

StatE0

5-7 May 2026 | ESA-ESRIN | Frascati (Rome), Italy



YPSGlobe – one-stop high-resolution yield prediction for the Globe

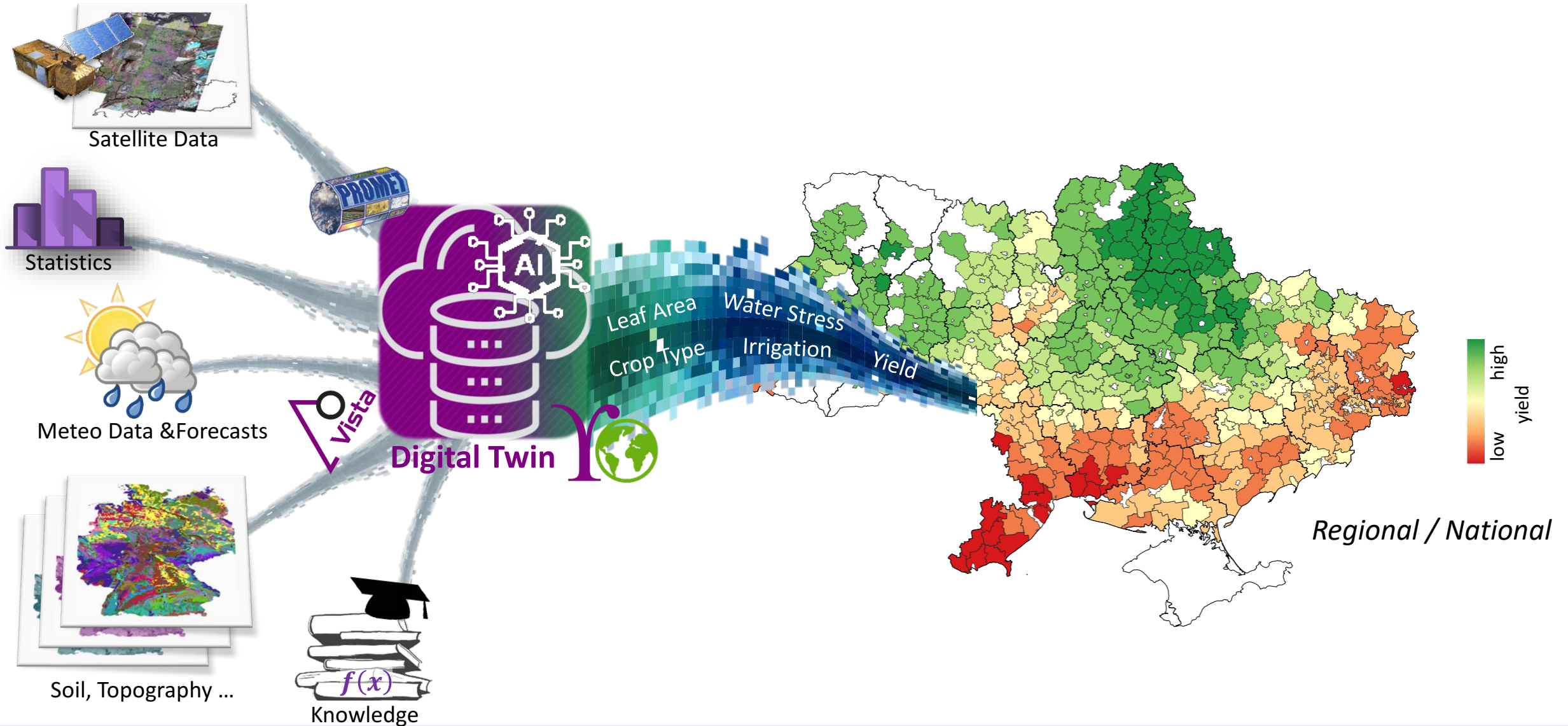
Sandra Dotzler, Heike Bach, Solveig Blöcher, Christian Miesgang, Silke Migdall, Anusha Sanmathi Sathyaniranjana

