

Financial risks by changing environments

Water & Agriculture



**Nelen &
Schuurmans**



Water & Agriculture

The Water & Agri business unit at Nelen & Schuurmans provides innovative solutions for agriculture. We support development organizations and professional agribusinesses in improving their activities. We build integrated information services and provide consultancy supporting implementation, ensuring long-term sustainability. This ranges from alignment with user requirements, maximizing social impact to a financially sustainable business case. This makes us a reliable and trustworthy partner for professional organizations.



Partners

We work with various partners from different domains, fields of expertise and countries:

- > Knowledge institutes and universities
- > Satellite data providers
- > Agribusinesses
- > NGO's and development
- > Governments



European Space Agency



VanderSat





Our solution

Financial risks by changing environments is our service on risks related to floods and drought in rural and urban areas. We accurately map these environmental risks for each area of interest. This includes a second impact level in terms of economical damages caused by these events.

We provide both near-real time operational monitoring services, as historical analysis of past events. The resulting information and performance indicators are made available through online dashboards, reports and web applications.





The challenge

The agricultural sector faces continuous threats due to the risks resulting from floods and droughts. In recent years such events are less predictable due to the consequences of climate change.

The specific challenge is to enable risk-informed investments and growth in the agri-sector.

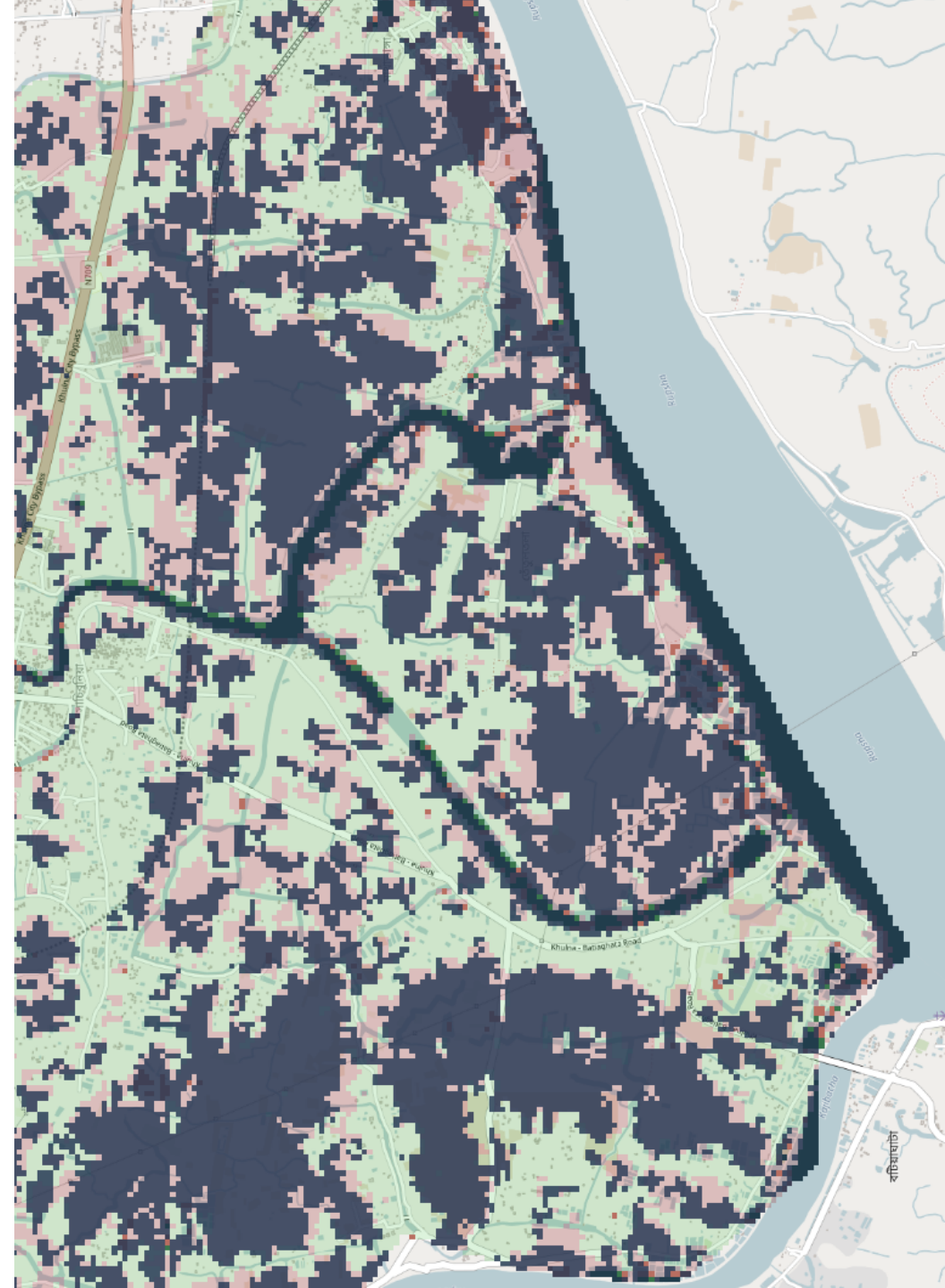
More specifically, to financial actors we provide information for risk assessment, risk monitoring and insurance risks for rural areas, specific crops or livestock.





