

Forum: Environmental Commission

Issue: The issue of the depletion of global water resources

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Introduction

Water is an essential resource of living and it is an important component to fulfil basic human rights to people. Water is an essential source of improvement: particularly, it improves better health care, maternal health, children's survival and children's education especially for girls. Adequate water resource is a ticket for a better society since it is a key component to fight against poverty and to strive to equality. Therefore, water becomes an important resource with regards to respecting *human dignity*. However, the basic rights of living are becoming harder to attain for people caused by the lack of access to clean water. Additionally, there are numerous conflicts and issues concerning the management of freshwater, on which it severely impacts the world in social, economical and environmental aspects.

Insufficient water supply causes serious issues primarily to people. Inadequate water supply will lead problems to sanitation and hygiene, that would result people suffering from water-related diseases. This issue goes directly to children, where children are excessively vulnerable to diseases. The United Nations Children's Fund (UNICEF) claims that due to hostile environment with poor and insufficient water supply, 800 children would lead to death every day. Such problems are preventable only if there is clean and adequate amount of water to people and to children. Furthermore, if there were to be sufficient water supplies to children, children would further have access to basic living components such as Education, Health and Food.

The amount of clean water present on Earth is actually sufficient to all people; the problem comes from mismanagement and corruption, where governments and organisations shall promptly mediate the problem and provide clean water to everyone. However, regions with excessive water depletion are finding difficulties of regulating and facilitating adequate and safe water supply because the problem of water scarcity is already irrevocable to solve.

Definition of Key Terms

Water Scarcity

Water scarcity happens when certain regions are affected by lack of sufficient supply of clean water. It may be caused by the lack of sufficient water or from unsafe water supply. Though water is known to be a renewable source accessible to all, problems arise in variety of ways.

Groundwater

Groundwater resource is the main supply of water to people. It is used cheaper than the surface water and it takes up almost twenty percent of all freshwater supply on Earth. Groundwater may be over-pumped or may be polluted from the wastes from land, while it is a major source of water to sustain rivers and lakes.

Water Stress

Countries are likely to have water stress when the annual water supplies are lower than 1000 cubic metres per person. People with inadequate water supply are likely to live in a 'water-stressed' region.

Agriculture

70 percent of the uses of freshwater goes to agriculture – to be exact, irrigation takes up 70 percent of the uses. The rapid increase of the world population for the past 50 years have tripled the uses of water and the extensive use of water in agriculture would further rise.

Water, Sanitation and Hygiene (WASH)

Water extremely impacts health to individuals. Public health issues such as Sanitation and Hygiene is abbreviated by these succinct words for better approach to assessing safe water, basic sanitation and hygiene environment to countries. WASH is set as a fundamental goal in the Millennium Development Goals (MDGs) where it is determined as a key issue that shall be held in any cases especially in the developing countries.

Wastewater, Freshwater

2.5 percent of the water in the Earth's atmosphere is freshwater. Humans may consume only a third of it because two-thirds of freshwater are glaciers or polar-ice caps. Most of the sources of freshwater is from precipitation. Problems occur when the rain is acidic because acid rain results in polluting lakes and rivers after all. Pollutants and chemical disposals are poured down to the lake and rivers where freshwater becomes wastewater.

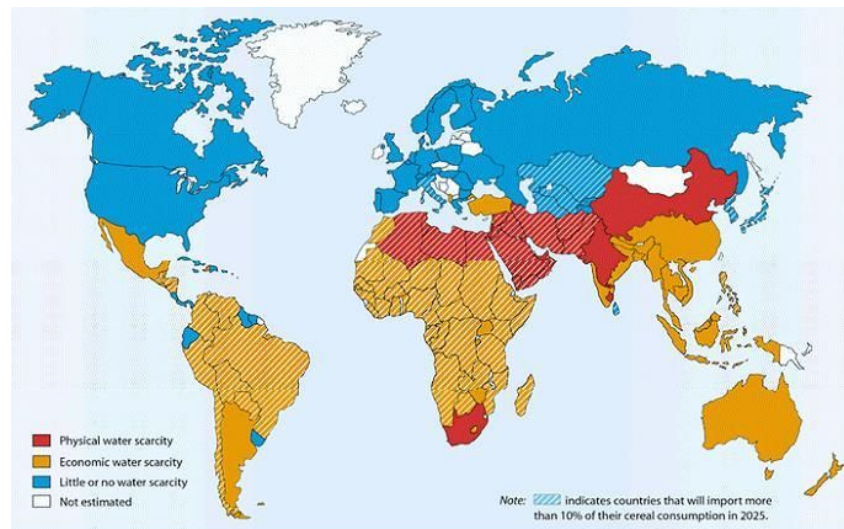
Climate Change

Climate change defines 'a change in weather patterns' where it is the main cause of the decreasing amount of freshwater available. There are many ways where climate change impacts the availability of water.

