

→ EARTH OBSERVATION FOR SUSTAINABLE DEVELOPMENT

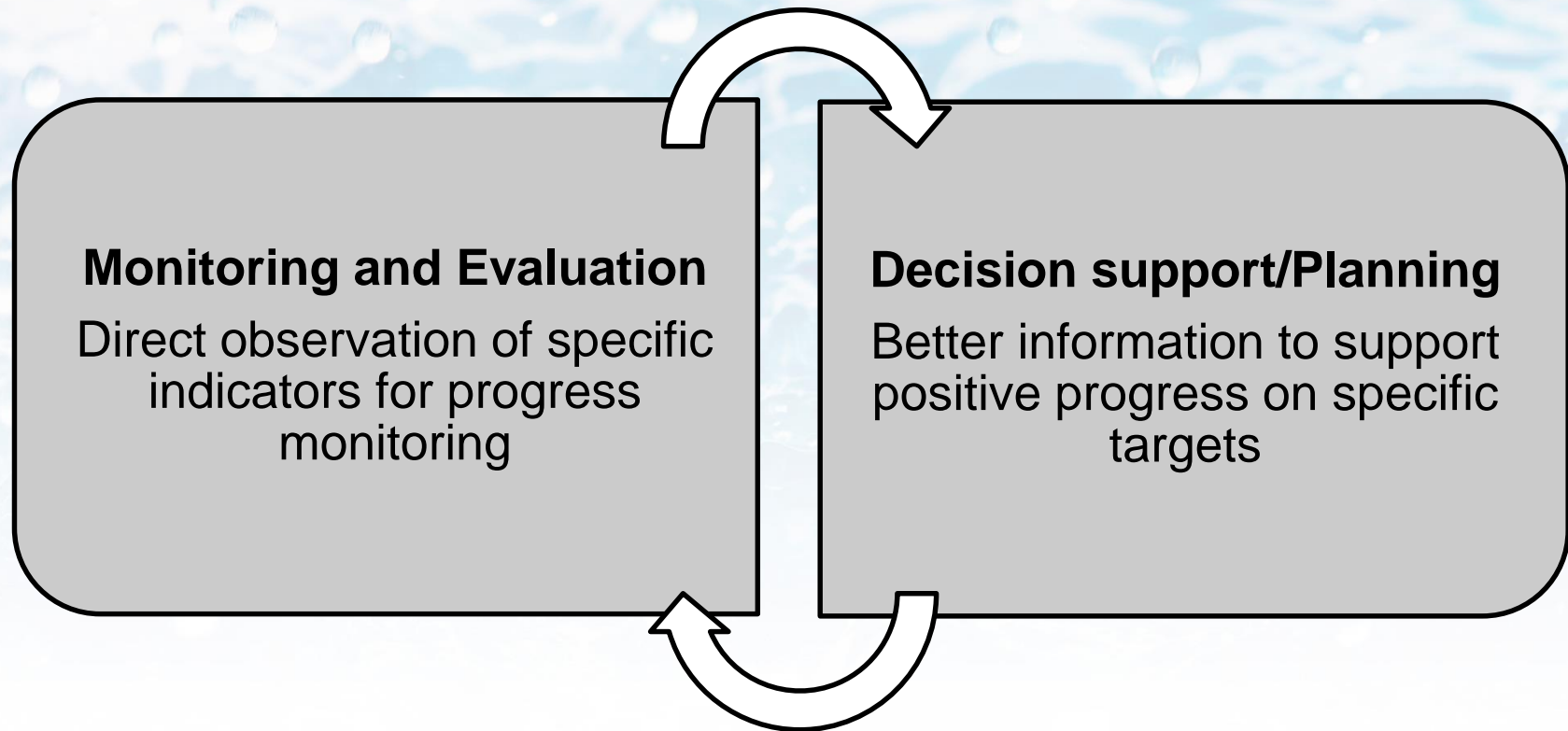
Water Resources Management

