FACULTY OF BIOSCIENCE ENGINEERING

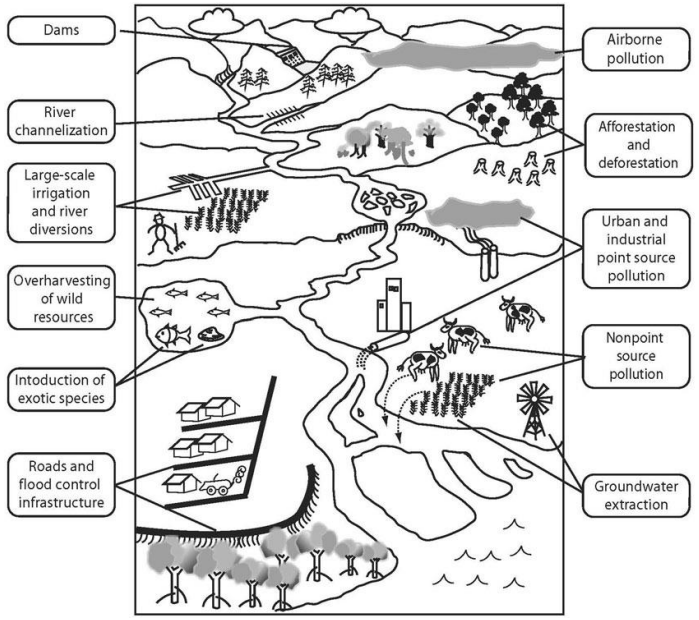
UNIVERSITEIT GENT

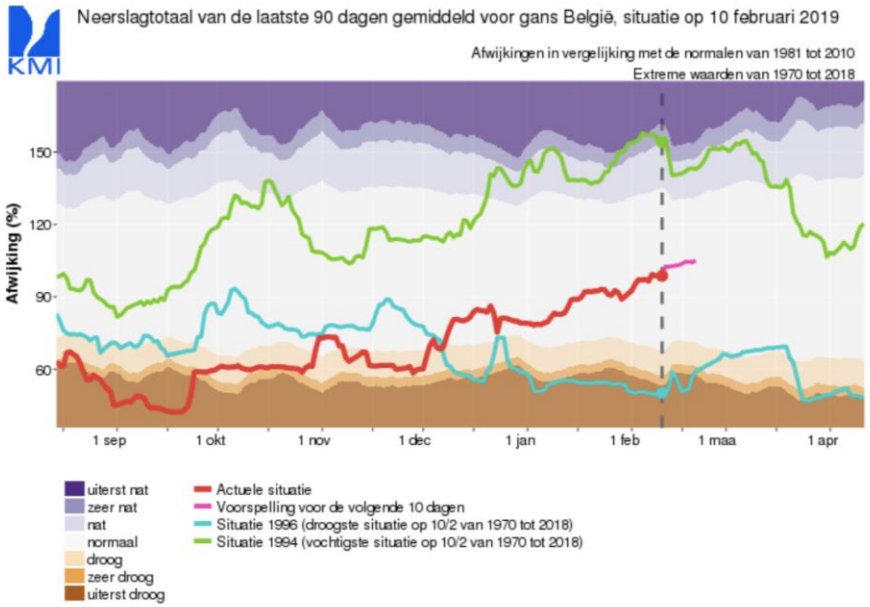
Prof. Dr. Peter Goethals

Adoption of watershed management by a water utility

Water system challenges

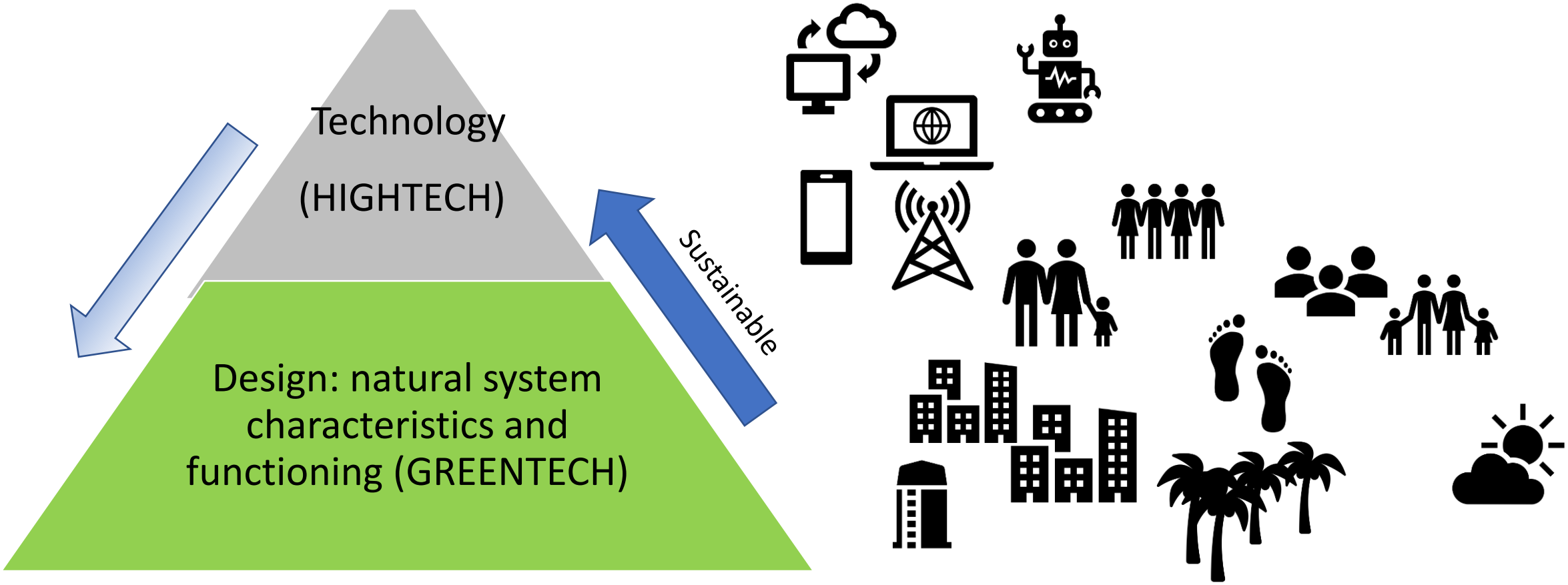
- Floods and droughts
