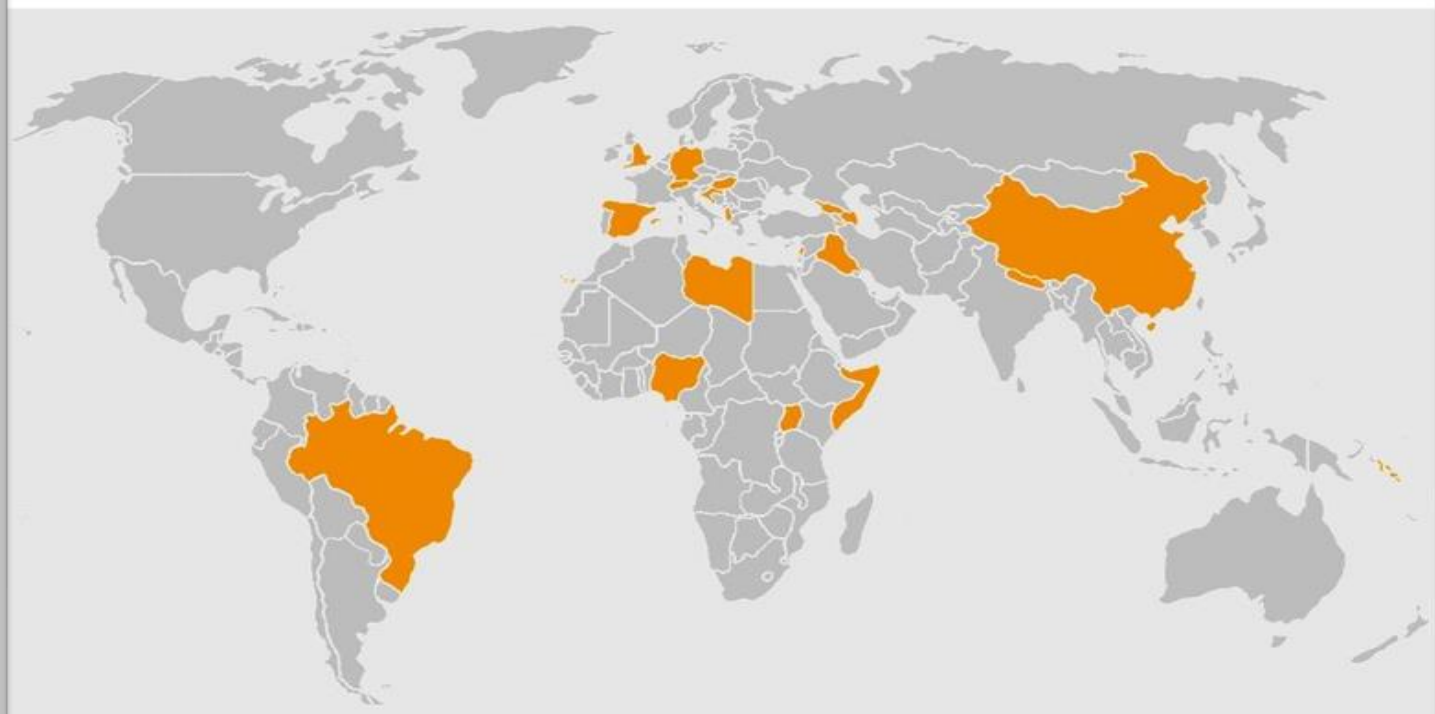
2023

BROCHURE

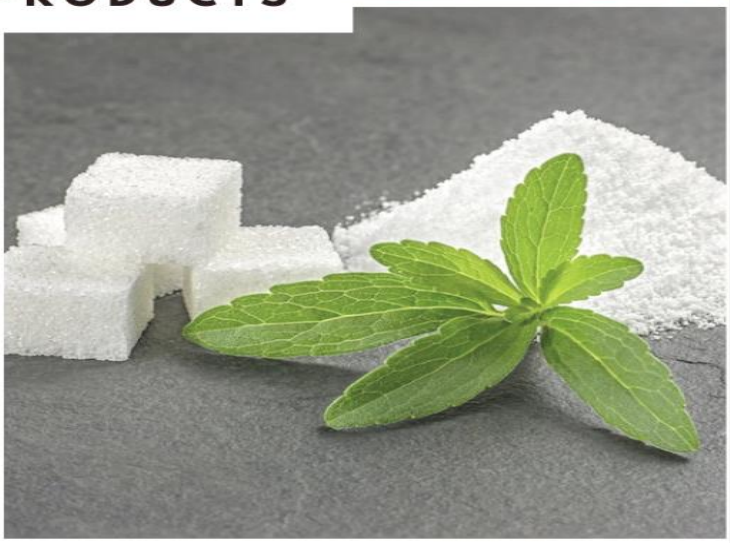
trinity

ADAPTATION OF THE NEAR FUTURE

International Activities of Trinity Enviro



NATURAL PRODUCTS



BENCE FÜLÖP

CEO

TRINITY ENVIRO

DEAR READER,

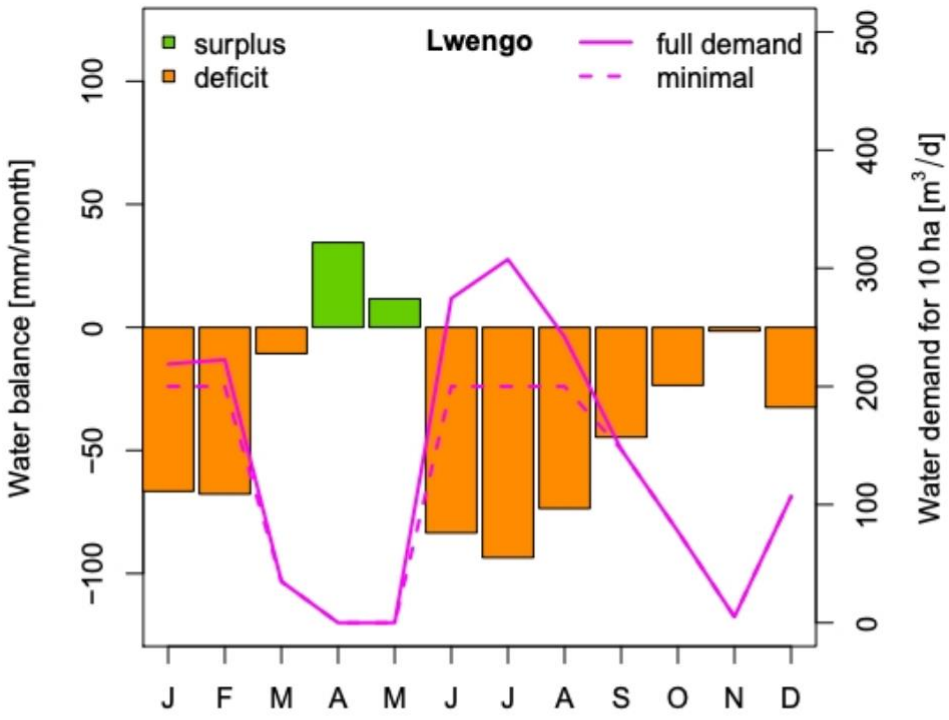
Among reduced water availability, water quality and siltation are the biggest threads to operation of reservoirs. Our state-of-the-art approach PhosFate has been a proven tool pinpoint area of intervention.

We will tell you exactly where to interact, but even more we can calculate you the most cost-effective set of measures to achieve your aims with your reservoir management.

No data, no problem to us our databases are covering the entire globe and based on our previous work your system can be calibrated. Moreover, with our Climate-change downscaling expertise we can.

Sustainable Energy-Water Solutions for Medium to Large-Scale Irrigation of Commercial Farming in Uganda – Pre-Feasibility Study

