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Innovations in the Agriculture Statistics based on remote sensing data

In the last few years, the possibility of using remote sensing for statistics has significantly increased. New data from the Sentinel satellite missions, within the framework of the European Copernicus Program, are now available. Based on multiannual experience and cooperation with national scientific institutions, in the field of monitoring the condition of agricultural crops (based on NOAA satellite imaging), Statistics Poland has started intensive research and development work, the main task of which is to build and implement an **innovative system for the identification and monitoring of agricultural and horticultural crops**. The monitoring will also cover the impact of extreme conditions (droughts, floods, frosts, flooding, etc.) on the state of agricultural crops during the growing season.

As part of this work, a cooperative effort has been launched involving research institutions such as the Space Research Center of the Polish Academy of Sciences, the Institute of Geodesy and Cartography, the Polish Space Agency, the European Space Agency (ESA) and the Ministries responsible for a wide range of national administrative data. By providing information on the condition of agricultural crops in a modern, spatial, disaggregated form, various stakeholder groups (agricultural producers, entrepreneurs, business organizations, numerous government and non-governmental agencies, as well as local administration) will benefit and get an opportunity to develop knowledge and grow competences. They will also be able to provide a more precise and accurate contribution to shaping agricultural, environmental and climate policies. Furthermore, the system for identification and monitoring of agricultural crops will become the main mechanism of innovation in the field of agricultural statistics.

As a part of the undertaken activities, **two major projects** are being carried out by Statistics Poland: EOStat – Agriculture Poland: Services for Earth Observation-Based Statistical Information for Agriculture (financed by ESA) and SATMIROL - Satellite Identification and Monitoring of Crops for Agricultural Statistics (funding received as a result of the competition for open projects under the strategic program of scientific research and development "Social and Economic Development of Poland in the Conditions of Globalizing Markets" – GOSPOSTRATEG.) The projects will be carried out by Statistics Poland in the years 2018-2021.

As an outcome of the above mentioned projects, a system will be built that will make it possible to analyse satellite data, make wider use of administrative data and faster obtain more targeted, low-aggregated information on crops, including a spatial perspective.

The **system for the identification and monitoring of crops** will become one of the innovative mechanisms used for the development of agricultural statistics and will reduce the costs and burden of statistical production. The projects focus on existing possibilities of using new digital technologies, which foster the development of innovative power and creativity in the field of agricultural statistics, as well as the cooperation and transfer of knowledge between scientific research institutions and Statistics Poland.