

organizational capacity, cooperation and robustness to change. The cumulative score of the feasibility scores corresponds to the adaptive capacity. The specific indicators are shown in Figure 2 for the option 'greywater sewers'.

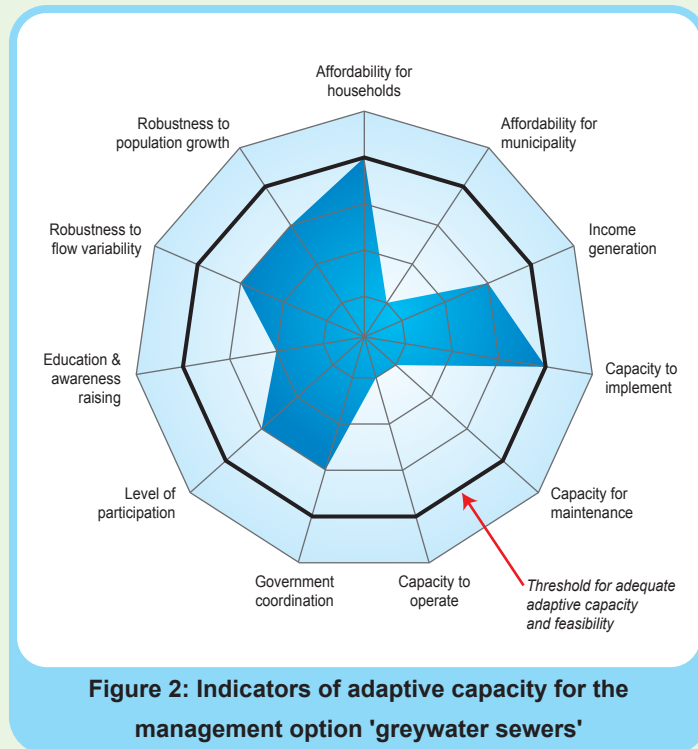


Figure 2: Indicators of adaptive capacity for the management option 'greywater sewers'

For the Inner Niger Delta, the adaptive capacity for improved drinking water is better than for sanitation, mainly as a consequence of the protected deep wells being a source of safe drinking water. The adaptive capacity is acceptable for the household-scale options (improved latrines and infiltration pits), but is unacceptable for public, municipal-scale options such as the greywater sewers and for a system of collection and disposal of fecal sludge and solid waste.

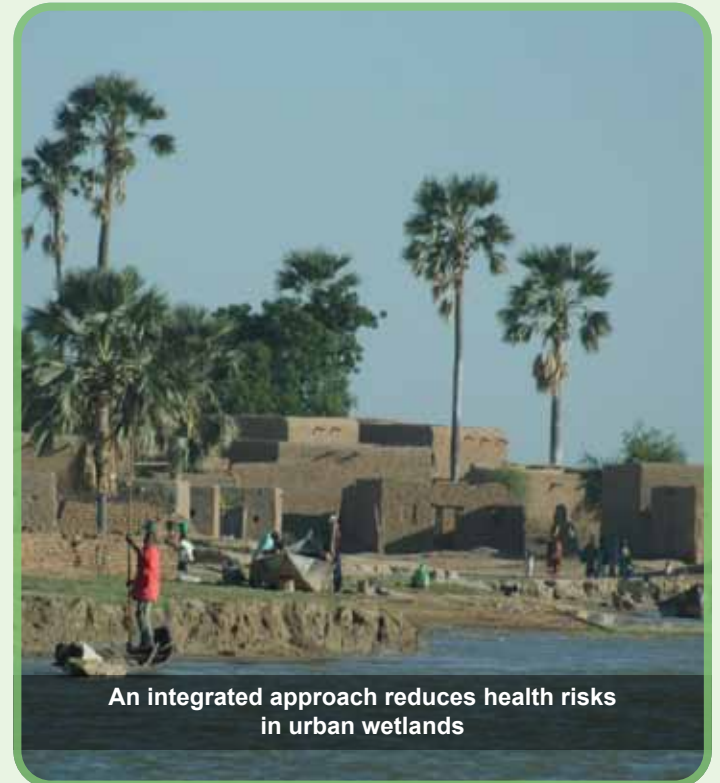
An integrated approach is vital to tackle the challenges in cities

Most existing studies and projects in the developing world have been executed in rural conditions, where the challenge is to provide a safe drinking water supply or to convince villagers to stop open defecation and effectively use latrines (when built) and improve hygiene. Under these conditions, single actions could be justified. For cities located in or along wetlands, an integrated approach is essential to tackle the bigger challenges. These challenges include the following:

- higher population density resulting in large volumes of excreta, wastewater and solid waste;
- limited space available for the safe disposal of wastes; and
- the bigger the scale of a city, the more coordination, better planning, and stronger organizational and technical capacity is required.

