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Meeting Global Environmental Security Challenges: Water Scarcity, Migration and Extremism

While water scarcity is a human security issue, it's also a common denominator problem in other domains. According to Marcus King, that means that access to water — along with population growth and religious extremism — will be a primary source of global instability in the coming decades.

By Marcus King for ISN

Three interrelated megatrends, with shared environmental roots, are likely to intensify in the next 25 years, challenging the cohesion of many nations. These trends include: uneven population growth and environmental migration; climate change-induced environmental degradation with decreases in water supplies as its major proxy, and a continued upward spike in violent religious extremism. Areas where these three trends converge will be future focal points of instability. Evidence from various disciplines suggests that the Middle East and North Africa (MENA) and Sub-Saharan Africa are areas where these factors will ignite conflagrations that will have the greatest consequences. As these megatrends unfold and proliferate, fewer nations will have the resources and capacity to address them absent unforeseen breakthrough technologies likely to be controlled by wealthy nations. The scope of natural resource conflict, particularly surrounding water, will increase. Solving these problems will demand security strategies that enlist the capabilities of new actors.

A growing challenge

Challenges related to international water security – including ensuring safe and sufficient water across the globe and preventing local and international conflict in key water basins – are considerable, and will grow significantly in the coming years. Although it comes as a surprise to many, history has shown that water issues are more likely to lead to cooperation between nations than conflict. According to some scholars, the last war between nations that can be directly attributed to water happened 4500 years ago and involved Mesopotamia as a belligerent. However, local conflict over water resources is common and recent.

New climate science studies, combined with intelligence forecasts and some academic studies, raise doubts that water will continue to engender more cooperation than conflict, providing justification for urgent action. A 2012 U.S. intelligence assessment on global water security predicts that as water becomes scarcer states may employ it as a means of coercion against rivals in areas where

cooperative solutions have prevailed. Furthermore, water problems including shortages and quality issues will contribute to existing tensions and increase the risk of instability and state failure. States focusing on addressing internal water-related problems may be unproductive in other arenas.

The rapid onset of climate change is a reminder that the window to make successful interventions to promote peace and stability over water resources is closing. Long-term trends indicate less precipitation leading to drought conditions in the Sahel, southern Africa and parts of southern Asia that are experiencing largely-unrelated internal instability. Higher precipitation levels also present water security challenges including floods that may contaminate drinking supplies and destroy crops. In 2012 alone, floods in Pakistan and the Sahel affected over 8 million people.

Higher temperatures will alter the timing of glacial melting, eventually threatening the water supply of hundreds of millions of people in Asia and South America. The ten hottest years on record have all occurred since 1998. Higher temperatures are causing the Arctic icecap to melt at an alarming and unpredictable rate, resulting in sea level rise that may cause saltwater intrusion into freshwater supply.

Water scarcity will have great implications for energy availability because all known means of production require water. The energy sector accounts for 8% of worldwide water withdrawals and is the fastest growing consumer of water in the United States. Water scarcity will diminish hydro-electrical generation capacity: fifteen developing countries generate more than 80% of their electricity through hydroelectricity. China plans to generate 30 percent of its electricity from hydropower by 2020, but capacity is likely to decline for the foreseeable future due to droughts and possibly glacial melt in the Himalayas. Nuclear reactors and fossil fuel electric generation plants are also compromised because they use water for functions including cooling, steam generation, and waste disposal. Biofuel production is also very water intensive. The legitimacy of states that are unable to provide basic utility services will be called in question.

World population, currently at 7 billion people is expected to grow to around 11 billion by 2050. This rate of absolute growth will not overwhelm the earth's projected environmental carrying capacity. However, distribution is of great concern. Sustained but uneven population growth is expected for most of the MENA countries where the average age is decreasing. A youthful population is good news in highly productive economies such as Korea with strong education systems where new entrants into the labor force are an engine of economic growth. However, increasing concentration of wealth means that demand for jobs will exceed supply in weaker economies.