Using Big Data and Earth Observations for SDG 6 monitoring

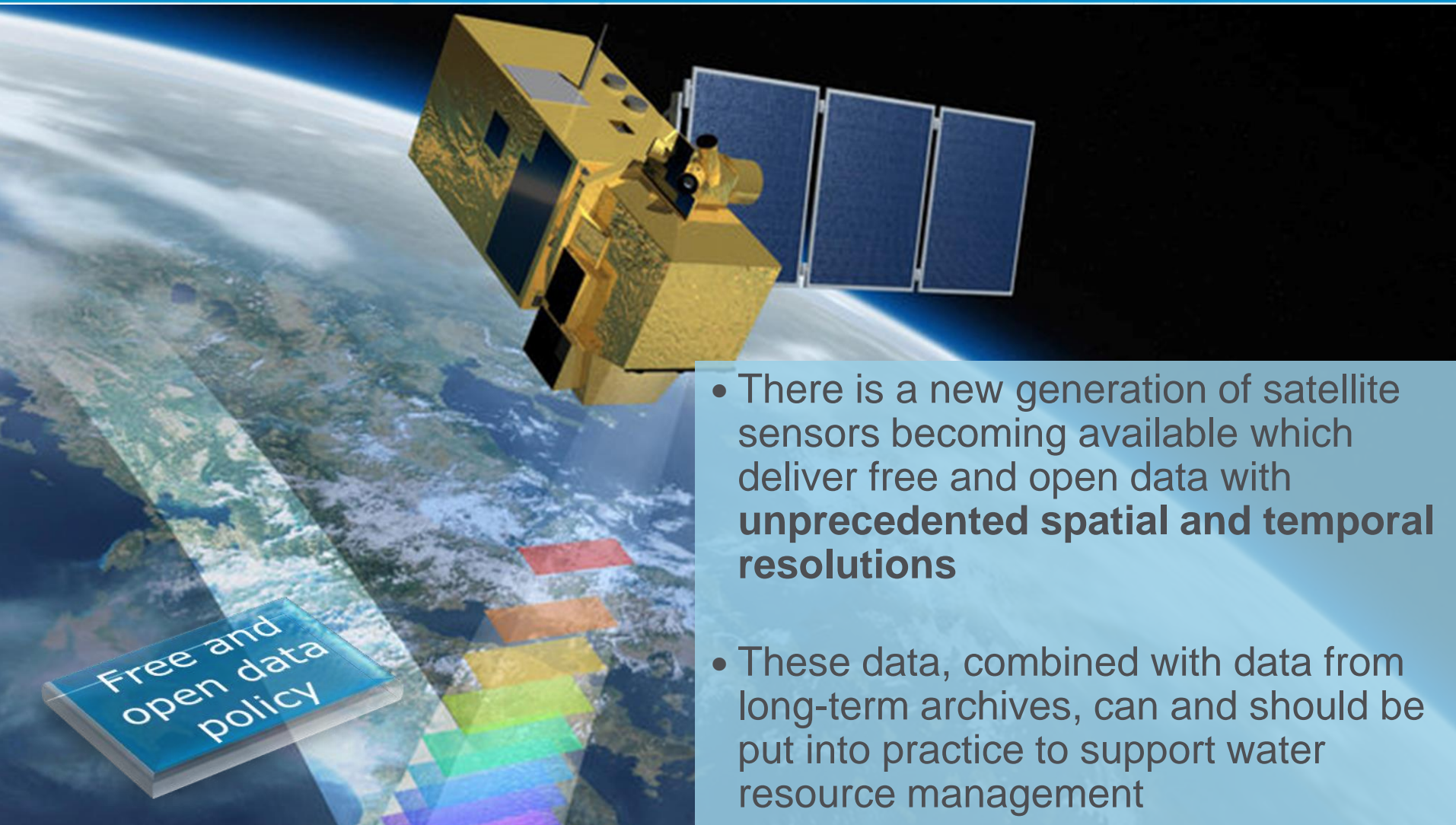
World Water Week | 2018 August 29 | Stockholm, Sweden

