European Union

Copernicus Europe's eyes on Earth

EARSC European Association of Remote Sensing Companies

THE GREEN LAND

IIASA

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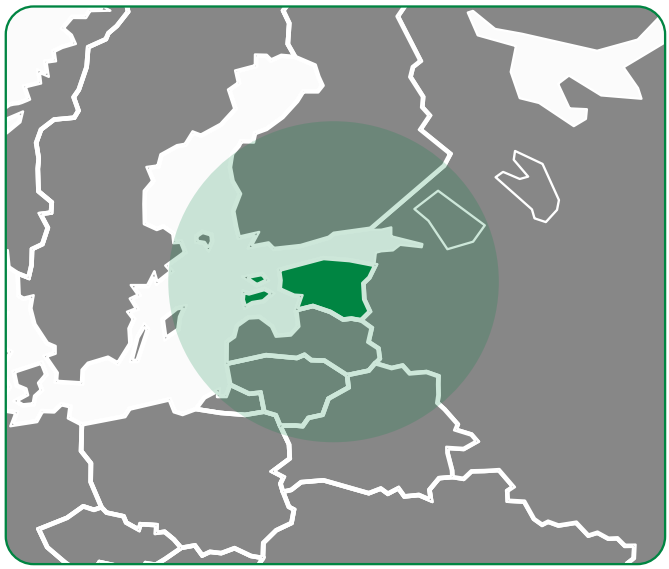
GRASSLAND MONITORING IN ESTONIA

What it is about

Sentinel data is being used by the Estonian paying agency responsible for CAP subsidy payment distribution to better monitor grassland mowing activities. KappaZeta, a remote sensing company, have collaborated with the Estonian Agricultural Registers and Information Board (ARIB) to develop a system which replaces on-the-spot compliance checks of CAP grassland mowing requirements with automated, remote mowing detection.

Using this sentinel-enabled service, ARIB can accurately monitor 100% of registered grasslands, something which would be impossible to do without satellite data. Thanks to this working relationship, CAP regulation is enforced more efficiently and public funds are awarded to deserving, compliant farmers in a much fairer and more transparent manner.



What we found

- KappaZeta use both Sentinel-1 and Sentinel-2 data (SAR and optical imagery) to constantly monitor around 101,000 fields of grassland across Estonia. The system developed can automatically detect when a mowing event has taken place on any given field.
- Utilisation of the new sentinel-enabled monitoring system allows ARIB to monitor all registered fields, compared to the 5% sample currently mandated by regulation. As a result, they can fulfil their operational mandate in a more complete manner, save costs associated with in-person checks, and help to distribute taxpayers' money more fairly.
- The system helps to maintain and protect the biodiversity of Estonia's rural landscapes . It also contributes to the environmental sustainability goals of the CAP's initiatives i.e. keeping EU agricultural practices sustainable, maintaining the good condition of agricultural land, protecting natural habitats and aiding the sequestration of CO_2.

Funded by the EU and ESA

Layout by ESA EO Graphics Bureau

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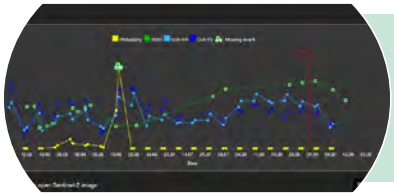
The Satellite Data

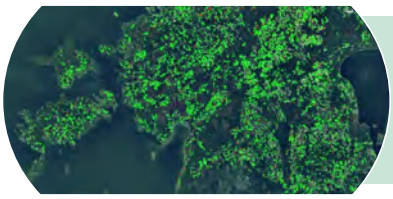
Copernicus Sentinel-1 provides free-of-charge frequent, all-weather, day-and-night C-band radar images. Copernicus Sentinel-2 provides free-of-charge frequent wide-swath, high-resolution multispectral imagery with 13 spectral bands over Estonia.



The Service Provider

KappaZeta, an Estonian company who specialise in remote sensing-based agricultural monitoring services leverages Copernicus Sentinel-1 and Sentinel-2 data to help clients map, monitor and detect CAP related grassland mowing requirements.

€53k-106k pa



The Primary User

The Agricultural Registers and Information Board (ARIB) are the Estonian paying agency in charge of CAP activity monitoring and subsidy distribution. The Sentinel-derived system has replaced on-the-spot mowing checks, allowing them to monitor all claimants'fields remotely.

€50k-1M pa

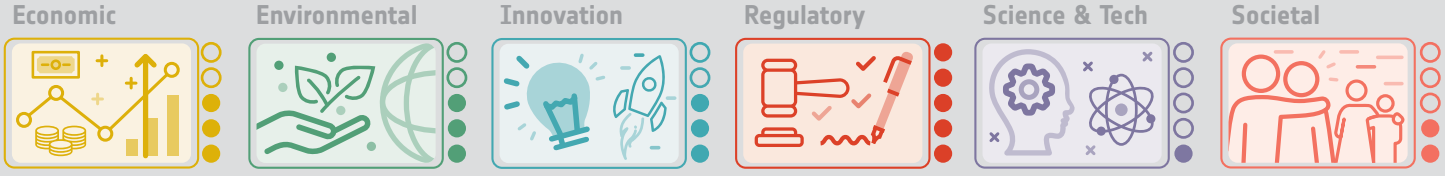
Secondary Benefits

Claimant farmers and landowners benefit from the fairer and more transparent evaluation system. Uncompliant claims have less chance of "slipping through the net", meaning more public funds reach deserving, compliant claimants.

End User Beneficiary

Citizens and society benefit from the system because it ensures that public funds are used correctly and the environmentally beneficial regulations of the CAP are upheld.

Total benefits



Anticipated benefits: 103k – 1.1M pa

About the project

Through a series of case studies, EARSC aims to gather quantitative evidence that the usage of Copernicus Sentinel data provides an effective and convenient support to various market applications. These studies are undertaken in the frame of the project "Showcasing the benefits brought by the usage of Sentinels data to society, environment and economy: a bottom-up assessment based on traceable impacts along selected value chains", under an assignment from the European Space Agency (ESA) funded by the European Union as part of the Copernicus Programme.

Download the full report from the project website

http://earsc.org/sebs