Research Report

Leiden Model United Nations 2015
~ fresh ideas, new solutions ~

Forum: *Special Conference on Water*
Issue: *Sustainable use of water for agricultural purposes*

Position: *Chair*

Introduction

The Universal Declaration of Human Rights (1948) enforced the right of everyone to consume nutritious and adequate food. However, access to proper food depends heavily on access to natural resources. Agriculture is the biggest user of water on the globe. Thus, the quality of various production processes in the agricultural field is in the hands of water.

Taking that into consideration, it cannot be denied that sustainable use of water is key to keep the human species well fed. Crops and livestock need water to grow. Unfortunately, the growing quantities of water required for irrigation may lead to a scarcity of water available for our global future needs.

To prevent enrolling in this trap of scarcity, drastic changes in policy and management should be enforced. Every part of the planet should adjust and cooperate: the entire agricultural production chain is needed to join the task of ensuring best use of available water resources in meeting growing demands for food and other agricultural products.

Freshwater is one of the world's most precious natural recourses. Agriculture-based water withdrawals return very poorly back to sources. If we continue to take more than we give back, water stores will be threatened.

Definition of Key Terms

Sustainable development
Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." It involves careful usage of the Earth's resources and prevention of exploitation.

Water management
Water management is the activity of planning, developing, distributing and optimally using water resources. For this, water policies and regulations are

created and followed. Water management includes management of water treatment of drinking water, industrial water, sewage or wastewater; management of water resources; and management of irrigation.

Hydrology
Hydrology is the mobility of water. It includes water flowing, leaching, evaporating and having the opportunity to be re-used. Agriculture contributes hugely to the hydrological cycle through proper water management.

Sources
Sources refer to agricultural water sources. The regions where competition for scarce water resources is most intense, sources are sought. Sources include piped supply networks (depending on precipitation) and 'stored' sources, which mainly consist of surface water (lakes and rivers) and groundwater (shallow/deep aquifers). Sources ensure re-use and sustainable use of water.

General Overview

The link between water and food may seem obvious, but not many people realise that agriculture accounts for 70% of all water withdrawn by the agricultural, municipal and industrial sectors. When investigating the possibility of future water scarcity, large areas of absolute water scarcity are not included in the world picture. These areas mainly accommodate billions of poor and disadvantaged people. It is therefore very important that countries do not only try to save themselves in this water shortage, but also help those less capable in financial, economic, and political ways.

At the same time, the developed countries also risk shortages of water in the future. Economic growth and individual wealth are shifting diets from mainly starch-based to meat and dairy. Meat and dairy products require more water, impacting water consumption greatly.

When combining the developing and developed countries in this issue, a much bigger concern can be established: the world population is predicted to have grown with more than 2 billion (6.9 to 9.1 billion) by 2050. Consequently, the Food and Agriculture Organization has predicted food demand to be increased by 60% in 2050.

Having summed up all the concerns with growing demand of food and thus water, we come to the greatest concern of them all: human behaviour. The way water is used in agriculture causes huge wastes of water. As products move along extensive value chains and pass through many hands, food can be wasted

at every step along the value chain. In addition, a more direct cause of water waste is, of course, irresponsible use of water: carelessly spraying water around is an under-acknowledged, but huge, problem. Leaky irrigation systems, wasteful field application methods, and cultivation of thirsty crops not suited to the environment are direct causes of unsustainable human behaviour with water. The problem is made worse by misdirected subsidies, low public and political awareness of the crisis, and weak environmental legislation.

Though the problems are endless, naming the solution seems easy. Maximising the 'crop per drop' will solve the issue in no time. For this, a lot of research and innovation has to be carried out and new water management plans need to be established.

Major Parties Involved

UN-Water

UN-Water is the United Nations inter-agency coordination mechanism for all freshwater and sanitation related matters. Since 2003, it promotes coherence in, and coordination of, UN system actions aimed at implementation of the agenda defined by the Millennium Declaration and the World Summit on Sustainable Development as it relates to its scope of work. The scope of UN-Water's work encompasses all aspects of freshwater, including surface and groundwater resources and the interface between fresh and sea water. UN-Water launched the two initiatives UNW-DPC and UNW-DPAC in 2007.