Pooling the data into intersectoral governance for in-country implementation





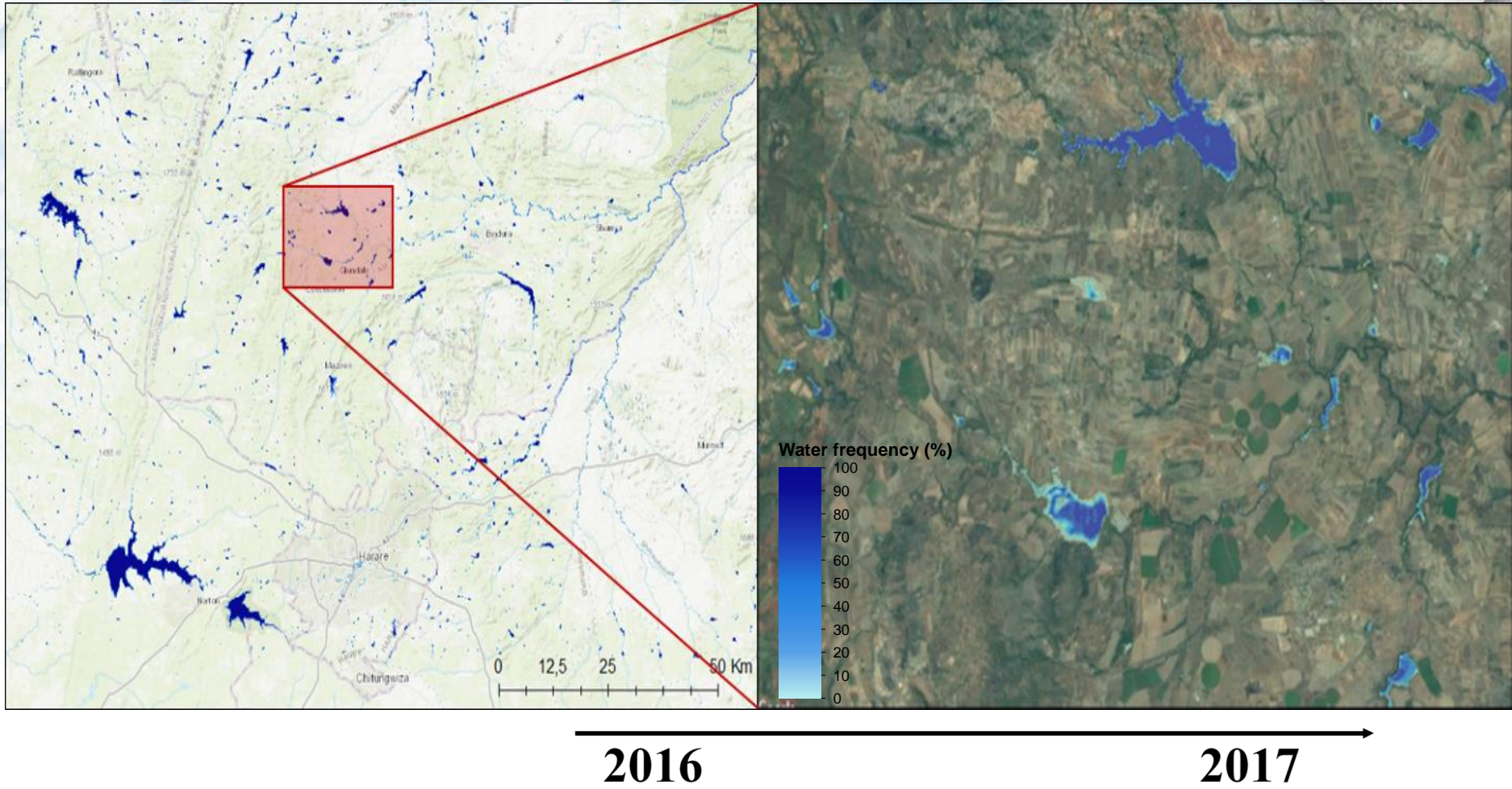
- Many water related issues/indicators not easy to assess at basin/national level with traditional survey data → EO can provide harmonized transboundary/national information



