



PRACTICE ABSTRACT

Digital technology

September, 2020

SATAGRO - CROPS SATELLITE MONITORING

Karolina Dmochowska-Dudek, UniLodz

SatAgro is a system that was developed by a Polish start-up with EU funds in 2015. This innovative technology processes and integrates satellite data used in farming to monitor the state of crops and individual fields. The system sends data in an easy-to-understand format that helps to increase agricultural efficiency and helps to reduce a farm's environmental footprint.

SatAgro makes use of satellite imagery from NASA, the European Space Agency and private satellite operators. A desktop application allows farmers to monitor productivity of cultivated land and analyse historical data (including meteorological data and indices, soil maps and vegetation maps) on an ongoing basis.

The SatAgro system offers different services, such as crop monitoring, event and treatment logging, alarms when variable values are exceeded, data export to other applications, historical data from previous seasons through maps, geolocation, weather forecasts, soil sampling support, and consulting to help users interpret data and optimise crop yields and production inputs.

With the Android SatAgro app, users can monitor crops' development in near real-time, observe the effects of weather events and agronomic treatments, and use historical data to improve decision-making. It allows optimised agrochemical (fertiliser and plant protection products) doses, which also minimises environmental impact. Custom-built variable-rate prescription maps enable farmers to sow, fertilise and spray with unprecedented precision. Automated alarms warn about sudden changes in crop condition and weather. The application is free for farms of up to 50 hectares. SatAgro's crop monitoring application is currently in use in 20 European countries, as well as in the United States and a few African countries, and it covers more than 20 000 fields.

Application scenario

The use of remote sensing and satellite data in farming to improve farm management and performance efficiency

Digital technologies

Remote sensing, GPS, application maps, sensors, IoT, app

Socio-economic impact

- Economic: resource efficiency, optimised farm management, maximise land's potential, productivity
- Environmental: Soil protection, reduce environmental footprint of farming
- Social: Improved data accessibility, information, empowering social capital, prediction, surveillance

More info: <https://www.satagro.pl>



Purpose of the tool

SatAgro aims to make satellite data accessible to all. It develops processing chains for a variety of satellites, transforms and processes the data as it becomes available, and delivers the resulting images, cropped to individual user's needs. SatAgro uses innovative solutions to improve decision-making and increase agricultural efficiency, but also to reduce environmental footprint. SatAgro allows knowledge exchange (i.e. experts can collaborate with farmers to develop new solutions). A Professional and Premium Packages technical support and agronomy advice is included.

Description of the tool

Basic SatAgro components consists of few functionalities. The Dashboard displays basic information along with a schedule of upcoming satellite fly-overs. The Explorer (the most important part of the SatAgro app) lets the farmer browse data acquired by satellites as well as other data integrated with the account,



Source: [SatAgro](#)

such as digital terrain models and soil quality maps. It is also possible to inspect time series of key variables (e.g. weather data – received from public and private, web-enabled weather stations) on the charts. With the Android SatAgro app, users can compare what they see on satellite imagery with the actual situation in the field and easily find problem spots with the phone's GPS. SatAgro app also helps with applying fertiliser based on satellite imagery and planning soil sampling. SatAgro system offers compatibility: individually collected satellite and weather data can be exported for use outside the app, and the precision treatments created in SatAgro can be wirelessly sent straight to the tractor in the field.

Areas of socio-economic impacts

Social	Enhanced human work; better access to information. The system is available for all users - free for farms up to 50 hectares.
Economic	Enhanced efficiency of in-field operations and evidence-based decision-making and management.
Environmental	Protection of the environment, thanks to reductions in the use of fertiliser and plant protection products. Using the app helps cut fertiliser use by up to 30%.