



# DELTA IN TIMES OF CLIMATE CHANGE II INTERNATIONAL CONFERENCE

OPPORTUNITIES FOR PEOPLE, SCIENCE, CITIES AND BUSINESS  
ROTTERDAM THE NETHERLANDS, 24-26 SEPTEMBER 2014

<b>Deltas in Depth scientific sessions</b>	
<b>Deltas in Depth 3. Governance of adaptation</b>	
<b>DD 3.5 Adaptation policy and practices</b>	
<b>Chair</b>	Prof.dr. Shah Alam Khan, Bangladesh University of Engineering and Technology, Bangladesh
<b>Keynote</b>	● Ad Jeuken, Deltares, the Netherlands
<b>Presentations</b>	● PhD Stijn Reinhard, Wageningen UR, the Netherlands
	● Dr. Saskia Werners, Wageningen UR, the Netherlands
	● MD Golam Rabbani, Bangladesh Centre of Advanced Studies, Bangladesh
	● Hans Korving, Witteveen + Bos, The Netherlands

### **KEYNOTE: Local to regional solutions for fresh water management, Under what conditions are they attractive?, Ad Jeuken, Deltares, the Netherlands**

Ad Jeuken speaks about the achievements of Knowledge for Climate related to fresh water management. Climate and global change is a large problem, and local solutions are tiny compared by it. But when local solutions are combined or up-scaled, they could make a difference against climate and global change. Understanding the system, both biophysical and social factors that interact with the system you try to manage, is of importance for effective management.

#### The critical factors for being successful;

Sense of urgency which is also perceived by the main actors, shared knowledge base, shared perspective on solutions, upscale to build the big resilient fish.

### **Implementing optimal fresh water service levels in times of climate change, PhD Stijn Reinhard, Wageningen UR, the Netherlands**

Water shortage is a mismatch between water demand and water supply. The first step to overcome this mismatch is to reduce the water demand; when that step is not sufficient the supply can be increased. This will stimulate innovation. But prioritizing water demands has not yet been done on a national scale. The waste hierarchy of the EU waste directive inspired the proposed water hierarchy. The water hierarchy prioritizes the saving of water, substitute, reuse of wastewater, storage by water user, storage regionally, and as a last measure to supply from other regions. Further research will be done before the hierarchy can be implemented.

#### Question:

*Is the hierarchy applicable in the whole Netherlands or should it be specific to certain locations?*

It should be applicable to the all of the Netherlands. Making a distinction between different regions does not enhance innovation.

*Do you have a location for a pilot project yet?*

There is no location yet.

### **Temporary water shortages and salinization in Pearl River Delta, dr. Saskia Werners, Wageningen UR, the Netherlands**

Zooming in on water related problems does not always give solutions; sometimes you have to zoom out to see and understand the entire system. Different climate scenarios give different results in potential runoff. This research tries to focus on these events of water scarcity and focuses on situations that are policy relevant. This research uses a level of concern as an indication of when to act and react on potential climate change. This level of concern is referred to as the threshold.





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Threshold determined with delta water board indicates that 125 days a year exceedance would become problematic. The study area, the Pearl River Delta (PRD), is one of the biggest water sources in the region. It has managed to lower the water use while GDP did rise enormously during the last decade (2000 – 2010). Further research includes an analysis of the threshold in more detail. The threshold is an important matter of communication and has proven to be more accessible than other maps.

Are tipping points the same as turning points?

For now they are the same.

Why 125 days?

This was discussed with PRD and is based on the capacity of reservoirs that they have at this moment.

How is money allocated?

It depends on the sector. The data for water use is mostly the official government of what is supplied; it might be made up of different sources. The water company however charges on the district level. For industry it is a more diverse pattern, for farmers there is no fee since they only lease it for a short period of time, including irrigation supply. Any revenues go back to the state.

## **Pond ecosystems: An effective resource base for community based adaptation to climate change, MD Golam Rabbani, Bangladesh Centre of Advanced Studies, Bangladesh**

Pond ecosystems are underappreciated by the scientific community as a means of adaptation, while in rural Bangladesh they are the sources for all domestic water needs. With increasing cyclonic events and storm surges these ponds are under threat as well. During pre-monsoon season, both the quantity and the quality of the ponds are deteriorating. The average household income per pond has been deteriorating as well. Due to waterborne diseases, many households say that they loose working hours due to sickness. Existing adaptation options to protect the ponds are the construction of embankments, rainwater harvesting, re-excavation of the pond, and annually cleaning the pond.

Any kind of ecological study how these ponds work?

This is an area that scientists and politics are neglecting. There is not a lot of research done. The local governmental department of civil engineering would be responsible for the cleaning of the ponds after the cyclones Ayla, but it has never been done so. The poorest of the poor still rely heavily on these ponds.

What does the community mean with excessive rainfall?

Increase in high intensity rainfall events.

## **Risk based determination of service levels for fresh water supply in the Netherlands, Hans Korving, Witteveen + Bos, The Netherlands**

The Netherlands is facing a water shortage due to climate change. A weather extreme at this moment might be normal practice in the future. The purpose of this research was to model the future fresh water availability in the Netherland to make a better assessment on risk allocation. What is extreme at this moment might be normal in the future. The model output shows results of expected water demand and deficit. A calculation of average deficit times the maximum demand would lead in every scenario into return period of <1000 years, which does not correspondent with the experience of the farmers.

Questions;

How do you define a shortage situation, might there be a difference in definitions (by farmers and the researchers)?





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There might be, the used definition was when demand is higher than supply for a period of 10 days it is called a shortage. This might very well be different from the feeling that farmers have.