- There is a new generation of satellite sensors becoming available which deliver free and open data with **unprecedented spatial and temporal resolutions**
- These data, combined with data from long-term archives, can and should be put into practice to support water resource management

Zimbabwe water resource assessment

Monthly updates on surface water area with Sentinel data

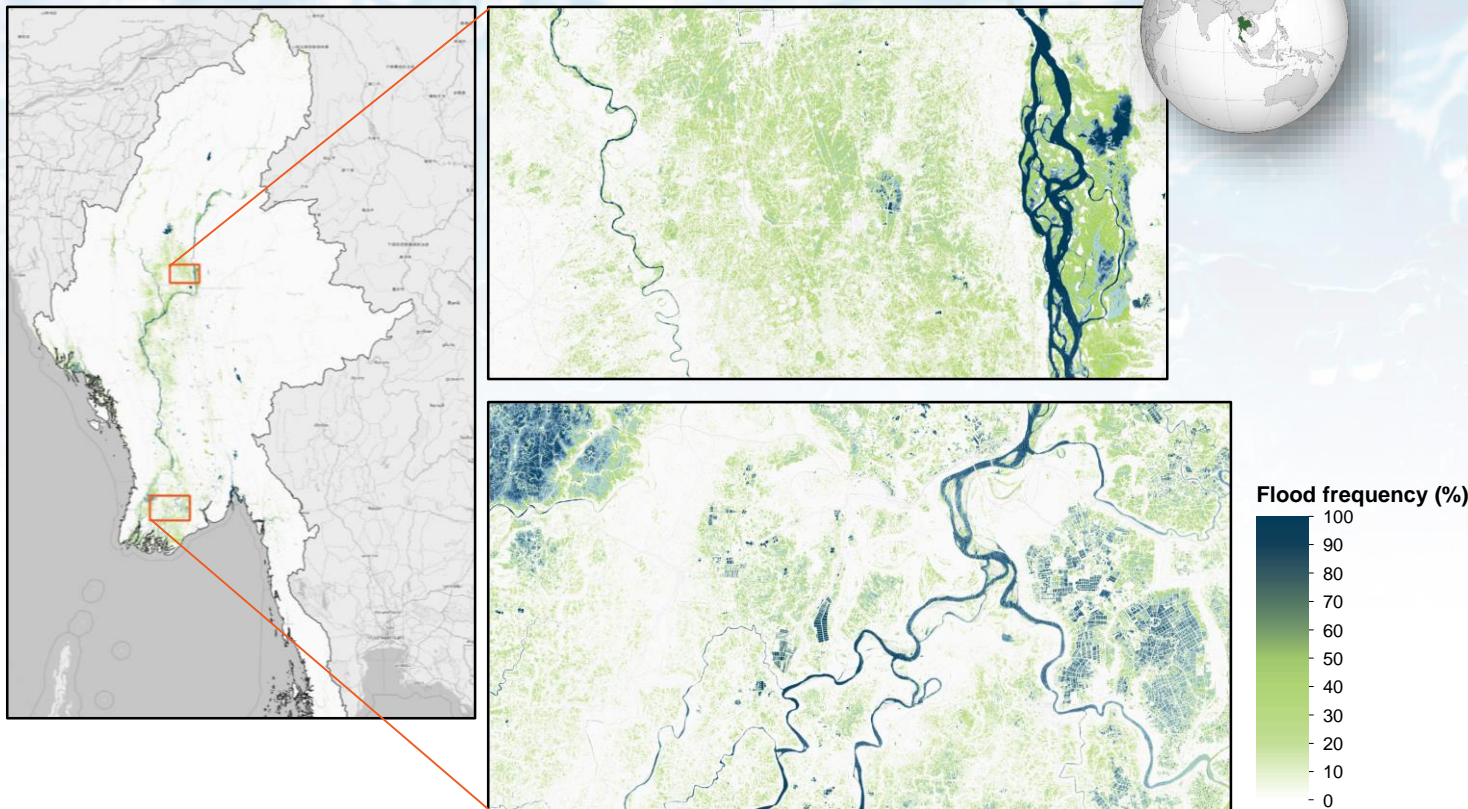


Inundation frequency

Identifying flood prone areas in Myanmar

- Seasonal information on flood dynamics and patterns are of high importance for planning- and management purposes in Myanmar

