



NUMUN

Northwestern University Model United Nations

DISEC

Topic B: Water Scarcity

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Introduction:

Water is the most essential natural resource for people in the world. Such a simple compound is fundamental to all vital processes for all organisms on our planet that are carbon based. Although over 70% of Earth is covered in water, some say that over one billion people do not have access to a constant stream of clean water. Furthermore, millions of people die each year due to drinking unsafe water.

The issue of water scarcity is a growing concern all over the world. As the global economy continues to grow, the demand for usable water is increasing dramatically. In fact, some say that the most challenging task of our time is to ensure that future generations will have adequate food and water and will be able to maintain those resources.

While some may say that water is all around us, the seeming abundant availability of water is misleading. Freshwater only accounts for about 2.5% of the total water present on Earth. Furthermore, most freshwater is in a non-usable form, such as ice and snow, or groundwater, which is not a renewable resource. Only 0.3% of freshwater is renewable.

The greatest challenge of our time will be to bring the necessary supplies of water to not only the rural communities that do not yet have access to safe drinking water, but also to the quickly growing urban communities. In the last twenty years, much has been done to provide proper irrigation to those communities that lack it. India has spent billions of dollars to improve coverage across the country. Now, over 86% of the population has reliable access to water supply.

Although we have seen great improvement in India, this is a global issue that endangers much of the world. Our current levels of global economic growth cannot be maintained without addressing and providing solutions to this issue. Therefore, the United Nations must address this issue and make achievable goals that continue to preserve this vital resource for years to come.



Background:

The United Nations defines water scarcity as “the point at which the aggregate impact of all users impinges on the supply or quality of water under prevailing institutional arrangements to the extent that the demand by all sectors, including the environment, cannot be satisfied fully.” Water is essential to life, yet only 1% of the Earth’s water is drinkable. As the world’s population increases, the need for water in agriculture, industry, and the home increases as well. Over the past 50 years, the use of water has doubled from what it was previously and so water scarcity has become an extremely prevalent topic in international discussion.

Water scarcity is not an issue that is new to the international arena. The fall of great empires such as Rome, Maya, and Babylon can all be attributed to issues of water scarcity. Most major civilizations ended up having problems with overpopulation and subsequently water scarcity due to extensive irrigation and excessive need of water in agriculture. The pertinence of the issue, however, has greatly increased in the last decade or so. In the 1990s, people started realizing that water scarcity could potentially be a problem in the future as many countries in Africa and in Asia started experiencing water shortages. Water scarcity has once again become an issue in the global arena.

Water scarcity is sometimes termed as a problem for “tomorrow” because not every country in the world is experiencing extreme shortage of water at this point in time. The World Bank reports that 80 countries around the world are experiencing water shortages that are negatively affecting health and the economy. While this number itself is staggering, it is expected that two thirds of the world’s population will be facing water shortages by 2025. As these numbers increase, international security becomes severely threatened. The Middle East is already plagued with the burden of water scarcity. So-called “water wars” have been brewing between Turkey and Syria and Israel and the Palestinian Authority. There have been conflicts between India and Pakistan over the



Indus and between India and Bangladesh over the Ganges. Of course water scarcity is also an internal issue. Politics largely play into this as many countries have experienced an attempt of privatization of water. Widespread dissatisfaction in Bolivia led to Water Wars both in Bolivia and in greater Latin America. Activists in Ghana, Indonesia, the Philippines, and South Africa all acted out against firms who sought to privatize water.

The International community has taken many initiatives to combat this crisis. Governments of countries in Africa and Asia have ambitiously tried to change and enact laws that preserve water and help distribute clean and healthy water to the population. The United Nations itself has done much to cope with this situation by creating programs such as UN-Water, which helps coordinate water conservation efforts and sustainable development along with other UN agencies and outside organizations and governments. The UN Climate Change Conference in 2009 also addressed many of these vital water issues. However, though initiatives have been taken to combat the issue of water scarcity, there is much more that is yet to be done domestically and internationally to fully overcome this obstacle.



Current Status:

The reality of the situation is that the planet has a finite amount of fresh water available for humans and other organisms to consume in order to survive. These sources are come largely from aquifers, which are underground layers of water bearing permeable rock or other materials that can be successfully penetrated to extract groundwater. Other sources of water include surface water and the atmosphere. Surface water generally refers to that water which can be collected from rivers, ponds and lakes. For example, the Himalayan glacier itself is the source of several of Asia's major rivers, including the Ganges, Indus, Brahmaputra, Yangzi, Mekong, Salween and Yellow Rivers. The Himalayan glacier itself currently serves more than 2.4 billion people and this source of water is predicted to disappear by 2350ⁱ. As this source of water gradually diminishes, these areas in China, South Asia and Southeast Asia are expected to experience heavy droughts that would not only affect human drinking water consumption for the worse, but also industry and agriculture. With respect to agriculture, it could lead to famine as water scarcity leads to a ruined crops.

To put things into perspective, the Ganges river supplies water to more than 500 million people, almost half of India's population, for drinking and farming. Should the river dry up, these 500 million plus whoever else across the country depends on the agriculture of the Ganges river basin would be adversely affected. Even the United States, which heavily depends on its groundwater reserves, will face depleted aquifers within the next 30 years.

