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Water Security, Health and Water Conflicts Around the World

Joy Prakash Chowdhuri

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Prof. Joy Prakash Chowdhuri

Dept of Sociology,

KALINGA UNIVERSITY,

Naya Raipur. Chhattisgarh.

Email: drjoyprakash@gmail.com

Water is indispensable for human health and well-being. Water security defined as the capacity of a population to safeguard sustainable access to adequate quantities of water for sustaining livelihoods, human well-being. A person cannot live for more than a few days without clean, drinkable water. It is rightly pointed out that save the water to secure your future. Sustainable development will be possible only if there is a water-secure world. The United Nations estimates that 1 billion people lack access to safe drinking water. The 10 million people including 2 million children die each year of waterborne diseases. The major sources of this contaminated water are bacteria, viruses, and cysts. These pathogenic organisms breed in unprotected water and unsanitary conditions economic development, for ensuring protection against water-borne pollution and water-related disasters as well as for preserving ecosystems in a climate of peace and political stability.

Water security defined as the reliable availability of an acceptable quantity and quality of water for health, livelihoods and production, coupled with an acceptable level of water-related risks. The water is important for sustainable development as well as a secure world. It is important for human survival and well-being. A water-secure world reduces poverty, advances education and increases living standards. It is a world where there is an improved quality of life for all, especially for the most vulnerable—usually women and children—who benefit most from good water governance.

Effects of water pollution on human health:

There are relations between pollution and health problem. The disease-causing microorganisms are known as pathogens. The pathogens are spreading disease directly among human beings. Many water-borne diseases are spreading man to man. The health risks are associated with polluted water such as respiratory disease, cancer, diarrheal disease, neurological disorder and cardiovascular diseases. Nitrogenous chemicals are responsible for cancer and blue baby syndrome. Poor people are at greater risk of disease due to improper sanitation, hygiene and water supply. The contaminated water has negative effects on pregnant women which caused the increased rate of low birth weight as a result fetal health is affected. The poor quality of water destroys crop production as well as infects our food which is hazardous for aquatic life and human life. Pollutants disturb the food chain. The metal-contaminated water leads to hair loss, liver cirrhosis, renal failure and neural disorder.

The untreated drinking water and fecal contamination of water is the major cause of diarrhea. The fever, abdominal pain, nausea, headache are major symptoms of diarrhea. The

cholera is caused by contaminated water. The symptoms of this disease are watery diarrhea, nausea, vomiting and watery diarrhea lead to dehydration and renal failure.

Hepatitis is a viral disease caused by contaminated water and infects the liver. Jaundice, loss of appetite, fatigue, discomfort and high fever are symptoms of hepatitis. If it persists for a long time it may result in death. According to WHO, diarrhea cases are about 4 billion and results in 2.2 million deaths.

According to UN-Water, t*he capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining 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.* [1]

Lawrence Smith, President of the population institute, asserts that majority of the planet is composed of water, 97 per cent of this water is constituted of saltwater; the freshwater used to sustain humans is only 3 per cent of the total amount of water on Earth. He believes that the competition for water in an overpopulated world would pose a major threat to human stability, even going so far as to postulate world wars being fought over the control of thinning ice sheets. Two billion people have supposedly gained access to a safe water source since 1990. They may have earlier lacked it.

Water use has grown at more than twice the rate of the population increase in the last century. Specifically, water withdrawals are predicted to increase by 50 per cent by 2025 in developing countries, and 18 per cent in developed countries. By 2025, 800 million people will be living in countries or regions with absolute water scarcity, and two-thirds of the world population could be under stress conditions.

According to Nature (2010), about 80 per cent of the world's population (5.6 billion in 2011) live in areas with threats to water security. Water security is a shared threat to human and nature and it is pandemic. The regions with intensive agriculture and dense populations, such as the United States and Europe have a high threat to water security.

The United Nations Security Council to include water issues on its agenda. There is rising international support for adopting “universal water security” as one of the Sustainable Development Goals — a set of mid-term global goals to succeed the UN’s Millennium Development Goals. It accepted by world leaders in 2000 for achievement by 2015.

[1] https://www.unwater.org/publications/water-security-infographic/ 26th June 2020

UN-Water, the United Nations' inter-agency coördination the mechanism for all water-related issues defined water security as the capacity of a population to safeguard sustainable access to adequate quantities of water and acceptable quality water for sustaining 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. Water fits within this broader definition of security — embracing personal, food, energy, political, health, economic, environmental and other concerns — and acts as a central link between them.