Farming First

Farming First is a coalition of multi-stakeholder organisations, aiming to improve farmers' livelihoods and agriculture's contribution to global issues such as food security, climate change, and biodiversity. They do this by articulating, endorsing and promoting practical, actionable programmes and activities to further sustainable agricultural development worldwide. The coalition represents the world's farmers, scientists, engineers, industry and agricultural development organisations. To enable all of this, Farming First created a sustainable agriculture and water program.

World Wildlife Fund (WWF)

World Wildlife Fund was created to stop the degradation of the planet's natural environment and to ensure harmony between human and nature. In order to achieve this mission, it focuses on the areas footprint (negative human activity) and biodiversity. The WWF is one of the most famous and successful organisations fighting for the planet's well-being, including its aim for

conserving water and ensuring water sustainability.

Timeline of Events

1990	The creation of the World Health Organisation/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation. It provides information on coverage of sanitation and water supply. The data from the JMP report were announced as 'a baseline for the Water for Life Decade'.
2005 - 2015	International Decade for Action 'Water for Life' by the UN. The challenge of the Decade is to focus attention on action-oriented activities and policies that ensure the long-term sustainable management of water resources, in terms of both quantity and quality, and include measures to improve sanitation.
August, 2007	Opening of the UN-Water Decade Programme on Capacity Development (UNW-DPC) in Bonn, Germany. The UNW-DPC strengthens the coherence and effectiveness of capacity development activities in the framework of the Decade.
October, 2007	Opening of the United Nations Office to support the International Decade for Action "Water for Life" 2005-2015/UN-Water Decade Programme on Advocacy and Communication (UNW-DPAC) in Zaragoza, Spain. It is led by the United Nations Department of Economic and Social Affairs (UNDESA), UNO-IDfA/UNW-DPC and facilitates information, implements communication activities and raises awareness in the framework of the Decade.
March 22, 2010	World Water Day 2010. A high-level meeting in New York, where a SG report (A/65/297) on the progress of the decade was presented. This report is a very compact summary of the activities that UN-water members and UN-water have implemented.
June 21, 2011	Launch of UN Campaign 'Sustainable sanitation: the five-year drive to 2015'.

Previous Attempts to solve the issue

Concerning the specific issue of sustainable use of water, The UN General Assembly tried to focus on coping with water scarcity and pollution, integrated water resources management, transboundary water issues, and disaster risk reduction in the International Decade of Action (2005-2015). With this, they created innovative ideas on the matter of water management, resource management, and agriculture management.

Farming First proposed six core tasks for sustainable crop and agricultural development. Those six were: safeguarding natural resources, sharing knowledge, building local access and capacity, protecting harvests, enabling access to markets, and prioritising research imperatives.

On the grounds of research and innovation, new application technologies were established worldwide. These were created to minimise water volumes required to spray crop protection products, while maintaining their efficiency. This was all to preserve water resources for other, more necessary, uses. Through biotechnology, plants were also genetically altered to develop drought resistant traits.

Possible Solutions

Improving land management systems is one of the most crucial tasks to increase water use efficiency. This can be done by mostly research and development, but requires communication and cooperation from all parties involved. By linking people and conservation, business and industry can be made more sustainable.

Good agricultural practices need to be promoted in order to protect water quality and usage. By not only adjusting the water management of multinationals and all those in charge, focus on the farmers is needed as well: demonstrations to farmers, and engaging them in the process of improving sustainability, are crucial. Spraying of crop protection products and releasing fertilizers both need to be controlled to match the crop's needs. This will improve the efficiency of nutrients uptake of the plants, which will in turn improve the plants' drought tolerance and growth. Most importantly, this will also reduce leaching significantly. This measure is especially useful there where farmers lack high-tech equipment.

Appendix/Appendices

http://www.un.org/waterforlifedecade/food_security.shtml
http://www.unwater.org/topics/water-and-food/en/
https://croplife.org/wp-content/uploads/2014/05/Water-Matters-for-Sustainable-Agriculture.pdf
http://www.un.org/waterforlifedecade/water_and_sustainable_development.shtml
http://www.unesco-ihe.org/sites/default/files/wwdr_2015.pdf
http://wwf.panda.org/what_we_do/footprint/agriculture/impacts/water_use/
http://www.farmingfirst.org/portal/agriculture/
http://www.un.org/waterforlifedecade/un_progress.shtml
http://www.unwater.org/publications/publications-detail/es/c/206582/