Physical and Economical causes of Water Depletion

Generally, there are two causes of Water Depletion: Physical and Economical. As mentioned, Water Scarcity may be caused by inadequate amount of water (physical) or the lack of access to clean and safe water (economical). There are certain regions that are experiencing physical water scarcity and other regions facing economic water scarcity as shown:

Figure 1:



Gender

The Food and Agriculture Organisation (FAO) and UN-Water highly recognize the deep relation of water scarcity and genders. It is a well-known fact that in some regions, especially in economically water-scarce regions, millions of women walk miles away from homes spending hours to find clean water.

Water Poverty Index (WPI)

This index is created for a measurement to scale a certain country's deprivation of water. There are five terminologies to assess: Resources, Access, Capacity, Uses and Environment. It determines mainly about the accessibility of water per person.

Key Issues

Conflicts over Water

Consumption of water resources have rapidly risen as global population rises, while the resources are becoming scarce and it triggers more conflicts and issues.

There were severe conflicts over water for long history over thousands of years. Back in the ancient history, people would be disciplined from their wrongdoings by the suspension of water supply. Nowadays, water would be used, or be fought upon between countries. The Water Conflict Chronology

shows, that there are six types of conflict they have categorised:

- Control of water resources - when water becomes the cause of the conflict
- Military tool - when water is used as a weapon
- Political tool - when water is used for political purposes
- Terrorism - when water becomes the target of the dispute
- Development disputes - when water becomes the major source of conflict caused by the social development.

The types and causes of water conflict gradually changed to a more serious one: there are several notable conflicts among the Middle-East, Africa and Asia. For instance, the political conflicts in the Jordan River basin is shared by different territories (Palestine, Lebanon, Israel, Syria, etc.) and the riparian rights is strongly dealt upon among these countries for more access to water . Another remarkable issue may be about the domination of water resources from Egypt in the Nile River, where eleven different territories share the same source of water while several agreements have been made by this circumstance.

Mismanagement of water resources

Technological advances during the decades made up many economic opportunities. Urbanisation is still rapidly ongoing, and the capability an environment that may accommodate living species have improved. Regions especially in Africa and Asia have expanded urban areas, sustaining more than ten million populations in such areas. Additionally, especially in developing countries - the more they develop, the more there will be such areas to prosper.

However, the management to treat wastewaters made from disposals is still poor, remaining all pollutants in water. This enlarges the problems of water scarcity in developing countries where freshwater gets polluted, groundwater resources get overexploited and management of water systems would further get disrupted. The problem leads not only to the urban areas itself but also the rural areas where agriculture takes place. Urban runoff such as urban flooding and pollution affects wildlife and waterways since it interrupts the flow of precipitation and rain storm events.

Since wastewater treatments in developing countries are excessively poor, this affects directly to crops where farmers and consumers are likely to get exposed to diseases. Conserving water and treating wastewater by managing chemical and waste disposal is becoming one of the most decisive measures that countries may prevent in order to maintain water in its fresh state.

Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs)

The MDG was made solely for improving billions of lives in poor condition. The Millennium Summit (2000) set eight goals where the seventh goal was to: 'enforce and advance the Environmental Sustainability in the world' in deep relation to water security. The goals set from MDGs were accomplished earlier in the year 2012. The results show that:

- 91 percent of the global population managed to have access to an improved facility of water source, yet those may not guarantee that they are hygiene
- Approximately 3 billions of people have managed to gain access to an improved drinking water source since 1990
- 42 percent of the population in rural countries have managed to have access to an improved system of water supply

Most of the population were able to have access to an improved water system such as basic sanitation and clean water. Followed by Sustainable Development Goals, it continues from the problems yet to be solved addressed by the MDG; the population up to 600 million people are still not having access to freshwater. The target mainly focused on the economical and infrastructural problems:

- Expanding international cooperation to developing countries by supporting water-and-sanitation activities such as water harvesting, desalination, wastewater management, recycling and reuse technologies
- Reducing pollution and reducing wastewater
- Encouraging the local communities to improve water management
- Restoring ecosystems such as mountains, forests, rivers, aquifers and lakes.

Pollution and the Sources of Water

Pollution is defined as: "...introduced by men... deleterious effects to harm living resources..." from the 1969 UN report. Water Pollution occurs mostly on substances we make that would cause problems to lives and people. An ecosystem would get ruined from a continuous exacerbation of water quality.

Sources of water get polluted by each distinct ways. Surface water is the most common way of water pollution, where rivers, lakes and oceans get contaminated by the waste disposals. Surface water gets polluted directly as soon as pollutants are poured down. Groundwater is different, yet it also gets affected very easily from chemicals such as pesticides and weed killers. Groundwater may be more important than Surface Water to preserve, because it supplies most of the sources of drinking water and feed rivers.

There are many different causes of water pollution such as atmospheric deposition, sewage disposals, waste disposals, chemical wastes, plastics and etc.

Industrial Revolution and Urbanisation lead many resources of ecosystems to change and deteriorate. Environmental movements began during the 1960s and it made many historical events such as Earth day, while resources such as coal emerged to be the great use during industrialisation. New industries and technological advances expanded life expectancy, while waste byproducts were dumped in water. Problems with sanitation uprisings and wildlife is gradually getting threatened.

