Incorporating drought risk modelling as a planning tool for climate change adaptation measures

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Project objectives

Objective

- To incorporate drought risks modelling as a planning tool for climate change adaptation measures in Saint Kitts and Nevis

Main outputs

- Implementation of a drought forecasting system
  - Stakeholder working group
  - Capacity building

Outcome

- Increased resilience in the water sector, improved use of water resources, water and food security

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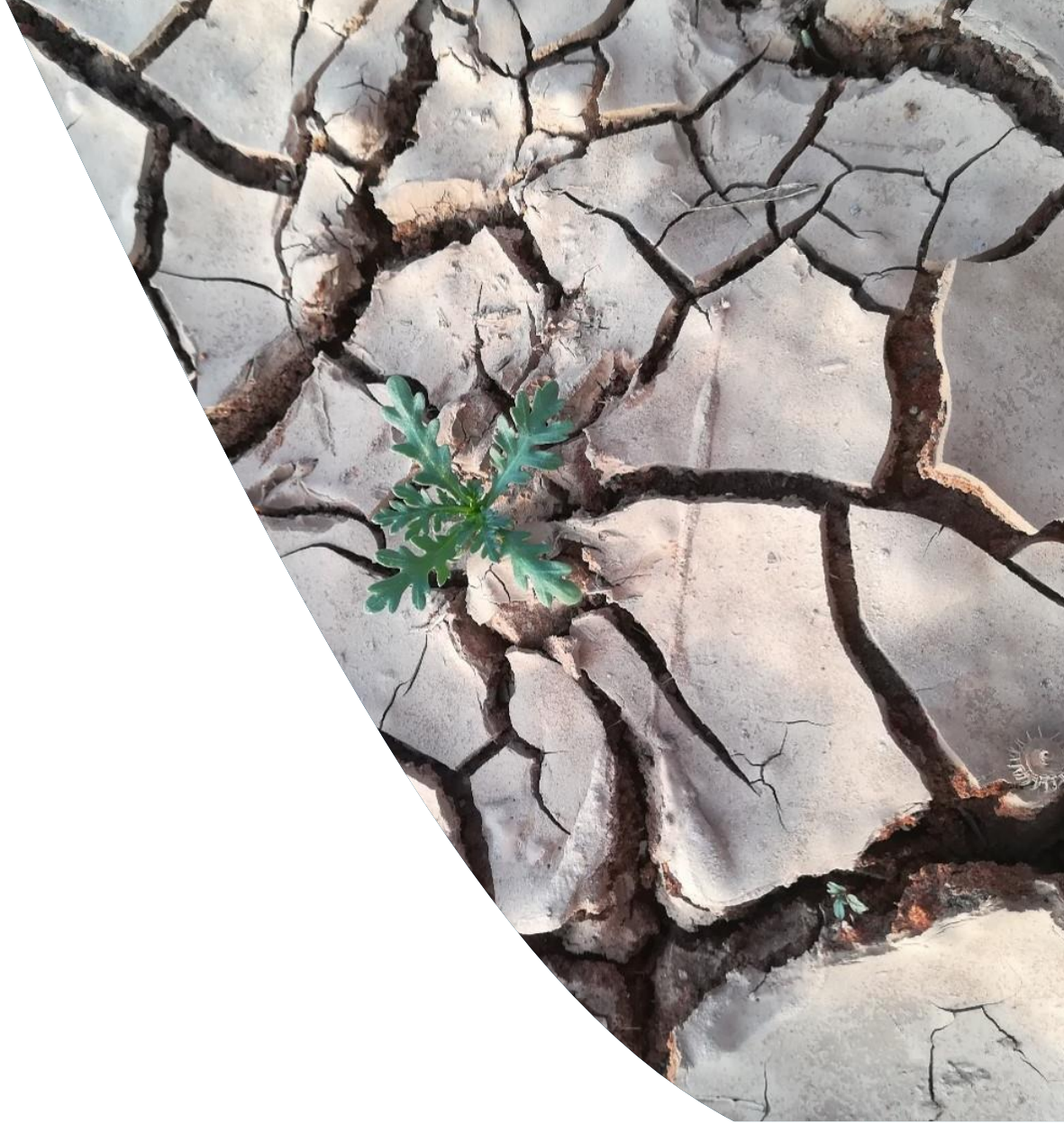
Drought and climate change

