BLUE PEACE BULLETIN

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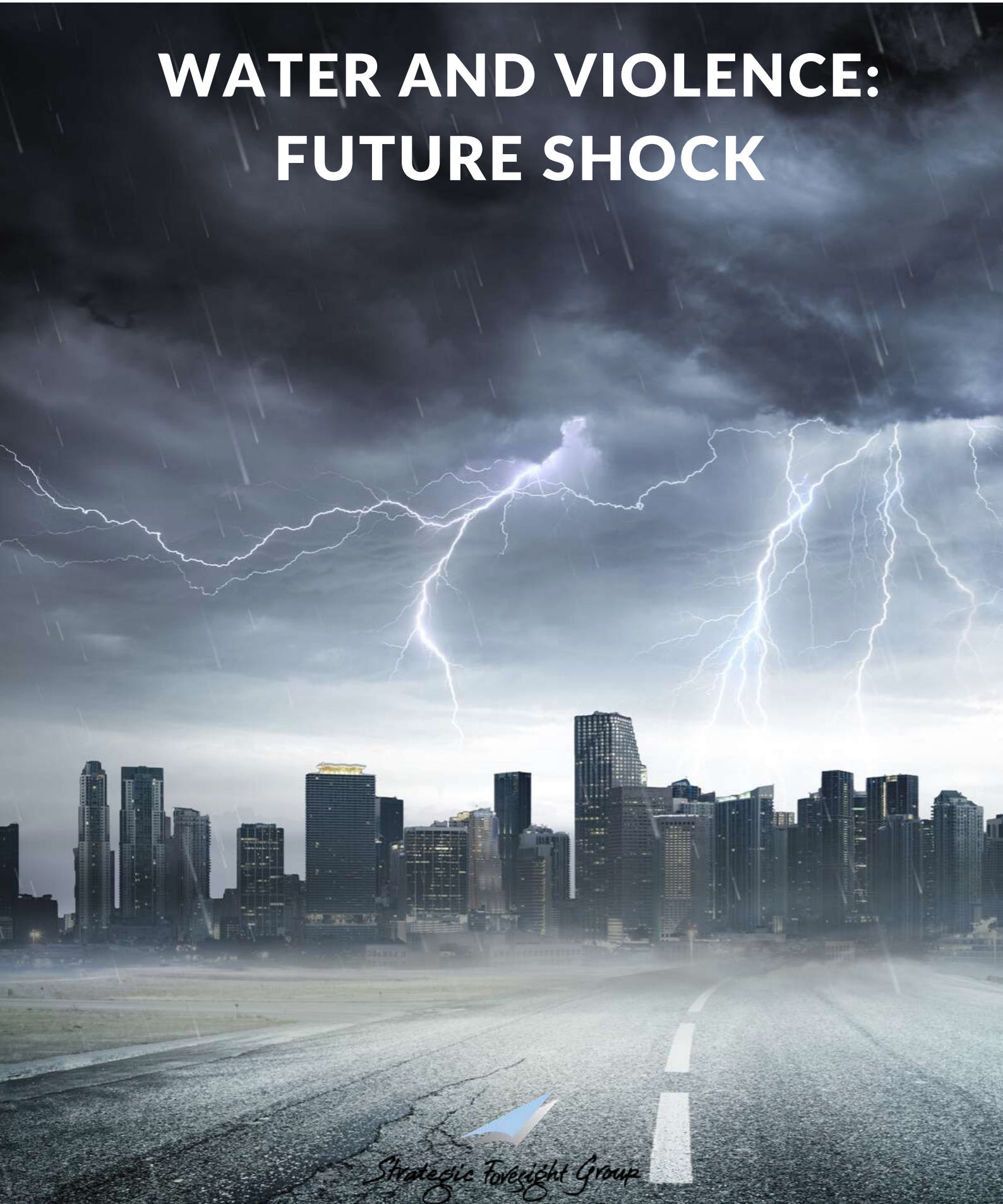
