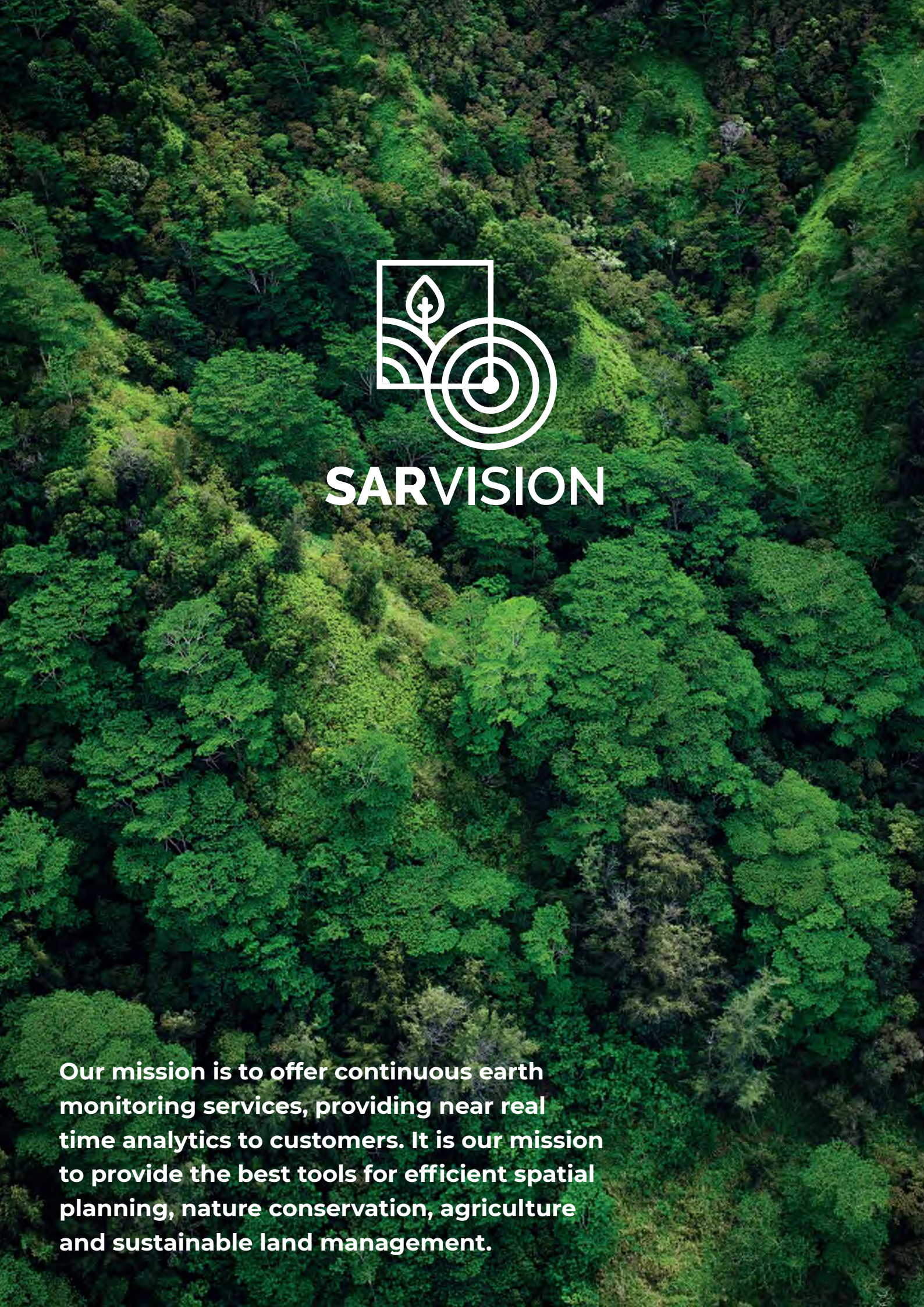


Our mission is to offer continuous earth monitoring services, providing near real time analytics to customers. It is our mission to provide the best tools for efficient spatial planning, nature conservation, agriculture and sustainable land management.

The need to monitor forests

Newspapers report almost every day about threats to forests all around the globe. Climate change results in large wildfires and pressure on land and resources lead to forest conversion at a large scale. But forest loss comes at a cost. The losses contribute to the increase of global carbon emission, ecosystem goods and service diminish and remaining biodiversity is decreasing at an alarming rate.