Access to safe water and sanitation is a fundamental human right. US Secretary of State Hillary Clinton and the Interaction Council, an association of 37 former heads of state and government co-chaired by the Rt. Hon. Jean Chrétien, former Prime Minister of Canada, and H.E. Dr. Franz Vranitzky, former Chancellor of Austria. According to Mr. Chrétien, nothing is more fundamental to life than water.

The post-2015 must join a goal and related targets for achieving water security, as this will address multiple priorities development areas under consideration: conflict and fragility; environmental sustainability; growth and employment; health, hunger, food and nutrition; inequities; energy and water. It is safe to state that investment in water security is a long-term pay-off for human development and economic growth.

UN-Water echoed its support for including water security on the UN Security Council agenda which are as follows:

- Recognition of the need to include water security in the formulation of the Sustainable Development Goals;
- A supportive policy environment including innovative financial mechanisms to achieve water security;
- Increases in capacity development on a wide range of needs, from human to financial, institutional, technological and service provisioning.

In 2011, the UN Security Council recognized the serious effects of climate change, with water being the medium through which climate the change will have the most effects.

In 2011, there was largely shortage of water and food shortages linked to drought in Africa, almost 185,000 Somalis migrated to neighbour countries. In Sudan, violence broke out in March 2012 in the Jamam refugee camp where large numbers of people faced serious water scarcity. In South Sudan, entire communities were forced to leave due to scarce water resources as a result of the conflict in 2012.

Disasters and conflicts can also affect the physical the infrastructure needed to access water, sanitation and hygiene services, treatment plants, drainage systems, dams, irrigation channels, etc., reducing levels of water security.

Water insecurity, therefore, leads to cascading political, social, economic and environmental consequences.

The key aspects of water security are as follows:

- Access to safe and sufficient drinking water at an affordable cost to meet basic needs, including sanitation and hygiene, safeguard health and levels of well-being;
- Protection of livelihoods, human rights, cultural and recreational values;
- Preservation and protection of ecosystems in water allocation and management systems in order to maintain their ability to deliver and sustain the functioning of essential ecosystem services;
- Water supplies for socio-economic development and activities (such as energy, transport, industry, tourism);
- Collection and treatment of used water to protect human life and the environment from pollution;
- Collaborative approaches to trans-boundary water resources management within and between countries to promote freshwater sustainability and cooperation;
- The ability to cope with uncertainties and risks of water-related hazards, such as floods, droughts and pollution, among others; and,
- Good governance and accountability, the due consideration of the interests of all stakeholders through appropriate and effective legal regimes; transparent, participatory and accountable institutions; properly planned, operated and maintained infrastructure; and capacity development.

The analytical brief chronicles several hopeful international developments in progress on achieving water security, such as the management of the Guaraní Aquifer, which extends over more than 1 million km2 and spans Brazil, Paraguay, Uruguay and Argentina. The population of 15 million today relies on the aquifer because surface water, though abundant, is often polluted. In 2010, Argentina, Brazil, Paraguay and Uruguay signed the Guaraní agreement, establishing a foundation for the aquifer's coordinated management in an effort to prevent conflicts. The brief details similar encouraging developments related to Europe's vital Rhine River, shared by nine countries and the Nile Basin, the main source of water in the north-eastern region of Africa and one of the world's most politically sensitive and vulnerable basins.

Water-related Conflict between countries:

In 1898, there was Military conflict between Britain and France, when a French expedition attempted control of the headwaters of the White Nile. Later the matter was settled through negotiation between them.

Kyrgyzstan and Uzbekistan lead to the deployment of 130,000 Uzbekistani troops on the Kyrgyz border to guard reservoirs straddling the two countries due to serious water tensions. Uzbekistan accuses Kyrgyzstan of releasing too much water from the Toktogul reservoir.

The Khumbuwan Liberation Front (KLF) blows up a 250-kilowatt hydroelectric powerhouse in Nepal's Bhojpur District, cutting off power to Bhojpur and surrounding areas. The government spend Rs. 10 million (US $120,000) to repair it. In 2002, Maoist rebels destroyed more than seven micro-hydro projects, a water-supply intake, and supply pipelines to Khalanga in western Nepal. In 1993, Kenya's Maasai warriors attacked immigrant Kikuyu people and killed 33 of them. After this incident, the Kikuyu population forced to live in refugee camps. In 2007 and 2008, the shortages of drinking water provoke demonstrations in the Nile Delta. The people called it a Revolution of the Thirsty. The protestors blocked the main coastal road after the regional water company diverted water from farming and fishing towns to affluent resort communities.

