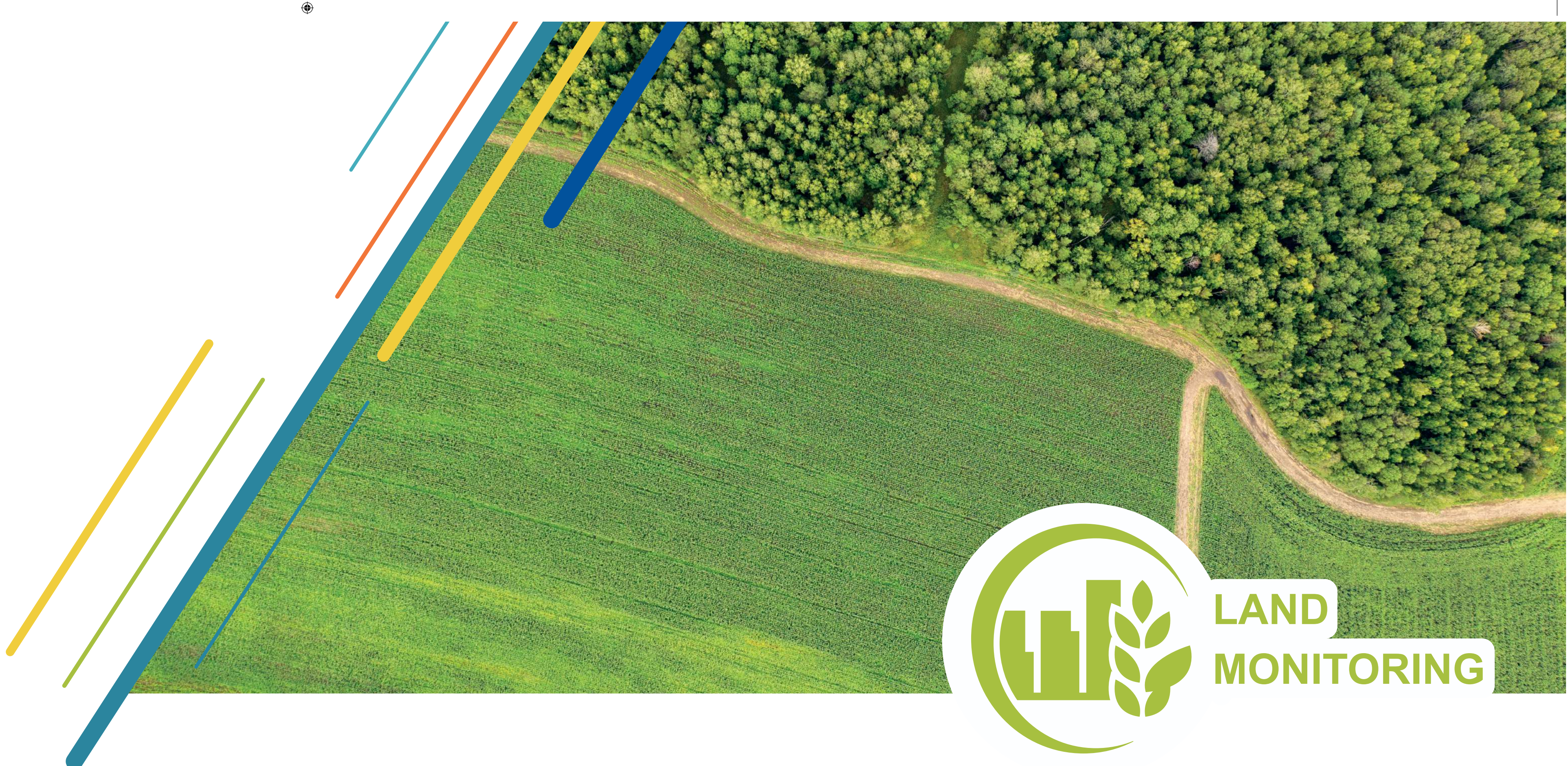


CLMS HRL SLF

SMALL

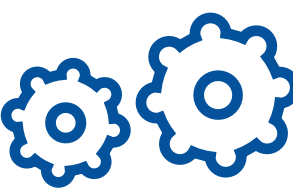
LANDSCAPE

FEATURES



OBJECTIVES

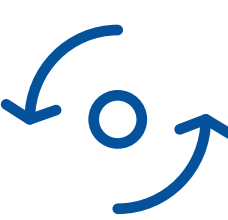
- Mapping of hedgerows and vegetation patches to support biodiversity, land management and climate mitigation across Europe
- Updating and expanding existing products relative to Small Landscape Features