How we overcome this challenge

By combining our knowledge, experience and technological tools we are well equipped to support the agricultural and financial sector. The building blocks for our services use high quality data source. This includes real-time weather forecasts, enriched with local measurements. Satellite data allows accurate mapping of land cover and water surfaces. This is input for our “state-of-the-art” technological tools for data science and hydrodynamic and hydrological modelling. Our system is capable of assessing the past, monitoring current events and estimate future hazard impacts.





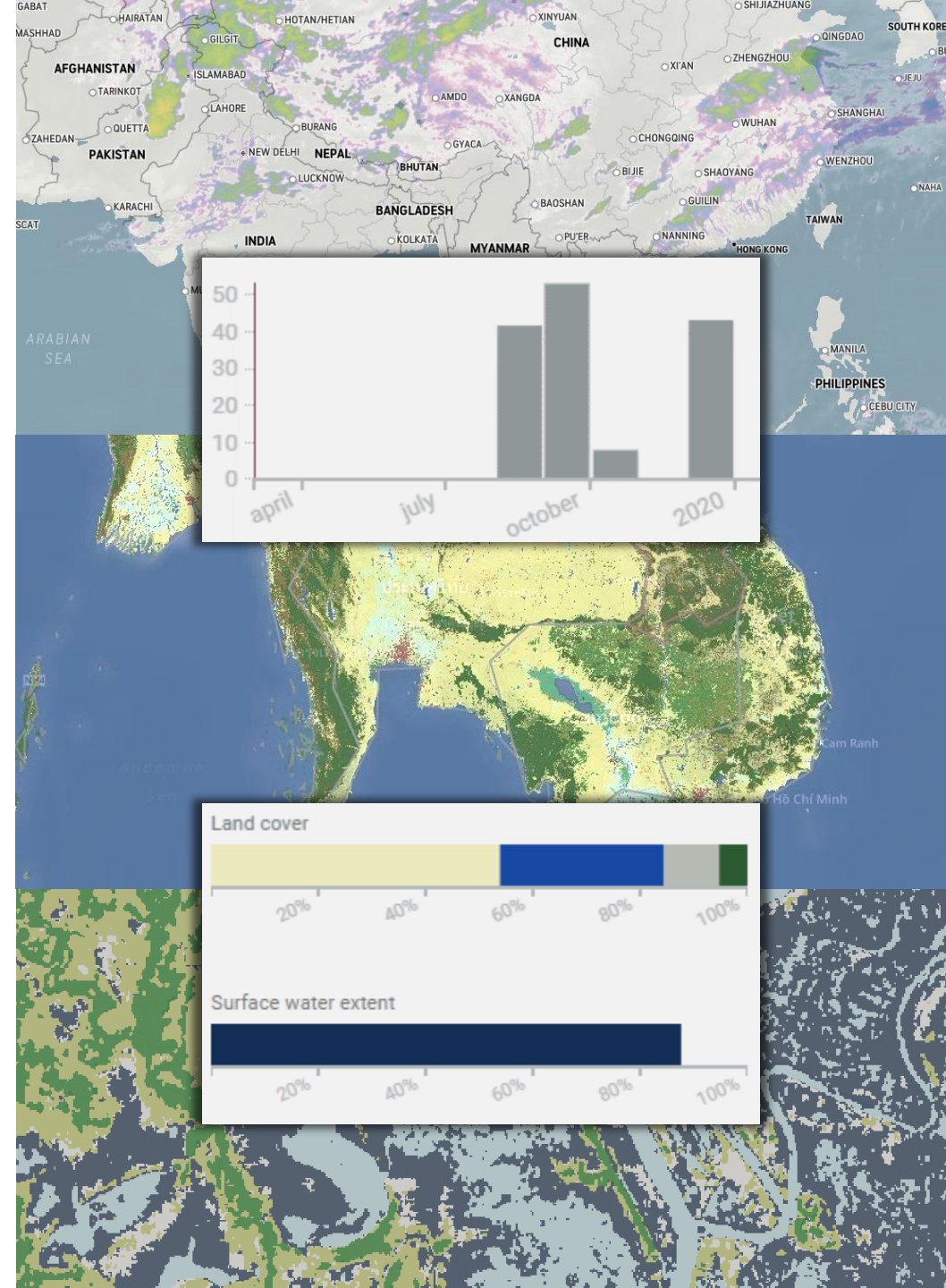
Flood risk analysis

We combine near-real time satellite images for flood mapping with weather forecasts and incorporate them in our 3Di flooding modelling tool.

Using land use maps a distinction is made between agricultural, forests and urban areas.

The hydrological simulations coupled with weather information provides the expected duration of the flood in every specific area.

The economical damage, past and/or expected, is computed based on flood duration and operational value of the land use.