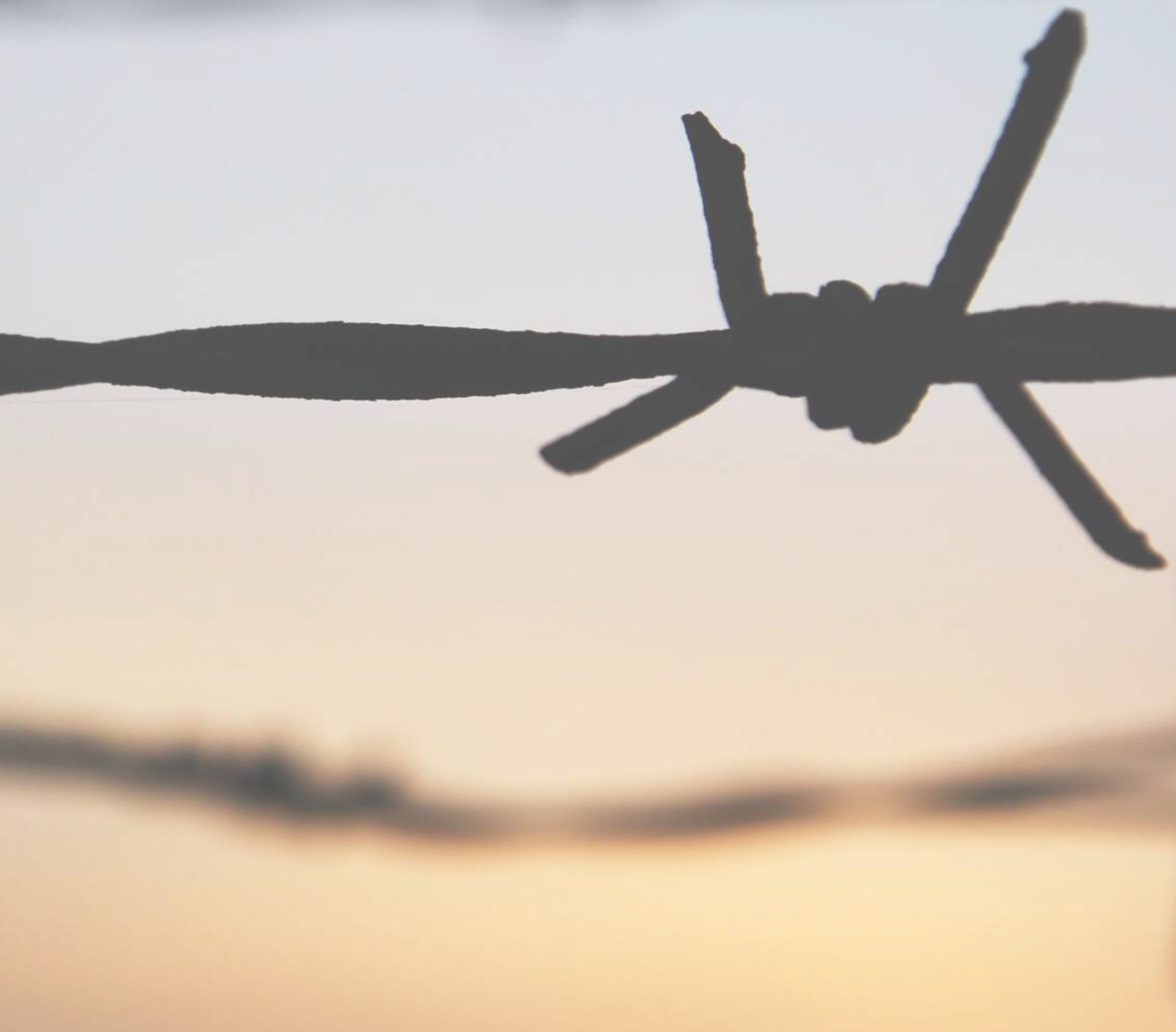
WATER AND VIOLENCE: FUTURE SHOCK