Major parties involved and their views

World Trade Organisation

The WTO mediate the disputes and contention held between countries by regulating measures to control the flow of water resources. Since agricultural trades mostly depend on water, international trade deeply relate with the management of domestic water supply. The WTO is putting its effort to arbitrate the international water conflicts for a better international trade.

Developing countries

1.1 billion people in developing countries have inadequate access to clean water. Developing countries face challenges on enforcing regulations to prevent contamination on water resources and to enhance the treatment of wastewater.

China and India

These two countries are both in severe Physical Water Scarcity, where urbanisation and pollution becomes the main cause of such. 60 percent of water resources of rivers in China is already dry, and groundwaters are overexploited. Drinking water supply is deteriorated, mostly due to environmental causes. They both lack adequate water supply and also facing a severe water insecurity.

Sub Saharan Africa

Among all the regions in Africa, the Sub-Saharan regions in Africa has the most water-stressed countries. The problems of water scarcity applies on both rural and urban areas. Since Agriculture takes up almost 80 percent of all water activities in the region, the loss of water resources directly influences the households with food insecurity.

Organisation for Economic Co-operation and Development (OECD)

The memberships of this Organisation mostly comprise of nations with economic stability. The OECD regularly hold meetings and programmes to research and manage water resources in the world. They are responsible for funding and providing treatments to regions in need of help, particularly for the

developing countries.

UN Bodies and other non-profit organisations

Lists of specialised agency in relation to water security are: United Nations Educational, Scientific and Cultural Organisation (UNESCO), United Nations Development Programme (UNDP), UN Water, UN HABITAT, United Nations Environment Programme (UNEP), etc.. They are important institutions for researching, fostering and encouraging water treatments and awareness.

Middle-East

Middle-East regions are facing serious water crisis. Though the continent itself is enriched with oil industry with much wealth, the climate and environment is deprived with water resources. Increasing desertification deteriorates the land available of food products; it severely impacts regions such as Syria, Iraq and Iran. Two-thirds of Arab countries have less than 1000 cubic metres of water available per person, which shows a 'water-stressed' scale.

Middle East and North African regions (MENA) has its water conflict in 3 main river basins: Jordan. Tigris-Euphrates and Nile River. For instance, Turkey has used its position as it is in the upstream state of the Tigris-Euphrates basin, as to enhance its regional interests. There were certain issues due to territorial conflicts: of Israel overtaking the West Bank and Israel overuses the water supplies in the Jordan River basin on which Palestine was only accessible to 17 percent of aquifer water.

The Islamic State (IS) has also used water as a weapon, where they captured the major dams in Tigris-Euphrates basin in order to form a caliphate among Syria and Iraq. IS captured the major sources of electricity and water by capturing the old Soviet Tabqa Dam, making it manageable for them to threaten the region and take control of water.

Timeline of Relevant Resolutions, Treaties and Events

Several World Summits – where those are considered to be one of the biggest summits ever held – are mostly held for the sake of enhancing environments and making a more sustainable environment in the world.

Date	Description of event
1972	Clean Water Act is the major environmental law of the U.S law for recognising the concerns of controlling water pollution.

- 1974 **First World Food Summit** Took place, mainly to discuss about the vulnerability of people in malnutrition and the rights to access food.
- 1977 **The United Nations Water Conference**
- 1981 - 1990 **International Decade for Clean Drinking Water: 35/18 Proclamation of the International Drinking Water Supply and Sanitation Decade**
- 1982 **UN Convention on the Law of Seas** was signed by 120 different nations in order to govern the ocean in order to protect maritime species.
- 1992 **Rio Earth Summit** dealt upon four major environmental issues and one of them was about the limited supply of water.
- 1992 **1992 International Conference on Water and the Environment**
- 2002 **2002 World Summit on Sustainable Development**
- 2003 **UN Water has been established.**
WHO assembles a group of experts to examine the nutritional aspects of water.
- 2010 **World Health Organisation (WHO) Consensus on the Meeting of Drinking-Waters**
- 2012 **Washington World Leaders Summit on Water Sanitation**
- 2012 **Conference on Water Scarcity in Africa**
- 2015 **General Assembly Resolution on the Human Rights of Water (70/169)**
- 2015 **United Nations General Assembly** has agreed on the

Sustainable Development Goals on its 70th Session

Suggested Solutions

Deteriorated water resources shall be treated, water conflicts shall be soothed and water related ecosystems shall stay in its healthy state. In order to do so, further researches on wastewater treatments shall be taken place. Further methods of desalination shall be investigated, making an outcome of more accessible drinking water to all living species, while it produces the minimum pollutant emitted as possible. There shall be further investigations of aquifers and groundwater since it also provides massive amount of freshwater. Human wastes are relatively the smallest cause of water depletion. However, people shall be aware of reusing and recycling and minimise waste products, so promoting awareness campaign for water conservation would be in need. The accessibility of freshwater in rural areas and urban areas shall be equal by decreasing the urban runoff pollutants made by urban areas. Legislations and agreements shall be made strictly regulated to countries surrounding ecosystems for equal amount of water accessible, at the same time preventing further exploitation on water resources.

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