PRODUCT DEVELOPED

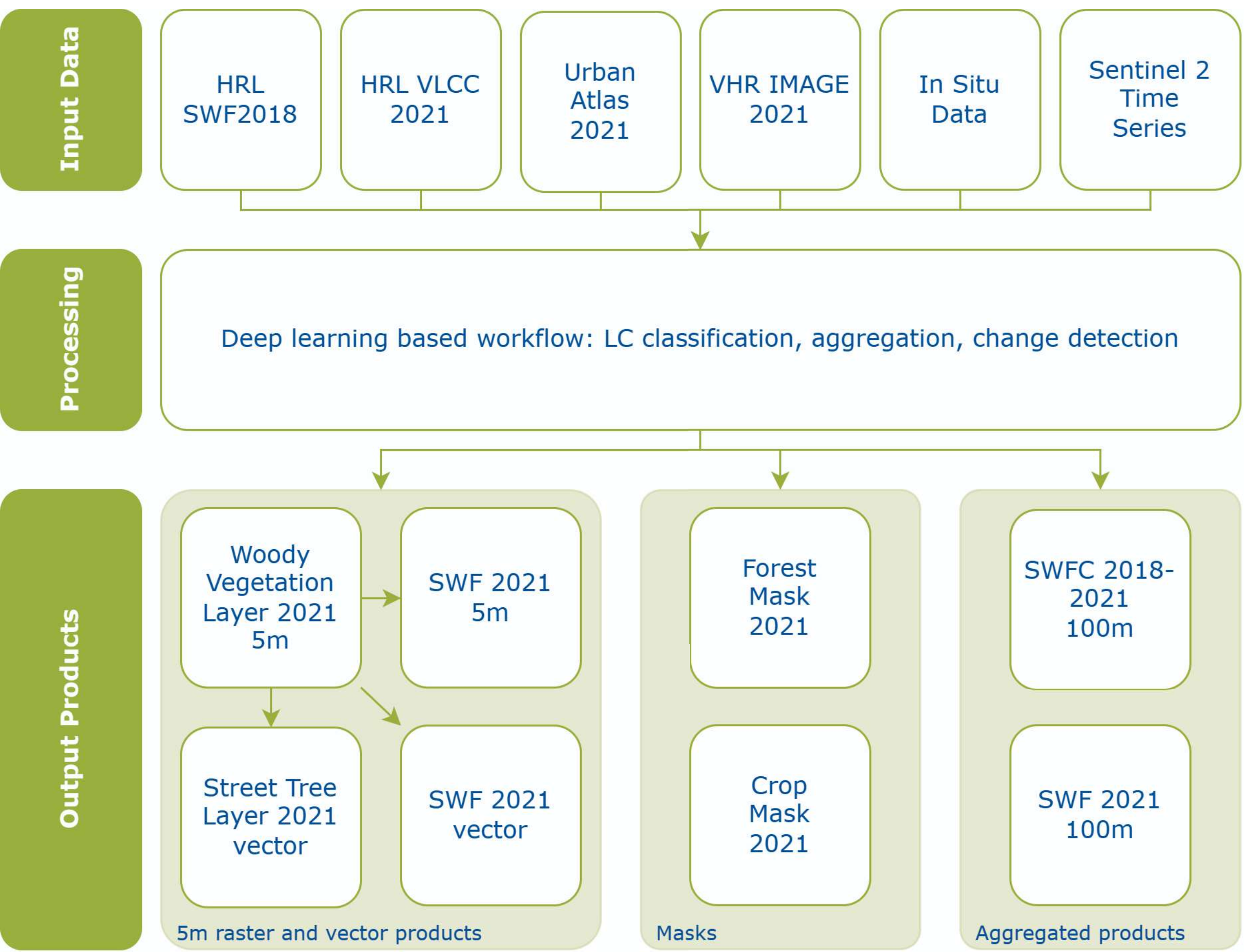
Latest products delivered in 2025

- Small Woody Features Change 2018–2021 (raster)
- Small Woody Features 2021, 5 m (raster/vector)
- Small Woody Features 2021, 100 m (raster)
- **NEW** Woody Vegetation Layer 2021 (raster)
- Forest Mask 2021 (raster)
- **NEW** Crop Mask (raster)
- **NEW** Street Tree Layer 2021 (vector)
-



METHODOLOGY

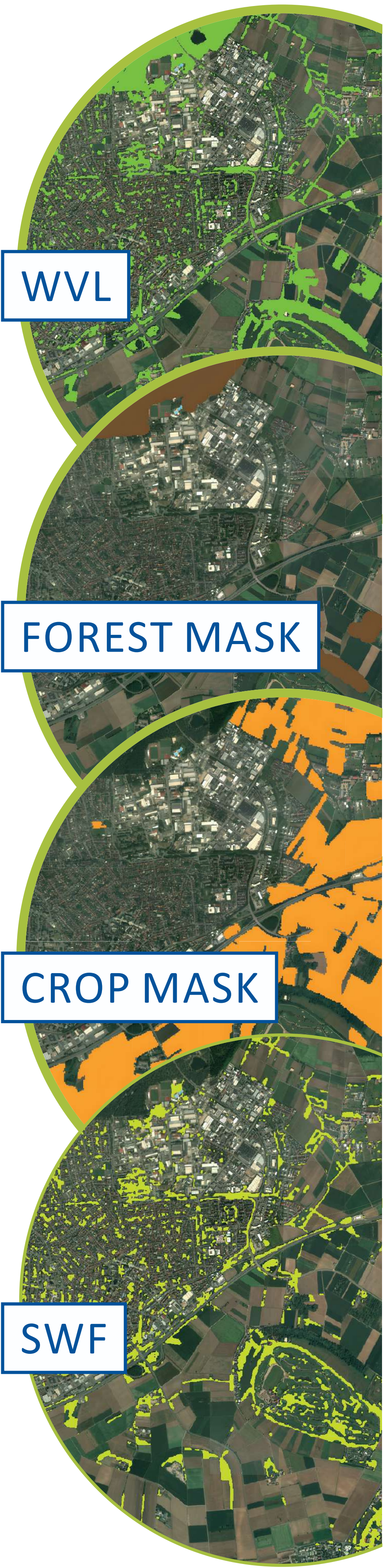
- Deep Learning based approach
- Use of a large, visually updated training dataset extracted from Copernicus products, covering all EEA38 + UK
- Input Earth Observation data: Sentinel-2 Super Resolution and Very High Resolution (VHR) satellite imagery
- Edge detection and probability mapping to enhance small feature extraction



USE CASE

Viernheim, Germany

- The images illustrate an area where different data layers effectively identify Small Landscape Features (SLFs) within agroforestry systems.
- A 2021 study in Germany demonstrated that combining SWF 2015 and CLC 2012 data allowed researchers to detect the impact of agricultural intensification and the loss of trees and hedges.
- This finding underscores the importance of SLFs in carbon storage and highlights their decline due to landscape simplification.
- With the newly updated SLF products, it is now possible to monitor agroforestry systems more accurately.



60 000
VHR scenes
processed
across Europe



CONCLUSIONS

SLF products enhance monitoring of small landscape features, supporting better environmental tracking and land-use planning.

- Sentinel-2 super-resolution data combined with AI models enables fine-detail mapping at 5 m resolution
- Reprocessing of 2018 reference year with same method enables better change detection
- Integration of CLMS datasets improves mapping of Small Woody Features and Street Tree Layers with high accuracy



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