Annex 3 Farm climate analysis


surplus
deficit
Lwengo
full demand
minimal
Water balance [mm/month]
Water demand for 10 ha [m³/d]
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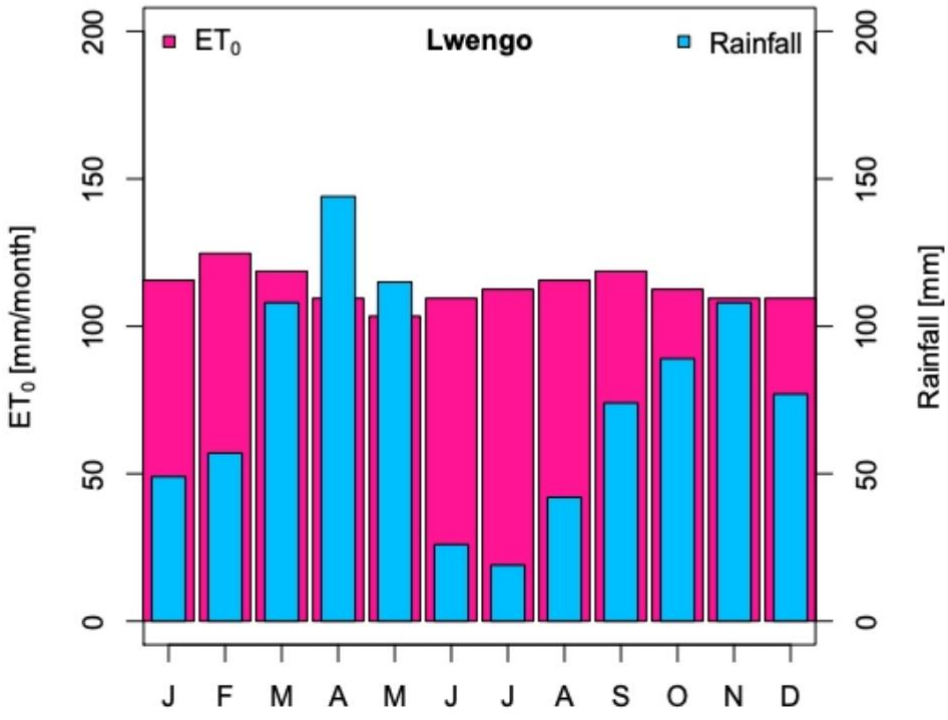
J F M A M J J A S O N D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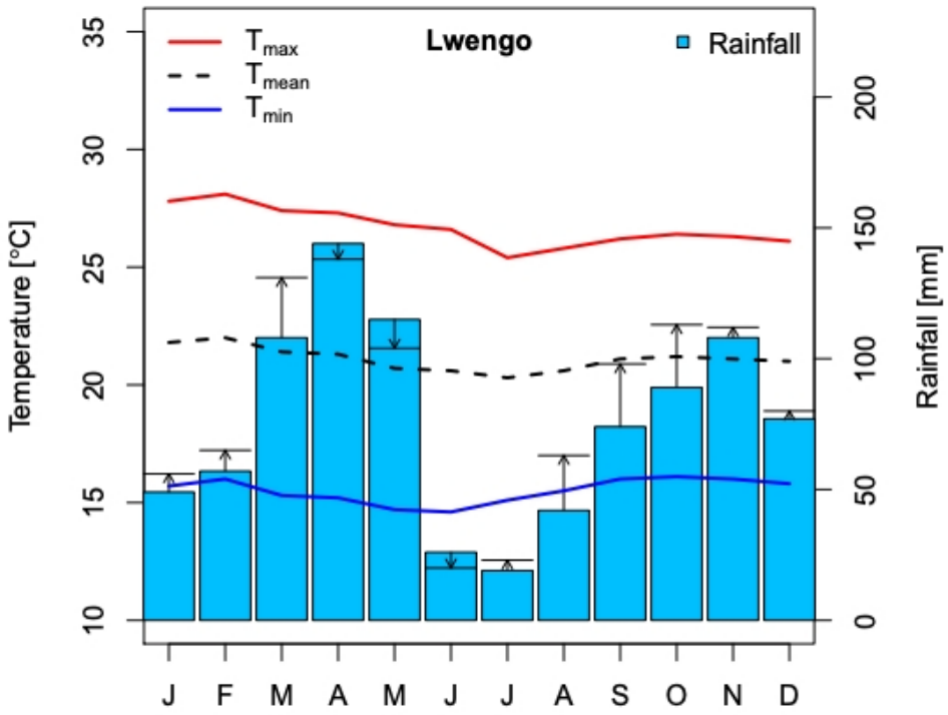
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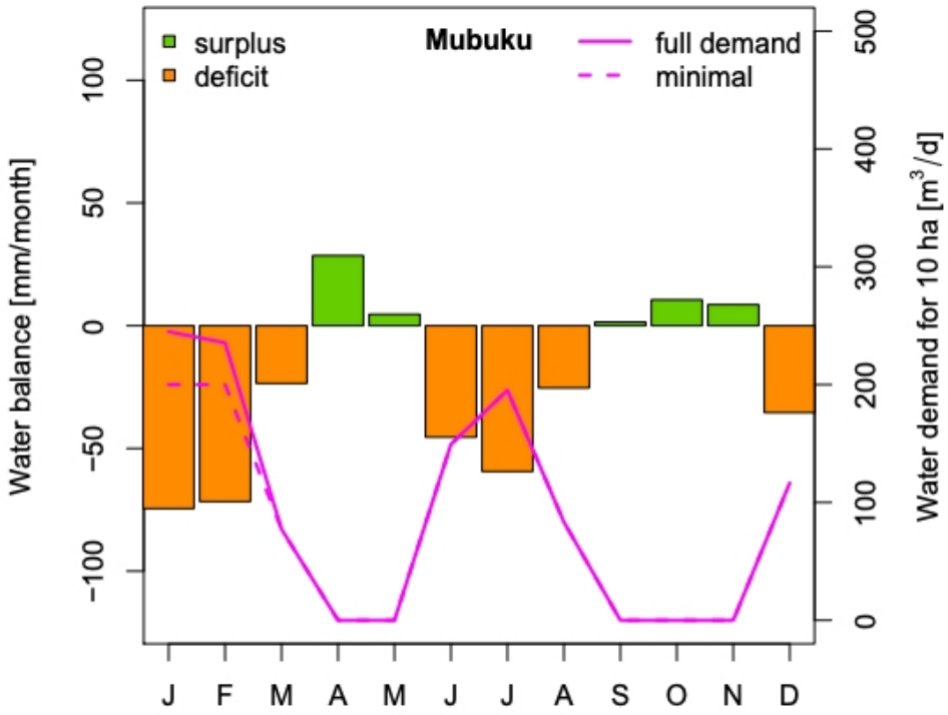
Mubuku
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full demand
minimal
Water balance [mm/month]
Water demand for 10 ha [m3/d]
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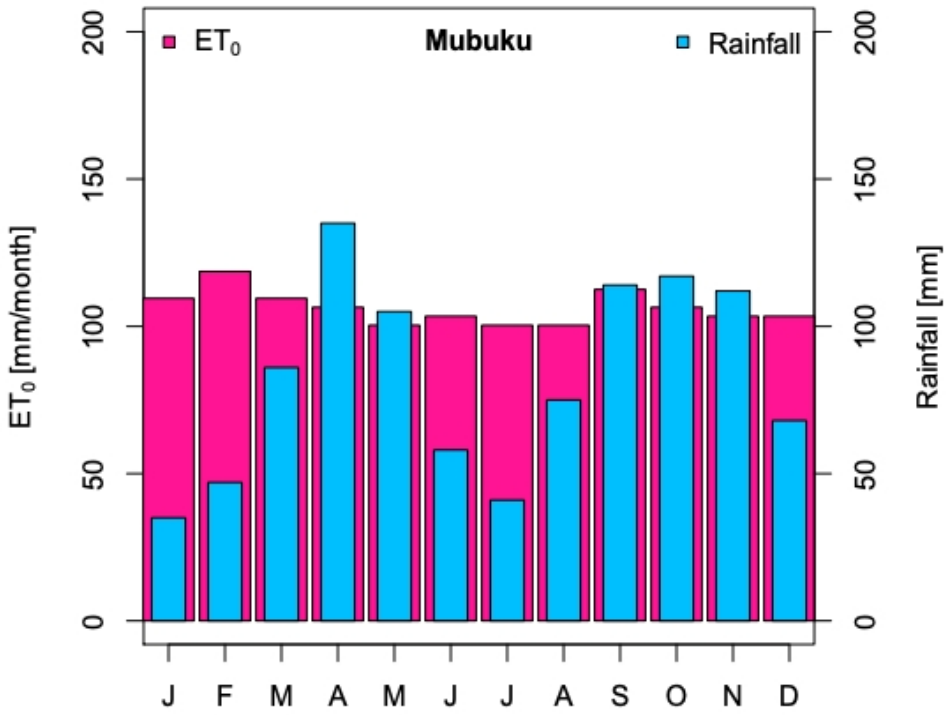
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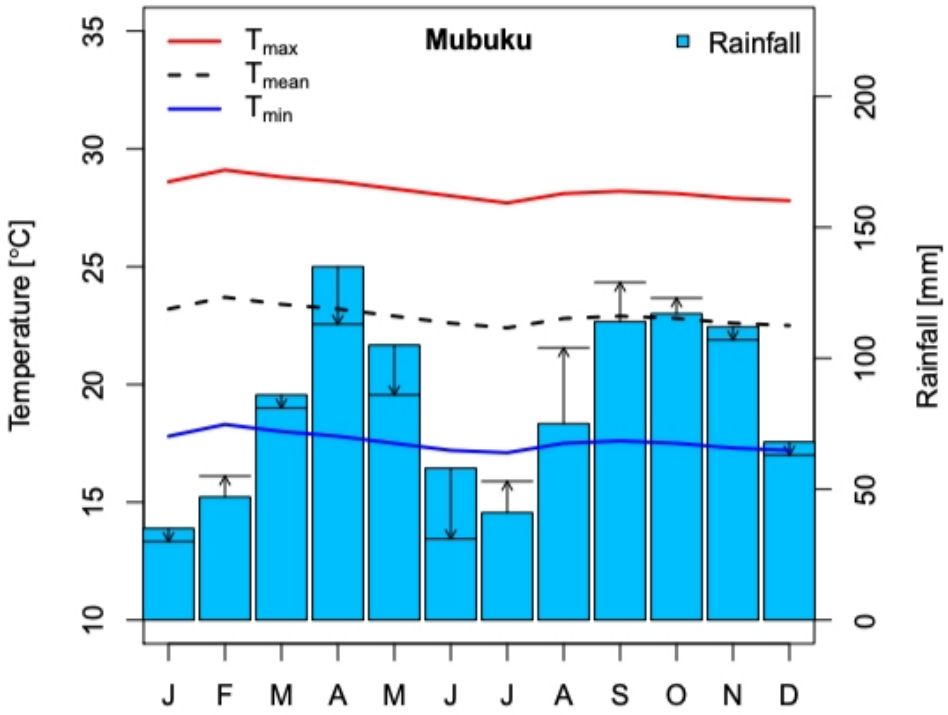
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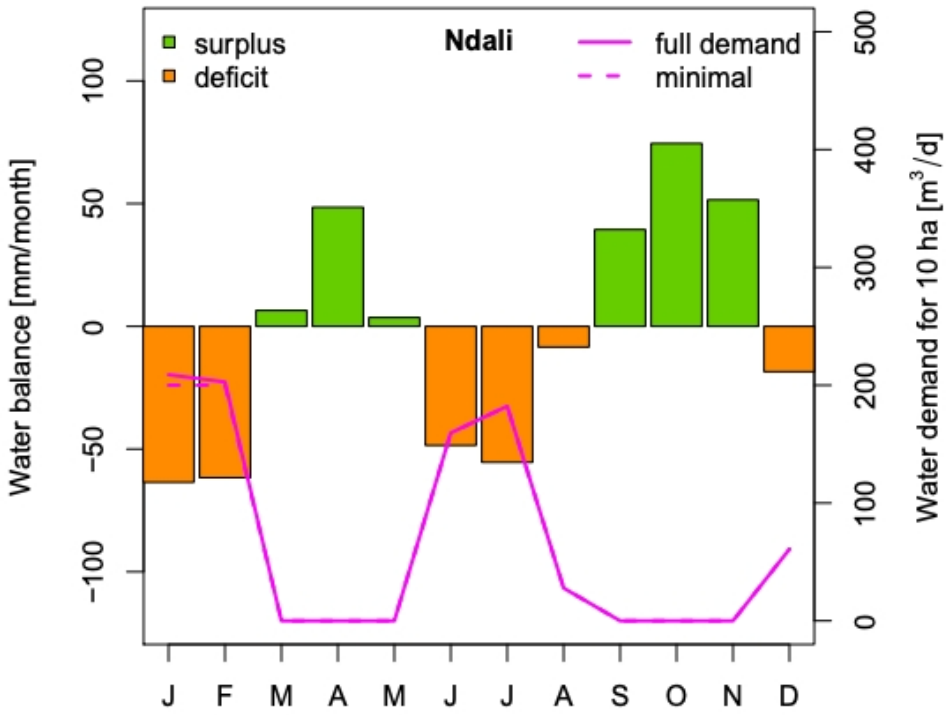