- Water pollution
- Drinking water provision (distribution, leakage, health and taste)





Benoit Legrand: Belgian Technical Cooperation

Smart water systems: integrating GreenTech and HighTech

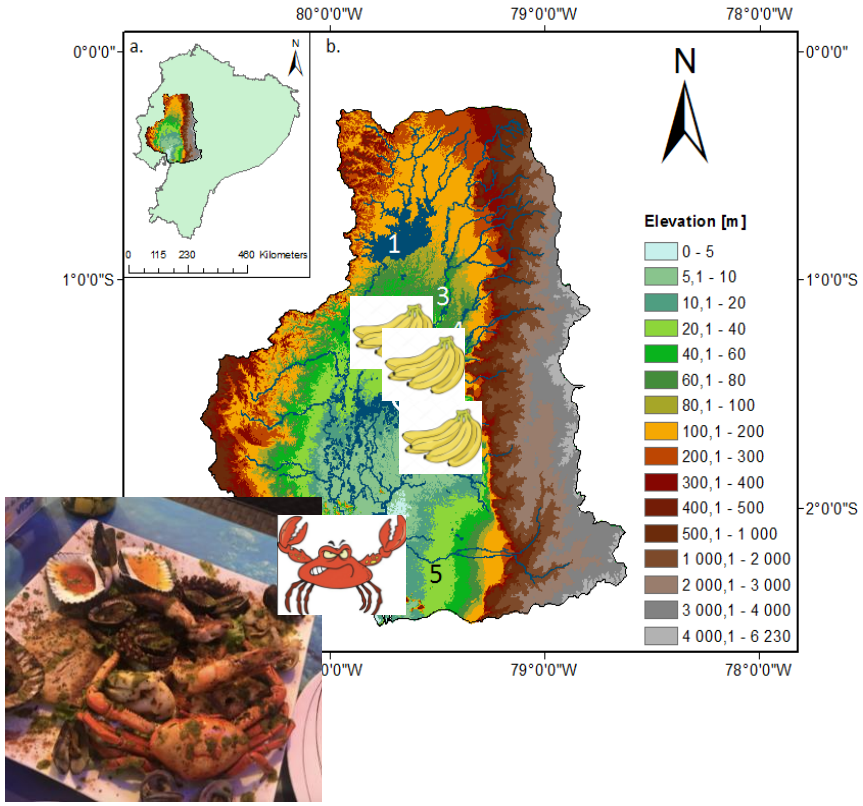


Smart by design: what, where, how and when?