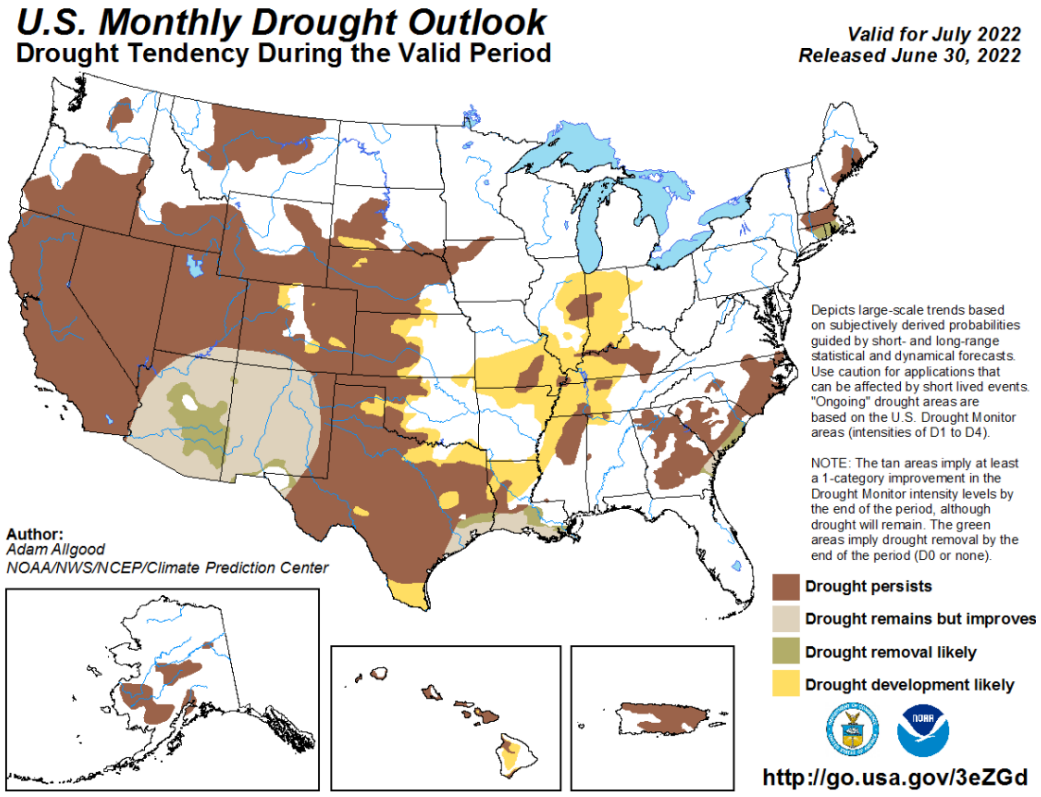
- Increasing drought risk is projected for Caribbean SIDS, with moderate to extreme drought conditions projected if temperature increases by 1.5°C.
- Since 2015, St. Kitts and Nevis has been experiencing significant drought which impacts water and food security.
- Almost half of St. Kitts and Nevis receives less than 50 inches of rainfall per year.



Can droughts be predicted?

- Substantial advances in drought prediction
- Still challenges in predicting the full aspects of drought onset, severity, development, and recovery
- Occurrence at different temporal and spatial scales
- Efforts still needed in understanding drought mechanisms and predictability in different regions & seasons

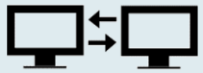
Early warning systems can provide decision makers with timely and reliable access to information on which mitigation measures can be based.



Monthly drought outlook published by the U.S. National Weather Service's Climate Prediction Center, which provides a drought forecast for the following month.

