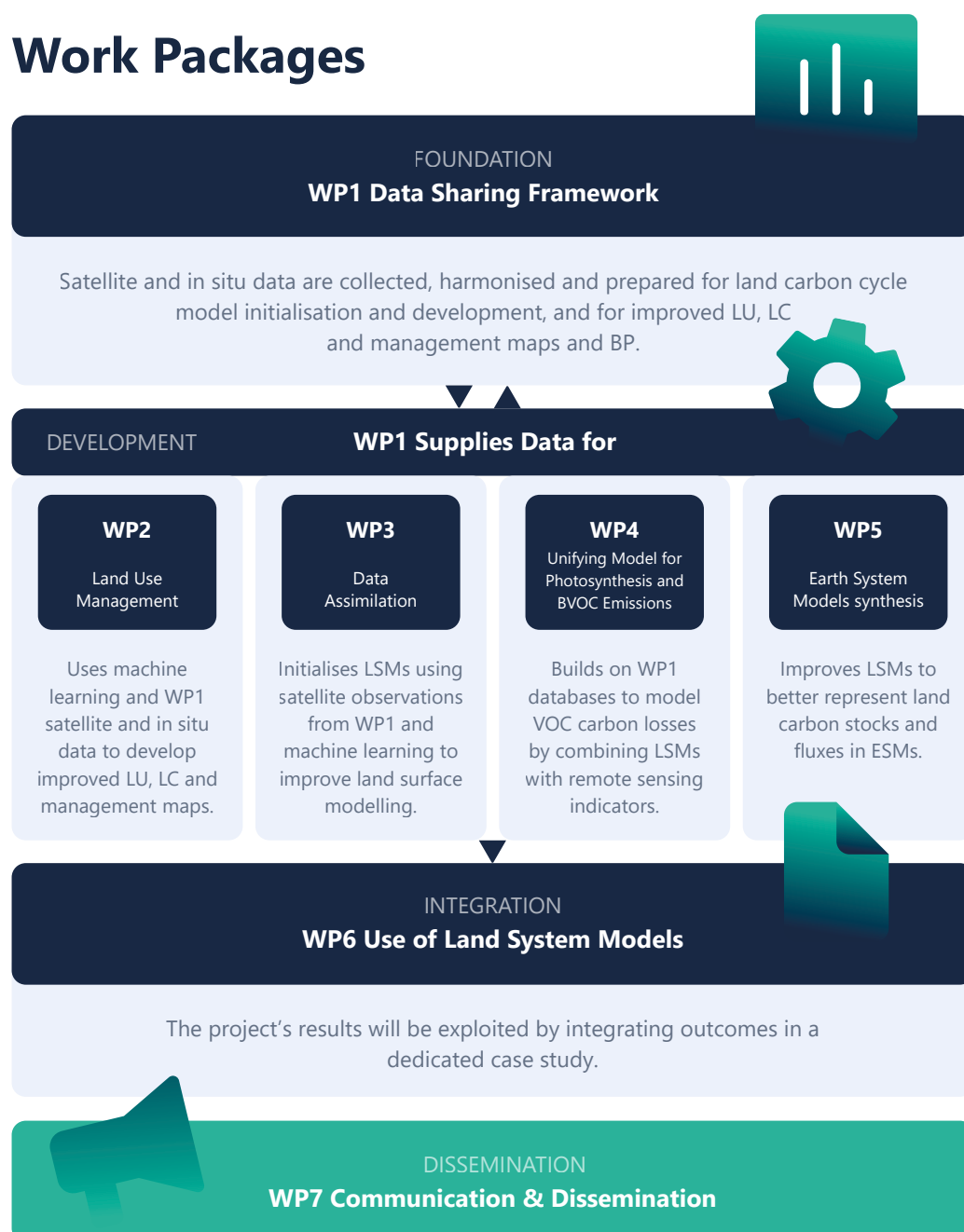


Improved **Carbon cycle** representation through multi-scale models and **Earth observation** for **Terrestrial ecosystems**

Background

CONCERTO leverages advanced Earth observation data, innovative process models, and machine learning techniques to enhance land surface simulations. By refining land cover representation, integrating new data sources, and improving the modelling of carbon fluxes, CONCERTO will support better land management strategies and contribute to carbon neutrality efforts.

Work Packages



Methodology

- 1 Develop an integrated land-carbon cycle framework to better quantify terrestrial ecosystem processes and strengthen Earth System Model projections.
- 2 Combine satellite Earth observation data with advanced modelling to capture variations in carbon processes across space and time.
- 3 Use artificial intelligence, machine learning, and data assimilation to integrate multi-scale information and reduce modelling uncertainties.
- 4 Exploit new ESA Earth Explorer missions and existing EO datasets to improve representation of land-carbon interactions.
- 5 Bridge data and models to deliver more reliable estimates of carbon sinks and sources, supporting robust climate-change predictions.

13 organisations, 7 countries



Project Duration

January 2025 - December 2028

Project Coordinator

Manuela Balzarolo - CMCC

Contact

manuela.balzarolo@cmcc.it

MANAGEMENT
WP8 Project Management

