Summer School 2018 – Water Support Programme

Ministry of Foreign Affairs
The Hague, 21 August 2018

A Dutch perspective on water management and droughts

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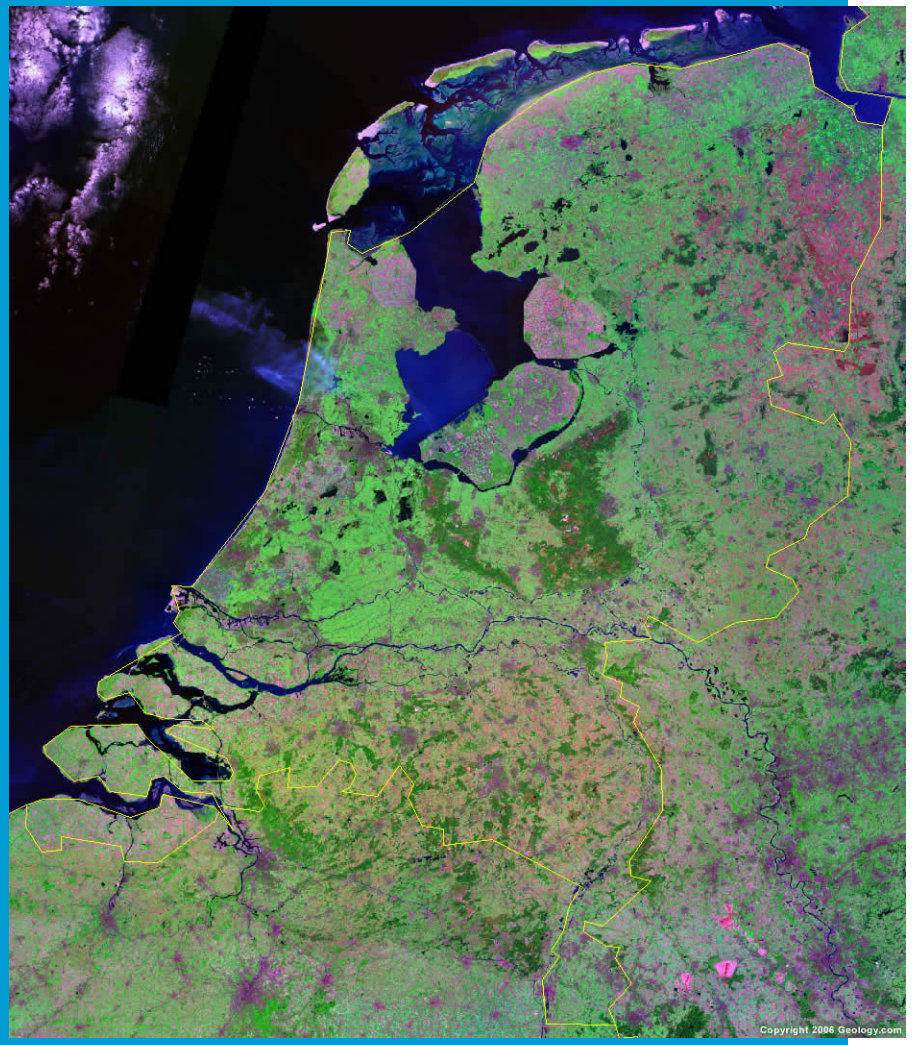

