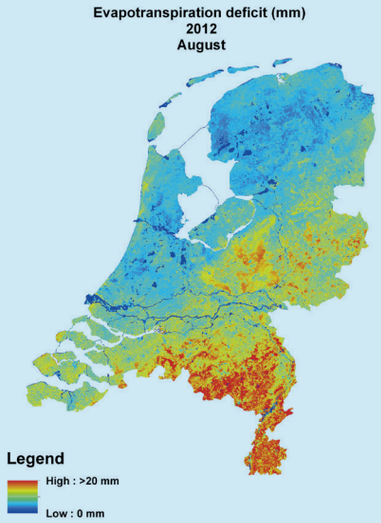
Contact

marta.fanecasanchez@deltares.nl
t +31(0)6 5241 7847

sheila.ball@deltares.nl
t +31(0)6 4691 1748

Sustainable Development Goals for water

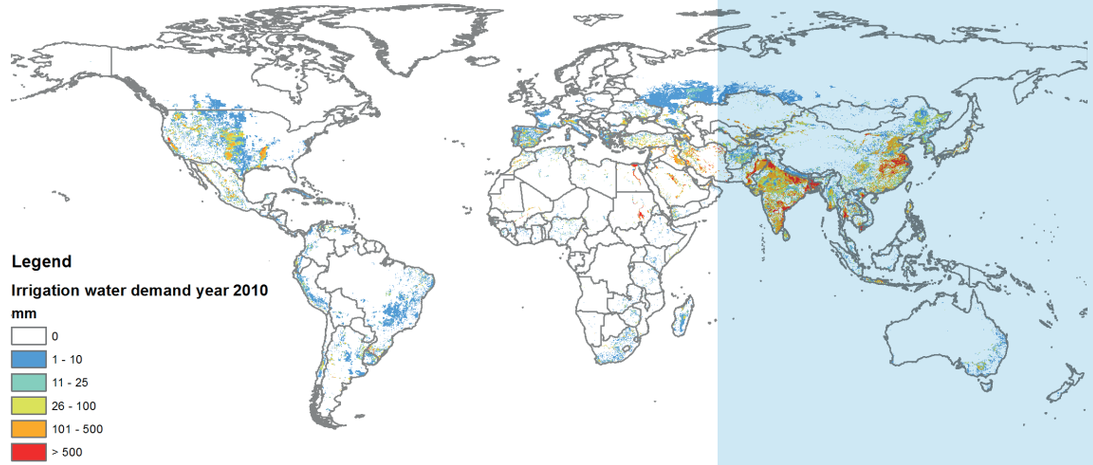


Monthly evapotranspiration deficit in the Netherlands derived from satellite data (Eleaf, 2016)

In September 2015, heads of state from all around the world adopted the 2030 Agenda for Sustainable Development consisting of 17 Sustainable Development Goals (SDGs) and 169 targets. The 2030 Agenda includes a dedicated goal on water and sanitation (SDG 6) that sets out to 'ensure availability and sustainable management of water and sanitation for all'. Indicators include changes in the efficiency of water use over time and the level of water stress, which relates water withdrawal ('abstraction') to available freshwater resources. Six Proof of Concept countries (Bangladesh, Peru, Jordan, Uganda, Senegal and the Netherlands) were invited to test the methodologies developed by UN organisations and to collect data for these indicators.

As a result of the Proof of Concept process, Statistics Netherlands (CBS), Deltares and eLEAF conducted a demonstration project aiming to show how indicators can be compiled for the Netherlands, and what data can be acquired to support other countries in the process of evaluating indicators. The project received support from the Dutch Ministry of Infrastructure and the Environment and Ministry of Foreign Affairs.

A ladder approach was used in the demonstration project for the Netherlands. Each step includes more detailed or advanced data. The first step was to establish the indicators on the basis of statistical data. An example is the indicator for water stress, which states higher values as water shortages increase. Data from remote sensing and hydrological models were added in the second step. The third step has not been tested yet but it will consist of integrating the three sources in a fully consistent way before the indicator is computed. Finally, the indicator will be computed using the outcome of the integrated approach.



Total irrigation water demand for 2010 (PCR-GLOBWB model)

During the project, we looked at how existing statistical datasets could be extended and how modelling could provide additional detail for the purposes of calculating the indicators. The datasets were extended by, for example, improving geographical coverage, making time series longer and adding extra parameters. Some water balance terms had been simplified or neglected in the statistical data. Modelling can specifically add more details in space and time, and fill gaps in the data, for instance for fresh groundwater inflow and environmental flow. The indicator for water stress was calculated with and without additional data. The indicator for water stress for the Netherlands almost doubles if more detailed satellite and modelled data are added to the statistical data: 27% when using all three data types by comparison with 16% using statistical data only. The analysis also showed that there is a range of uncertainty in the indicator for water stress.

Combining the statistical data, the satellite-based data, and the model-based data has proven to be a useful exercise. Additional combinations of this data are expected to improve indicator compilation in the future for both the Netherlands and other countries. This will benefit the procedures that countries use to monitor and report on the targets relating to their Sustainable Development Goals for water.