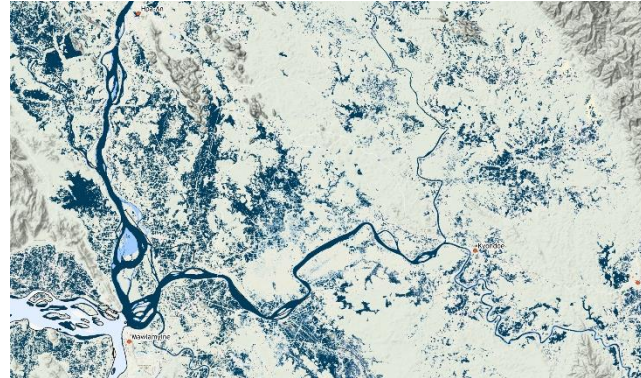
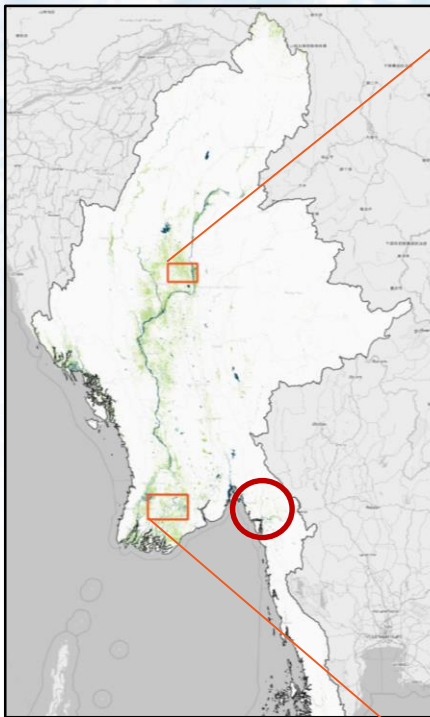
- Provide insights in dry and wet season water availability;
- identify location and size of irrigated crop areas
- Flood damage assessments
- Pinpoint areas at risk and where interventions are most needed



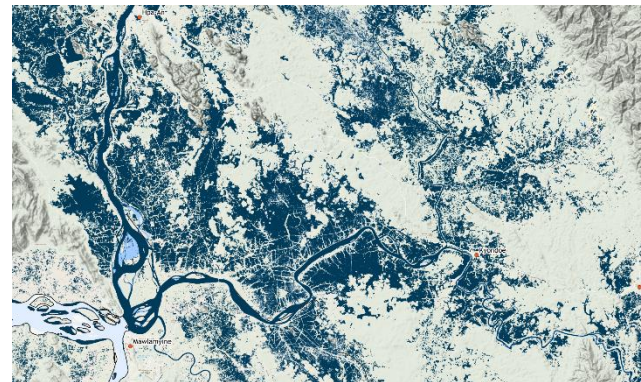
Inundation frequency

Identifying flood prone areas in Myanmar

- Seasonal information on flood dynamics and patterns are of high importance for various purposes in Myanmar