Vista GmbH



YPSILON - Yield Prediction by Satellite

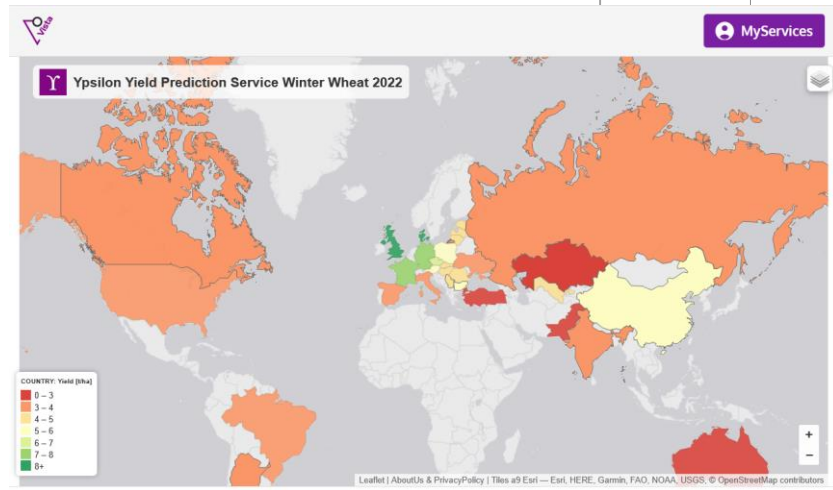
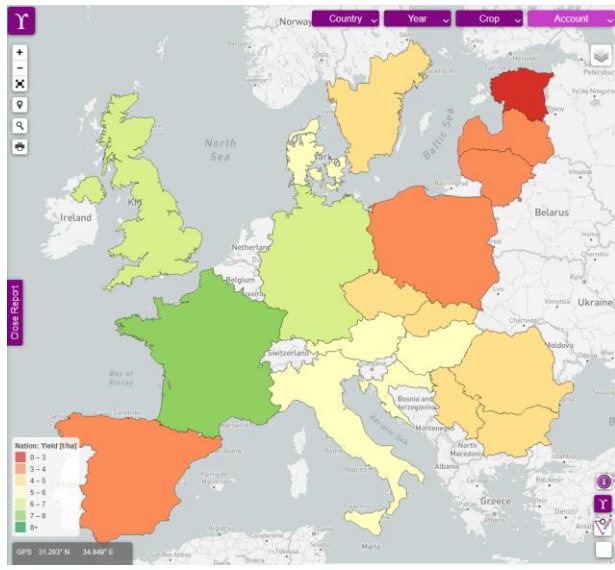
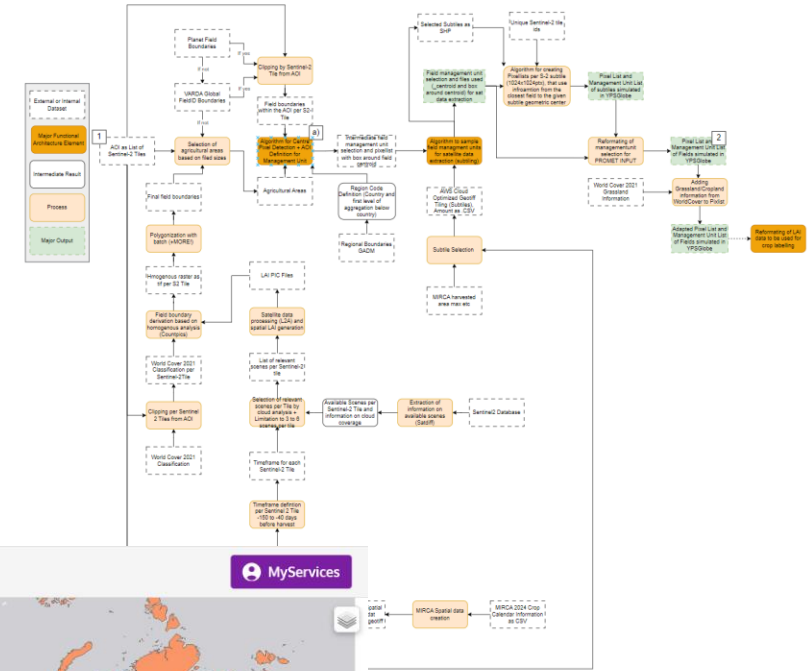
Regional Yield forecasts for wheat, barley, maize, rapeseed, sunflower



