



ICID Young Professionals e-Forum (IYPeF)

<https://www.linkedin.com/groups/6990321>

Non-conventional water use/re-use in irrigation

Background Note for Discussion

15-31 January 2019

Introduction

Water, as the main input for food production, has played the most significant role in population growth and societal evolution over much of the recorded human history. Numerous civilizations flourished and also became extinct because of the way they managed their agricultural water. Water is closely linked to a number of key global challenges. Its role in eradicating hunger, achieving food security, improving nutrition and promoting sustainable agriculture is critical (ICID 2017). In many water scarce areas, current per capita water consumption is unsustainable. Globally, water is sufficient to produce food for a growing and wealthier population, but a business as usual approach in water management practices will lead to acute water-related crises in many parts of the world (IAASTD 2017).

Agriculture is by far the largest consumer of the Earth's available freshwater: 70% of withdrawals from watercourses and groundwater are for agricultural usage, three times more than 50 years ago. By 2050, the global water demand of agriculture is estimated to increase by a further 19% due to expanding irrigational area to feed a growing population. Approximately 40% of the world's food is currently cultivated in artificially irrigated areas, especially in densely populated regions.

In regions with high water stress, use of brackish and saline water and the recycling of wastewater is sometimes the only option available to address the growing water crisis. Drainage water, treated wastewater, brackish and desalinated water can be used in agriculture, especially in the arid and semi-arid zones and in rapidly growing peri-urban areas. Cities' wastewater are in fact a precious source of water and nutrients for agriculture if properly managed to minimize environmental and health risks. It is estimated that worldwide, about 20 million hectares are irrigated with partially treated/untreated wastewater. These waters are called poor, low or marginal quality water.

With the increasing demand to achieve food security accompanied with the increasing population in most regions of the world, constrained by the amount of freshwater on the planet; the use of non-conventional water for irrigation is non-replaceable. Using non-conventional water in irrigation has its pros and cons, in terms of impacts on crops, soil and shallow groundwater.

This discussion aims to bring together young professionals with expertise in the field of irrigation and drainage to explore the non-conventional water use/re-use in irrigation.



Taking into consideration the challenges, opportunities and extensive research undertaken in this area, participants are invited to discuss the role of non-conventional water use/re-use in irrigation for sustainable agriculture, challenges and potential solutions in achieving food security.

Objectives

This discussion on the topic “*Non-Conventional water use/re-use in irrigation*” has the following objectives:

1. Get an insight into the non-conventional water types, its use and challenges in irrigated agriculture;
2. Discuss the need for putting in place policies, schemes and measures that would help in promoting sustainable management tools of non-conventional water use/re-use; and
3. Highlight the views of young professionals in regard to non-conventional water use/re-use for sustainable agriculture, challenges and potential solutions in achieving food security.

Expected outcomes

It is intended that this IYPeF discussion may explore answers to the following questions:

1. How is non-conventional water currently contributing to agriculture?
2. How can we promote a safe and good management of non-conventional water for irrigation?
3. What are the risk management approaches that needs to be addressed to prevent adverse environmental, health and gender related impacts?
4. How can YPs promote the multiple use of non-conventional water, challenges and potential solutions in achieving food security?
5. How can we develop and manage non-conventional water with sustainable approaches to benefit from rapidly growing peri-urban communities?
6. Legalization and regulation with regard to the use of non-conventional water; case studies and countries' experience.

Discussion Mentor

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Discussion Co-ordinator

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References

- ICID 2017, A road map to ICID Vision 2030: A Water Secure World Free of Poverty and Hunger; International Commission on Irrigation and Drainage.
- IAASTD 2017, International Assessment of Agricultural Knowledge, Science and Technology for Development; Agriculture at a Crossroads IAASTD findings and recommendations for future farming.
- International Commission on Irrigation and Drainage: Working Group on Use of Non-Conventional Water Resources for Irrigation (WG-NCWRI).
- Water for Food Water for Life. A comprehensive Assessment of Water Management Agriculture. International Water Management Institute (IWMI). Chapter 11: Agricultural use of marginal quality water opportunities and challenges.