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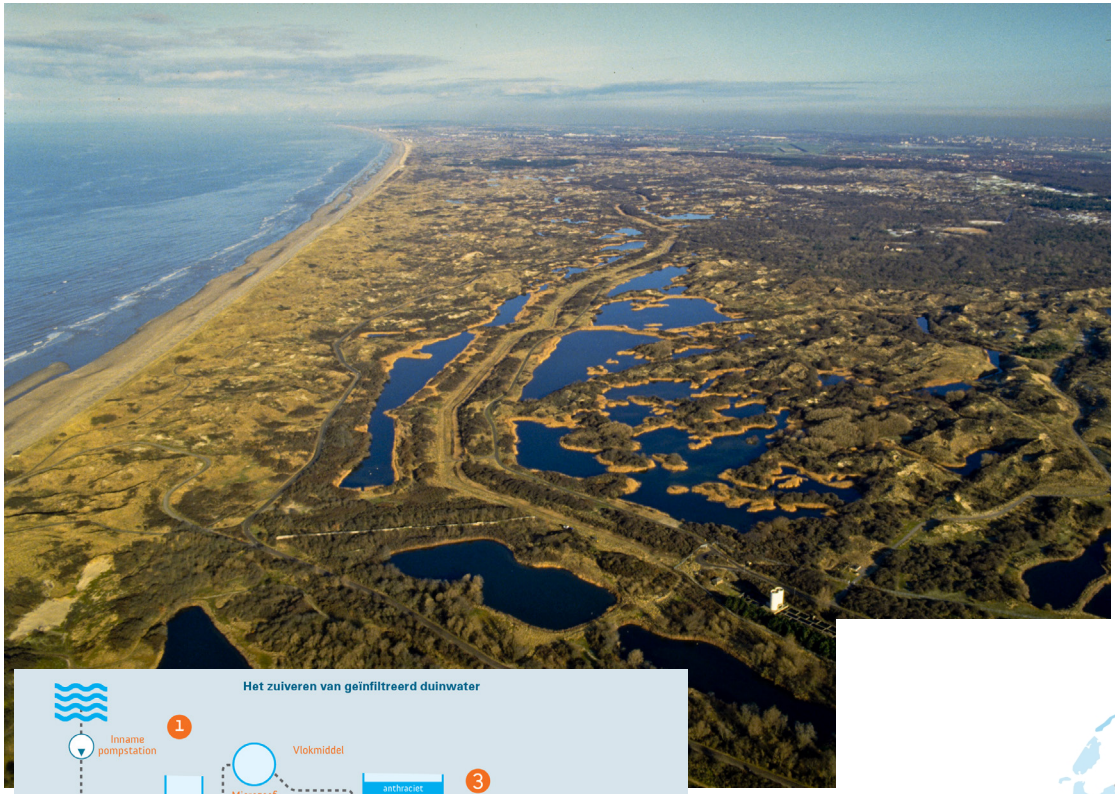
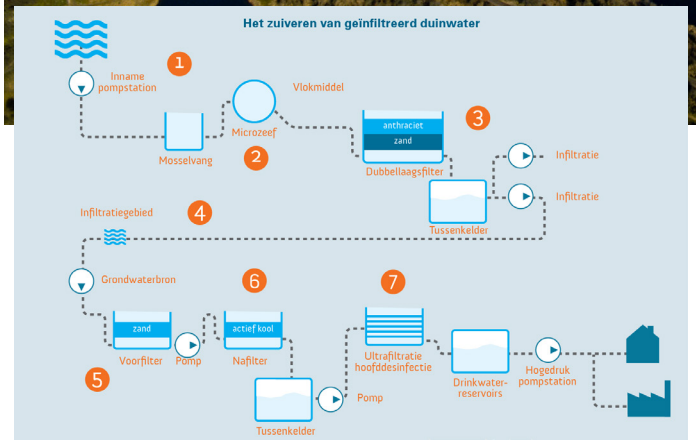
A Dutch perspective on water management and droughts

Outline

1. Drinking water supply and waste water treatment
2. Water management and spatial planning
3. Important knowledge centres
4. Opportunities for developing countries – some examples from Mozambique
5. Discussion

1. Drinking water supply and waste water treatment





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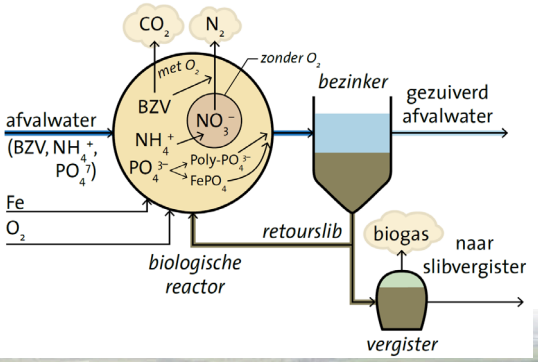
1. Drinking water supply and waste water treatment



1. Drinking water supply and waste water treatment

Drinking water and waste water:

- → Expertise in hydrogeology
- → Expertise in water technology
- → Expertise in re-use and resource recovery
- → Expertise in utility management (drinking water companies, water boards)