From YPSILON to YPSGlobe



- Ypsilon: European yield forecast service from 2018 onwards
- But: global market needs global solution → YPSGlobe
- „simple upscaling“ not possible → completely new workflow necessary
- New services included: production forecast



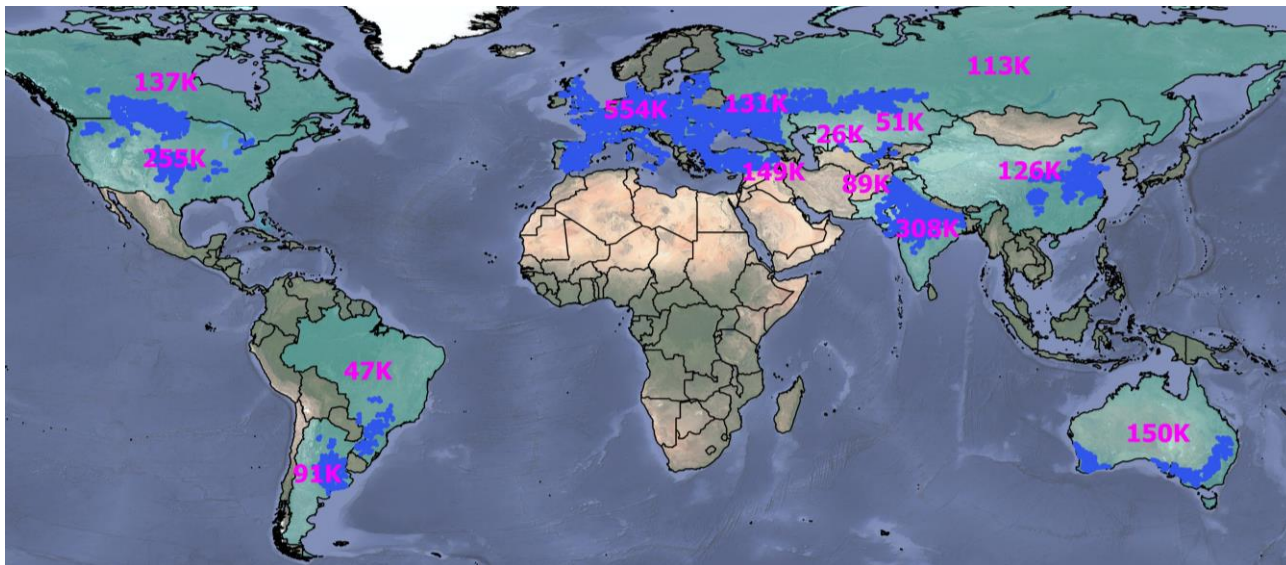
Yps Globe - Global Wheat Intelligence — From Yield to Market Forecast

Independent, timely, and reliable wheat production and price insights — all in one place.

Where on the Globe?

- The main wheat producing and exporting countries
- Covering 90% of global wheat production (based on 2023 FAO data)