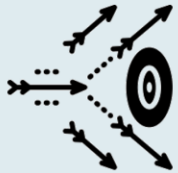
Challenges

No data sharing



time needed to incorporate new technologies

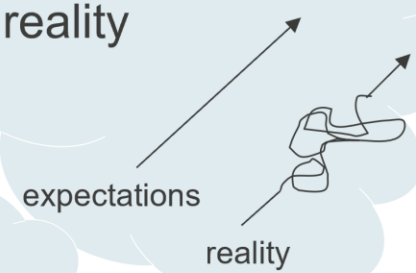
Forecasts often unreliable



changes of political agendas

Information is too technical

Miss-match between user expectations and reality

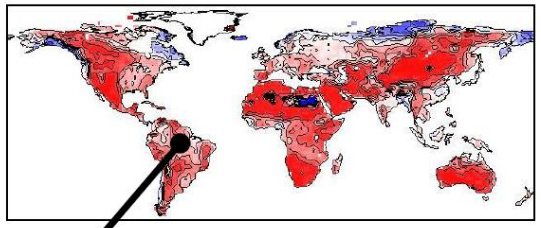


Insufficient data

data not relevant in local context

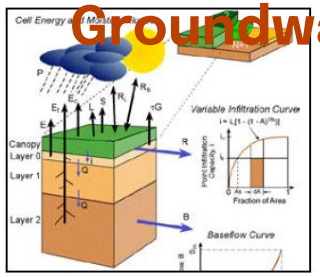
cost of new technology

Technical components



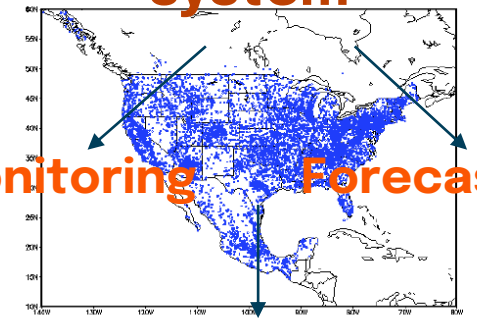
Water balance

Groundwater



Type of system

Ground Observations

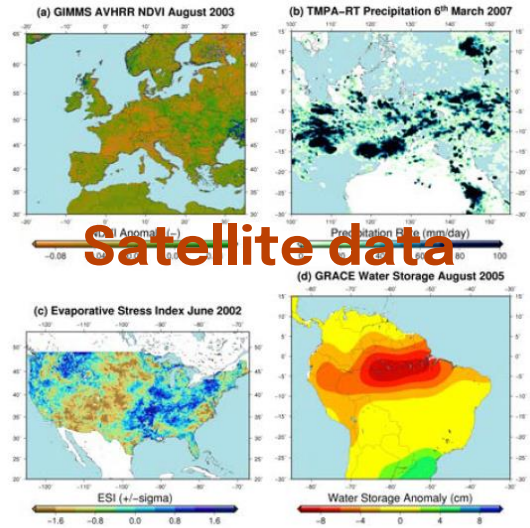


Monitoring

Forecasting

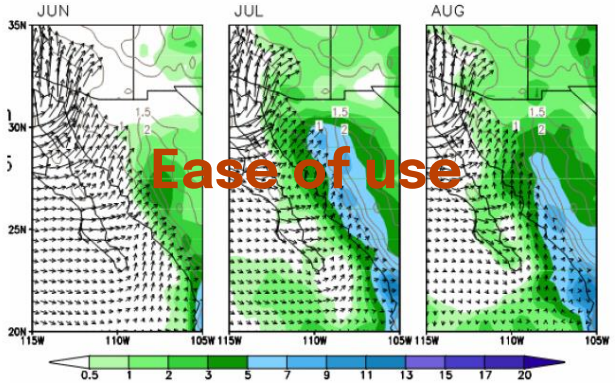