2. Water management and spatial planning

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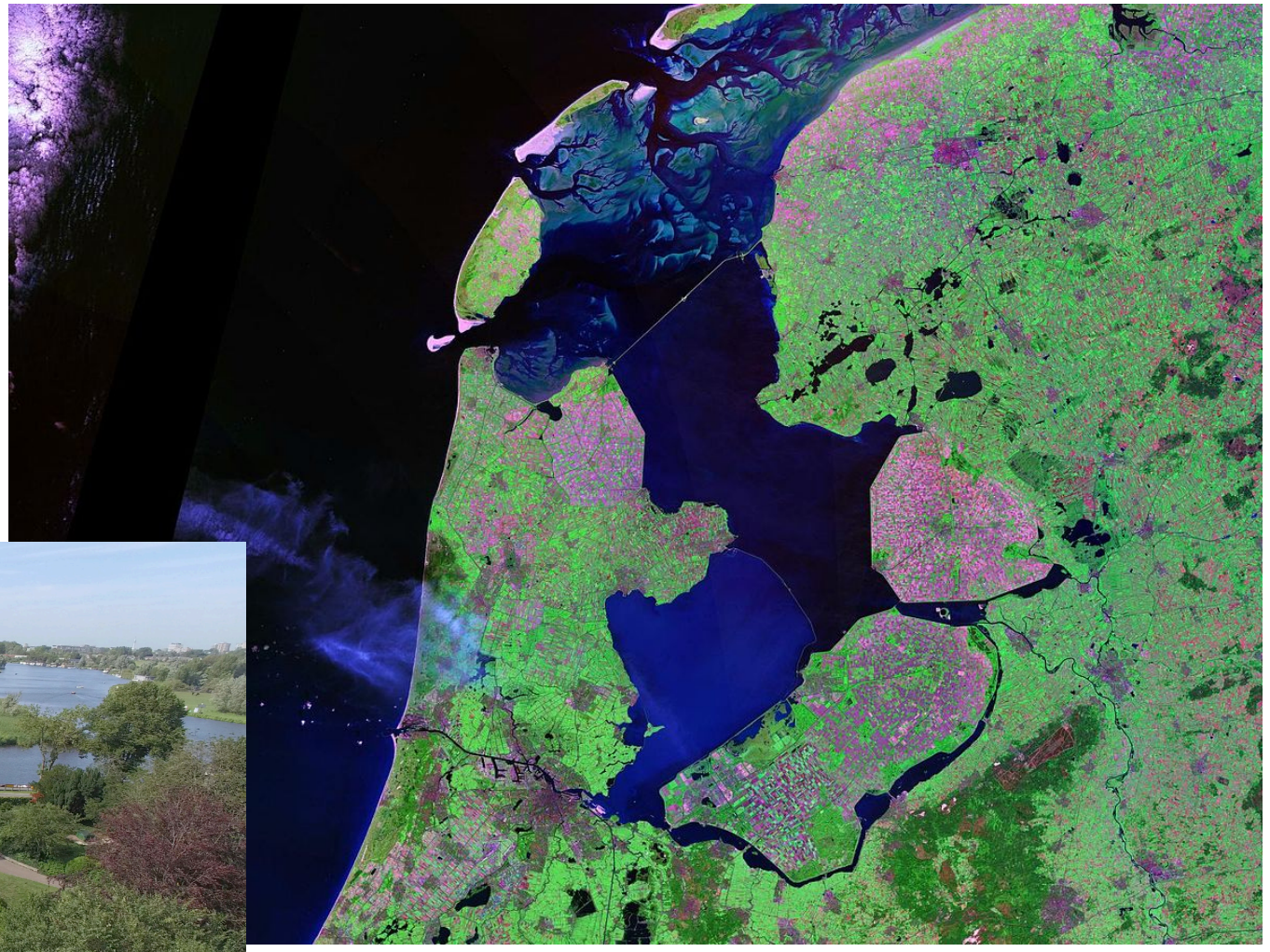

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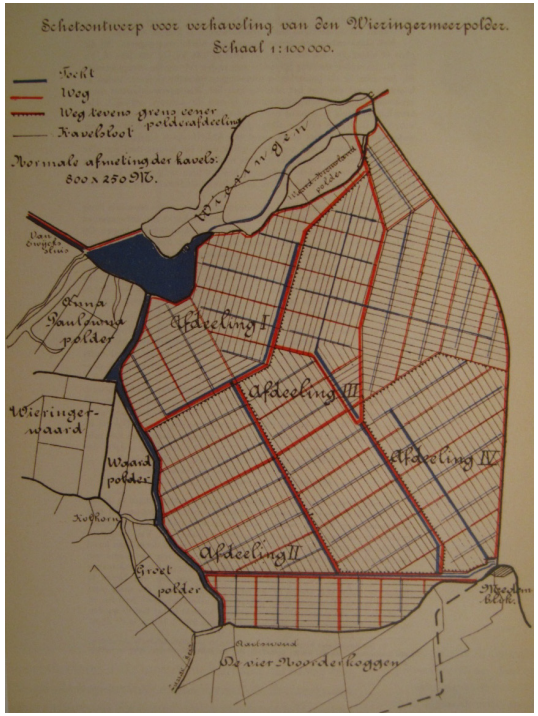