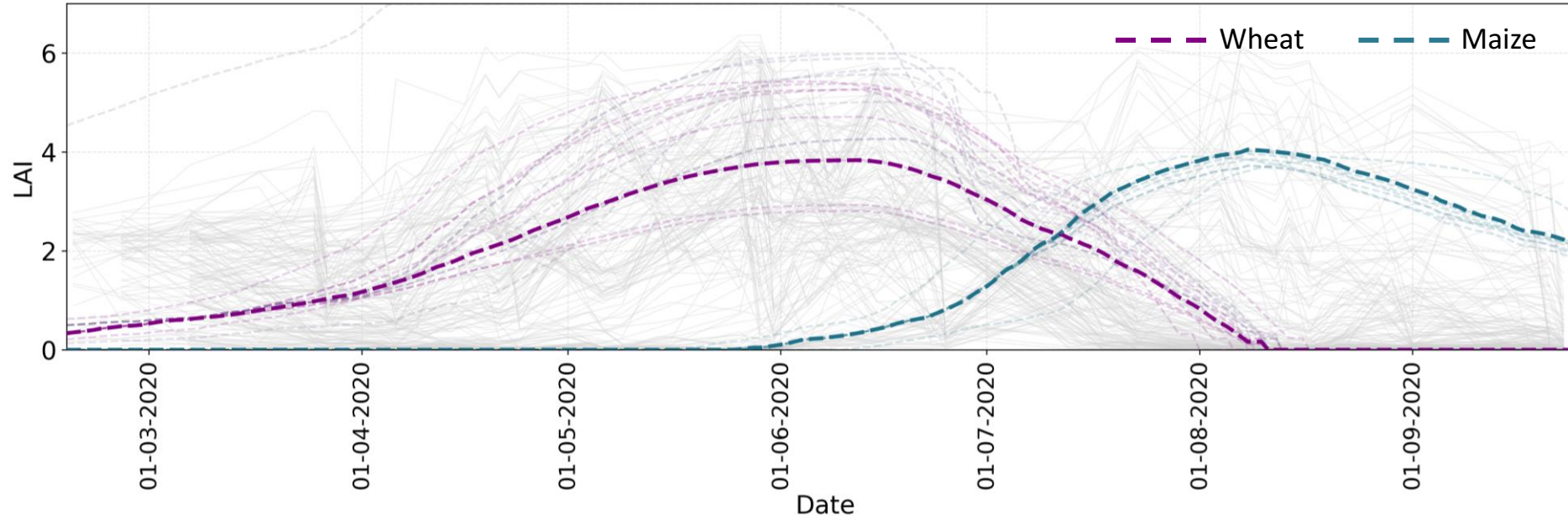
- Field selection using existing field boundary datasets, or in-house algorithms based on Sentinel-2 data
- ~2.4 million fields selected
- high resolution
- scalable



Is it wheat? Crop classification and outlier correction



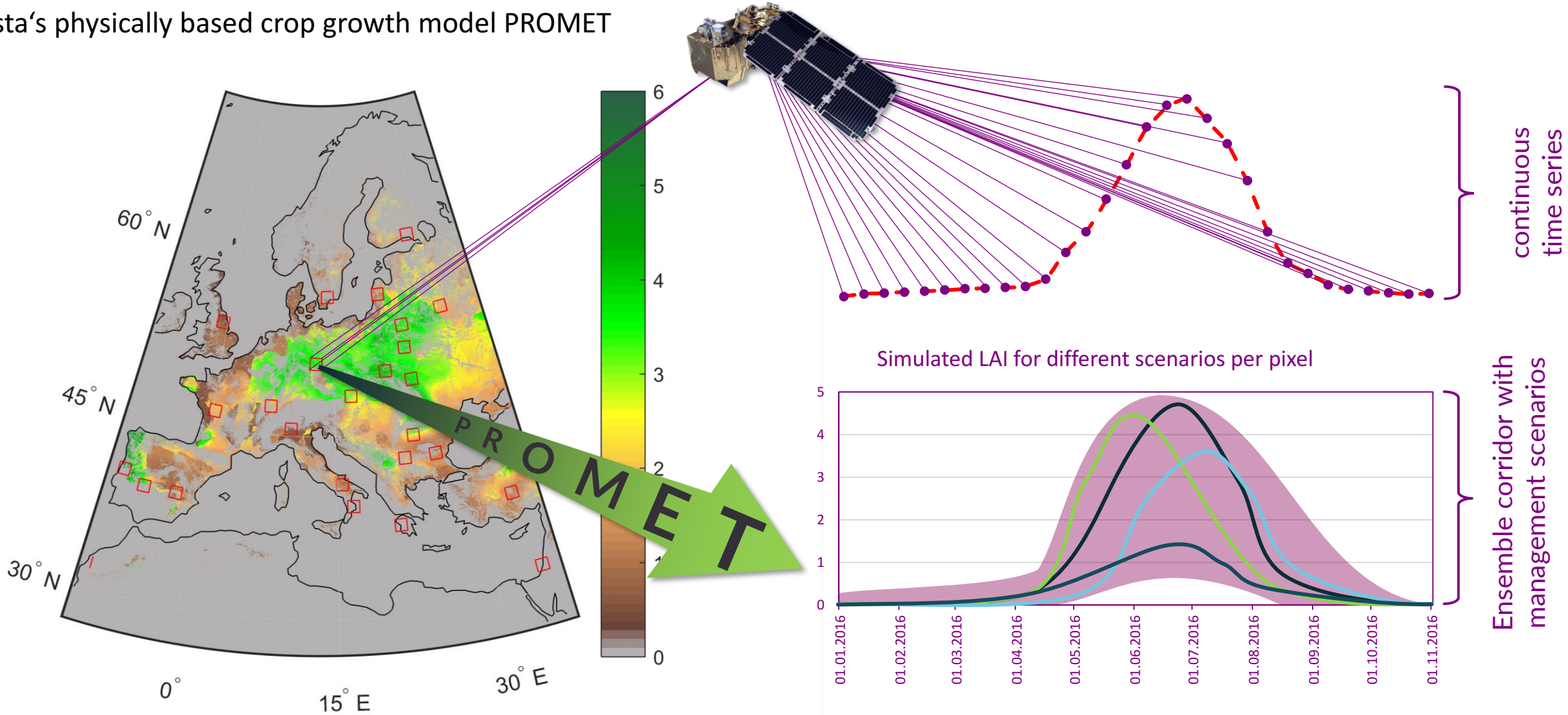
- Flexible, scalable EO data extraction using OpenEO
- LAI retrieval – physical informed neural network PINN
- Crop type classification: comparison of EO derived temporal LAI profiles with simulations of wheat growth for different management practices
- Challenge: there is no global description available of phenological behavior of wheat for different environmental conditions → we overcome this by using earth observation data