In recent years, there has been much talk about the risk of "water wars'. The data on depleting water resources in the context of climate change, economic growth and population growth is provided as a rationale for the anticipation of water wars. In reality, countries with low water availability, such as Singapore, face no conflicts over water, and the countries with relatively high water availability such as Bangladesh and Iraq face serious crisis. This paper demonstrates that during the next 20 to 30 years, there could be risk of wars over water but not simply because of declining water availability. There is a complex relationship between water, wars and peace. It requires nuanced understanding of the issue to assess whether water will propel wars or foster peace between 2020 and 2050.



SCENARIOS 2040

Circa 2040 AD
There is good news and bad news!

The good news is from Africa. It emerges as the only continent free of any wars or tensions between countries. Africa has used an innovative strategy. As Europe had established the Coal and Steel community in the 1950s to provide a material basis for the future European Union, Africa used water, food and hydel energy to create foundations of a peaceful African Union. Ethiopia has established intensive cooperation with Egypt and Sudan; the process began with selling stakes in its Grand Renaissance Dam to the Egyptians and the Sudanese in the 2020s and Egypt reducing its demand for water from the Blue Nile River through efficient domestic management. This cooperation paved the path for food and hydro energy trade, technical cooperation and a Treaty of Friendship.

The Congo Basin Blue Fund is supporting collaborative projects on its rivers, lowering the region's dependence on forests for livelihood. South Africa is helping all neighbouring countries to advance in industry, trade and services in exchange for their surplus water. A strong material basis has enabled cooperation to combat desertification and climate change. There is a vibrant African Parliament debating real issues of people.

New technologies in ground water management and urban planning have resolved conflicts between herders and grazers, particularly in the Sahel. In this spirit of cooperation, African leaders are determined to work together to free the continent of small arms by 2050. The African Union is supported by a Defence Cooperation Commission.

The bad news is from the Americas. Instability in one of the Central American countries produces massive number of armed militants. One group takes over Chagres River in Panama that feeds the canal. It threatens to build small dykes to divert the flow. If the canal is impaired, almost half the trade between North America and East Asia will face hurdles. The United States would like to send forces to free Panama. But the Pentagon is preoccupied with a much more serious problem.

A group of hackers has broken into the data base of all dams in the United States. Such an effort was made several times in the last 25 years, but the US authorities had managed to change digital locks each time. On this occasion, the hackers have outmanoeuvred the American experts. They have launched cyber attacks on vulnerable dams one by one. There are flash floods in the western states. The White House suspects that the hackers are backed by the Chinese intelligence agencies in order to establish China's supremacy on the global economy f r the remaining 21st century. China refutes these allegations. The US is nevertheless considering the use of ICBMs to attack some Chinese cities and activate lethal autonomous weapons to target the Three Gorges Dam. If this happens, the Third World War may break out, involving nuclear and post nuclear weapons, perhaps ending the human story on the earth.

