance rights that give special recognition and social services to generational landowners.²⁶ These dynamics, combined with mutual dissatisfaction caused by sparse economic opportunities, has created a conflict spiral with no end in sight.

The conflict in the Middle Belt is little understood and has not received widespread media attention. The 2015 Global Terrorism Index reported that "Fulani militants" alone were the fourth most deadly terrorist group in the world, responsible for the deaths of 1,229 people in 2014.²⁷ In 2016, herdsman killed more Nigerians than Boko Haram, the extremist group widely considered the primary threat to Nigerian security.²⁸ However, there is a concerning linkage. Sources within the Nigerian military allege that Boko Haram members are infiltrating Fulani communities in response to battlefield setbacks.²⁹

Poor national policies contribute to deteriorating conditions. Nigerian authorities' attempts to manage the conflict have been ineffective, and local authorities have depicted pastoralists as the sole aggressors.³⁰ Inability to prevent conflict also creates an unstable environment for effective water management policy.

GLOBAL RIPPLE EFFECTS

Internal conflicts in the drought-afflicted countries described herein will have wider geopolitical, economic and security impacts:

People displaced across borders by drought or conflict present myriad challenges. Some migrants flee one politically fragile state only to land in another equally precarious situation. Somali refugees who make the dangerous crossing of the Arabian Sea to Yemen are an example.³¹ Migrants from all three nations we surveyed are seeking refuge in Europe in large numbers, placing strain on social support and political systems.

In Syria and Iraq, it appears that the military coalition formed against IS will be victorious in its ground operations. But even as the Islamic State is dismantled, the area is a persistent epicenter of global jihad. IS-inspired terrorist attacks are pervasive in Europe.

Compounding challenges emerge from the war in Somalia, including large-scale humanitarian commitments, displacement across borders, and internationalization of the conflict to neighboring states.³² Somalia sits on the Bab-el-Mandeb Straits, a vulnerable touch point between the continent of Africa and the Middle East. Piracy has been rampant in the strategic route for Persian Gulf oil, natural gas, and petroleum product shipments to Europe and North America, and European and North African oil exports to Asia.³³

Nigeria is an important rising power due to its sizable population, oil production and military posture. Supply disruptions for Nigeria and, to a lesser extent, Iraq have created uncertainty in the global oil market. Nigeria is also a strategic U.S. partner, providing a bulwark against extremism through support of regional peacekeeping missions. Even as Nigeria struggles to manage multiple internal conflicts, al Qaeda in the Islamic Maghreb (AQIM) has already gained influence in neighboring countries, and linkages with Boko Haram have been established.³⁴

Perhaps the greatest concern is the growing linkage between extremist organizations. A network among the major extremist groups discussed in this article is now discernible. For example, there are accusations that the Fulani militants have been infiltrated by Boko Haram.³⁵ Boko Haram fighters have conducted training in Somalia with al-Shabaab.³⁶ Although their strongest ties are with al-Qaeda, a faction of al-Shabaab has declared allegiance to IS.^{37, 38}

CONCLUSION

A changing climate stresses water resources and increases state fragility in arid countries. Water stress and poor water governance were factors that enabled extremist groups' exploitation of the water weapon. Localized conflict is increasingly likely to scale up to higher order security risks as extremists metastasize and coordinate.

Water weaponization is a tool that will only swell vulnerable populations and create lasting damage unless swift and decisive policy measures are taken. Better coordination between the global community and national level actors is essential in countries where deteriorating ecological and social conditions are creating growing instability.

NOTES

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