EuroGEO Workshop 2025

Notetaker	Mark Noort, HCP international
Session	Space applications: From research to operations – Water management
Day	DAY 3
Time	13:00 – 14:15
Document version	Final
Document date	30/10/2025
Reviewers	Nick van de Giesen

Part 1 – Session overview

There are many challenges pertaining to water management, including increasing demand, climate change, deteriorating environmental conditions, decreasing water availability, decreasing water quality and increased risks, such as floods, droughts and salinisation. The Netherlands has always been strong in knowledge and innovation in relation to water resources management. This session focusses on how Earth observation, ranging from in situ measurements to satellite data, helps improve water management, with examples from the Netherlands.

The organiser of this session was the Knowledge Network Water (KNW, https://kennisnetwerkwater.nl/), which is sponsored by the National Space Office. KNW brings together companies, academia, and water managers in the Netherlands around remote sensing of droughts, water quality, and floods.

The chairman of the KNW, Nick van de Giesen (Delft University of Technology), gave a general introduction on the topic.

Marit van Oostende (Free University) and Annelies Hommersom (Water Insight) gave presentations on water quality.

Han, Qianqian (University Twente), Evelyn Aparicio Medrano (FutureWater) and Bram Schnitzler (HydroLogic) presented on drought.

Lianne Wilmink (Ministry of Infrastructure and Water Management) presented on Earth observation for water management and uptake by user groups.

The recommendations and possible topics for further research and innovation of the presenters can be found in the last section of these notes.

Part 2 – Discussions

There was room for some technical questions, here are the main points.

- On uptake by users: some applications are difficult to use (complexity, specific skills required), it is better to have dummy demonstrations that have a low threshold.
- Exchange at municipality level is needed e.g. for digital twins.
- Exchange at the level of water boards is also useful.
- The point was made that this is similar to activities that JRC does for the EC DGs in terms of use of Earth observation.
- Bring together users and let them talk to each other, complementary to connecting researchers and users.
- Technology push is not a dirty word, but should be balanced with a pull from the market / potential users.

Part 3 – Specific recommendations to EuroGEO

Marit's presentation on Earth observation for water quality highlighted methods to determine water quality in the Netherlands, which is below the WFD ecological target. Her recommendations are:

- Work together with waterboards.
- High revisit, with high resolution is useful, e.g. PlanetScope SuperDove enables daily, ~4 m data.
- Earth observation must be validated and calibrated with in situ data.

Annelies highlighted the importance of combining satellite data with in situ observations for water quality, with examples related to chlorophyll monitoring, harmful algal blooms, dredging plumes and phytoplankton monitoring for shellfish.

Qianqian discussed the application of two drought monitoring indices and stressed the importance of Earth observation for drought research in his presentation on drought analysis for the Netherlands.

Evelyn presented on Earth observation for sustainable water management, with an example on drought monitoring. Her challenges / recommendations were:

- Coupling Earth observation Indicators to policy and regulations.
- Make Earth observation interpretation accessible for a wider audience.
- Provide incentives to the public and private sector to apply EO services operationally.

Bram presented the National Information Service Soil Moisture and Evaporation (LBIV) that integrates various information products, including satellite-based ones, resulting in applications for e.g. water extraction compliance, dike monitoring and flooding.

Lianne demonstrated how Earth observation data and policy for water management can be connected, with use cases on e.g. water quality, drought and low flow models, water bodies and reporting. Her recommendations for bridging science and policy are:

- Integration – Combination is key for success.
- Usability is important – Data alone is not enough!
- Ask the right questions.
- Enhance and improve continuously.
- Collaboration is crucial.