Operational

Satellite Remote Sensing



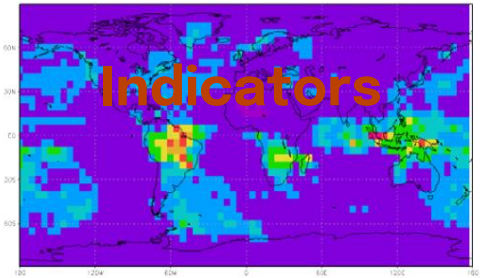
Satellite data

Reanalysis



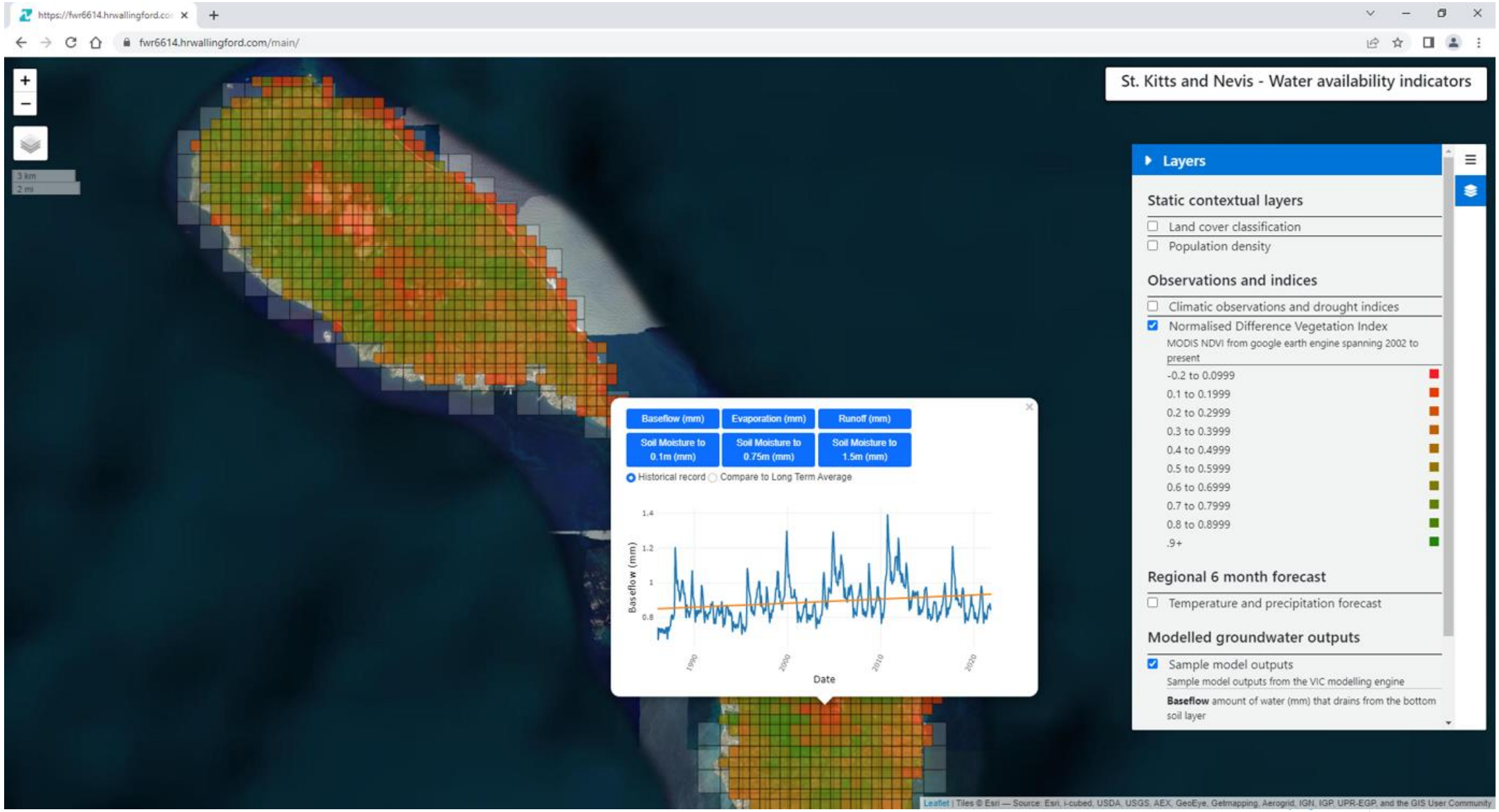
Ease of use

Regional/Global Climate Models,
Statistical Prediction



Indicators

The web-based system



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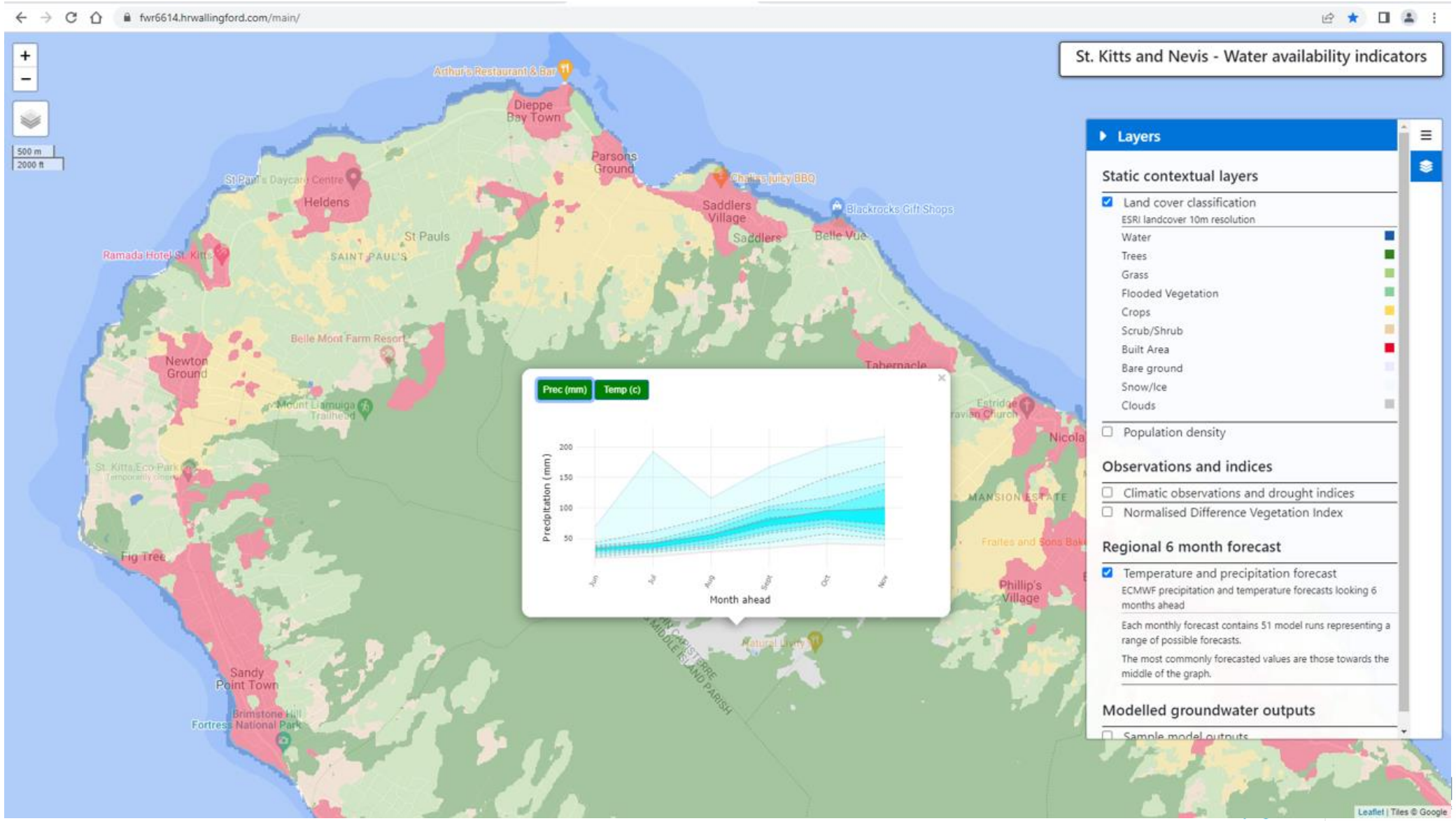

What needs to be done so that the full benefits of drought forecasting systems can be realized?

- Enhancements in remote sensing capabilities
- Continuity of Data
- Automated data collection
- Interoperability
- Models and Decision-Support Tools
- Community Dialogue
- Coordination under single authority
- Integrated approach
- Stakeholder involvement early on
- Lessons learnt from other countries

There's no radar image for a water crisis. No storm surges, no debris fields - the Tap-Out is as silent as cancer. There's nothing to see, and so the news is treating it like a sidebar.

Jarrod Shusterman (from the book “Dry”)

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Thank you!

Sustainability

Sustainability is resolved by addressing a problem in a way which is relevant to the local community

- Ensure end-users are involved early in the process
- Focus on capacity building activities
- Co-designing of methods and tools
- Local partners play a key part
- Strong presence in the country

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