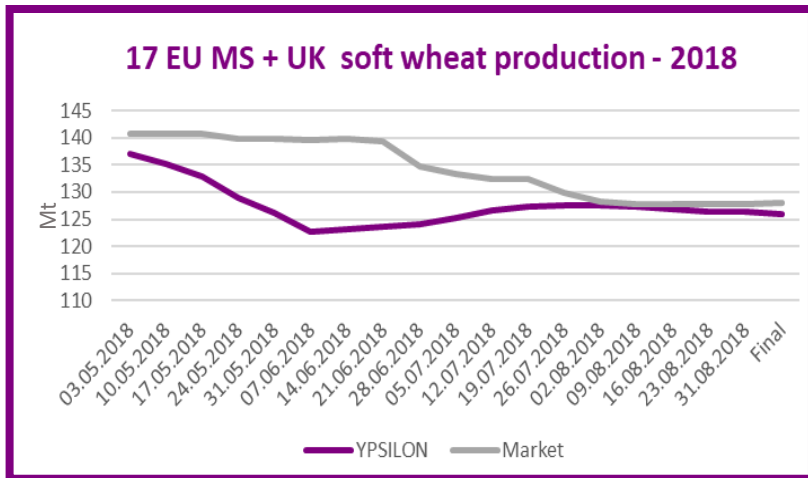
Yield forecast modelling



Vista's physically based crop growth model PROMET

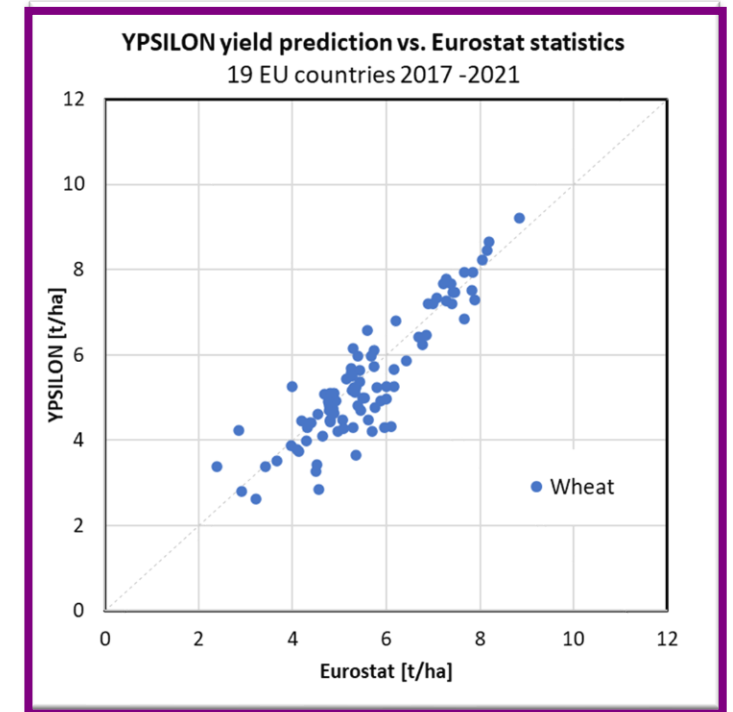
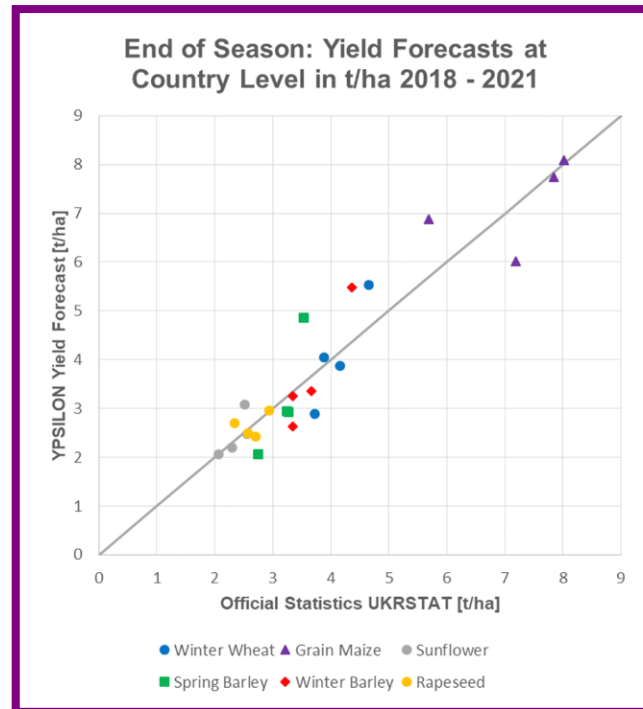