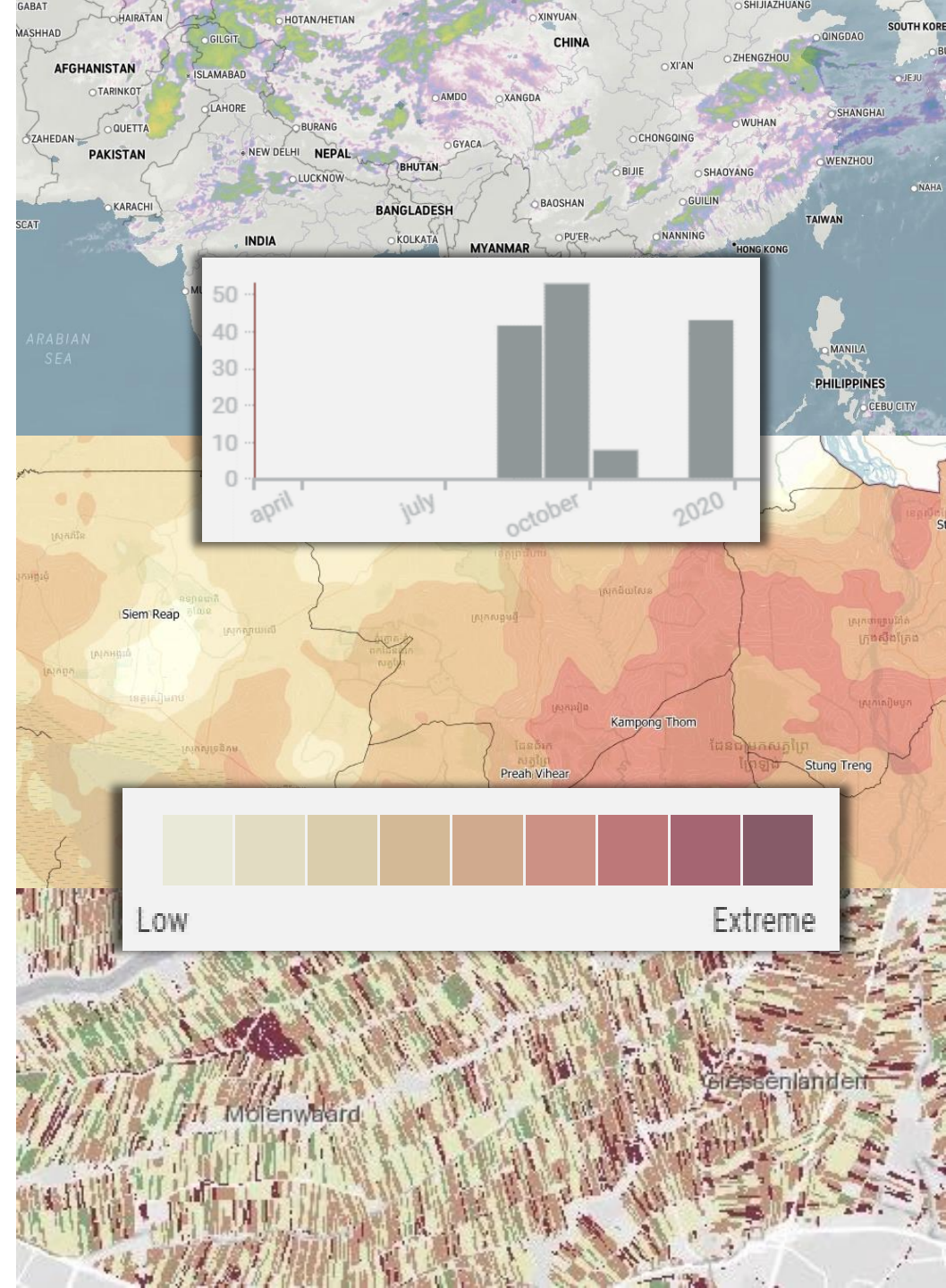
Drought risk analysis

We combine near-real time satellite images of soil moisture content and evapotranspiration with weather forecasts and our Geo-Block tools to estimate depletion of moisture in the soil.

Using land use maps a distinction is made between agricultural, forests and urban areas.

The Geo-Blocks tools hydrological simulations coupled with weather forecast provides an estimation for the duration of the drought period.

The economical damage, past and/or expected, is computed based on drought duration and operational value of the land use.