In areas of Africa most sensitive to climate change, nearly 70 percent of the population is under 30 and unemployment is 20 percent or higher. Young people are experiencing a revolution of expectations. Those, predominantly males, who fail to meet these expectations, are prone to violent extremism. The most recent climate assessments find that many of the areas facing the greatest challenges from climate change are struggling with youth unemployment. A subset of these countries – Nigeria, Iraq, Afghanistan, and Syria – is now experiencing internal conflict.

Environmental migration will also contribute to unequal population distribution. In May of 2011, 30,000 migrants arrived in Italy dislodged as a result of the turmoil brought about by the Arab Spring but were in many cases also unable to grow crops. The majority was from Tunisia and Italy sent many to France partially due to their common language. Academic literature has found that climate-induced migration from North African countries to Europe is unlikely to pose an existential threat. However, cross cultural tension and criminal activities are common. Muslim urban youth marginalized by high rates of unemployment and a lack of integration in countries such as France will be increasingly susceptible to radicalism and recruitment by Islamic extremist organizations such as the perpetrators of the bombing of the Madrid train system in 2004.

While the intensity of conflict in the major theatres of the U.S. “War on Terror” seems to be diminishing, the absolute number of countries facing violent extremism is increasing. It is a very stark trend that all countries where Al Qaeda and its direct affiliates are operating are heavily impacted by climate change and most by water scarcity. Mauritania is an obscure but emerging example. It is one of the countries most exposed yet least resilient to the impacts of climate change, increasing its susceptibility to political and humanitarian crises. Sea level rise threatens the capital Nouakchott and food insecurity triggered by severe droughts has resulted in massive internal migration. Restive youth, ethnic and racial tensions, and a significant number of external refugees are creating an opportunity for Islamists affiliated with Al Qaeda in the Islamic Maghreb (AQIM) to seek refuge. Meanwhile, Tuareg minorities have established an unstable de-facto state on one border, and an unresolved dispute over the neighboring territory of Western Sahara, that has itself created environmental migration to Europe, simmers on the other.

Environmental change will continue to threaten food security. Direct links between the environment and the Arab Spring are now increasingly recognized. Syria’s steady drought conditions in 2011-12 produced 75% crop failures in some regions causing at least 800,000 farmers to migrate to urban centers in search of non-existent jobs. Conditions in these cities eroded confidence in the Assad regime’s capacity to govern and extremists ascended to leadership positions in the rebel movement. Egypt faces similarly formidable challenges. Sea level rise and desertification will degrade the soil and threaten food security in the thin fertile zone around the Nile where nearly all of the population and agriculture are located. Egypt receives nearly 100% of its freshwater from outside its territory and Ethiopia plans further dam construction upstream. Increasingly idle and urbanized youth could spark political upheaval with even larger regional and global consequences than the last few rounds.

Time running out?

How much time do nations have to prevent the realization of the worst outcomes I have described? Three types of forecasting tools provide the best answers we have: scientists’ climate models; demographers’ population growth models and intelligence agencies’ political risk estimates. All operate with a high degree of uncertainty but have a reasonably accurate assessment horizon of about 25 years. The convergence of these predictions and an abundance of caution dictate that we have less than that amount of time. The MENA region is an early indicator of trouble elsewhere.

A good way for stable governments to start addressing these complex issues is by dedicating much greater resources to improving global water security. Many people understand that basic access to water is a human security problem but they fail to understand that water scarcity is a common denominator in other key demographic, energy and security challenges including terrorism. Environmental security—the proactive minimization of threats to the biosphere and the people that inhabit it—should provide a new principle for global engagement. Just like in an ecological system, the complex world security architecture connects us all in ways that are not easily understood. The zero-sum theory of international security maintains that as one country becomes more secure another becomes less so. This is inherently untrue in an environmental security paradigm where degradation creates a negative sum equation where all parties lose.

Reliance on established organizations such as the U.N. and the military to provide environmental security has proven inadequate. Nations must implement grand strategies that include new actors such as corporations, faith-based organizations and existing civilian agencies beginning with water as the most urgent priority. Every instrument of national policies – including development, diplomacy and defense – should be called into action to support these strategies.

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