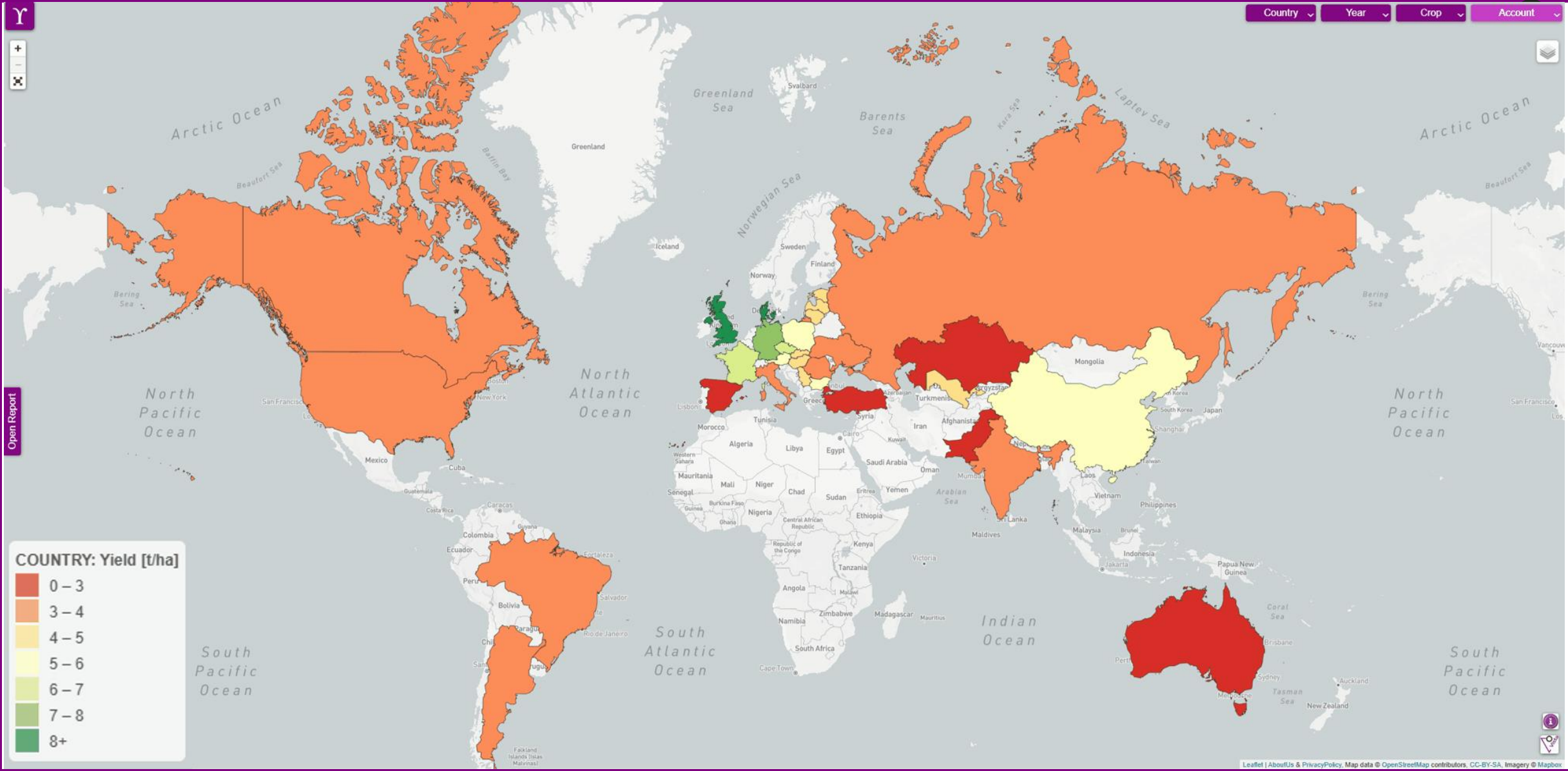
- Results from YPSILON heritage
- Validation against official statistics (Eurostat, UKRSTAT)



YPSILON reacts early and reliable also to extrem weather events

YPSILON shows strong correlations with official yield data, which, however, are published much later