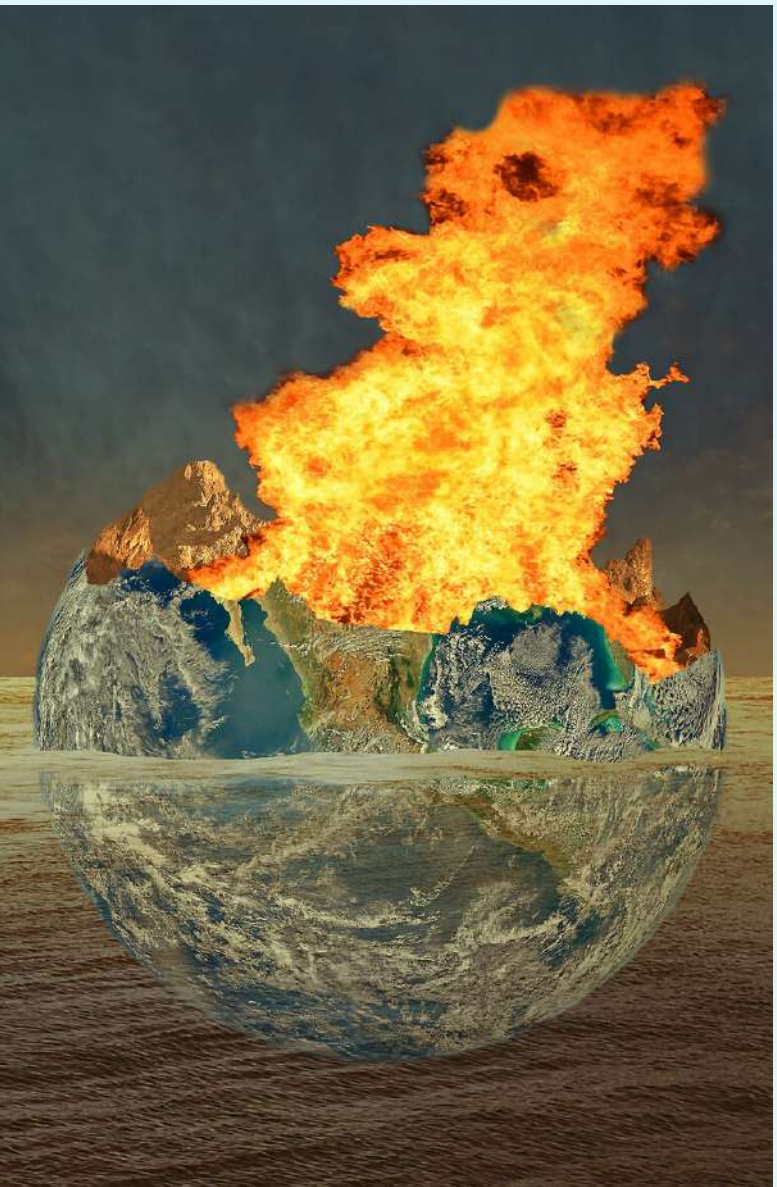
Warnings of 2015-2020

The good and bad news of 2040 has its origins in the developments of 2015-2020. In August 2015, West African Ministers of Water gathered together in Dakar to welcome a new policy instrument, Water Cooperation Quotient that would enable countries to measure the quality of riparian relationship between countries that shared any river. The document revealed that any two countries that collaborated actively for managing water resources would not go to war for any reason whatsoever, whether related or unrelated to water. The African leaders took this seriously and began to form communities of blue peace, based on shared rivers and lakes. Senegal River Basin Organisation had been created in the 20th century, but the leaders were not aware of how the asset they had created could lay foundations for world peace. The gathering in Dakar brought a new realisation. Soon countries sharing the Gambia, Niger, Volta, Congo and other rivers followed the example of Organisation pour la mise en valeur du fleuve Sénégal (OMVS) to foster cooperation in their own basins. The Nile Basin was still a difficult challenge. But a series of agreements in the 2020s between Ethiopia, Egypt and Sudan changed the course of events there as well.

Around 2015 another development took place. ISIS, a terrorist organisation, had realised that controlling water infrastructure gave them the real power over societies and states in the Middle East. The terrorist group took over major dams. By the time the international coalition against ISIS understood the game, the terrorist group had secured full control over Tabqa Dam, the largest dam near Rakka in Syria. ISIS used the Tabqa Dam as its headquarters. In May 2017, US marines managed to free Tabqa. Within three months, ISIS lost 90% of its territory.

Even though ISIS lost the game by 2018, terrorist groups around the world learnt from them. Al Quaeda affiliates in southern Mali tried to take over Manatali Dam in 2025, but they did not succeed due to growing cooperation between West African nations. Later on, many events of capture or attack on dams and pipe lines continued to take place in different parts of the world. The take over of the Chagres River in Panama and the data base of dams in the United States was the culmination of a 25-year old war strategy to use water infrastructure by terrorist groups.

It was possible to prevent the destructive trajectory and expand the positive pathways. The United Nations had convened a special debate of the Security Council in the form of UN Security Council Meeting 7818 on 22 November 2016. As it was the first session on Water, Peace and Security in the history of the United Nations Security Council, it was open to all member states of the United Nations. 69 countries participated in the meeting, which had forewarned about water infrastructure being used by terror groups and elaborated on the strategies for cooperation.[i] But the wisdom of the meeting was lost in the din of daily politics by 2020. Had the large and small countries learnt to read the tea leaves, humanity would not have been on the brink of world war in 2040.