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full demand
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Water balance [mm/month]
Water demand for 10 ha [m³/d]
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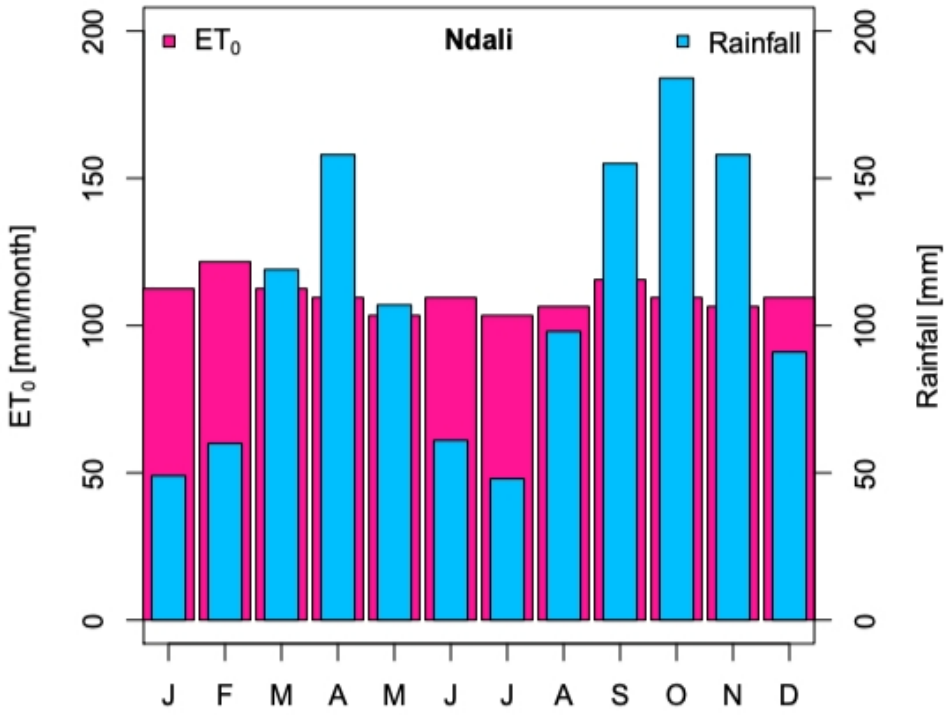
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Rainfall [mm]
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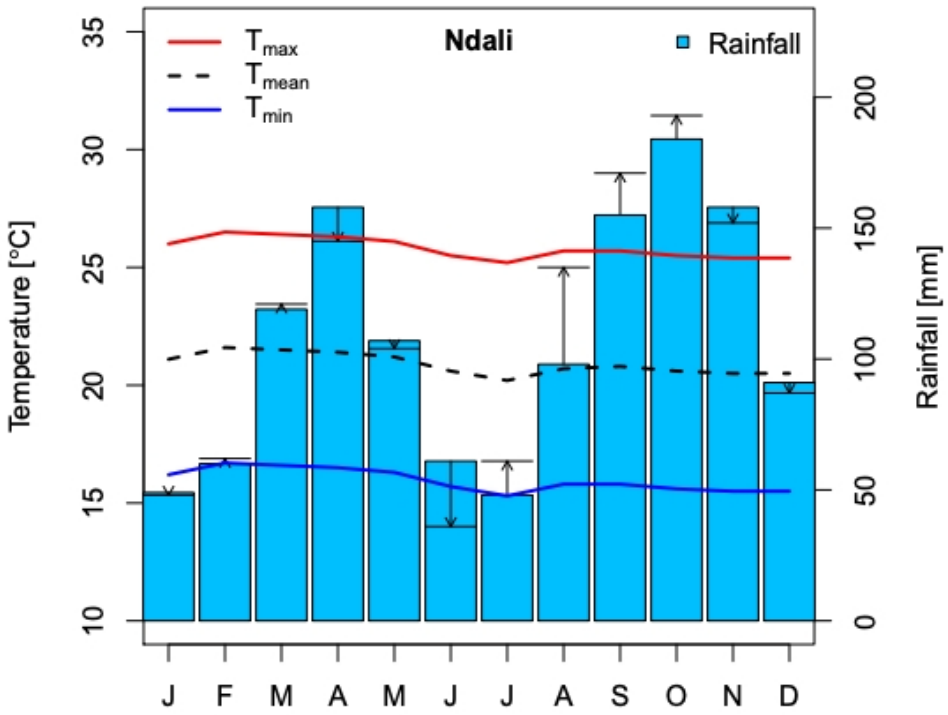
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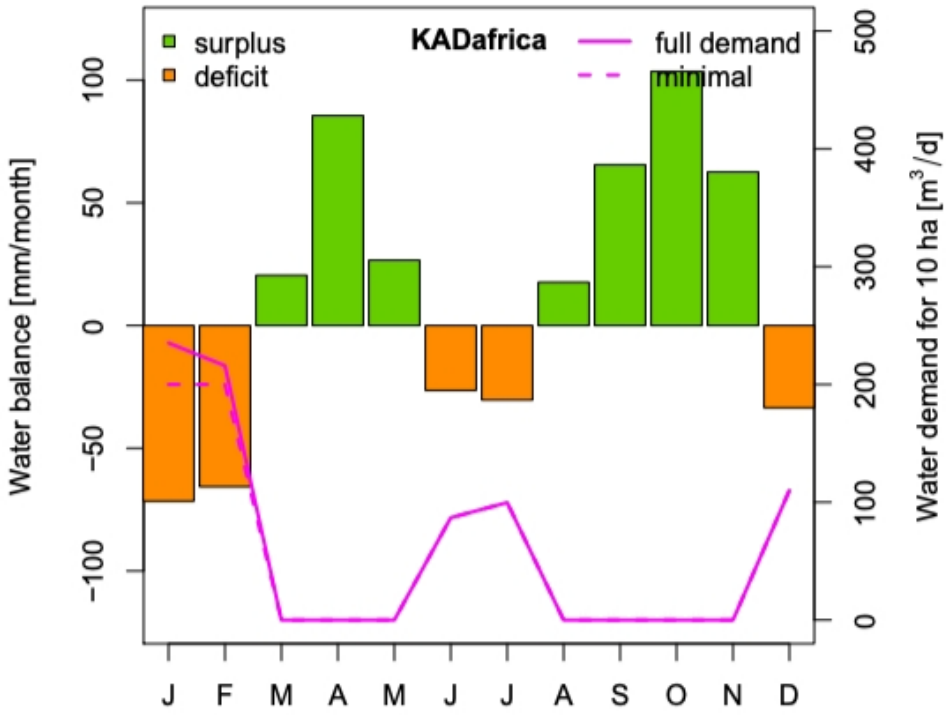
KADafrica
surplus
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Water balance [mm/month]
Water demand for 10 ha [m³/d]
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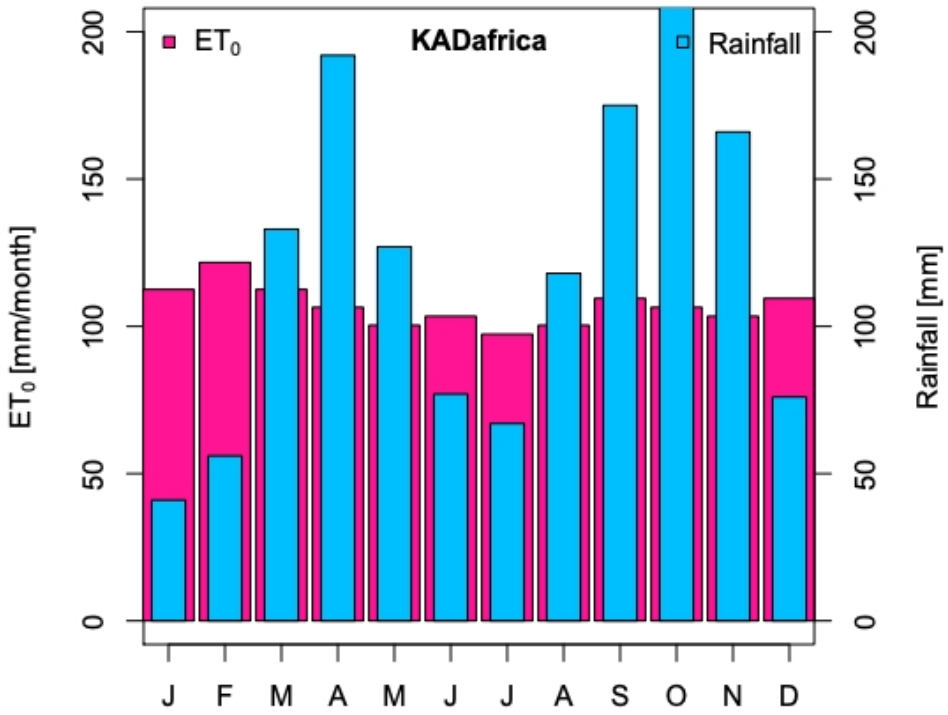
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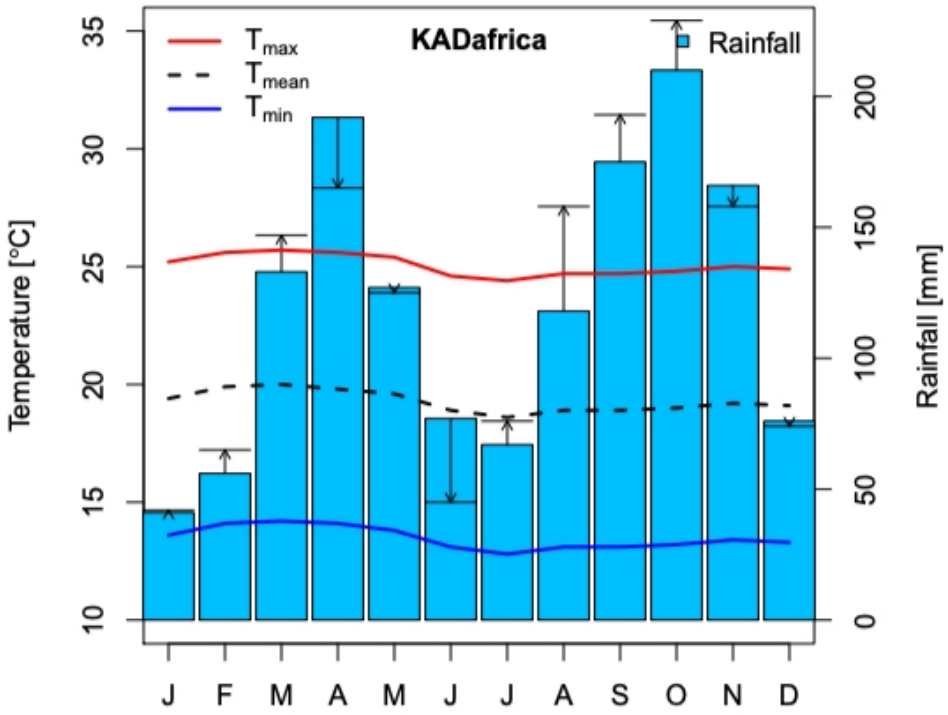
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Rainfall
