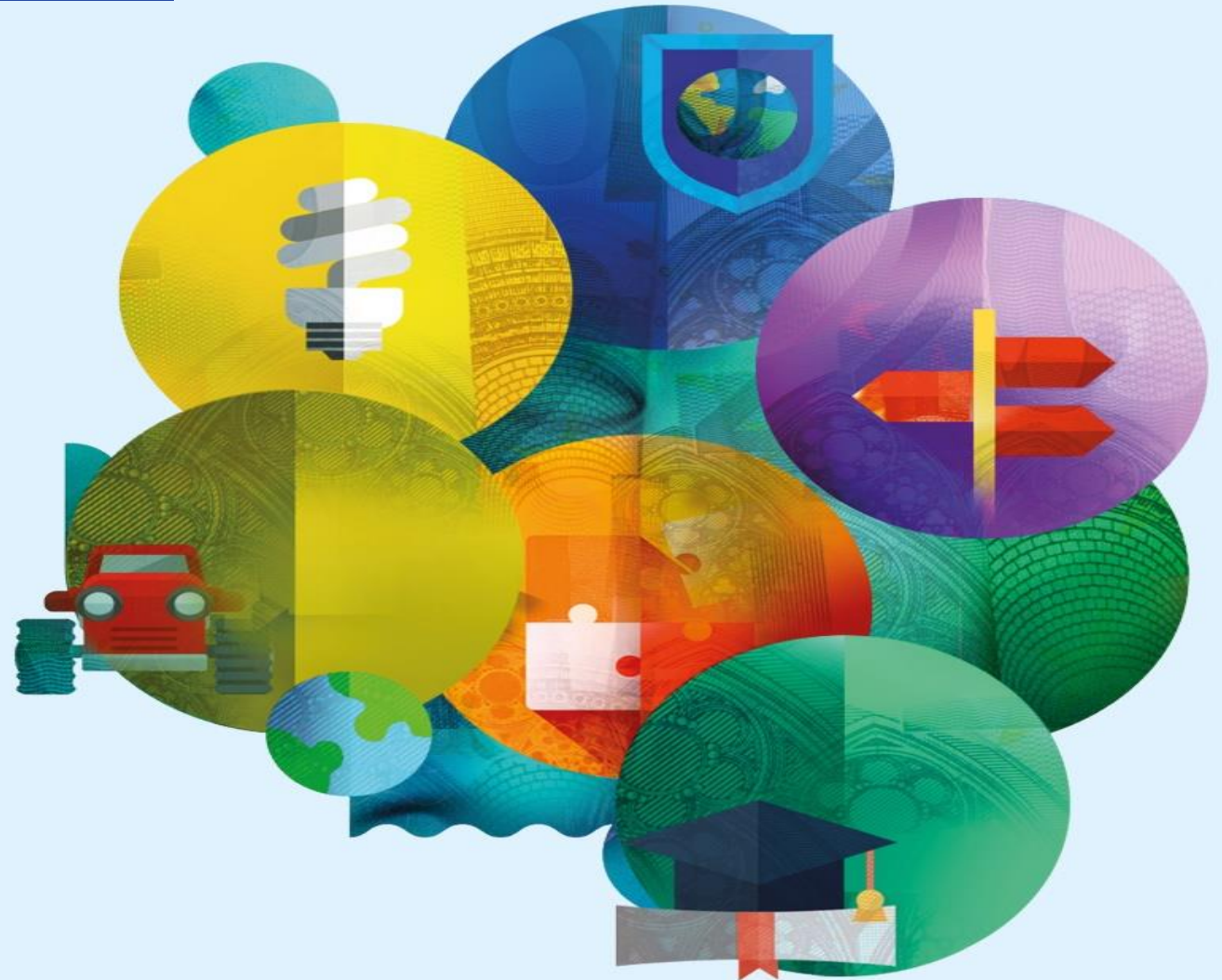


COMMON AGRICULTURAL POLICY post-2020

Farm Sustainability Tool for Nutrients - FaST

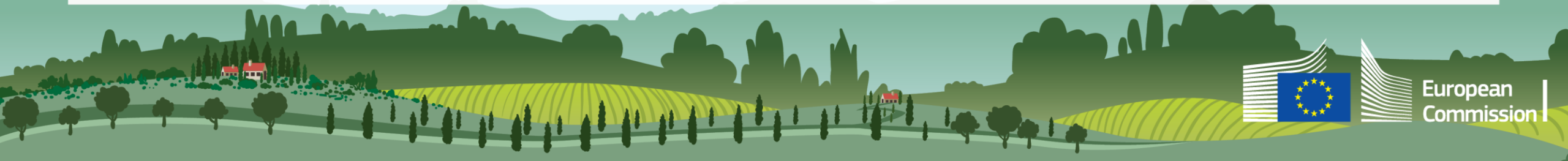
Isidro Campos, DG AGRI D4

[#FutureofCAP](#)