North Korea releases 40 million m^3 of water from the Hwanggag dam, causing a flash flood on the Imjin River without prior warning to his counterpart. The six fishermen died. South Korea fears that North Korea could use the water of the dam as a weapon during a war. Riots break out and five people died and fifteen were wounded.

South African troops move into Angola to occupy and defend the Ruacana hydropower complex as well as the Gové Dam on the Kunene River. The intension was to take possession as well as defend the water resources of south-western Africa and Namibia.

There was a territorial dispute between Namibia and Botswana over Sedudu Island or Kasikili Island in the Zambezi River or Chobe River. In 1999, the International Court of Justice gave his verdict in favour of Botswana.

There was tension between India and Pakistan over access and control of the Siachen Glacier in Kashmir.

Hydroelectric dams bombed as strategic targets during World War II. The strategically-important Dnieper hydropower plant in Ukraine is targeted by Soviet and German troops during World War II. On August 1941, the dam and power plant were destroyed by Soviet troops. World War II inflicted enormous harm to hydroelectricity systems in the Soviet Union. Over two-thirds of the hydroelectric power stations were lost.

In 1944, the US bombardment of the Japanese-occupied Island and targeted water supply points and people suffered from severe shortages of water.

Israel destroys the Arab diversion works on the Jordan River headwaters. During Arab-Israeli war, Israel occupies Golan Heights with Banias tributary to the Jordan and occupied West Bank.

Iraq threatens to bomb the al-Thawra (Tabaqah) dam in Syria and massed troops along the border, alleging that the dam had reduced the flow of Euphrates River water to Iraq.

During the Iran-Iraq War, Iran claims to have bombed a the hydroelectric facility in Kurdistan, thereby blocking out large portions of Iraq.

In the 1980s, during the conflicts between Namibia and Angola, water dams and the major Cunene-Cuvelai pipelines were targeted.

During the Gulf War, Iraq destroys Kuwait's desalination capacity during the retreat. During the Persian Gulf War, Allied Coalition forces damage Baghdad's water supply and sanitation system. In 1991, childhood death in Iraq increases by 47,000 and the country's infant mortality rate doubles to 92.7 per 1,000 live births.

Yemen's water availability is declining dramatically. The unequally distribution, corruption and nepotism are at the core of this imbalance. The water scarcity is playing a role in fuelling the political and security crisis in Yemen.

Water pumping plants and pipelines in the border town of Adi Quala were destroyed during the civil war between Eritrea and Ethiopia.

NATO targets utilities and shuts down water supplies in Belgrade. NATO bombs bridges on the Danube, disrupting navigation.

American forces bomb the hydroelectric facility at Kajaki Dam in Helmand province of Afghanistan, cutting off electricity for the city of Kandahar. The dam itself is not targeted.

China launched a political crackdown in Tibet. Some observers have noted the importance of Tibet for the water resources of China. Tibet is referred to in some circles as the 'world's water tower'; the Tibetan plateau is home to vast reserves of glaciated water, the sources of 10 of the largest rivers in Asia, including the Yellow, Yangtze, Mekong, Brahmaputra, Salween, Hindus and Sutlej among others. By some estimates, the Tibetan plateau is the source of freshwater for fully a quarter of the world's population.

In 2000, privatisation of the drinking water in Cochabamba incurred violent protests and escalated into the 'Water War of Cochabamba',[2] which killed at least nine people. The city's water was renationalised and access to water received new legal backing.

India constructed the new dams and it was seen by Pakistan as a threat to its water interests and its national security. So water scarcity, societal unrest will inevitably push states and other actors to act aggressively even violently to secure precious water resources. The brief calls for water security in the UN's post-2015. Sustainable Development Goals, including targets and indicators that reflect water's cross-cutting impacts on food, energy and other priority development areas.

According to UN-Water, a majority of climate change effects will be felt through the water cycle…. higher climatic and hydrological variability, with important consequences for societies. Changes in the hydrological cycle will threaten existing water infrastructure, making societies more vulnerable to extreme water-related events and resulting in increased insecurity.

The rainfall variability alone could push over 12 million people into absolute poverty and climate change could increase global malnutrition by up to 25 per cent by 2080.

There has been much conflict overuse of water from rivers such as the Tigris and Euphrates rivers. Another highly politicized example is Israel's control of water resources in the Levant region since its creation, where Israel securing its water resources was one of several drivers for the 1967 Six Day War.

Water security is sometimes sought by implementing water desalination, pipelines between sources and users, water licences with different security levels and war.

Researchers estimate that during 2010-2015, US $800 billion will be required to cover the annual global investment in water infrastructure. Good management of water resources can jointly manage biodiversity protection and human water security. Preserving flood plains rather than constructing flood-control reservoirs would provide a cost-effective way to control floods while protecting the biodiversity of wildlife that occupies such areas.