- GreenTech, building with nature… not against
- More than ‘building dressing’

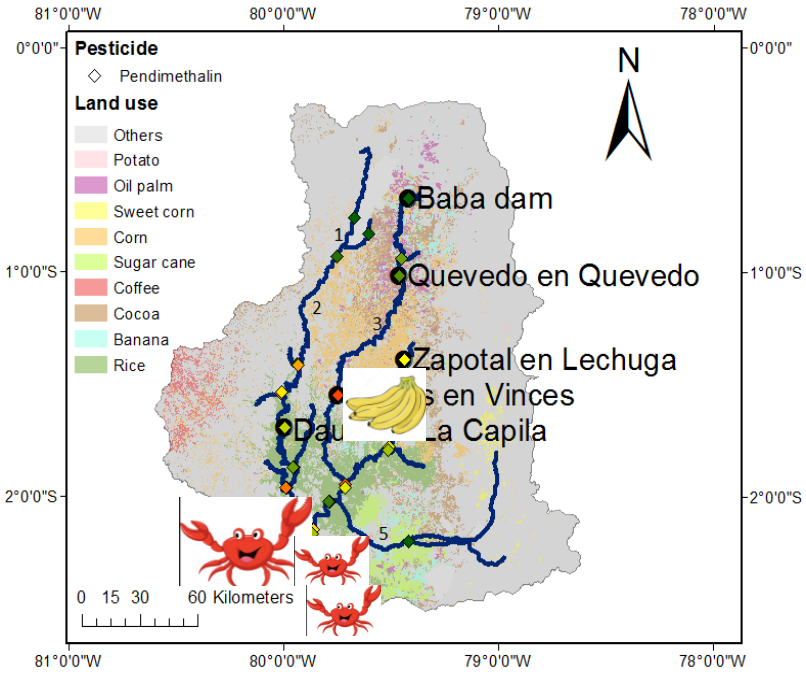
Starting from data and insights in the water systems

- Sustainable farming (crabs, location of crops) in basins connected to cities: example Guayaquil (Ecuador)



Optimal location banana farming

Implementation Integrated Pest Management



- GREENTECH: Sustainable exploitation of nature
- Using the local strengths of and environment

Nature-Based Solutions Utility Spotlight: De Watergroep

Catchment protection through ecosystem restoration

This spotlight is part of a series of utility case studies intended to shed light on the opportunities and challenges facing regulators and water utilities in their efforts to incorporate nature-based solutions into water management. Learn more about the partnership between IWA and The Nature Conservancy here.

De Watergroep is the largest drinking water supplier in the Flanders region of Belgium. To serve a customer base of approximately 3 million inhabitants, the utility draws water supplies from 85 groundwater pumping stations and 5 surface water pumping stations. In the densely populated and cultivated region of Flanders, investing in the long-term protection of these water supplies through nature-based solutions (NBS) is a means of addressing serious water quality issues stemming from agricultural and industrial pollution.

Case-study: Kluizen drinking water production system (De Watergroep, Belgium)

Aerial view of the water basins at Kluizen near Ghent for the collection of surface water for drinking water supply. Photo: De Watergroep.

De Watergroep tackles pollution threats by focusing on the protection and enhancement of the ecosystems that surround their abstraction areas. The water utility currently faces restrictions on their surface water pumping activities during the warmer months of March to September. This is attributed to the increased threat of nutrient and pesticide infiltration into surface water supplies and a diminished dilution of chloride coming from industrial discharges. During seasons with low water levels or times of prolonged drought, any subsequent rainfall flushes large amounts of nutrient runoff into the surface water. As the utility with the largest amount of shallow water extraction sites and surface water intakes in the region, the need to protect water resources carries strategic importance for De Watergroep.

Nature-based pumping regimes in captation forests

View of a water well in a managed alluvial forest. Photo: De Watergroep

Nature-based solutions related to agriculture

A 5m grass buffer strip was installed as a pilot test in an EU-funded project to protect the water in the small river, Bollaertbeek, which is used for drinking water production after treatment in the province of West-Flanders. Photo: De Watergroep.

Conclusions

- Smart water systems need to integrate technological solutions based on insights in ecosystem and river basin functioning
- Glocal approach needed: Global and Local, eg climate related actions integrated at a local scale

Contact

Peter Goethals (monitoring, assessment and management of water systems)

- Faculty of Bioscience Engineering, Ghent University
- Email: peter.goethals@ugent.be