Contest of Two Schools

Does water propel wars or foster peace? Is water the oil of the 21st century? Over the last few decades, this question has been debated by two schools of thought. One school believes that depleting water resources can increase competing demand, leading to tensions, and eventually military confrontation. Therefore, low per capita water availability can cause conflicts between riparian countries. The other school of scholars argues that water is a magic that fosters peace and cooperation. Both schools are partly right and substantially wrong.

Peter Gleick and Thomas Homer Dixon are leaders of the school arguing water as a cause of war. In “Water and conflict” Peter H. Gleick and Miriam R. Lowi, (1992) addressed the issue of water resources as military goals. In “Environment and Conflict: Analyzing the Developing World” (1993) Ashok Swain highlighted the role of environmental degradation including water resources leading to different forms of conflicts. In “Water Wars: Coming Conflicts in the Middle East” (1995), John Bulloch and Adel Darwish Gollancz contended that conflicts over the control of water, not oil, would threaten stability in the region. In 1999, Thomas Homer-Dixon wrote a book “Environment, Scarcity, and Violence” where he argues that environmental scarcities which include water would have profound social consequences contributing to civil violence, especially in the developing world. Many other books with similar arguments have followed since 2000.

On the other hand, another group of scholars sees the role of water in fostering peace. In “Hydropolitics in the Third World: Conflict and Cooperation in International River Basins” (1999) Arun Elhance argued that states have no choice but to cooperate on water without going into war.

Aaron Wolf wrote several articles on water being a tool for peace including “Middle East Water Conflict and Direction for Conflict Resolution” (1999) where he addressed the role of water in peace processes as well as “Water Can Be a Pathway to Peace, NotWar” (2005) written in conjunction with Annika Kramer, Alexander Carius, and Geoffrey D. Dabelko.

In 2005 B.G Varghese wrote about the role of Indus Water Treaty in fostering peace between India and Pakistan.[vi]Claudia W Sadoff and David Grey of the World Bank, in their article “Beyond the river: the benefits of cooperation on international rivers” (2002) further address the importance of water in fostering peace between riparian nations. The argument that the depletion of water resources can lead to war does not hold water since many countries with low as well as high per capita water availability have conflicts with their neighbours. Singapore, Yemen and the Palestine Territories have per capita water availability of about 100 cubic meters. Singapore has no problem of water supply or conflict with neighbours. Yemen and the Palestine face crisis and conflict with the same level of availability. The threshold level of water scarcity as per the Water Stress Indicator widely used by the United Nations is 1000 cubic meters. Many countries including Afghanistan, Bangladesh,Iraq, Armenia, Iran, Lao PDR have much more water available than the threshold level, but they have major disputes with their riparian neighbours.
See Table below

Per Capita Water Availability of Countries Involved in Water Disputes (cubic meters)

Afghanistan	2 008
Bangladesh	7 621
Iraq	2 467
Armenia	2 574
Iran	1 732
Lao PDR	49 030

Source: Aquastat, Food and Agriculture Organisation, online data base

Those arguing for cooperation have misplaced optimism. The Indus Water Treaty is often cited as an example of cooperation. In reality, it merely allocated the water of six rivers between India and Pakistan, with each country having access to three rivers. It has a strong arbitration provision for technical disputes on the utilisation of rivers. The treaty has not prevented three wars and many near war situations between the two countries. The Mekong River Commission facilitates data exchange and a few joint technical projects. It has not prevented major political disputes. Often what is described as cooperation is merely an agreement on exchange of technical data and implementation of small projects to demonstrate goodwill. These programmes are managed by officials in water ministries with no bearing on overall peace and security between the concerned countries.

Where Politicians Become Statesmen

The level of availability of water by itself is not a cause of either war or peace as demonstrated by the examples mentioned above. Agreements of basic technical cooperation do not foster peace either.

This is not at all to suggest that water scarcity is irrelevant. Decline in water availability does lead to environmental, health and economic challenges. Water is no oil since oil has alternatives like natural gas, solar energy, wind energy, among others. But only alternative to water is water. Prudent management of water resources is the need of the hour. But the relationship between water and wars is a different matter.

This is also not to suggest that technical cooperation between countries sharing rivers and lakes is irrelevant. Such basic cooperation is helpful in day to day management of shared resources. But the strategic calculations of leaders for decisions to build peace are altogether different.

