

The Water Harmonica session

A summary

The 7th INTECOL International Wetlands Conference
Utrecht, The Netherlands 25-30 July 2004

Some basic principles of Waterharmonica:

- Polishing and reuse of wastewater
- Integrating waterchain and watersystem
- Using ecological engineering concepts

Water Harmonica is about communication

- communicating the need for integrated water management
 - Wastewater managers should consider the effect of their activities on adjacent ecosystems – including humans
- communicating "integrated knowledge in a usable form"

**The Waterharmonica:
the link between wastewater and surface water**

Possible consequences of Water Harmonica approach

- Contribute to wetland creation and restoration using wastewater
 - ⇒ spreading economic and environmental benefits to other citizens than the immediate landowners and wastewater managers

Some goals of the Environmental Reuse project at the Empuriabrava WWTP

- To provide water of sufficient quality to the Cortalet lagoon to avoid its dessication in summer and/or to flood the wet meadows in the surrounding area
- To restore the healthy ecological condition (flora and fauna) of the area in order to achieve a degree of biodiversity similar to that of natural ecosystems

Wastewater polishing wetland as part of lake restoration, Hässleholm SE.



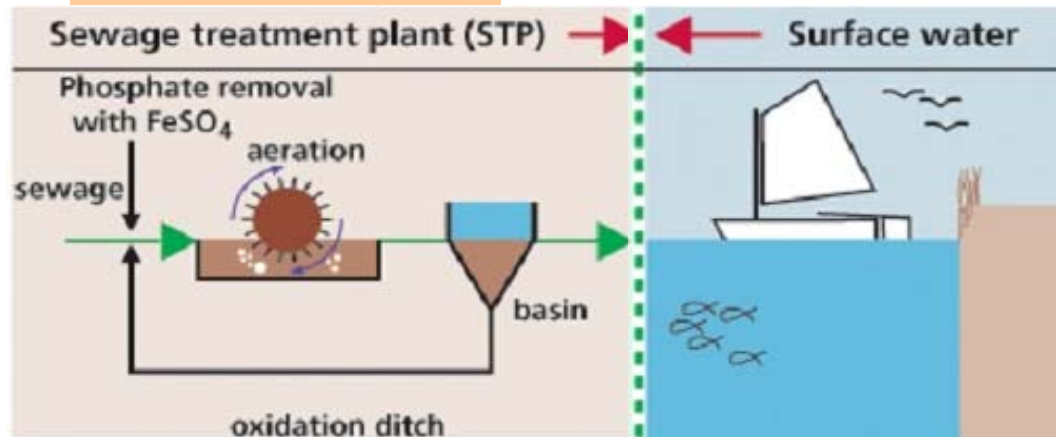
Water Harmonica in EU and North America

- Wise management of wastewater to promote hygienically safe surface water (for use and reuse), promote biodiversity and create recreational values
- ⇒ wastewater has to be managed using a catchment and ecosystem approach

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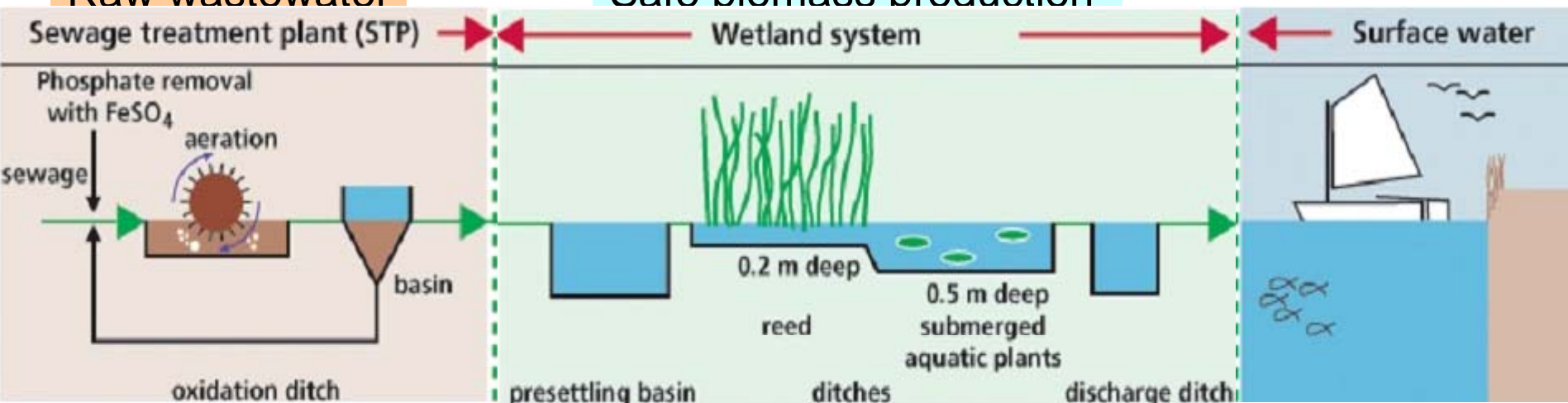
Water Harmonica in tropical and developing countries

Raw wastewater



Raw wastewater

Safe biomass production



Waterharmonica: combine the combined approach

Water Harmonica in tropical and developing countries

- Wise use of water and nutrient resources in wastewater to alleviate poverty and achieve sustainable development **while maintaining viable ecosystem functions**
⇒ wastewater has to be managed using a catchment and ecosystem approach

**The Waterharmonica:
the link between wastewater and surface water**

Principles for sanitation systems in developing countries

- Low external energy requirement
- Easy operation
- Low maintenance requirements while maintaining acceptable effluent quality
- Contribute to safe biomass production
- Different systems needed; feasible for urban, periurban and rural areas

Waterharmonica task:

Communicating knowledge in a usable form

- knowledge about how to use a catchment and ecosystem approach when managing wastewater
 - examples of successful, and less successful, cases of such management
 - access to technical and practical knowledge about design and management of e.g. constructed wetlands and aquaculture systems

Water Harmonica task:

Providing a contact network of
scientists and practitioners
promoting this approach