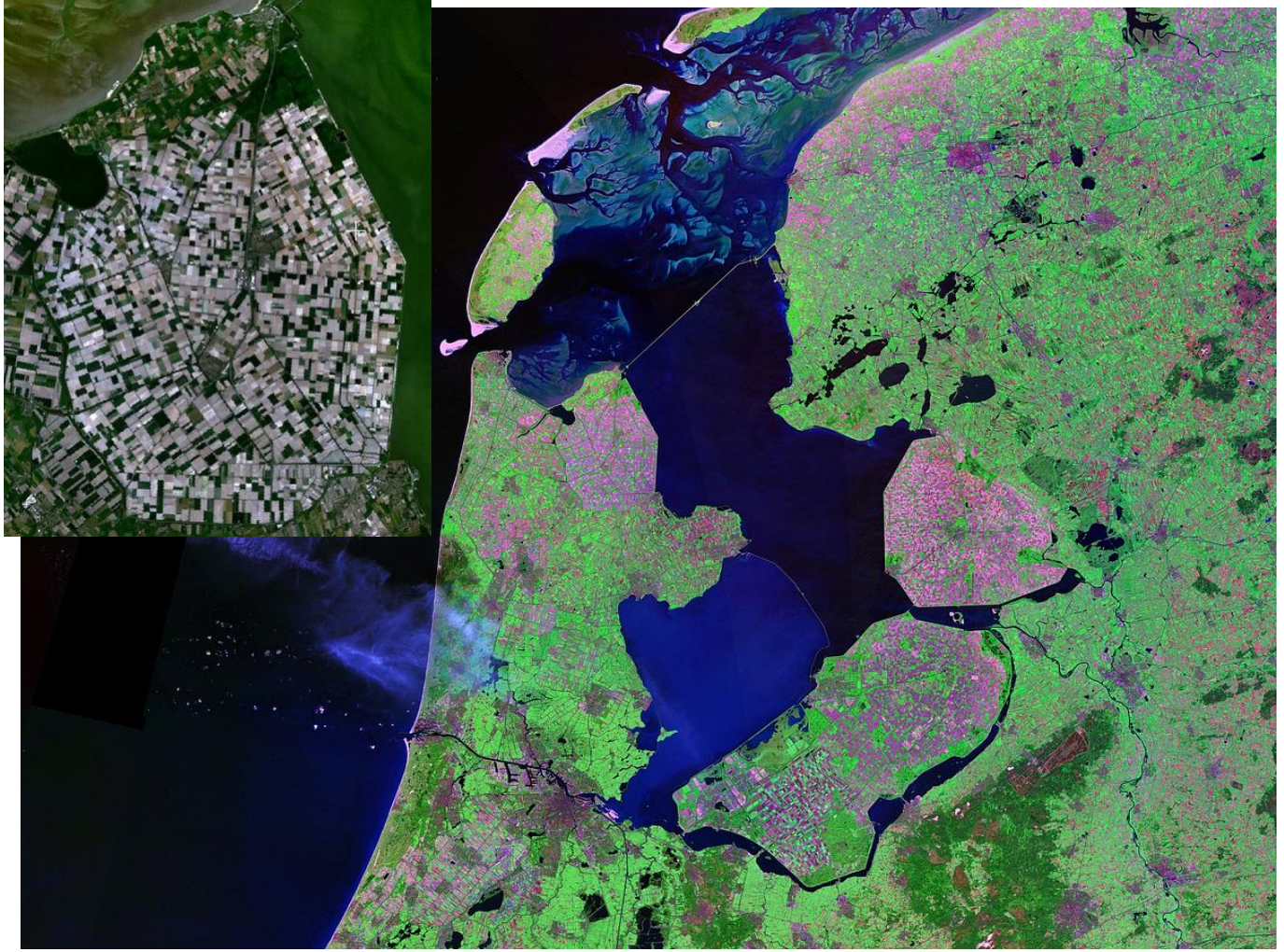

2. Water management and spatial planning

Water management and spatial planning

→ Expertise in land reclamation (polders) and spatial planning

→ Expertise in hydraulics, drainage and irrigation, agrohydrology and agriculture

→ Expertise in participatory governance of water systems (water boards)