Temperature [°C]
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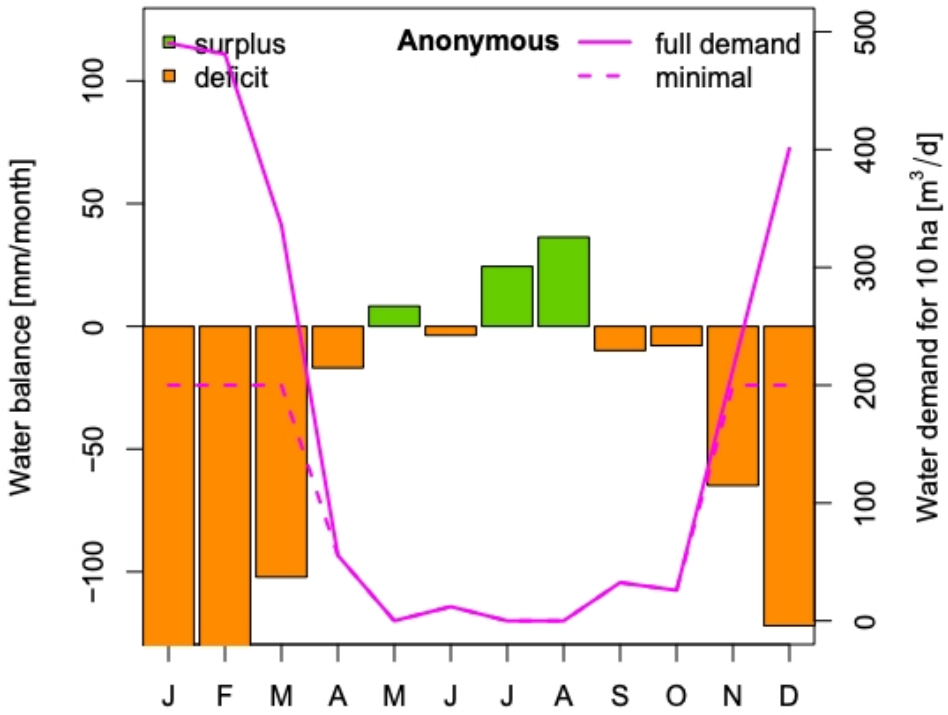
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Water balance [mm/month]
Water demand for 10 ha [m³/d]
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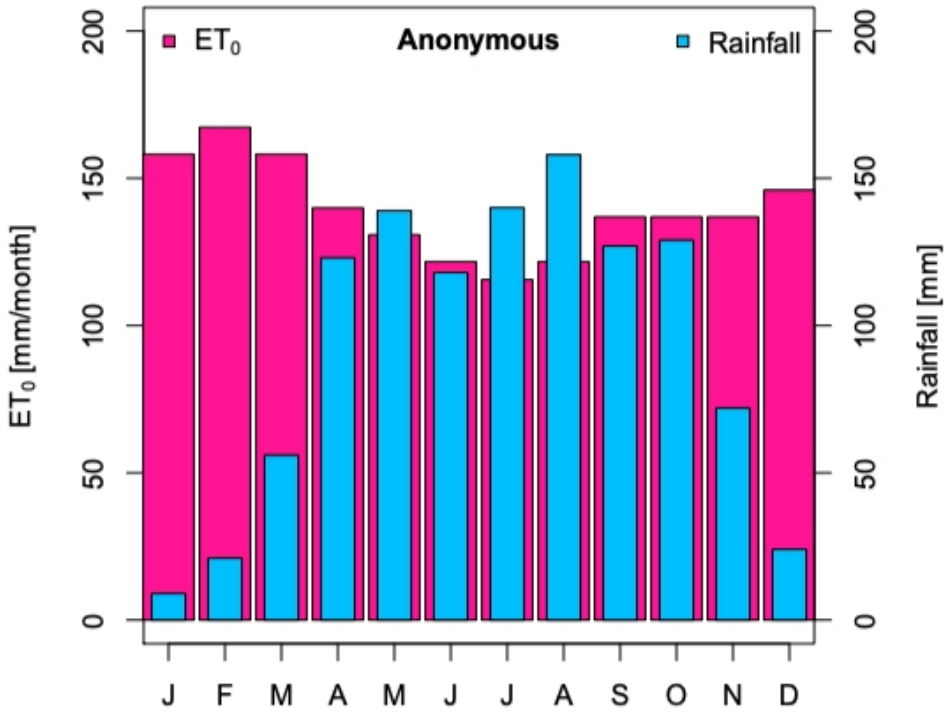
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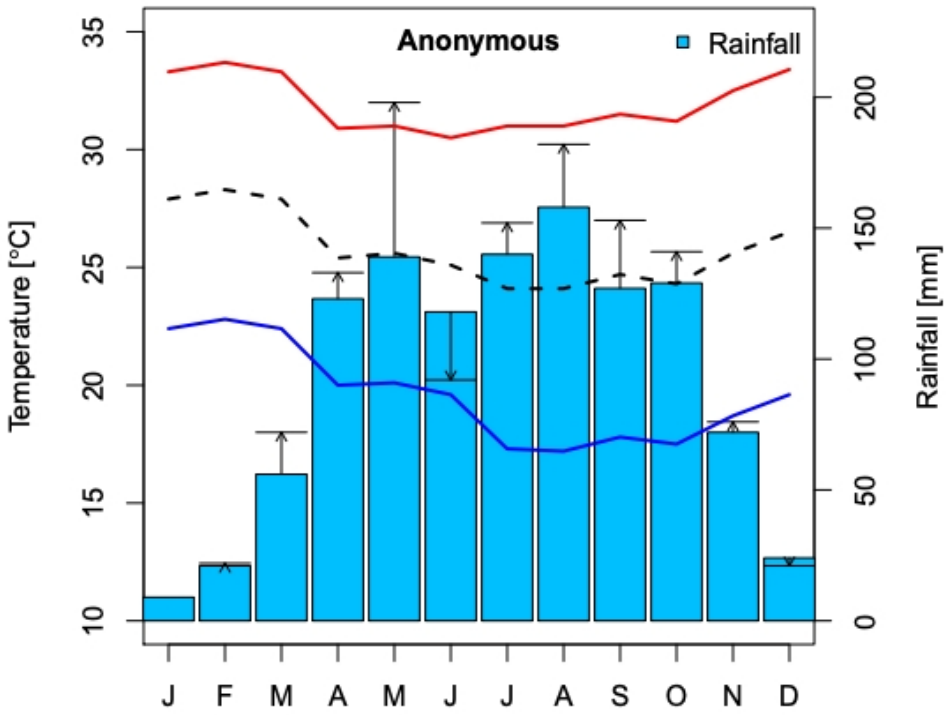
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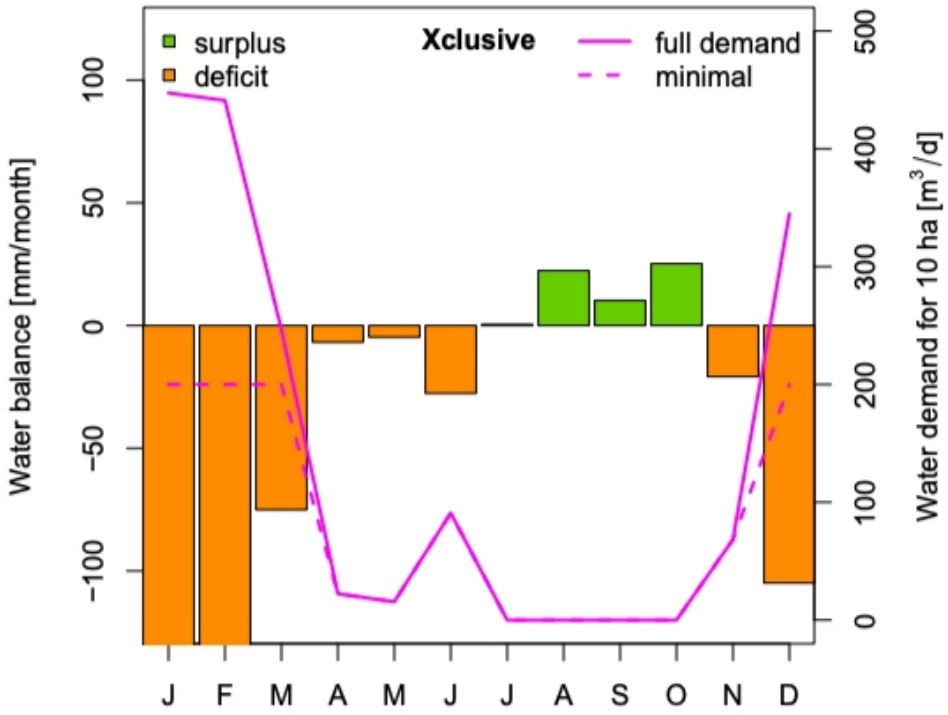
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Water balance [mm/month]
Water demand for 10 ha [m³/d]
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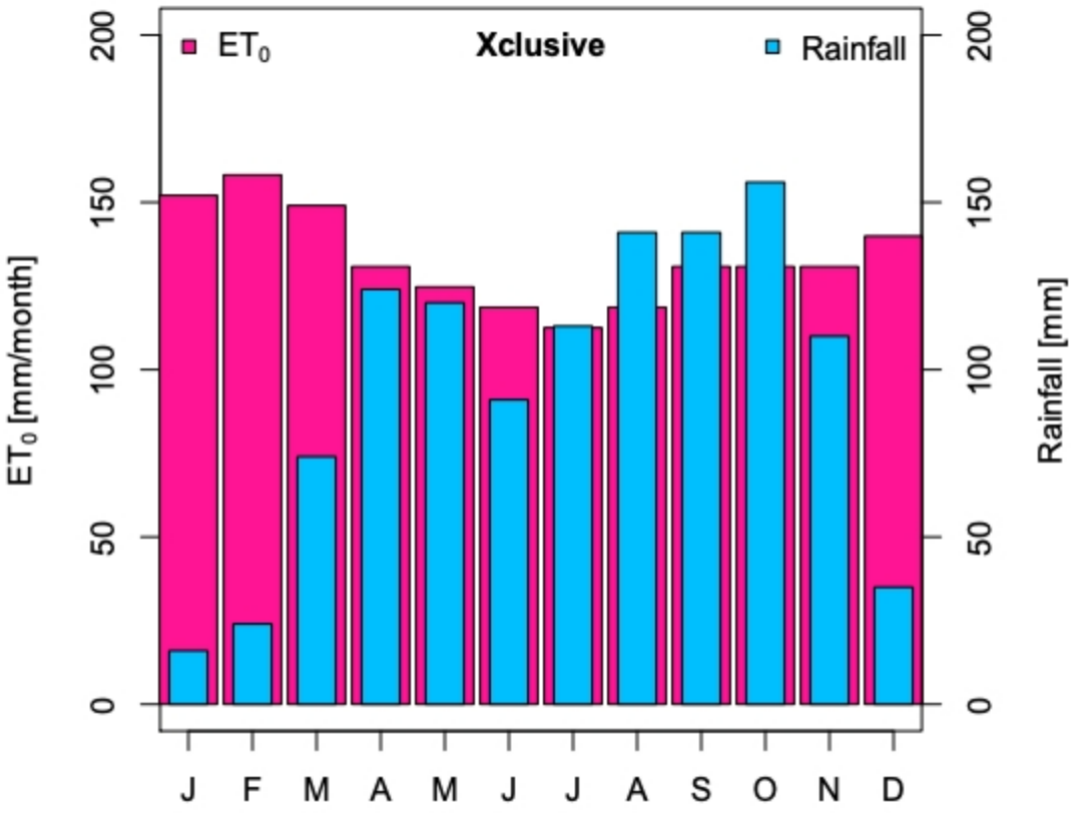
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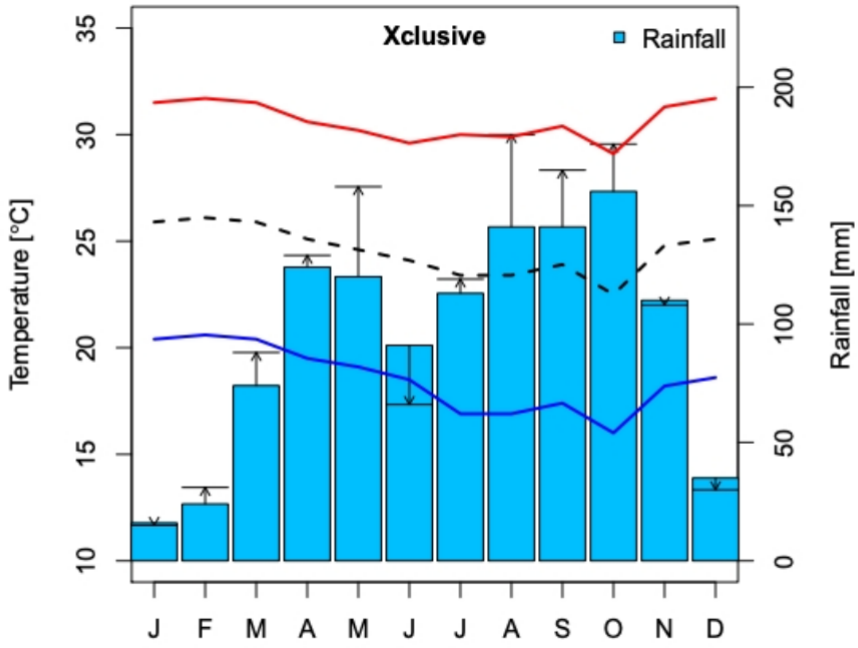
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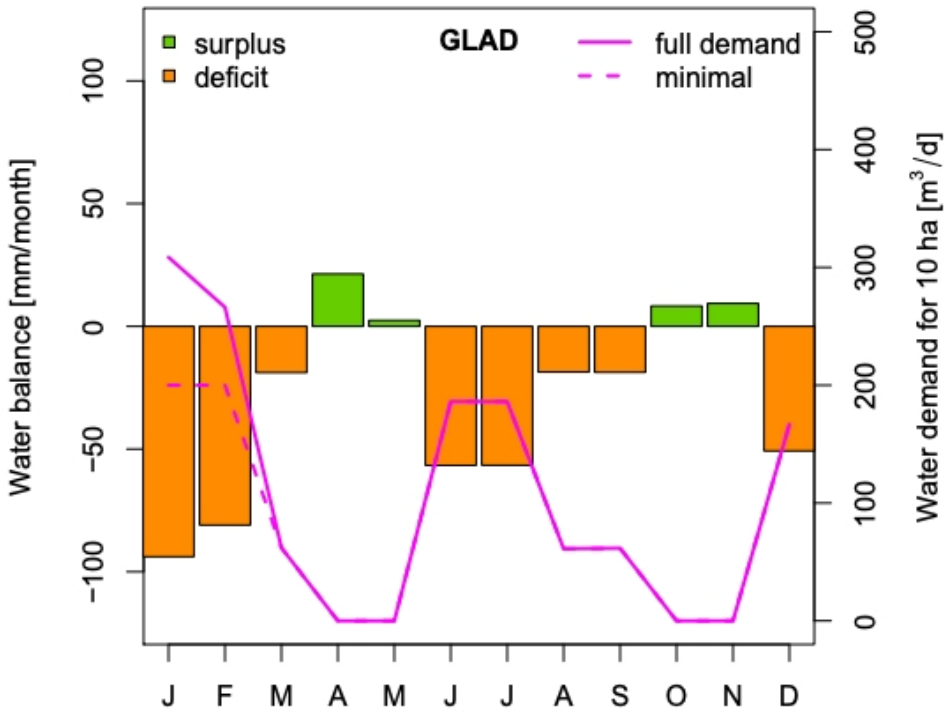
