A person wearing a green and gold sari is shown from the waist down, with pink petals scattered on the ground. The background is a dark, textured surface.

3R potential in coastal water resources systems

Application of dune infiltration



CONTEXT

- Pressure on the water abstraction – urban/
tourism – increasing scarcity
- Climate change (water levels, extremes)
- Too little effective recharge
- Surface water flow reduced or erratic
- Higher risk of saline groundwater tables



COMMON APPROACHES

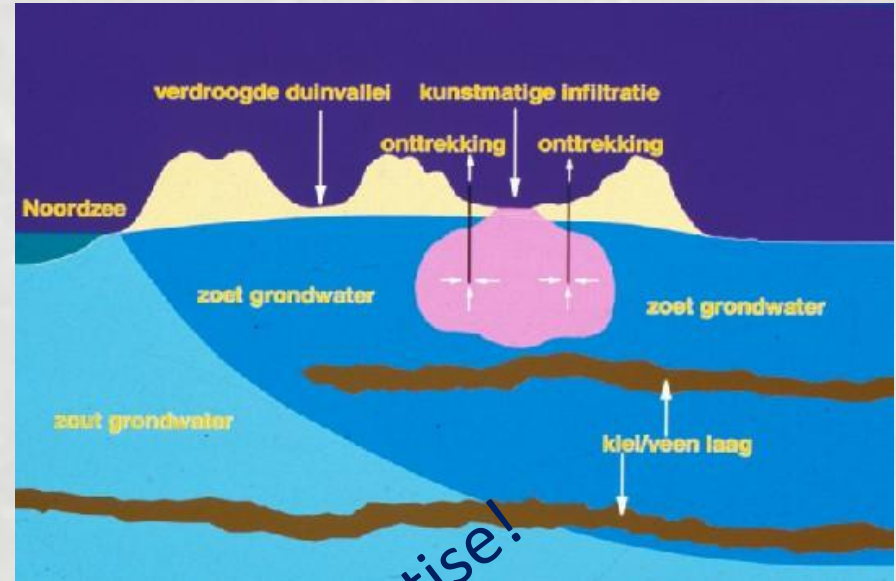
- Desalination – expensive, high-tech, small volumes and brine;
- Connection to long distance water supply – unreliable, low capacity, often not sufficient quality, high O&M cost;
- Surface water storage – limited application;
- Groundwater abstraction – salt water intrusion or brackish water.



3R – Dune Infiltration

Conditions for application:

- Good dune area (elevation, area, depressions, age, water retention capacity)
- Rainfall + external water
- prevent run off (extensive paving)



Dutch Expertise!



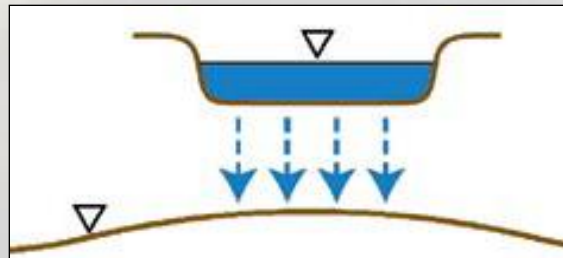
Spreading methods



Infiltration pond Atlantis (South Africa)



Infiltration ponds Amsterdam Water Supply



Recharge pond, Sanaa Plain, Yemen



Why focus on touristic centres

- The scale is adequate for piloting (3R potential for larger scale);
- Private sector and investors;
- Economic interest for maintenance;
- Corporate responsibility rebound to image;
- Linkages between tourism development and poverty reduction through economic growth;
- Stimulus to agri-business.



3R – For whom?

Potential users:

- Touristic infrastructure (include drinking?);
- Surrounding communities;
- horticulture;
- Environmental use;

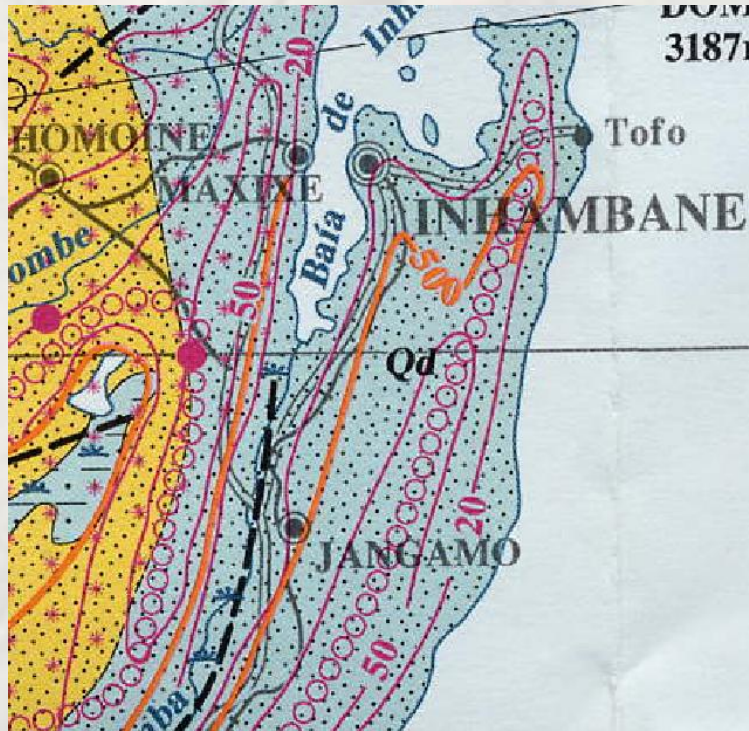


Implementation network

- land owners (private, state,)
- direct investors on area development (tourism,...)
- government and impact investors: environmental aspects of area development;
- agri-business: demand for high quality/value local market/crops/horticulture
- water company
- companies aiming at water compensation/saving image



Ex: Tofo-Mozambique



- High class tourism development;
- Coral reefs, diving (deep water);
- Aqua sport (surfing, snorkeling, etc)



Business Case Tofo

Present water supply

- N beach: Shallow wells + nearby lakes
- E beach and town: Boreholes and lake
- Inhambane capital also with limited source

Options:

- Improve retention in lakes (limit outflow)
- Improve GW abstraction (more shallow)
- Roof top rainwater storage
- External water (rather far; only if combined with city scheme); develop dune area



Potential cases:

Mozambique

- Praia de Tofo/Inhambane
- Savana/tilted plain (tourism and potential port)
- Chinde/(port development)
- Zalala/Quelimane/beach ridges (tourism)
- Nacala (port development)

Kenya

- Mombasa South ?
- Lamu tourism (and port development)

Bangladesh

- Cox Bazaar



Contact

Join the 3R family for knowledge sharing,
partnering and new opportunities

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you're standing
on a solution
without even
knowing it...

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