Early July 2018

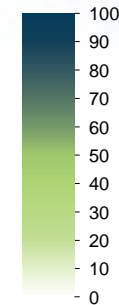


Late July 2018



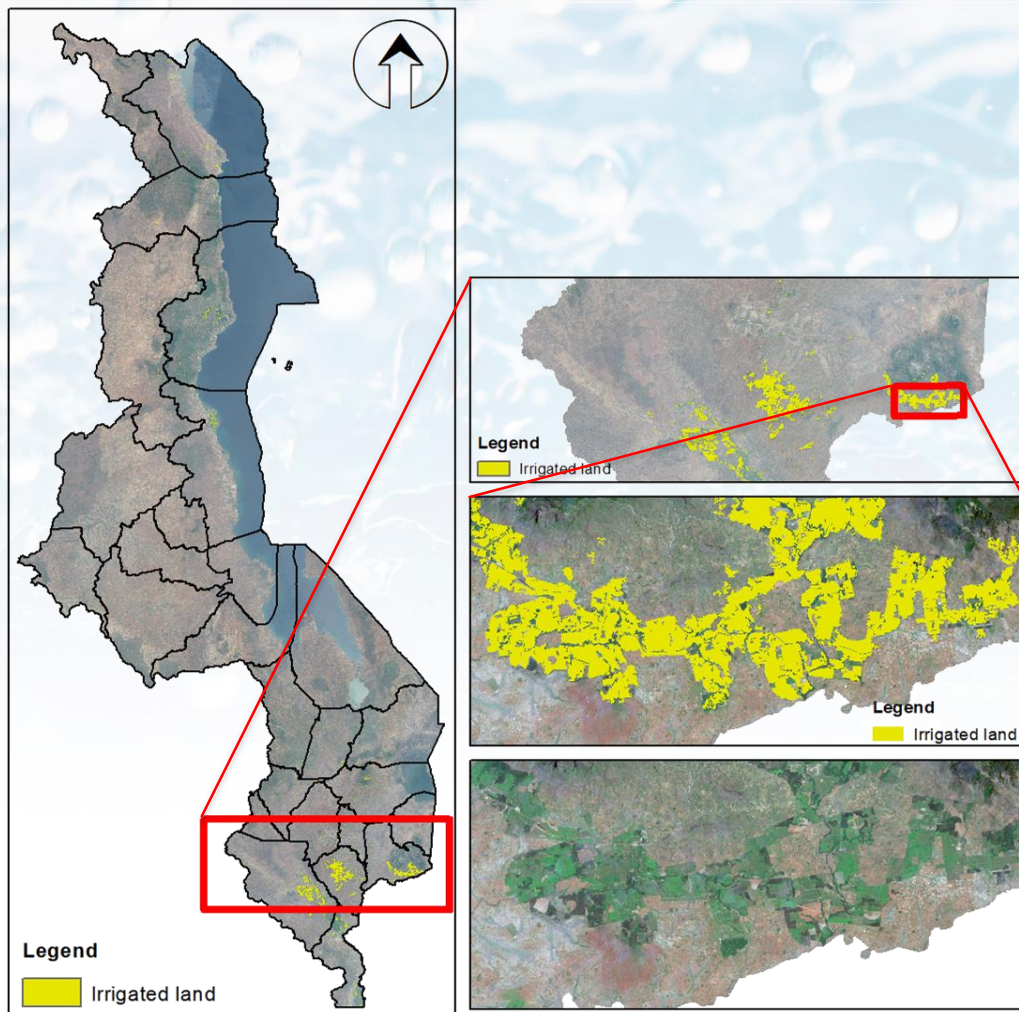
- Provide insights in dry and wet season water availability;
- Flood extent and damage assessments
- Pinpoint areas at risk and where interventions are most needed

Flood frequency (%)