An integrated approach is essential in dealing with the multiple pathways for disease transmission in urban wetlands. The nature of the pathways means that access to sanitation is critical. As long as there is at least one person practicing open defecation, human exposure to excreta remains; for example water contaminated with a few cholera pathogens can cause fatal outbreaks of the disease at a large distance away from its source of pollution.

Conclusions and recommendations



An integrated approach reduces health risks in urban wetlands

Target the right pathway to reduce disease transmission

- The effectiveness of water management to reduce health risks depends on the effectiveness in cutting the pathways for disease transmission. The pathways, therefore, need to be identified and assessed first and, consequently, prioritized and targeted.
- If the pathways for chemical and bacterial contamination are not controlled, wetlands may deteriorate resulting in loss of wetland ecosystem services and increased transmission of diseases
- More clarity is needed on the most appropriate options for urban water management and sanitation. The self-purification capacity of urban lagoons is limited and, in many cases, saturated. Centralized systems might be appropriate but this largely depends on local conditions.
- Downstream ecosystems and settlements are mostly affected by upstream pollution sources.

Tools to promote mutual understanding and multi-criteria decision-making

- The importance and appropriateness of management options is often poorly understood, especially by other sectors and stakeholders. The framework presented is useful to promote mutual understanding, to integrate different domains, such as wetland and health management, and to judge the appropriateness of management options in a data-poor context.
- A detailed quantitative assessment is often not needed prior to decision-making. More important is the inclusion of all relevant criteria to assess appropriateness (such as affordability, long-term maintainability, fit within the organizational and institutional capacity, robustness to climate change and the acceptance by stakeholders) rather than limiting the analysis to costs and benefits.

Better cooperation and capacity building

- Effective risk prevention through water management asks for an integrated approach, including both water management, and infrastructural and community options.
- Efforts are required to create awareness amongst households on how to reduce contact with faeces and contaminated water.
- Additional capacities are needed for the collection and disposal system for fecal sludge and/or solid waste.
- Better understanding of the robustness of management options to future change is needed.

Authors: Jan Cools, Mori Diallo, Bakary Kone and Tom D'Haeyer

About WETwin

The WETwin project aims to enhance the role of wetlands in integrated water resources management for twinned river basins in the European Union (EU), Africa and South America in support of EU water initiatives. The objective is to improve community service functions while conserving good ecological status.

Partners

VITUKI Environmental and Water Management Research Institute, Hungary (coordinating partner)
Wetlands International, Mali
Antea Group, Belgium
Potsdam Institute for Climate Impact Research, Germany
WasserCluster Lunz, Austria
UNESCO-IHE Institute for Water Education, the Netherlands
National Water and Sewerage Corporation, Uganda
International Water Management Institute, South Africa
Escuela Superior Politécnica del Litoral, Ecuador

Funding



WETwin is a collaborative project funded under the European Commission's Seventh Framework Programme Grant agreement number 212300.

Factsheet topics

- 1: Lessons learned from a comparative assessment
- 2: Enhancing governance in wetland management
- 3: Devising a Decision Support Framework
- 4: Balancing ecology with human needs in wetlands
- 5: Creating an effective Spatial Data Infrastructure
- 6: Wetlands in a catchment context
- 7: Assessing vulnerability of wetlands to change
- 8: Integrating health, urban planning and wetland management
- 9: Case study: Lobau wetland, Austria
- 10: Case study: Ga-Mampa wetland, South Africa
- 11: Case study: Abras de Mantequilla wetland, Ecuador
- 12: Case study: Gemenc floodplain, Hungary

Contacts

For further information, email:

István Zsuffa: info@wetwin.eu

Tom D'Haeyer: tom.dhaeyer@anteagroup.com

The contents of this factsheet are the sole responsibility of the WETwin project. The European Commission is not liable for any use that may be made of the information contained herein.