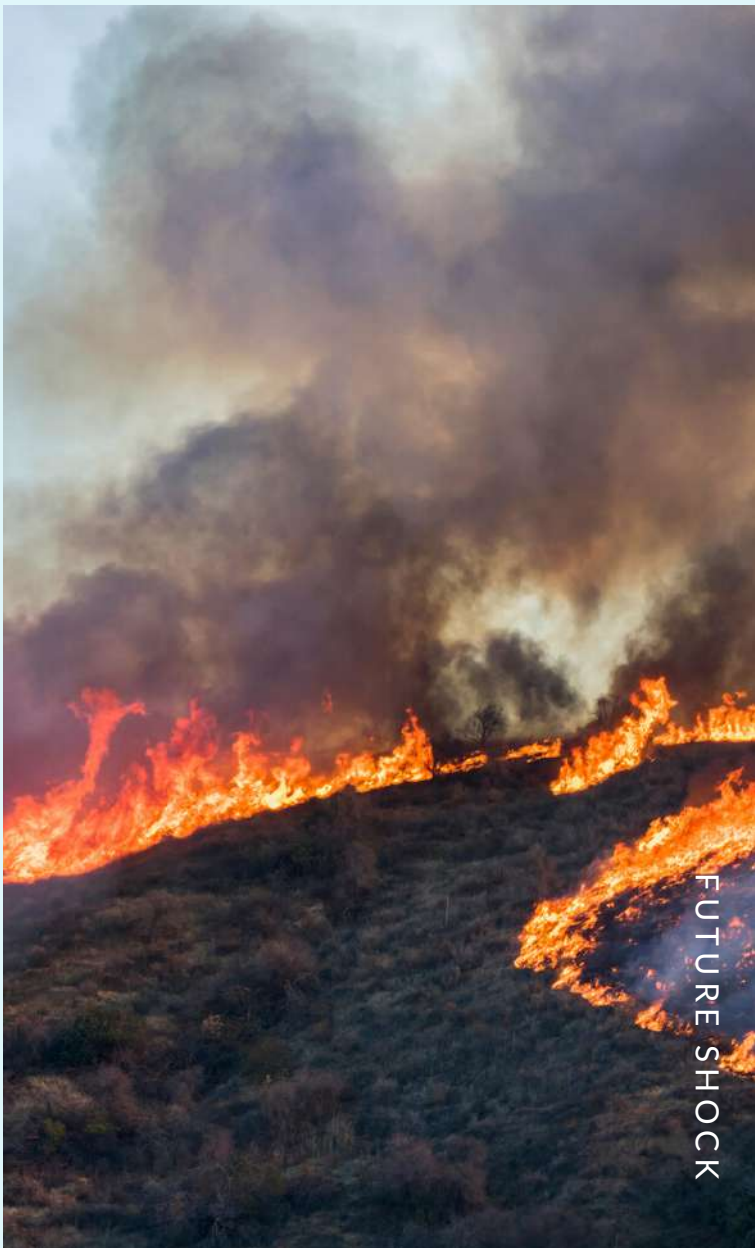
While trying to assess whether water will function as a tool of war or peace during 2020-2050, it is necessary to evaluate drivers in different categories.

Basic Drivers influencing supply of and demand for water-

- Climate change
- Desertification
- Deforestation
- Natural disasters
- Population growth
- Economic growth
- Industrialization
- Sector governance
- Urbanisation
- Agriculture
- Energy demand

Active Drivers influencing war and peace-

- Ecosystem management for the entire basin including mining and pollution issues
- Migration
- Harmonisation of laws governing water in the same basin
- Investments in large collaborative or competing dams and other infrastructure
- Navigation and trade
- Advanced technology
- Strong institutions for mediating political relations
- Engagement of top political leaders at the level of Heads of Government in water relations
- Terrorist activities.



An interplay of drivers produce scenarios for the future. There are three possible scenarios:·

- Where politicians leave it to civil servants and technicians to shape the basic drivers of water management, there is no consequence for war or peace.

- Where politicians fail to have intensive security cooperation with neighbours, they allow space for terrorists who use water assets to start and accentuate wars.