Water licensing in Malawi

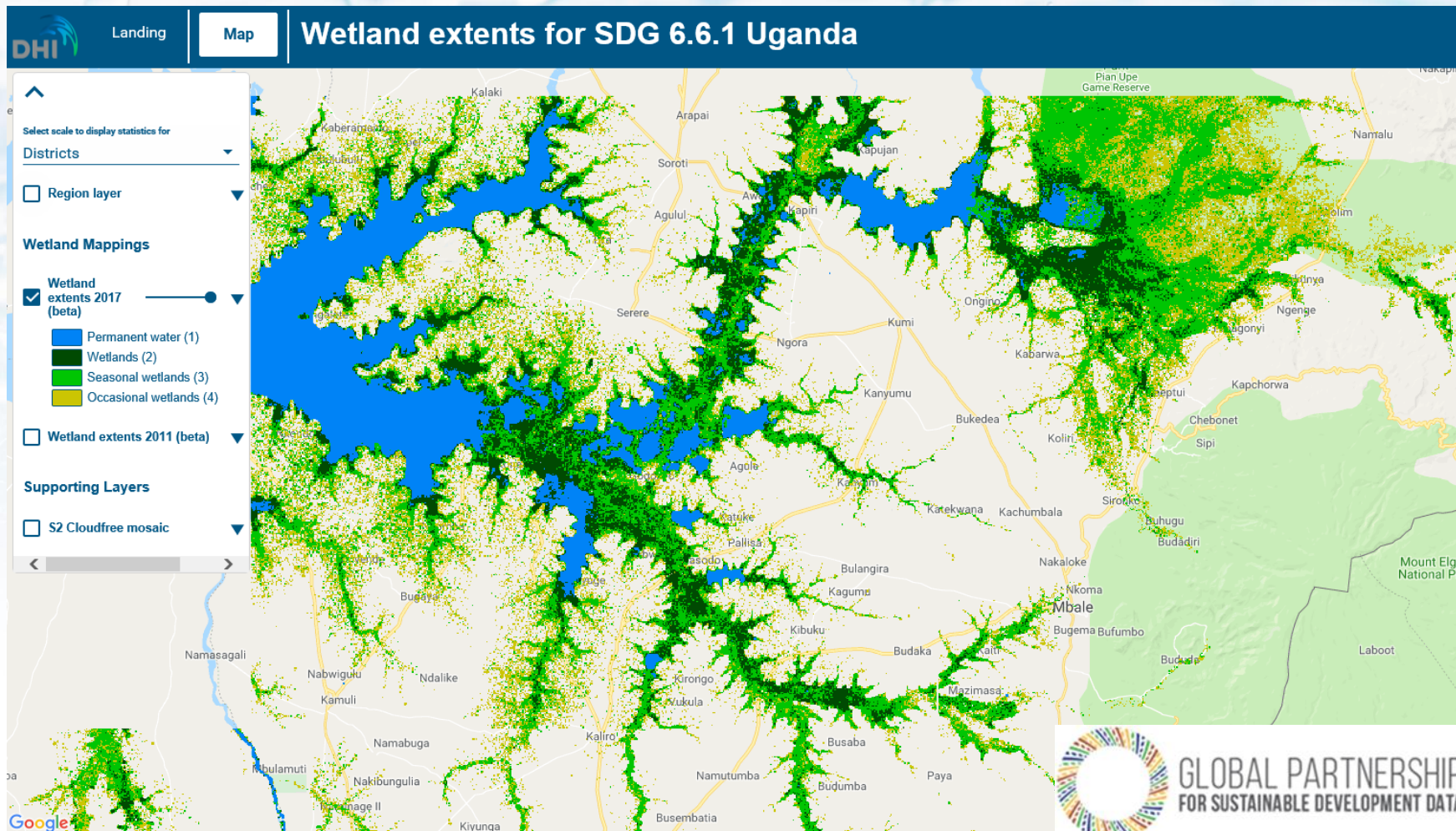
National mapping of irrigation with Sentinel-2



- To regulate the amount of domestic water use, Malawi have developed and implemented a water licensing system
- EO is used to prepare a national map of irrigated areas to compare with the actual licensed area and identification of non-licensed water usage
- Improved information for investment and management capacity for irrigation services