→ Expertise in transboundary water management

3. Important knowledge centres

TU Delft

Delft University of Technology

WAGENINGEN
UNIVERSITY & RESEARCH

100years
1918 — 2018

Deltares
Enabling Delta Life

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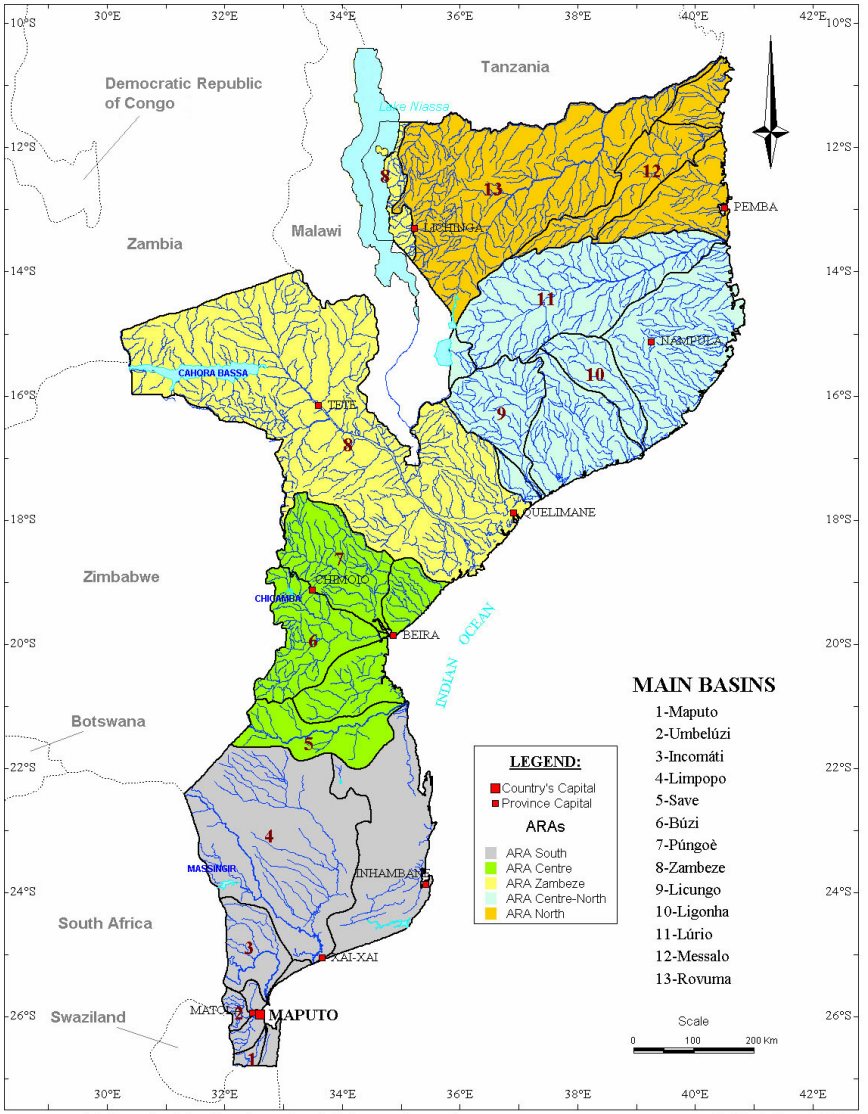
wetsus

KWR
Watercycle Research Institute

4. Opportunities for developing countries

Some examples from Mozambique



4. Opportunities for developing countries

Examples from Mozambique

Water and sanitation

- SMALL – Water Supply and Sanitation in Small Towns (Uganda and Mozambique) - https://small.un-ihe.org/
- AltWater – Enabling the assessment of alternative water supply systems to promote urban water security (Mozambique and Indonesia) - https://altwater.un-ihe.org/
- *Aedes aegypti*, water, and households: chasing the mosquitos in the Urban South (Mozambique and Colombia) - https://chasingthemosquito.com/
- Set-up of the FIPAG Academy for Professional Development in Water and Sanitation, Mozambique (Nuffic NICHE-MOZ149)

SMALL

Water Supply and Sanitation in Small Towns

Goal of the project

SMALL
Water supply and sanitation in small towns

To develop and facilitate the adoption of sustainable, efficient and equitable **models for water supply and sanitation service provision** that suit the particular needs, capacities and dynamics of small towns

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Aedes aegypti, water, and households: chasing mosquitoes in urban Mozambique

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Histórias from the fieldwork

CAR TIRES AS CONSTRUCTION MATERIAL AND THE EMERGENCE OF AEDES AEGIPTY IN THE CITY OF PEMBA

->Portuguese This post is the result of fieldwork carried out in December 2017 in the city of Pemba, in the neighborhoods of Alto-Gingone, Cariacó and Natite. It describes how the socioeconomic characteristics of households, together with the climatic... Read More

SOCIAL AND ECOLOGICAL MEANINGS OF WATER-CONTAINERS

->Portuguese On the 6th of November 2017 I embarked in a journey to the city of Maputo, Mozambique. I travelled to this emblematic city located in a beautiful bay of the Indian Ocean with the intention of understanding... Read More

WHO IS VULNERABLE TO CONTRACTING DENGUE IN THE NEIGHBORHOOD OF CARIACÓ, CITY OF PEMBA?

->Portuguese During the discussions held by the research team of the project, it was suspected that women would be vulnerable to Aedes aegypti mosquitoes. This because these mosquitoes frequently bite inside households and during morning hours and (we... Read More

Source: https://chasingthemosquito.com/

4. Opportunities for developing countries

Some examples from Mozambique

Water management

- Supporting the establishment of Spatial Data Infrastructure (Benin, Mozambique) – http://www.snieau.bj and http://www.mozam-agua.net
- SALINPROVE - Mitigating groundwater salinity impacts for improved water security in coastal areas under socio-economic and climate change (Mozambique, Vietnam and China) - https://salinprove.un-ihe.org/
- A4Labs –Arid African Alluvial Aquifers Labs securing water for development (Ethiopia, Mozambique and Zimbabwe) - https://a4labs.un-ihe.org
- IWACA-TECH – Improved water efficiency control based on advanced remote sensing technologies (Mozambique) - http://www.iwacatech.com/
- Zamadzi - Capacity stengthening in IWRM for the Zambezi Valley, Mozambique (Niche/MOZ/266) – http://zamadzi.net
- WaterNet - Building capacity for water resources management in Southern Africa - http://www.waternetonline.org/