- Where politicians become statesmen and personally invest in building active cooperation with riparian neighbours and other stakeholders, they produce sustainable peace.

Cardinal Mazarin, Prime Minister of France in the 1640s, was the first modern politician to turn a statesman by recognising the value of shared water resources. He included a clause to declare Rhine River free from tolls and use it as a corridor for development in the Peace of Westphalia. The Westphalia Treaty is well known for its separation of Church and the State, but it became a reality only because the possibility of cooperating on the Rhine provided it with a material basis. This also inspired the inclusion of cooperation on the Rhine in the Final Act of the Congress of Vienna in 1815.

Statesmanship was evident in North America when Mexico and the United States signed International Boundary Commission to harness Rio Grande in 1889 and between Canada and the United States in 1909. These are not only legal treaties but also the basis for an active institutional relationship.Statesmanship was evident in Europe in the period following the Second World War when active cooperation on the Rhine and Danube Rivers was established.Statesmanship was evident in West Africa during 2010s, when the parameters of Water Cooperation Quotient enabled the reform of riparian relationship, andSenegal successfully convened the UN Security Council Meeting 7818, referred earlier, in November 2016.

Options for 2020-2050

Whether water will propel wars or foster peace in the next three decades in different parts of the world, would depend less on relative scarcity or abundance of water and more on the commitment of bureaucrats, strategies of terrorists and wisdom of politicians.

Sound management of water sector at the domestic level is essential if excessive demand is not to cause tensions with the neighbours. Singapore has used efficient governance, conservation, waste water treatment, and use of high technology to reduce dependence on Malaysia reducing the risk of friction between the two countries. There are lessons to be learnt by the fast urbanising economies. China is trying to improve their domestic water governance in recent years. This has coincided with China establishing Lancang Mekong Commission to cooperate with the Mekong River Commission formed by the lower riparian countries.

If countries want to use water for peace, rather than war, international legal instruments are available. They include among others, the UN Convention on the Law of Non Navigational Uses of International Watercourses (1997) not ratified by most critical countries twenty one years later, and Article 54(2) and Article 56 of Additional Protocol I (1977) of Geneva Conventions (1949) prohibiting the use of water for violence.

Transfer of technology for efficient use of water resources can be made available through a new Blue Peace Fund of $100 billion, similar to the Climate Fund created by Paris Climate Accord for renewable energy and climate change mitigation strategies. Significant technological breakthroughs will be possible during 2020-2030 due to the implementation of technology currently under development, if supported by new financial instruments at various levels. In the distant future, around 2050, some entrepreneurs even dream of securing water from asteroids.

According to UN Water and WHO, financial requirements for resolving basic water issues worldwide is estimated to be $100 billion. If the additional $100 billion required for technology transfer are counted, the total requirement would be $200 billion. Global military expenditure trends indicate an increase from estimated $1800 in 2019 to $2000 in the early 2020s, demonstrating that political leaders can always find $200 billion for their priorities.

Technological, financial and legal resources are available and can be produced. If they are used, water can foster peace. In reality, political will often tends to be in deficit, leading to crisis and conflicts. Therefore, in the ultimate analysis, scenarios for 2020-2050 on the catalytic role of water for war or peace would depend on scarcity or abundance of political wisdom and statesmanship. The countries that engage in active water cooperation will experience peace and prosperity. The countries that arrogantly ignore comprehensive regional and global cooperation will have to worry about ballistic missiles, endangering their own and the world's people.

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Strategic Foresight Group is an international think tank based in Mumbai, India. Since its inception in 2002, it has worked with governments and national institutions of 60 countries in four continents. It is known for conceiving several pioneering policy concepts to help decision makers to respond to challenges of the future in three spheres: peace and security, water diplomacy, global paradigm shifts.

Its ideas have been discussed in the United Nations Security Council, United Nations Alliance of Civilizations,Indian Parliament, European Parliament, UK House of Commons, House of Lords, World Bank, World Economic Forum (Davos) and other important public institutions. The initiatives and analysis of the Strategic Foresight Group have been quoted in over 3000 newspaper articles and news media sources from almost 100 countries in all continents.

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