# Economics of water allocation in delta management

Petra Hellegers

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## Deltas are faced with various challenges

- Population growth
- Economic development

- Climate change
- Seawater intrusion

- Changing political concerns (food security, equity)
- Water is in many deltas over allocated (used unsustaina

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## Rationale

- These challenges are calling for a reform of water allocation mechanisms in deltas
- Insight into the various implications of water allocation makes trade-offs between various development paths in deltas visible
  - for instance between food self-sufficiency and water productivity

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## From chaos to ABCDE in the water sector...

A framework was introduced by Chris Perry

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## The five components

- Understanding how much water is available
  - ASSESSMENT
- Allocating the water among competing uses
  - BARGAINING
- Setting Rules
  - CODIFICATION
- Assigning responsibility
  - DELEGATION
- Developing the facilities
  - ENGINEERING

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- Water allocation in theory and in reality

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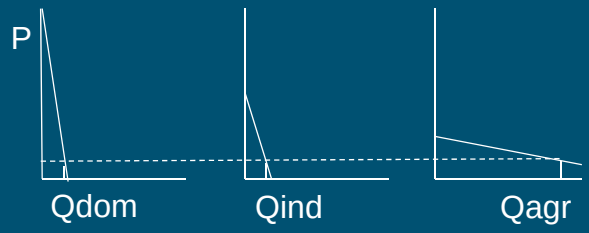
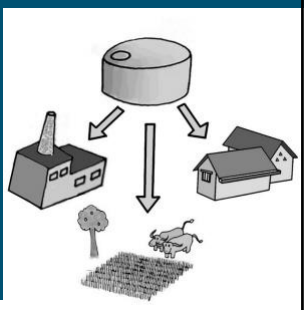
## According to economic theory

Sustainable water availability has to be allocated in such a way that the marginal benefits of water are equal among users



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## However in reality

I) The allocation process is guided by political concerns

II) Sectoral policies hamper a productive water allocation

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## I) The allocation process is guided by political concerns

- It is important to understand what drives water allocation
  - At the global level: trade liberalisation, food & energy prices, land grabbing
  - At the national level: food security, equity, poverty alleviation, geopolitics
  - At the local level: strong lobby groups
- Economists can show the foregone benefits of not allocating water in the most productive manner due to political concerns, which makes the (power) game more transparent

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## II) Other mechanisms to improve the allocation

As sectoral policies can hamper a productive water allocation, the challenge is to study how such policies can increase the productivity

Policy coherence and a global perspective are required

- Globalisation and trade liberalisation offers opportunities for specialisation in high value crops in water scarce areas
- Basin cooperation can also increase the productivity of water

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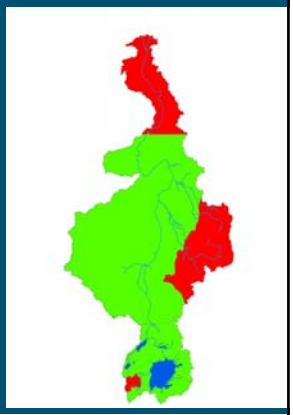
## When countries in the Nile Basin cooperate, the Basin can be food self-sufficient in 2025

However, if irrigated area in Sudan expands by 1 million ha

- 20 BCM less water for Egypt
- 30% less land use revenues in Egypt
- 10% less hydropower revenues
- Less revenues for the basin as a whole due to low water productivity in Sudan



Christian Siderius

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## Role of water economics

- Provides insight into the water productivity gains ($/m$^3$) of
  - water reallocation among regions, users, generations, population groups
  - But also of trade liberalisation, specialisation and basin cooperation

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## Conclusions

- Deltas are facing many challenges
- Sustainable water usage is a first priority in deltas
- Economists can show the foregone benefits of not allocating water in the most productive manner due to political concerns.
- Improving water productivity requires policy coherence and a global perspective (freer trade, specialisation and cooperation).

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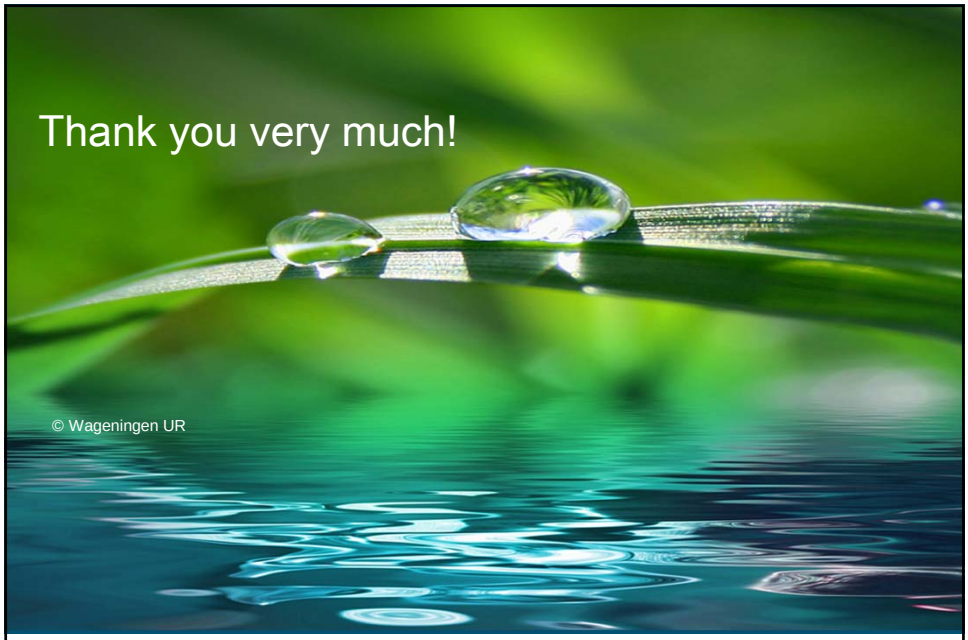


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