While part of the forest loss is policy driven, a significant reduction is caused by illegal activities. As these occur often in large and remote areas, satellite based monitoring is required. Due to frequent cloud cover the use of radar images that can 'look' trough clouds is essential for a near real time monitoring of these threats.

With SarVision's automated Forest Monitoring System, forest changes are mapped for very large areas every week (or 12 days) at a resolution of 15x15m. Not only clear-cut areas are mapped but also forest degradation, canal and road development, floods, and forest fire scars. Costs are low as use is made of free of cost radar imagery. The system allows quick response actions within two days after.

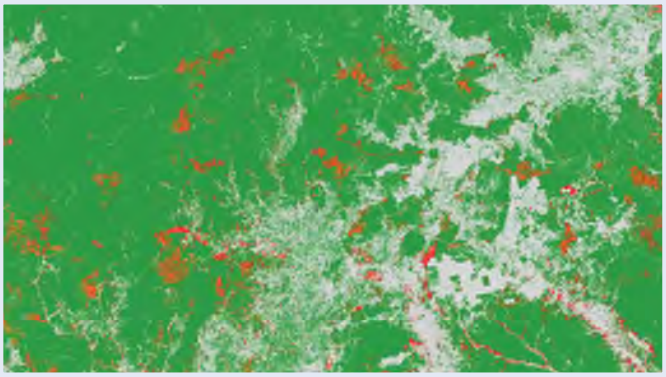
In addition, SarVision developed a **Tree Monitoring System** that detects small scale encroachment and maps individual tree felling at a resolution of 3x3m, independent of cloud and haze conditions.

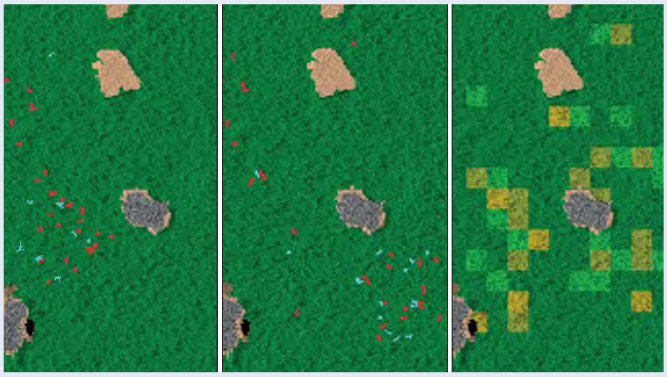
With SarVision's **Flood Monitoring System** floods and soil moisture conditions are measured below the tree canopy (!) resulting in flood frequency and -duration maps. With help of this information conversion of unsuitable land to plantation or other land use can be avoided, resulting in a reduction of forest and biodiversity loss.

The land cover and biomass maps of SarVision are well known of their quality and are unprecedented.

Early Warning System

SarVision has developed an automated Near Real Time forest monitoring system as part of WWF's Early Warning System. The monitoring system is now operational for the entire island of Borneo and the government of Indonesia indicated that they want to implement the system for the whole country. The system can easily be implemented in other forest regions of the world.



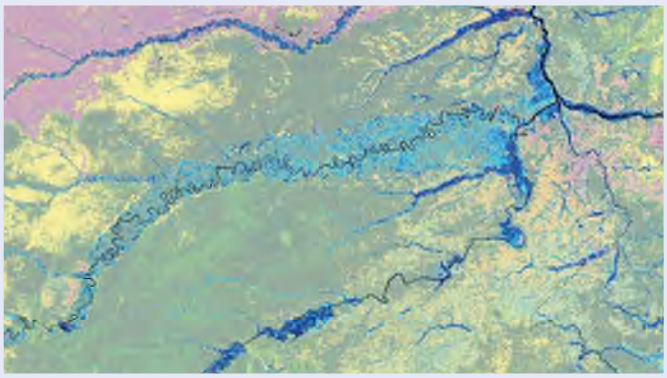


Tree Monitoring System

With this semi-automated system free of cost Sentinel-1 images are combined with PALSAR 2 and TerraSAR-X radar images to map degradation and selective logging cost efficient at tree level scale for large areas. The tree monitoring system is very accurate and can be set to a high temporal frequency (11 days) or with a lower frequency as requested.