The Earth has a limited though the renewable supply of fresh water, stored in aquifers, surface waters and the atmosphere. Oceans are a good source of usable water, but the amount of energy needed to convert saline water to potable water and modern technologies, such as

[2] https://reliefweb.int/report/world/editor-s-pick-10-violent-water-conflicts#:~:text=Turkey%2C%20Syria%20and%20Iraq%3A%20conflict%20over%20the%20Euphrates%2DTigris&text=Since%20the%201960s%2C%20unilateral%20irrigation,strained%20relations%20in%20the%20basin, 26 June 2020.

the Seawater Greenhouse, use solar energy to desalinate seawater for agriculture and drinking uses in an extremely cost-effective manner.

According to Consultative Group on International Agricultural Research (CGIAR), the countries and regions suffering most water stress are North Africa, India, Central Asia, China, South Africa, Chile, Australia and the Middle East. Water scarcity is also increasing in South Asia. More than 50 countries on five continents are said to be at risk of conflict over water.

Turkey has one project called Anatolia on the Euphrates. It has a potentially serious impact on water supplies in Syria and Iraq.

Blue Peace is a method which seeks to transform trans-boundary water issues into instruments for coöperation. This unique approach to turn tensions around water into opportunities for socio-economic development. It was developed by Strategic Foresight Group in partnership with the Governments of Switzerland and Sweden. The Blue Peace is to engage political leaders, diplomats and populations in harnessing and managing collaborative solutions for sustainable water management.

As new technological innovations continue to reduce the capital cost of desalination, more countries are building desalination plants as a small element in addressing their water crises.

Israel desalinizes water for a cost of 53 cents per cubic meter, Singapore desalinizes water for 49 cents per cubic meter and treats sewage with reserve osmosis for industrial and potable use. China and India, the world's two most populous countries, are turning to desalination to provide a small part of their water needs. In 2007, Bermuda signed a contract to purchase a desalination plant. The largest desalination plant in the United States of America is the one at Tampa Bay, Florida, which began desalinizing 25 million gallons (95000 m^3) of water per day in December 2007. In the United States, the cost of desalination is $3.06 for 1,000 gallons or 81 cents per cubic meter. After being desalinized at Jubail, Saudi Arabia, water is pumped 200 miles (320 km) inland through a pipeline to the capital city of Riyadh. According to the Wall Street Journal states on Jan 2008, Worldwide, 13,080 desalination plants produce more than 12 billion gallons of water a day, according to the International Desalination Association. The world's largest desalination plant is the Jebel Ali Desalination Plant in the United Arab Emirates. It is a dual-purpose facility that uses multi-stage flash distillation and is capable of producing 300 million cubic meters of water per year. A typical aircraft carrier in the U.S. military uses nuclear power to desalinize 400,000 US gallons (1,500,000 L) of water per day. While desalinizing 1,000 US gallons (3,800 L) of water can cost as much as $3, the same amount of bottled water costs

$7,945. A novel approach to desalination is the Seawater Greenhouse which takes seawater and uses solar energy to desalinate it.

Last but not the least, water is life and it is important for the survival of all creatures in the earth. Without water, we cannot imagine life on earth. Water is very precious for all of us. The lack of potable water caused many diseases like respiratory disease, cancer, diarrheal disease, neurological disorder and cardiovascular diseases etc. Hepatitis is a viral disease caused by unhygienic water and infects the liver. Jaundice, loss of appetite, fatigue, discomfort and high fever are symptoms of hepatitis. The scarcities of potable water led to war among the nation earlier. Some war took place due to the water dispute. Kenya's Maasai warriors with Kikuyu people, Kyrgyzstan and Uzbekistan, South African with Angola, Namibia with Botswana, the USA with Japan during the war, Israel and Arab war, Iraq with Kuwait (Gulf) war, India and Pakistan over access of the Siachen Glacier in Kashmir etc.

In future, war may take place for water as well. So it is very important to conserve the water for the protection from war and survival of human beings in the earth. The sustainable development is possible only after the secure water in this earth. We can save our future to protect the water. The UN- water is also playing a very important role to raise the issue related to water crisis and conservation of water in the globe. The potable water should be accessed to all citizens of a country. It will protect human life from dangerous diseases. The people' participation and awareness about pure water consumption can play a very important role at the grass-root level. They can also aware the people about the various diseases due to consumption of polluted water and cause of death. The pure drinking water led to protection from dangerous diseases which will help them for a better and healthy life further. The UN- water can play an important role to stop the water conflict around the world.

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