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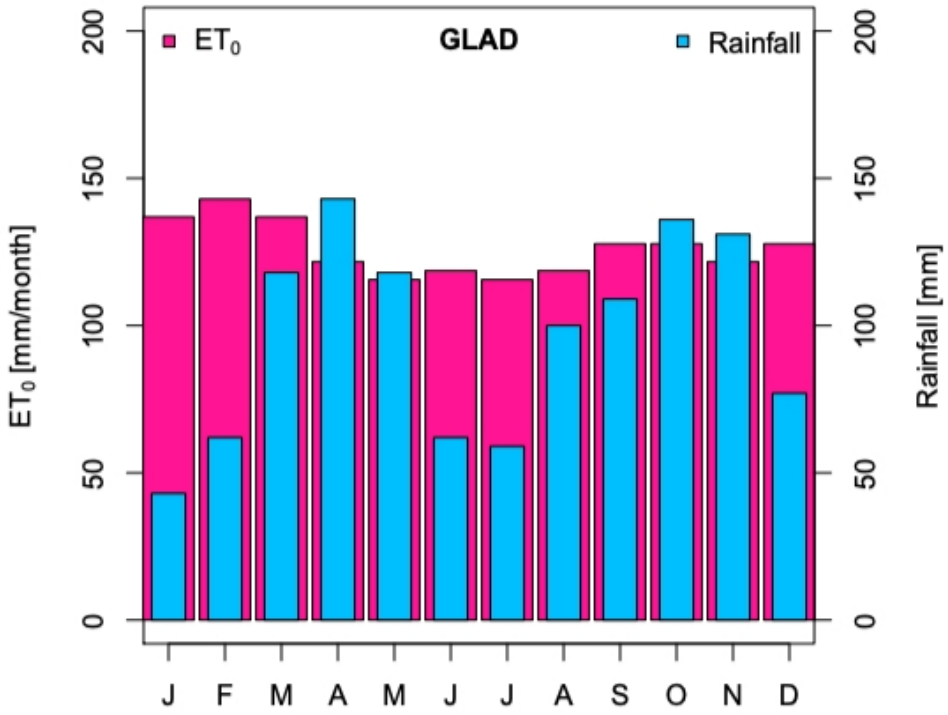
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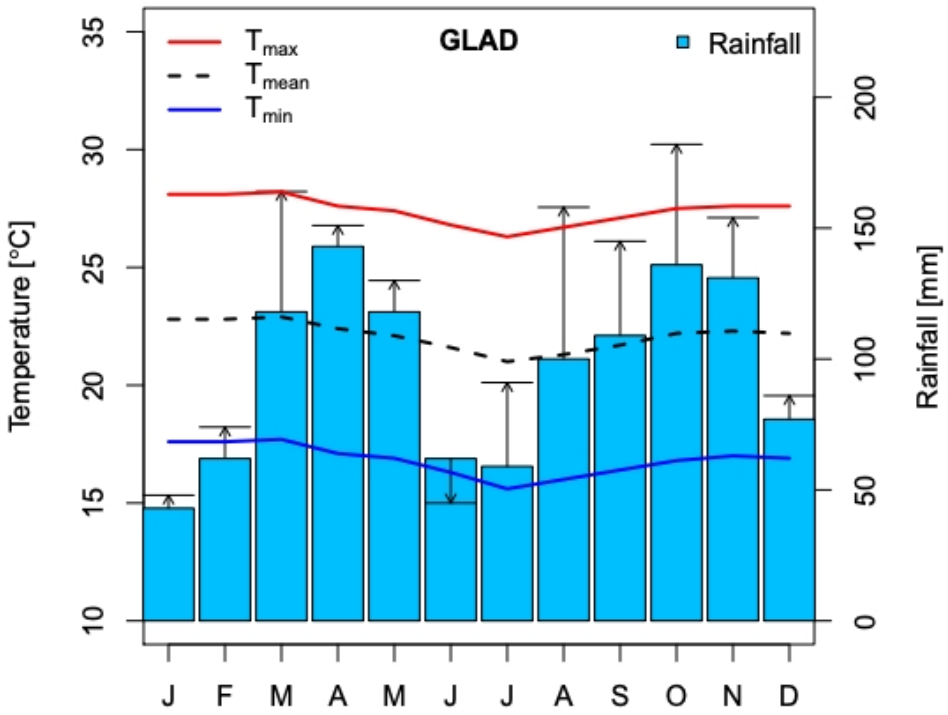
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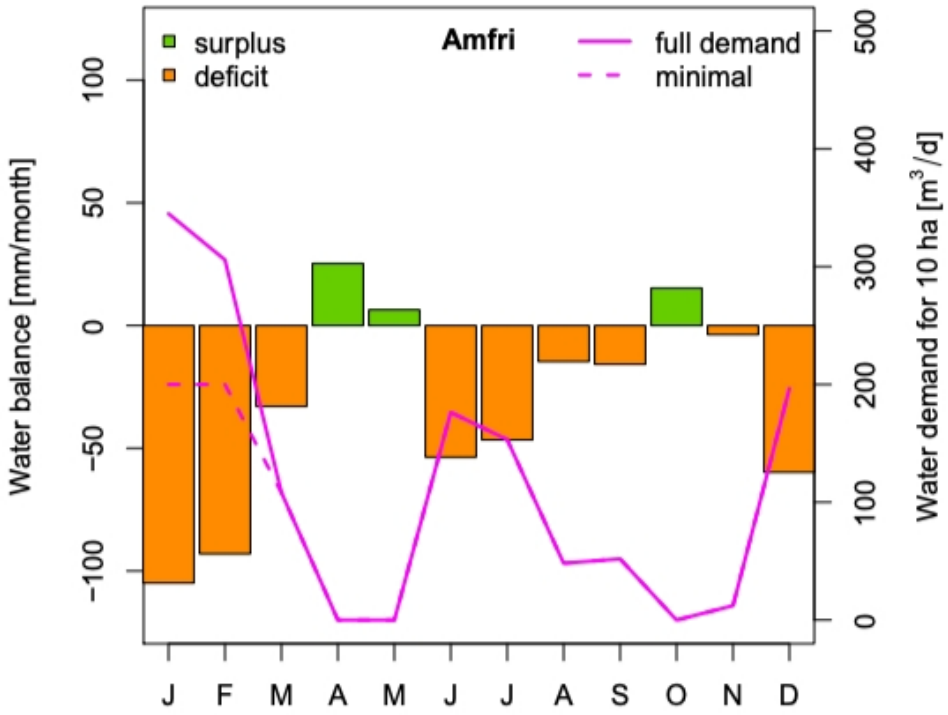
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Water balance [mm/month]
Water demand for 10 ha [m³/d]
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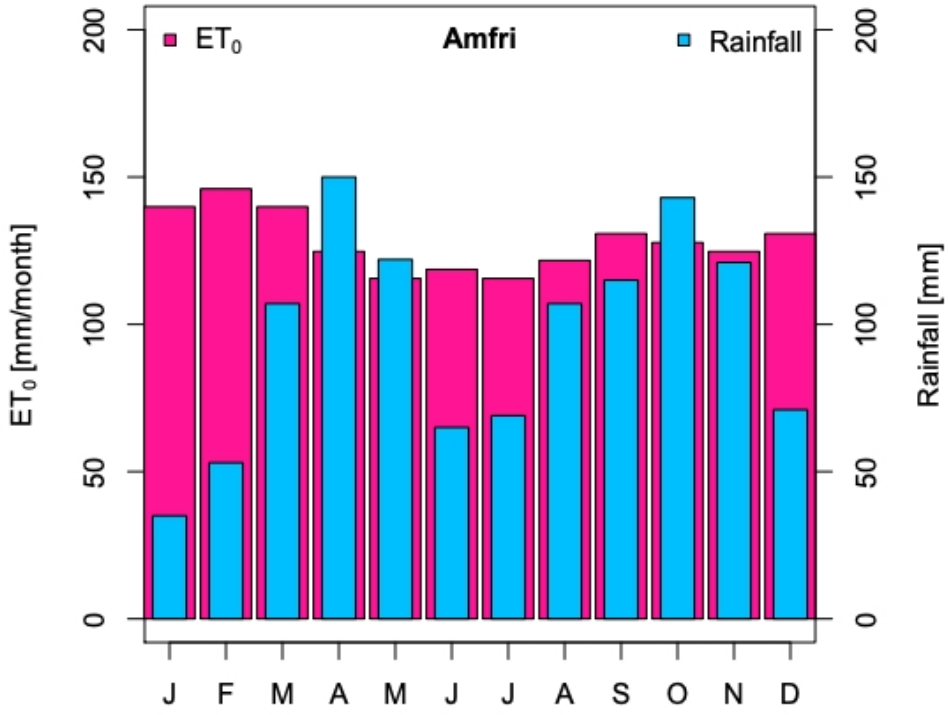
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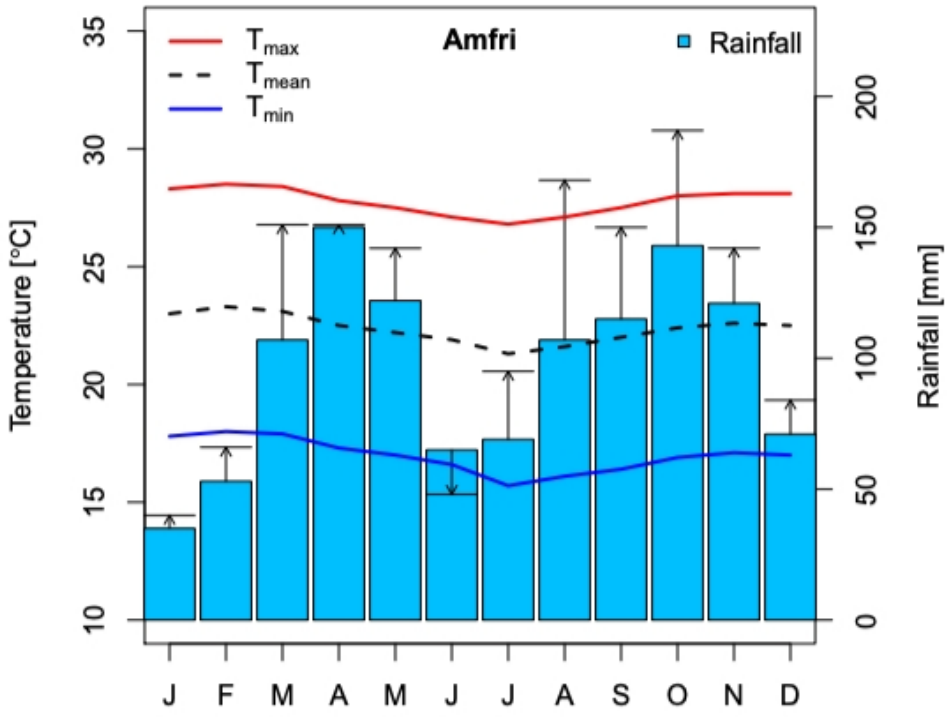
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Proactive Management of Urban Flooding
Experiences of Trinity Enviro and its partner organisations:
• Hungarian Academy of Sciences/Eötvös Loránd Research Network
• Budapest University of Technology and Economics