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Ministry of Foreign Affairs of the Netherlands

DUPC2: 2016 - 2019

CGS

BK TP.HCM

UNIVERSIDADE EDUARDO MONDLANE

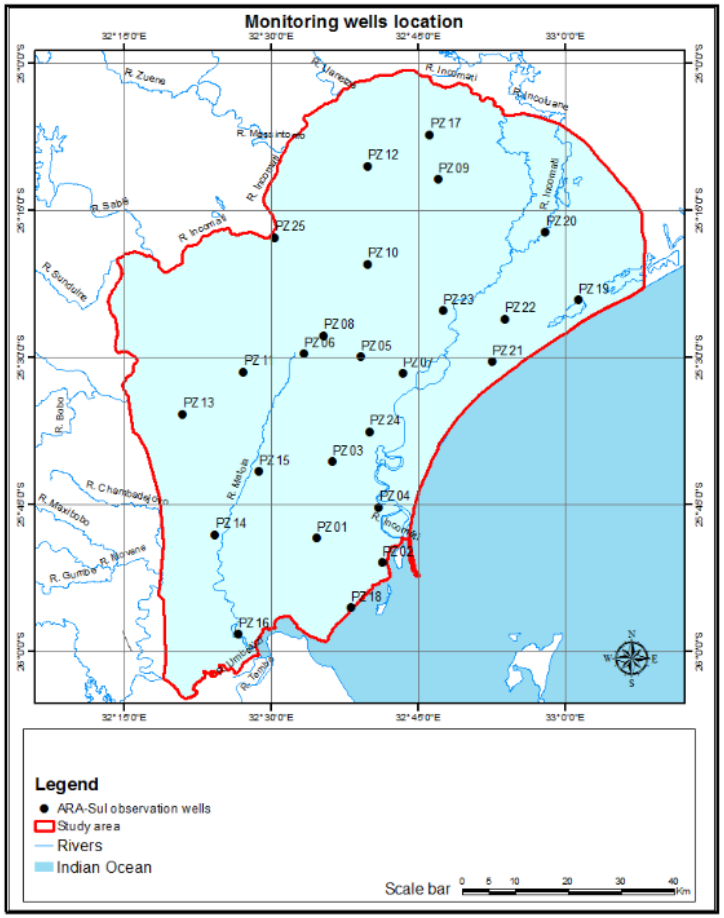
Mitigating groundwater salinity impacts for improved water security in coastal areas under socio-economic and climate change

Groundwater level and salinity monitoring network

ARA-Sul: 25 observation wells for both phreatic and semi-confined aquifers

Installed equipment

- TD-*Divers* (Water level and Temperature)
- CTD-*Divers* (Salinity, Water level and Temperature)
- Baro-divers (Atmospheric pressure)



Participatory monitoring

Participation of POPs (Small Private Operators) providing groundwater to communities, who measure groundwater salinity and/or water levels every 15 days.

A4Labs

A4Labs - Arid African Alluvial Aquifer Labs securing water for development

Co-develop, test, share and compare

methodologies to access a reliable and sustainable source of water for agriculture

using water underlying dry river beds, and

upscale these for use at river basin scale,

while maintaining sustainable abstraction limits and

minimising negative social and ecological impact.

Nature-based water storage!

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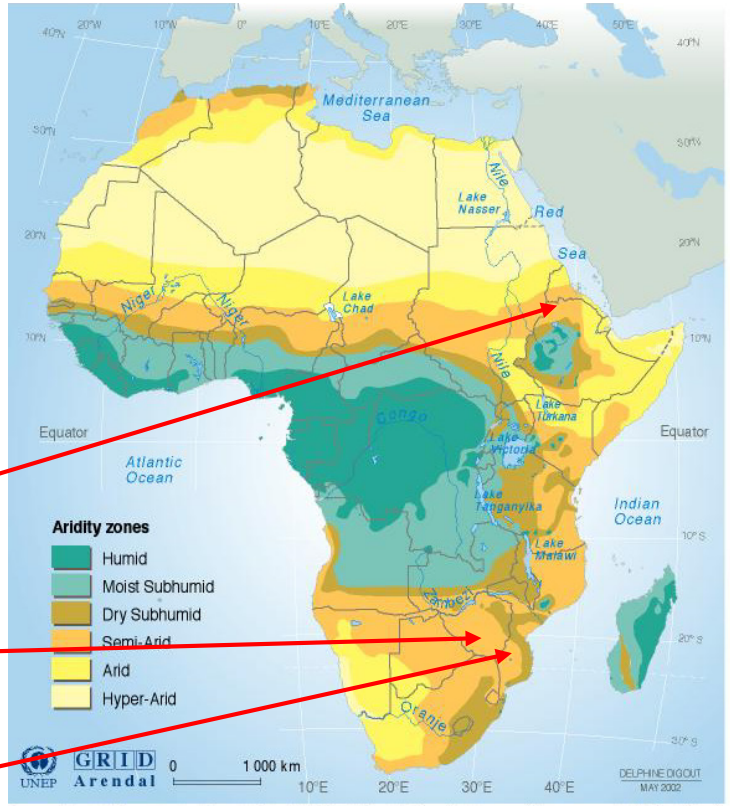
Why