Flood Monitoring

Semi-automated algorithms are used to create consistent time-series of flooding and water extent. With this system flood frequency and duration maps can be made based on a combination of Sentinel-1 and PALSAR-2 radar images. Note that flooding is also mapped under the tree canopy!

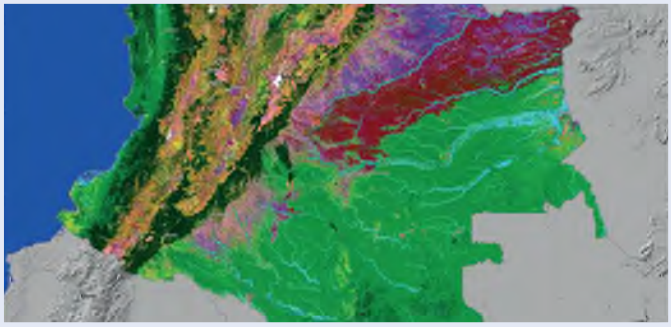


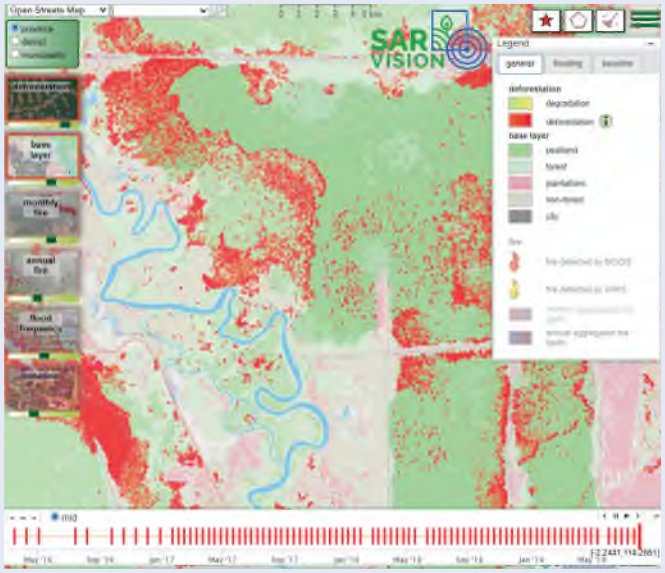
Rapid Hazard Assessment

SarVision is able to carry out a quick assessment of the impact and extent of unexpected floods, storm damage, forest fires and other catastrophes within a few days after they occur. During such events clouds and smoke often prevent a rapid analysis with optical images, but radar is not affected. The damage of forest fires can be quantified with our radar monitoring systems. Not only fast, but also providing information on the degradation level.

Land Cover and Biomass mapping

By integrating optical and radar imagery in combination with our state of the art algorithm's and in house expertise SarVision creates accurate land cover and biomass maps for entire countries and large regions. The maps are made according to international standards.





Tropical Peat View

Policy driven drainage of peatland in Indonesia changed its hydrology and made it sensitive for forest fire. Large areas of peatland caught fire during the El Niño event in 2015. As a result huge amounts of carbon were emitted into the atmosphere. To prevent repetition the government initiated the Indonesian Peat Restoration Agency (BRG) which goal is to restore degraded peatland. SarVision has developed a peat monitoring system to support BRG. This early warning monitoring system provides near real time information on peat forest degradation both by human intervention and fires, canal detection and changing hydrology in the peat forest.

Ecosystem Accounting

Wageningen University developed an operational system for national ecosystem accounting. Part of the accounts are Ecosystem extent, condition and thematic accounts such as land, water, carbon and biodiversity. SarVision provides input based on its monitoring system technology.

About SarVision

SarVision is a private company founded by researchers of the Wageningen University, the nr. 1 ranked agriculture university in the world. We are frontrunners in developing and implementing automated monitoring systems for natural resources management. SarVision integrates data from multiple satellite constellations with other sensors, using cutting-edge algorithms and environmental economic accounting models. We distinguish us from other Remote Sensing companies by our large expertise in advanced radar technology that has made us a world leader in low cost large scale operational near real time monitoring systems in areas with frequent cloud cover. Radar images are used by many, but our state of the art algorithms are unparalleled. They are the core of a monitoring system and guarantee a sustained generation of qualitative information with a high accuracy.

Agro Business Park 10 - 6708 PW Wageningen, The Netherlands - + 31 317 452 310 - rooij@sarvision.nl