trinity

General Information

Area of interest

Tackling real life complex water management issues with evidence-based models on a scientific background

Our concept

1. Indentification of key drivers
2. Indentification of key problems (direct, indirect, hidden)
3. Designing potential solutions by applying a tailor-made decision-support systems
4. Decision by the local stakeholders/decision-makers

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Experiences

- References on 5 continents, more than 10 climate-zones
- From the most urbanized cities to subsidiary family house-holds and untouched territories
- Working with various stakeholders: subsistence farmers/hunters/fishermen, waste pickers to governors, ministers and CEOs
- Multilateral agencies: UNDP, UNESCO, GEF, The World Bank, GGGI, Arab League, European Commission
- Multinational companies: OiLibya Holding, Holcim Group

Reference in Brazil:

- Sustainable water-management of the medio Paraíba do Sul basin, including the LIGHT system

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Precipitation-related Projects

- Holcim cement factory EIA – developing a model describing the rain-washout and flow-driven transport of emitted air pollutants (Hungary)
- Local precipitation field analysis based on historic rain radar analysis and ground measurements (Hungary)
- Water availability (including surface and river flow) analysis based on remote-sensing rain data (Uganda)
- River flow and sediment flux analysis in a large ungauged area (Albania)
- Updating IDF curves with climate change (Hungary)
- Surface runoff, sewer discharge and inundation analysis in a mountainous metropolitan area (Hungary)
- River flow and erosion analysis (Albania, China, Uganda, Austria, Switzerland, Romania, Brazil)

Climate Change and Precipitation Analysis

- Hungary
- Switzerland
- Uganda
- Croatia

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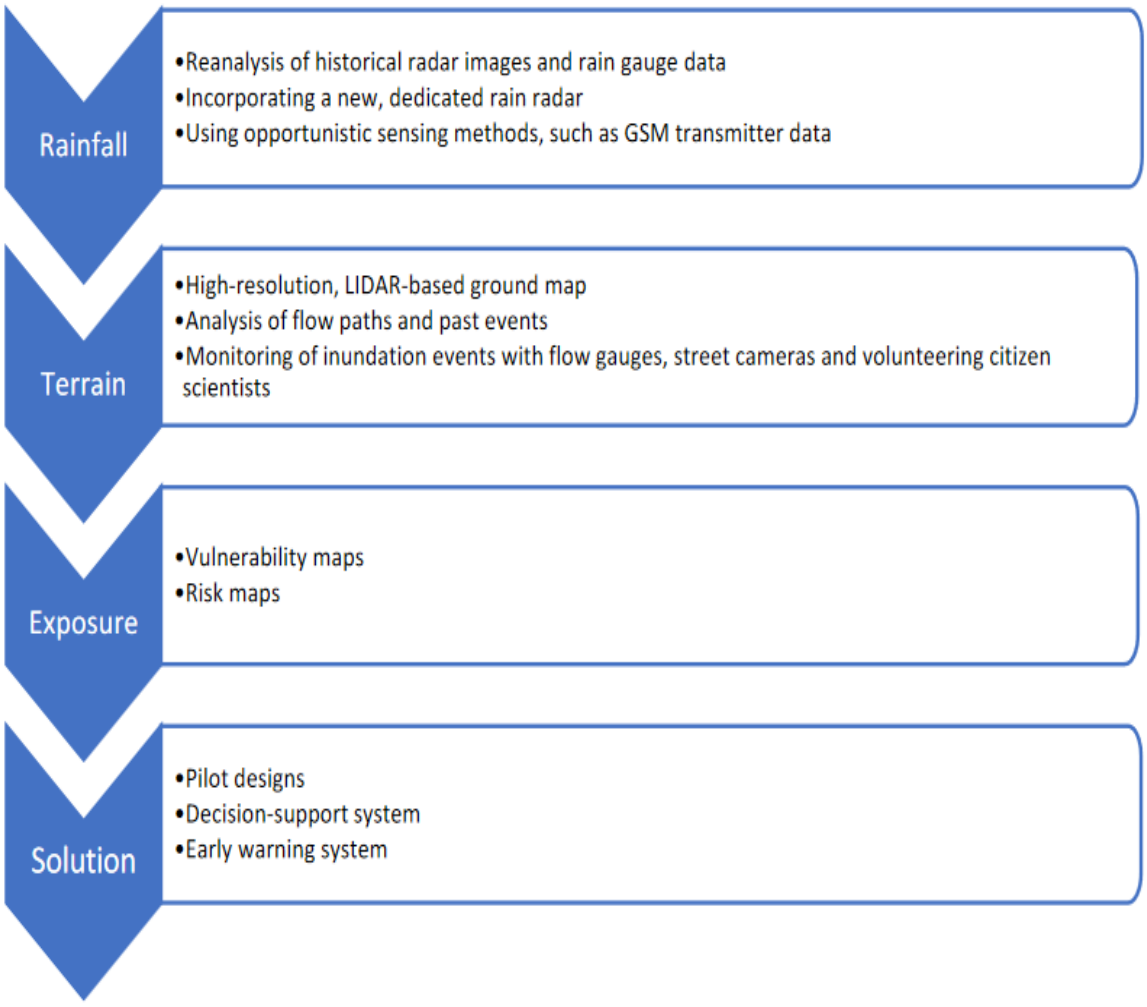
Other Proprietary Toolkits