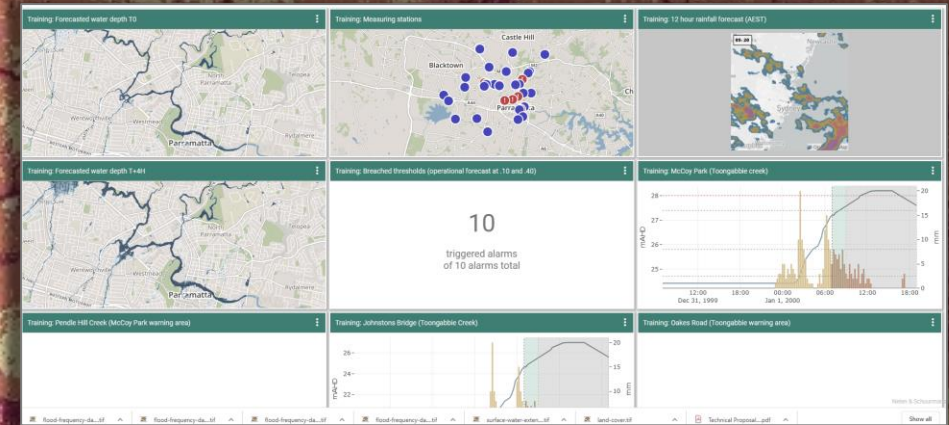
What can we do for your organization

We provide with the information you need for risk assessment related to flood and droughts in any region of the world.

- › Degrees of flood and drought risk that vary in space and time.
- › Economical expected damage per segment of land use.

This information is customized for every client within our service framework:

- › Online dashboards
- › Automatically generated reports
- › Direct performance indicators (API)





Want to know more?

Find us at:

nelen-schuurmans.nl/nl/advies/water-agri

Or contact us directly:

evelyn.aparicio@nelen-schuurmans.nl

