

Water and security

In the time it takes a restaurant guest to choose between still or sparkling water, a child under five will have died from dehydration or disease from dirty water. If last century was the era of oil, then this one will certainly be that of water, according to **Matt Minshall**



Water is complex, because it is linked to almost everything in the world. But complexity should not hinder understanding. Water is a precondition for human existence and for the sustainability of the planet and, if we

recognise that the entitlement to sufficient clean water through adequate supply is a fundamental human right, we must do more to ensure that sources and supply chains are properly protected, and to prevent control and exploitation for criminal or political purposes. This article looks at the growing importance of ensuring that one of the most fundamental requirements for man and nature is effectively managed for universal good.

Water security includes both provision and safeguarding. The proposed definition of water security for the United Nations is: “The capacity of a population to safeguard sustainable access to adequate quantities of and acceptable quality water for supporting 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.”

To guarantee security, the whole chain must be protected, from supply, through cleanliness, to protection from waste, theft, terrorism or political coercion.

Water is one of the most abundant substances on earth, yet approximately one billion people still lack access to safe water and over 2.5 billion do not have access to adequate sanitation. One of the first challenges of post crisis management in natural or manmade disasters is invariably the provision of potable water.

The world’s freshwater is limited. Of all water on the planet, 97 per cent is saltwater and found in the seas, three per cent is freshwater, of which 77 per cent is frozen in glaciers and ice sheets, and 22 – 30 per cent is deep underground in aquifers. That leaves only one per cent easily accessible in rivers, wetlands and lakes, and much of this is being systematically polluted through mismanagement.

At any point, a huge supply of water is floating in the atmosphere; a single cumulonimbus cloud can contain 300,000 tons of water. To alleviate local shortages, application of modern technology needs to be harnessed to release currently unobtainable sources (waste and polluted supplies), through better recycling, enhanced purification and reduction in pollution, and extraction of the water in the air, ie clouds and humidity.

The world’s population is rising and demand for water

is growing not only for survival, but for the development of nations – as health and living conditions improve and an economy grows, the requirement for water rises.

Water is thus a key element of critical national infrastructure (CNI). Historically, population density has centred around rivers and other clean sources. There is evidence of water being accessed and transported, such as man-made river diversions, Roman aqueducts and the Oman Falaj system (a series of channels dug into the earth, transporting groundwater from subsoil or valleys), dating back at least two millennia.

Water security represents a strategic risk highlighted by a number of factors, including hygiene security, for which vital tests and analyses must be managed and organised, and the lack of which have a significant impact on health. Poor health is a drain on life, infrastructure and public morale. Another factor is economic security; a lack of water results in the failure of everything – transport, industry and development – so the physical security of water sources, storage and distribution facilities is vital.

Failure of everything

Before looking at what security measures might be put in place, it is worth examining the threats and potential areas of exploitation. However, in protecting water resources, we must ensure that the measures do not themselves deny the right of the populace to access. We must protect water but not imprison it.

It is said that the next world war will be fought over water and, in this regard, there are few areas as tense as the River Nile, where a possible new dam has the potential to trigger a war over water, unless Ethiopia can reach agreement with Egypt and Sudan.

Recent world events from the Middle East to China, from India to Ethiopia and other regions have, unfortunately, continued to lead to new examples of threats. The current categories, or types of conflict, now include:

■ **Control of water resources by state and non-state actors:** Water supplies or access to water is at the root of tensions;

■ **Military tool by state actors:** Water resources, or water systems themselves, are used by a nation or state as a weapon during a military action (there is evidence of this tactic being used as long ago as 2500 BC);

■ **Political tool by state and non-state actors:** Water resources or water systems are used by a nation, state, or non-state actor for a political goal;

■ **Terrorism:** Water resources or water systems are either targets or tools of violence or coercion by non-state actors;



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■ **Military target by state actors:** Water resource systems are targets of military actions by nations or states; and
 ■ **Development disputes by state and non-state actors:** Water resources or water systems are a major source of contention and dispute in the context of economic and social development.

Clear threats make identification of the protection measures easier to consider, although ease of implementation is rarely straightforward, and can be costly.

As already alluded to, the protection of water is not limited to the physical denial of sources or interruption of access, but involves protecting the element itself from attacks or measures to contaminate it, making it unfit for consumption or use. Thus, protection measures must be cohesive and include water sources, application and maintenance of hygiene storage, distribution and recycling, in an enduring manner.

Protection of the water chain is complex and must not be considered in isolation; it should form a key element of an integrated and networked CNI system.

Walls and guards can be used for static sources and storage – but this is costly in terms of manpower, and often impractical when extensive areas and distances are involved.

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Protection of water should be linked in to a smart approach to security, enabled and enhanced by technology. Electronic alarms, visual surveillance by camera, radar, or programmed and autonomous drones, drone countermeasures, and all sensors should be networked with the effectors – artificial and human – to make water security a key contributor to CNI protection.

Water mismanagement alone can contribute to the failure of a state, and a failed state creates regional instability that can lead to dire human suffering and economic impacts. Thus, with their own water security ensured, states also have both a necessity and a duty to assist less fortunate countries with their own water security.

Going even further, everyone has a duty to assist with water security – national, regional and local governments, water companies, businesses and industries, non-government organisations, and individuals – for personal and common good.

Everybody, or nobody, should be allowed to choose between still or sparkling water.

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