- The arid and semi-arid regions comprise 30% of Africa's land area and are often considered marginal lands and lost to socio-economic development, due to scarcity of water.
  - Tigray region, Ethiopia
  - Matabeleland, Zimbabwe
  - Gaza Province, Mozambique



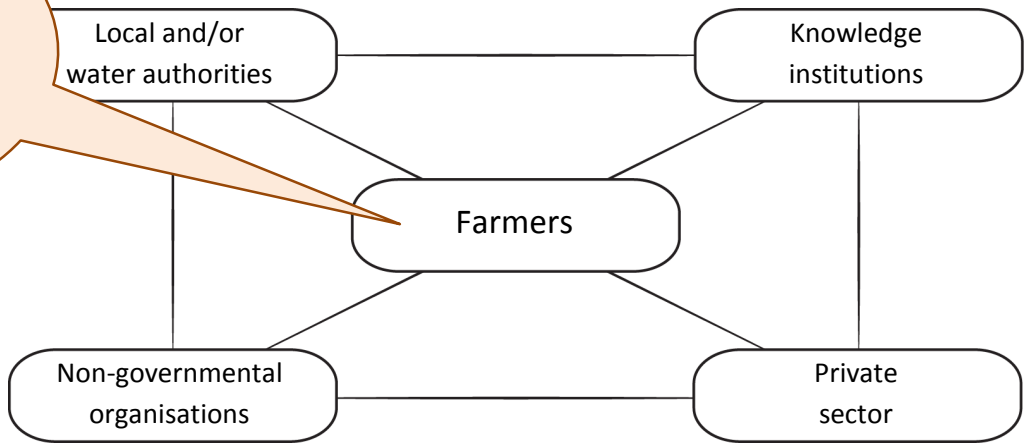
Source: World Meteorological Organization (WMO), United Nations Environment Programme (UNEP), *Climate Change 2001: Impacts, Adaptation, and Vulnerability*, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

- With this action research we aim to proof that there is much more water available for productive use and thus socio-economic development.

What

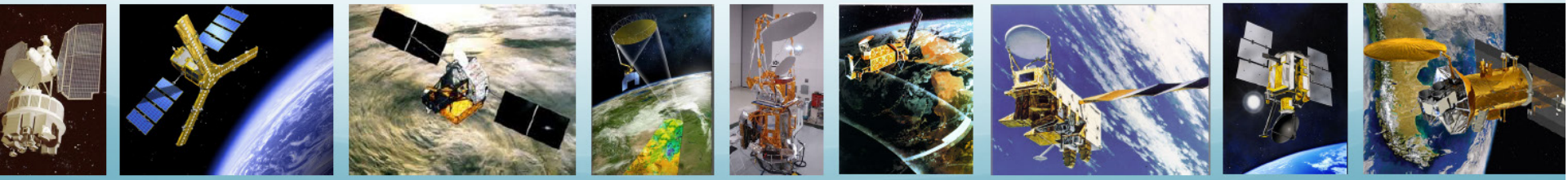
- Develop “living labs” where smallholder farmers, practitioners, agricultural extension officers, water engineers and students co-develop new (technological, agronomic, financial, market) approaches of accessing and using shallow groundwater for productive purposes, and evaluate the hydrological, social and economic effects and impacts.

Focus on young farmers (m/f) with entrepreneurial ambitions



IWACA-TECH

- Improved water efficiency control by combining advanced remote sensing technology with human-in-the-loop algorithms and smartphones
- Creating a solution to improve water productivity without changing the hardware of the irrigation scheme
- Build on existing irrigation hierarchy and methodologies



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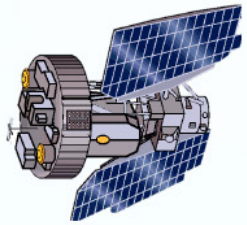
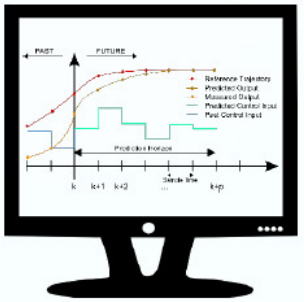
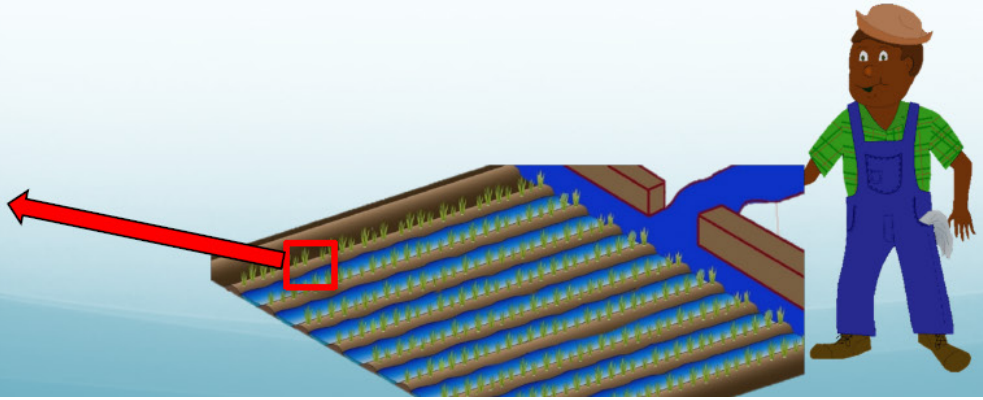
METHODOLOGY