Wetlands Monitoring with Earth Observation Data

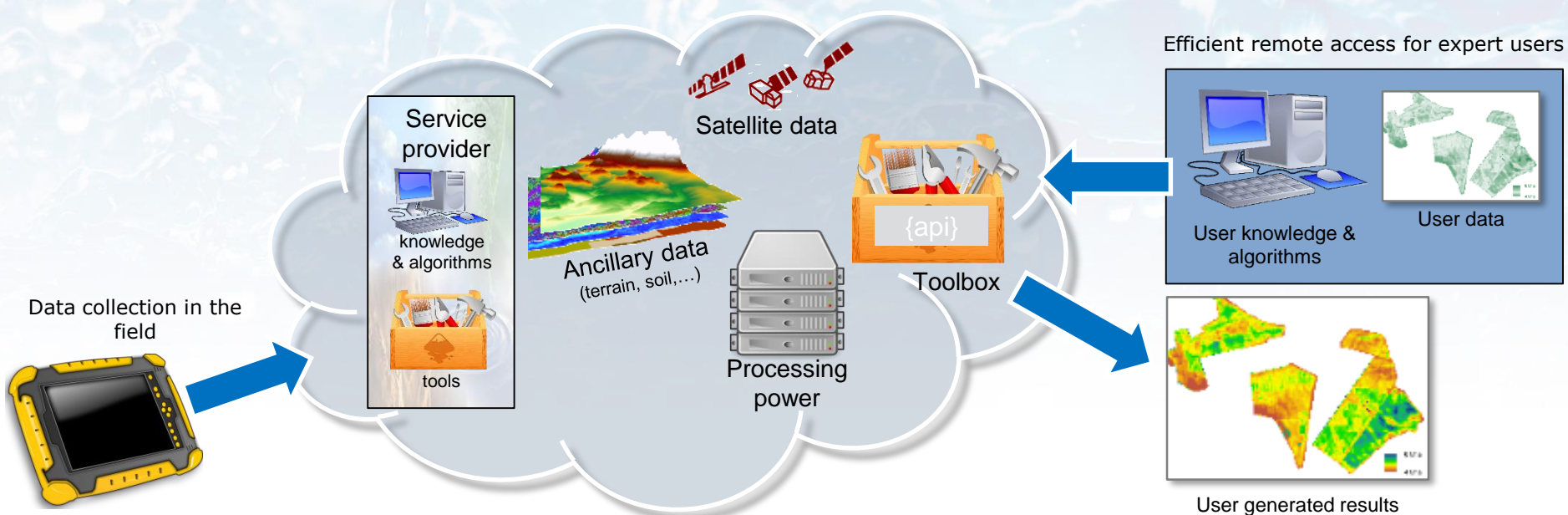
SDG reporting on indicator 6.6.1



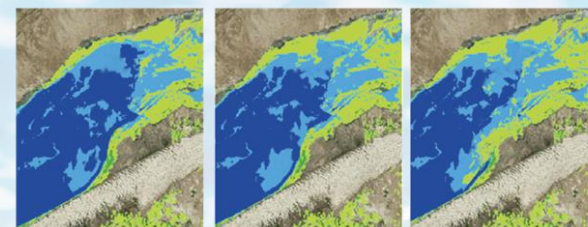
Towards efficient “big data” exploitation platforms

The power of the Cloud
“Bringing the users to the data”

The massive size of EO data generated by today’s sensors, in the order of daily Terabytes, means that cost-effective procurement of the computing infrastructure for archiving and processing is needed



- National/basin wide monitoring with open access EO data allow for cost-effective monitoring in support of sustainable water resources management
- EO is especially useful in many developing countries where reliable geo-spatial information on water and land resources is scarce
- To ensure the sustainability at the national level there is a need to promote best practice methodologies and tools which can be operated and maintained within the institutional, technical and financial means of development countries



2015 | 2016 | 2017
Detection and documentation of changes over time



Statistics




Analyse



Communicate

The ability to observe the land surface dynamics over time is essential for the statistical reporting, analysis and communication on land and water resources

A satellite image showing a river delta with a complex network of channels and floodplains. The water is a mix of light blue and white, indicating sediment. The land is green and brown, showing vegetation and bare earth. The background is a solid blue gradient with water droplets.

<http://eo4sd-water.net>
Christian Tottrup | cto@dhigroup.com

- EO4SD — Earth Observation for Sustainable Development — is an ESA initiative started in spring 2016 and focusing on top-priority international development issues including water resource management
- The main objective of the EO4SD on water resource management is to demonstrate the benefit and utility of EO-based information in support of in support of IWRM in the context of international development projects and activities

EO4SD will work together with major International Finance Institutions (IFIs) and their client states during 2017-2019 period

