

April 2022



EARTH OBSERVATION FOR SMART FARMING AND CAP PERFORMANCE

>>> A few years later

In the last few years, the data integration processes of our solution became more automated and the overall performance of the solution has increased. Respect to initial 12 crops tackled in 2018, the service now covers 26 different crops. Finally, an additional feature was offered, focusing on high accuracy weather and extreme events predictions, powered by Earth Observation and Internet-of-Things (IoT) weather data.

Mr. Nikolaos Marianos, NEUROPUBLIC S.A.



BENEFICIARIES	NEUROPUBLIC S.A.	Rural Economy of the Central Greece Region Rural Economy, Region of Central Macedonia Region	Farmers and food producers	Citizens and society
	TIER 1: SERVICE PROVIDER	TIER 2 PRIMARY USER	TIER 3 SECONDARY USER	TIER 4 END USER BENEFICIARIES
SERVICES	Sentinel-2	Smart Farming platform (gaiasense), containing vegetation indices maps such as NDVI and LAI	Smart Farming advices	Improved crop management and food quality

Value chain definition following SeBS Methodology - <https://earsc.org/sebs>

The space-based solution

This Copernicus-based solution was produced by a commercial company for a Public Administration and for other users. With respect to 2018, the solution is now more technically advanced: it is more accurate and reliable.

The Usage Maturity Level

UML has remained more or less at the same over the last few years. The solution has not passed to the operational phase yet as the necessary administrative process is still to be finalized.

Thematic Area



AGRICULTURE, FOOD, FORESTRY AND FISHERIES

Region of Application



CENTRAL GREECE; CENTRAL MACEDONIA

Sentinel mission used



S2

Copernicus Service used



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Usage Maturity Level



4

Overall benefits

ECONOMIC



- Capital expenditure has been reduced or avoided.
- Efficiency gains have been registered.
- Reduction of risk has been registered.
- The replicability of the solution was achieved.
- Cost savings due to optimisation of agricultural inputs.

ENVIRONMENTAL



- Reduced pollution.
- Reduced depletion of natural resources.

REGULATORY



- There were improvements in the policy monitoring capabilities of the PA in charge.

INNOVATION



- There were positive market externalities.

SCIENCE



- There was an increase in technical/scientific expertise related to Copernicus/EO at the service provider.

SOCIETAL



- An increased overall quality of life for citizens has been detected.

Benefits classification following SeBS Methodology - <https://earsc.org/sebs>

Interesting facts...

The solution was extended and additional AI-powered prediction models were added, allowing the provision of services to a total of 26 different crops. The accuracy of the existing models is being improved and the process of integrating EO data has been further automated. A new feature on high accuracy weather forecasts at the local level has been added with weather forecasts powered by satellite data, in combination with the meteorological data from the IoT telemetry stations of the gaisense platform.

Outlook to the future

The ability to connect with the Greek IACS system to offer secondary evidence in the context of the new agricultural monitoring approach, is currently under development. It is also planned to use hyperspectral imaging for agricultural applications with a special focus on crop performance and to develop more AI-powered algorithms using EO to enhance agricultural monitoring. Finally, the work for providing an interface for PAs and other policy makers to evaluate the CAP performance at a local regional or national level, will be completed bringing our solution to a fully operation level.

Acknowledgements

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