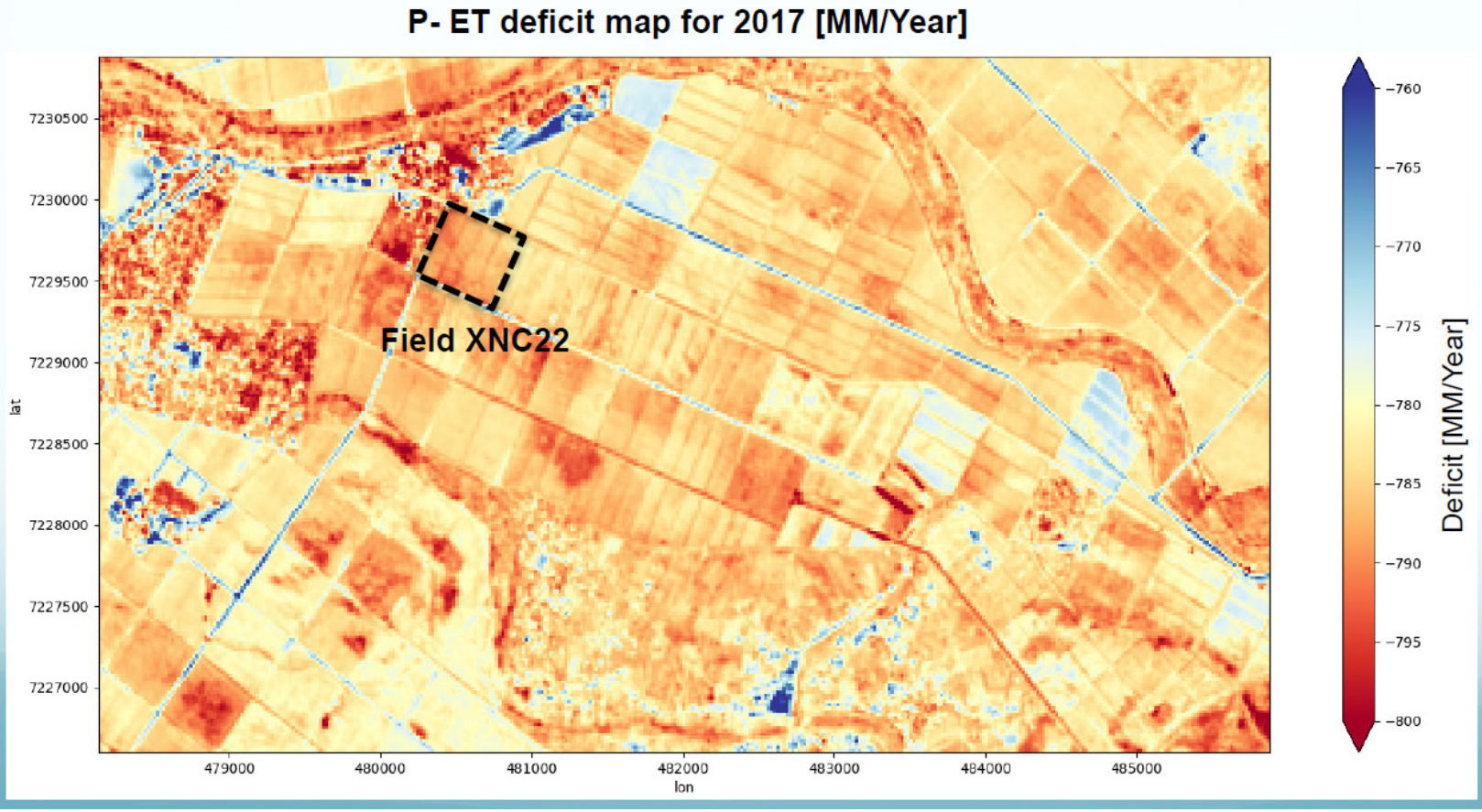




Improve irrigation efficiency



WATER ACCOUNTING



5. Discussion

Question?

Observations?

Suggestions?

Thank you!

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