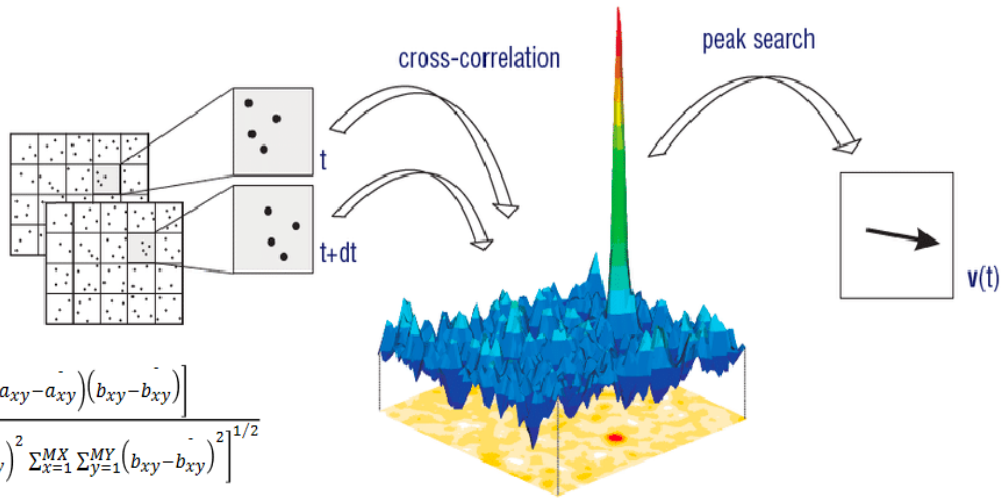
- Self-teaching algorithms
- Built-in optimisation tools
- Multi-stakeholder decision trees
- Stakeholder analysis
- Multi-stakeholder decision optimisation

Conceptual Framework for Niterói



Toolkits for Niterói

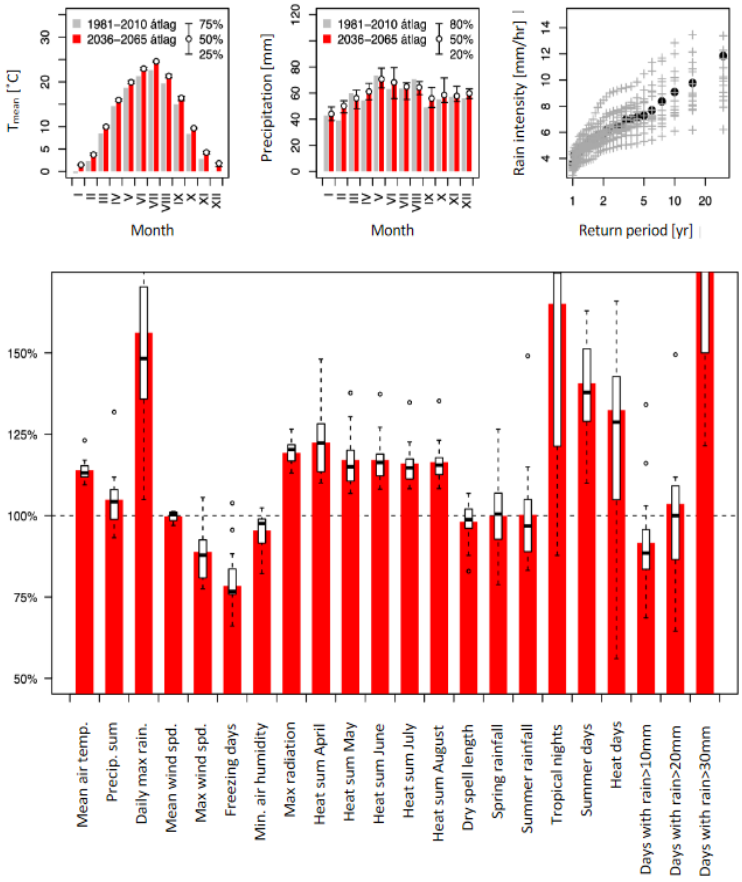
- Near-future rain forecast based on rain radar data using patch movement tracking and extrapolation using particle image velocimetry (PIV)



- $R_{ab} = \frac{\sum_{x=1}^{MX}\sum_{y=1}^{MY}\left[\left(a_{xy}-\bar{a}_{xy}\right)\left(b_{xy}-\bar{b}_{xy}\right)\right]}{\left[\sum_{x=1}^{MX}\sum_{y=1}^{MY}\left(a_{xy}-\bar{a}_{xy}\right)^2 \sum_{x=1}^{MX}\sum_{y=1}^{MY}\left(b_{xy}-\bar{b}_{xy}\right)^2\right]^{1/2}}$

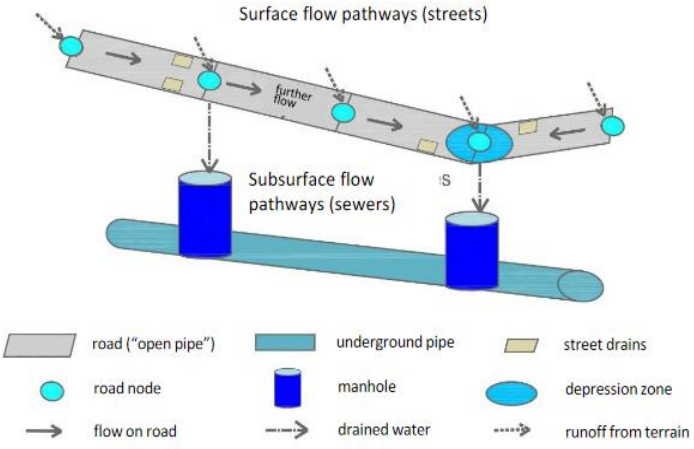
Toolkits for Niterói

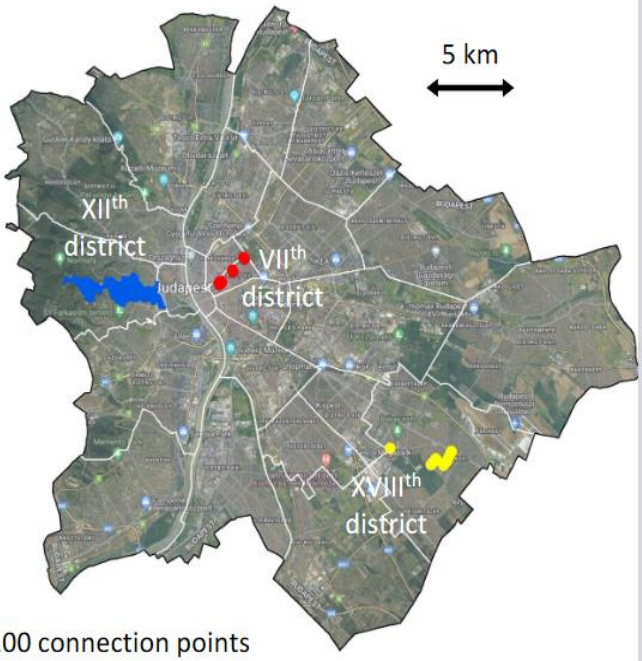
- Stochastic climate downscaling for investment analyses
- Using Ensemble forecasts from Cordex runs
- Assess the uncertainty of predictions
- Increase robustness of planned interventions



Toolkits for Niterói

- Connected dynamic models of surface and sewer runoff for entire metropolitan districts
- Designed for operative and strategic forecasts