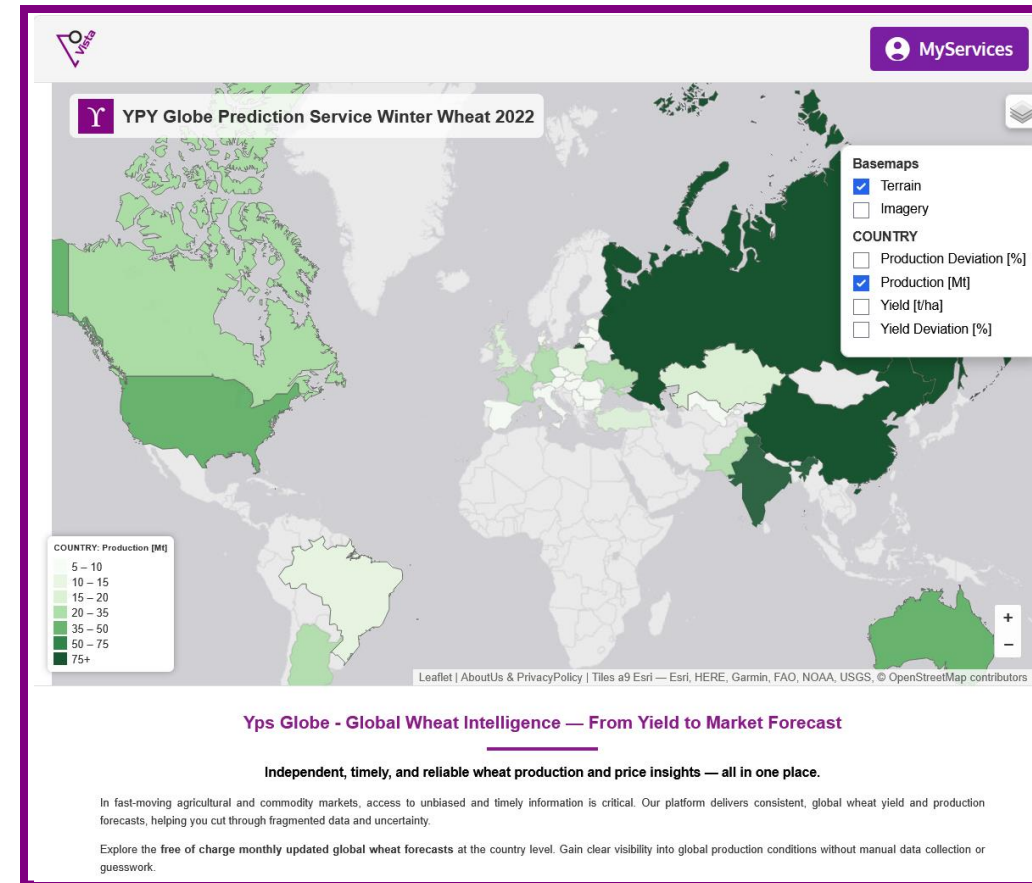


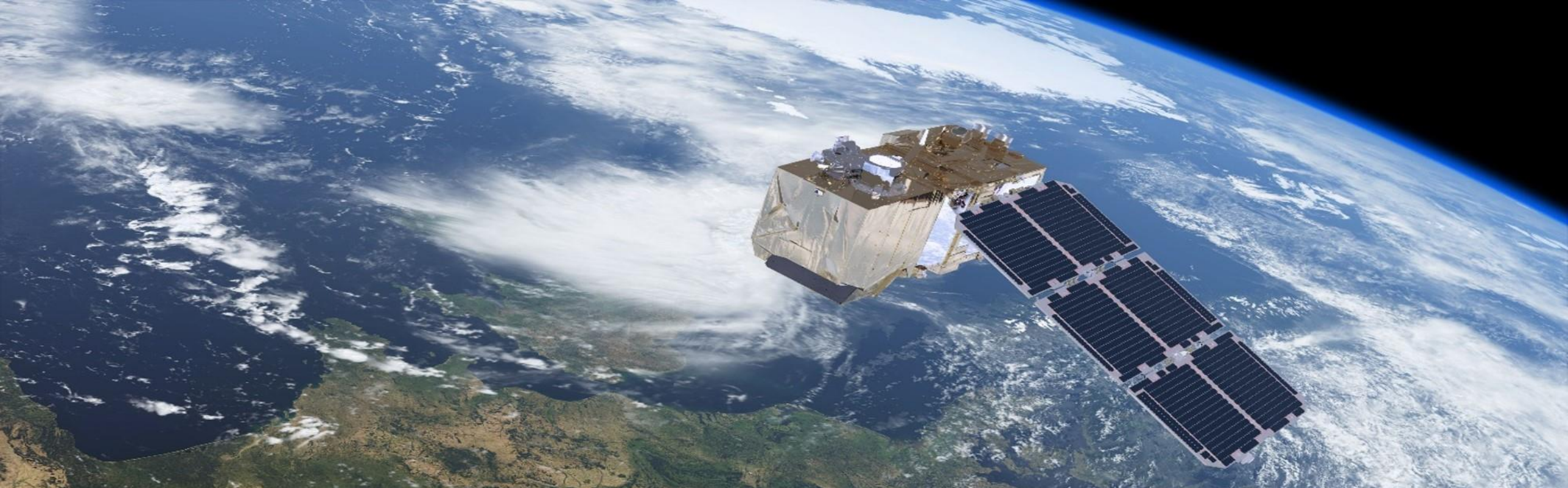


Vista-GEO Global Yield Forecast

- Data access via API or portal
- Yield, yield deviation
- Production, production deviation
- Monthly updates for free
- Weekly updates with the paid premium version
- Later extensions:
 - other crop types planned
 - Approach flexible for other regions and spatial detail

<https://portal.vista-geo-service.de/>





We would greatly appreciate your feedback

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