China also faces a similar problem. It currently diverts about 30 billion cubic meters of water into its northeast region every year due to that area's flat and dry terrain and extreme temperatures.ⁱⁱ However, this is the area of China that produces almost forty percent of the national crop in rice, which is water intensive, corn, soybean and beet. The reason for this extensive water pumping is was to raise the water table in the northeast of China from 15 feet in 1959 to 145 feet



today. Furthermore, the rate at which the table is currently falling is an alarming five feet per year in spite of continued irrigation. In an effort to counter this massive depletion of groundwater in the Yellow River basin, which is naturally fed by river in the northeast in China, the government hopes to initiate a south-north water pumping plan from the Yangzi river, which would supply the northeast with an additional 12 trillion gallons of water.

Additionally, India accuses the Chinese government's hopes to divert water from the Brahmaputra River in Tibet, although the Chinese deny this claim and say it is merely in a conceptual stage.ⁱⁱⁱ Regardless, the mere prospect of this plan has sent India and Bangladesh as well as other nations into a state of alarm at the prospect of losing their water supply from the shared rivers. The scarcity of water in this region of the world has already put a great deal of stress on the relations between these countries, two of which are the most populous in the world.

One might ask whether desalination might be an option in the race to provide the world with more freshwater. With traditional sources of water facing greater and greater levels of depletion, some may think to look at the world's oceans as the solution. However, the energy and cost required for desalination is far too high. The Middle East, which has abundant energy reserves, have pursued water desalination extensively as water resources are quite scarce in this region. The largest desalination plant is currently the Jebel Ali desalination plant located in the United Arab Emirates. It is capable of producing 300 million cubic meters of water per year while the largest one in the US is located in Tampa Bay, Florida and only produces ninety-five thousand cubic meters of water per year. Currently, the energy required to desalinate water is far too high and as a result, is not proving to be a viable option for many countries battling water scarcity outside the Middle East.

Another problem associated with the desalination of water is the environmental impact it will have. The product of ocean water desalination is fresh water and brine. Brine is the



concentrate of salt and other minerals that are removed from the water in order to produce the desired freshwater. Sometimes, this brine can be used to make table salt, however the disposal of the remaining product is particularly important in order to avoid harming the surrounding ecosystem. Desalination plants cannot simply deposit the produced brine back into the ocean water, as that would increase the salinity of the existing ocean water. This would be especially dangerous if it was done on a large scale across the globe and would negatively affect important marine life, such as plankton, fish eggs and larvae, filter-feeding and other types of organisms. Although careful reintroduction into the environment is possible, this would be difficult to achieve, especially if the amount of brine produced exceeds the amount of water being returned to the ocean, thus creating a buildup of unusable brine.

Not only would the world's people at large be affected by this problem, but this could specifically affect the world's poor, who may not be able to afford the inevitable rise in cost of water. Furthermore, with a greater scarcity in water, the world could face recurrent episodes of drought, famine and disease, which could give rise to major 'water wars' or could lead to the toppling of otherwise stable governments. In this already present and rapidly growing problem, no one can benefit and no one can escape the potentially catastrophic consequences of a world with shrinking supplies of water.

Thus far, the United Nations has established UN-Water, which is meant to support countries in all water related efforts. This also includes coordination among various UN agencies regarding all issues of the use of freshwater and water sanitation, and covers issues such as water resource allocation and water scarcity. Some of the programs that UN-Water has come up with are the World Water Assessment Programme that gathers and synthesizes data from UN-Water members, stakeholders and NGOs to examine the nature of water crises around the world and



countries' ability to address them.^{iv} Additional programs include, the UN-Water Decade Programme on Capacity Development and the UN-WDP on Advocacy and Communication, which works to show the benefits of good water management and implementation of effective water policies.

Bloc Positions:

There are a few viewpoints on how to address the issue of water scarcity. In the Asia Bloc, countries generally have been diverting water from various other groundwater resources, and now nations such as India and China have been increasingly looking to desalination as a possible factor in aiding water scarcity problems. Pakistan in 2007 announced its plans to use desalination and Singapore already implements it in its distribution of water to its citizens. The Middle East, which is abundant in energy reserves and lacking in water resources is another bloc that can discuss more efficient and cost effective ways of desalinating water not only for people in the region but also as a way of aiding other countries in this endeavor. In Europe, a great deal of wetlands have been lost to water consumption and industrial development. As a result, Europe faces a water crisis, although perhaps on a smaller scale. Africa faces massive deforestation and pollution and as a result must not only deal with heavily silted rivers that are no longer useable as freshwater sources, but also must deal with the resulting loss in biodiversity. Additionally African nations must be able to effectively address the issues arising with water resource sharing. Similarly, the North and South American countries also form their own blocs, having to address issues of glacial melting, groundwater depletion and water resource sharing.



Questions to Consider:

- What are the ways to combat water scarcity?
- Is global warming, if an actual phenomenon, responsible for some of the world's water scarcity?
- If so, what can be done to prevent further loss of water resources?
- How can increased cooperation between countries aid in the amelioration of water sharing and scarcity issues?
- Should there be a program specifically created to address this very issue?
- Is there anything that the UN can do, aside from establishing a program, to help solve this problem before it gets out of hand?

Recommended Sources:

- www.un.org
- www.unwater.org
- www.bbc.com
- www.who.int/en
- www.cnn.com



Bibliography:

ⁱ Vanishing Himalayan Glaciers Threaten a Billion

ⁱⁱ http://www.upiasia.com/Society_Culture/2008/10/02/depleting_groundwater_a_serious_problem/7656/

ⁱⁱⁱ http://www.dnaindia.com/world/report_china-plan-to-divert-brahmaputra-may-spell-doom-for-bangladesh_1095506

^{iv} <http://www.unwater.org/programmes.html>