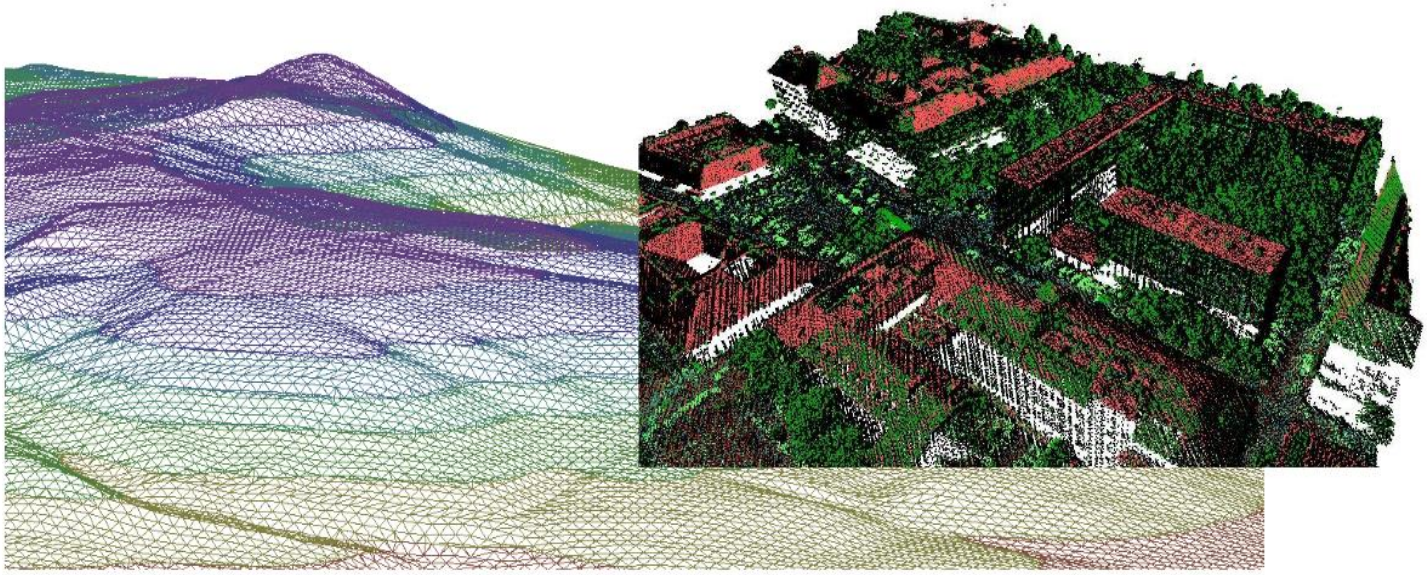


5000+3100 connection points

trinity

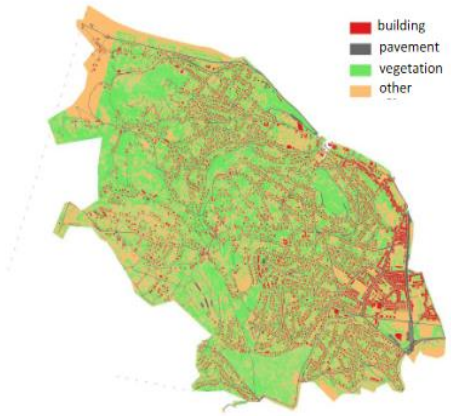
Toolkits for Niterói

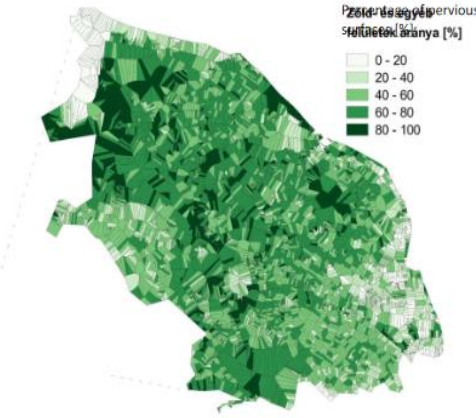
- Surface run-off modelling on combined HD LIDAR surface surveys and HD orthophotos



Toolkits for Niterói

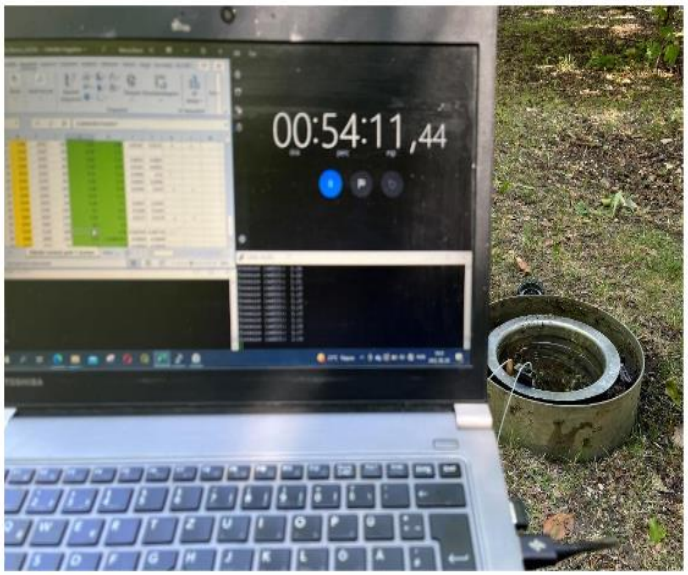
- Automatic surface classification for run-off modelling based on HD orthophoto

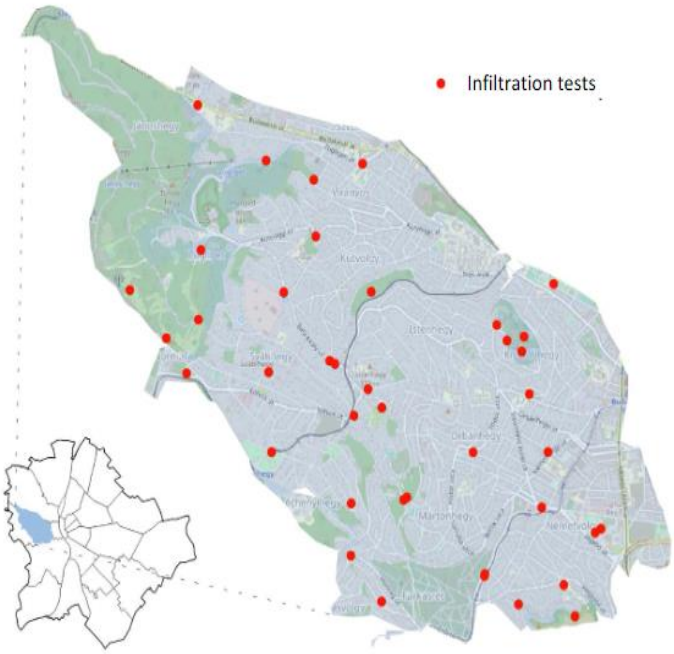




Toolkits for Niterói

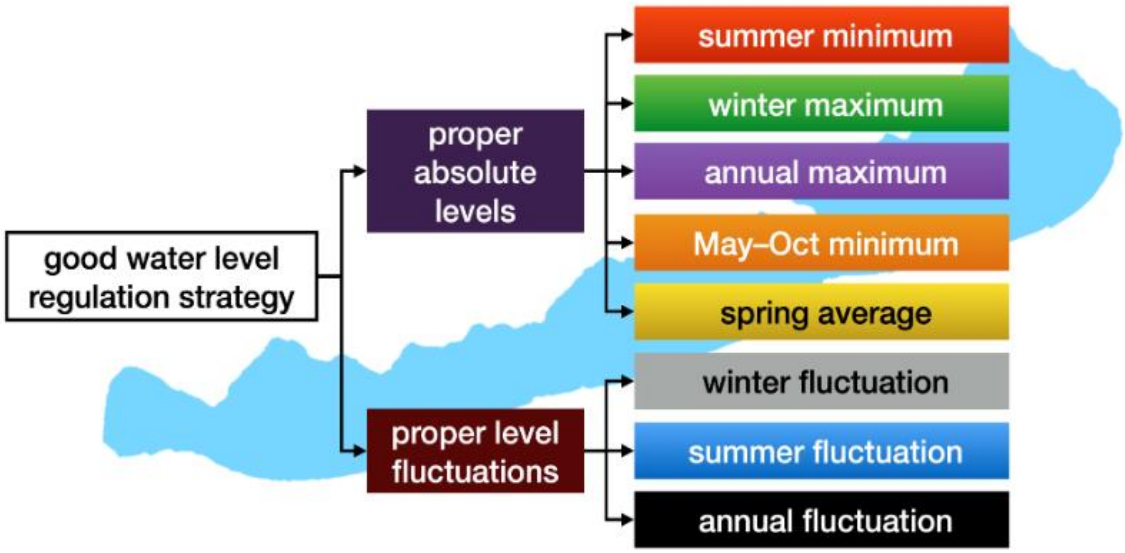
- In-situ runoff, flow, and infiltration measu





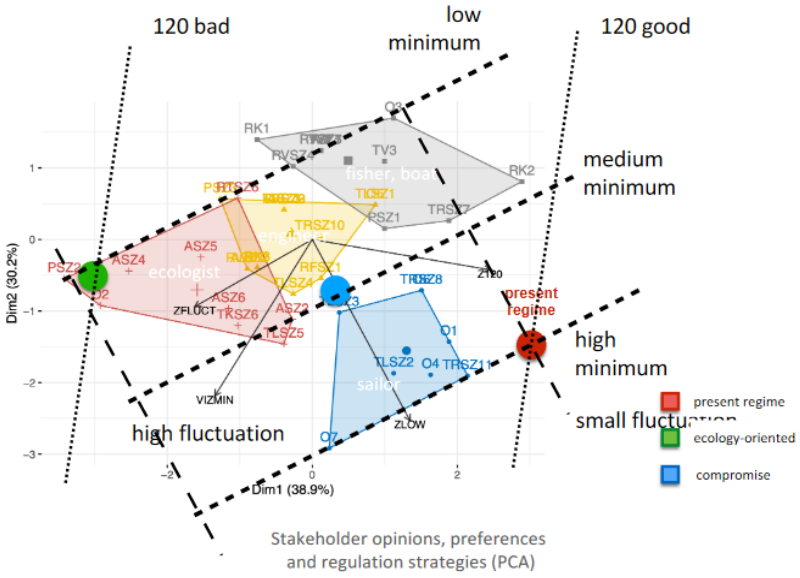
Toolkits for Niterói

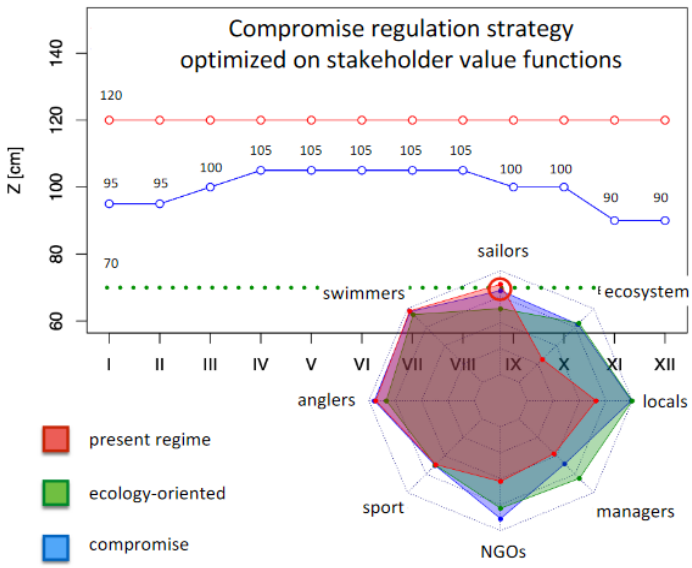
- Decision Support Systems for multi-stakeholder problems based on Multi-Attribute Value Theory



Toolkits for Niterói

- Generating optimised management alternatives to maximise stakeholder satisfaction





Thank you for your attention

IF YOU HAVE ANY FURTHER QUESTION, PLEASE CONTACT US ONE OF THESE WAYS:

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