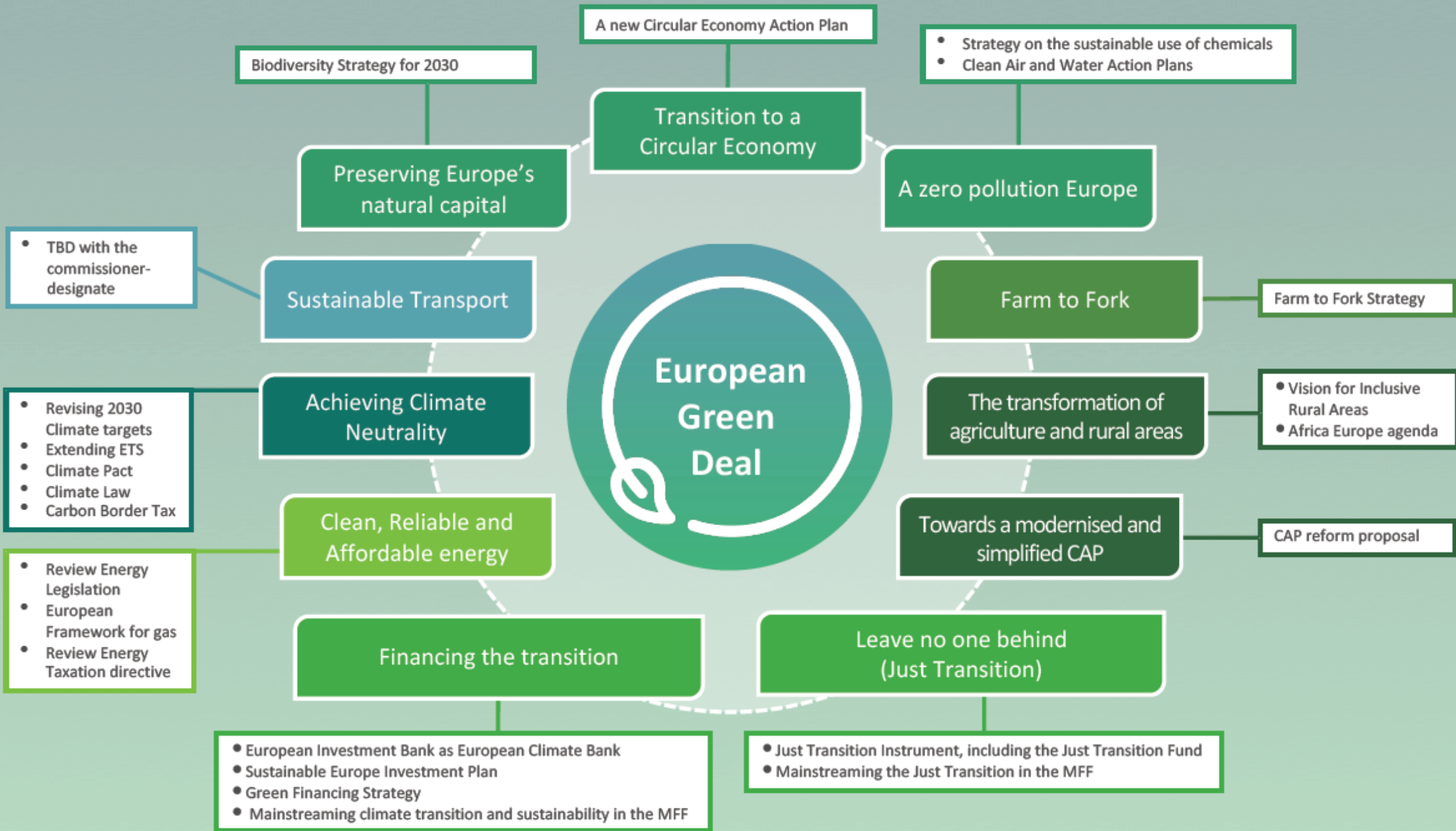


Farm Sustainability Tool for Nutrients – FaST

- Context
- The FaST in the CAP
- Actions implemented to support Member States



European Green Deal



Farm Sustainability Tool for Nutrients – FaST

FARM to FORK and Biodiversity strategies

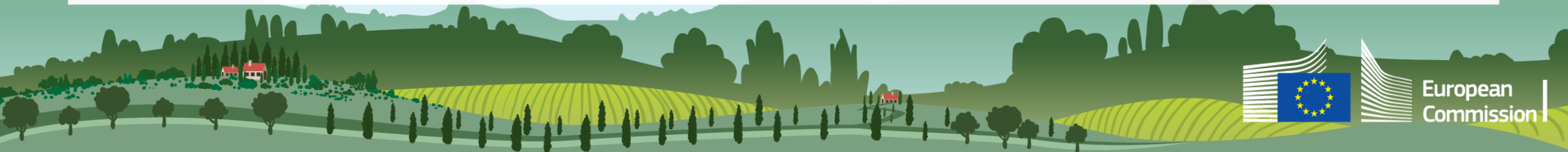
Target for reduction of pollution caused by nutrients

- The Commission will promote the goal of zero pollution from N and P flows from fertilisers through reducing nutrient losses by at least 50%,

while ensuring that there is no deterioration in soil fertility. This will result in the reduction of use of fertilisers by at least 20%.

Actions:

- Enforcement of relevant environmental and climate legislation,
- measures included in the CAP Strategic Plans such as the Farm Sustainability Tool for nutrients, investments, advisory services and of EU space technologies (Copernicus, Galileo).
- Integrated Nutrient Management Action Plan in 2022,
- update the EU Soil Thematic Strategy.



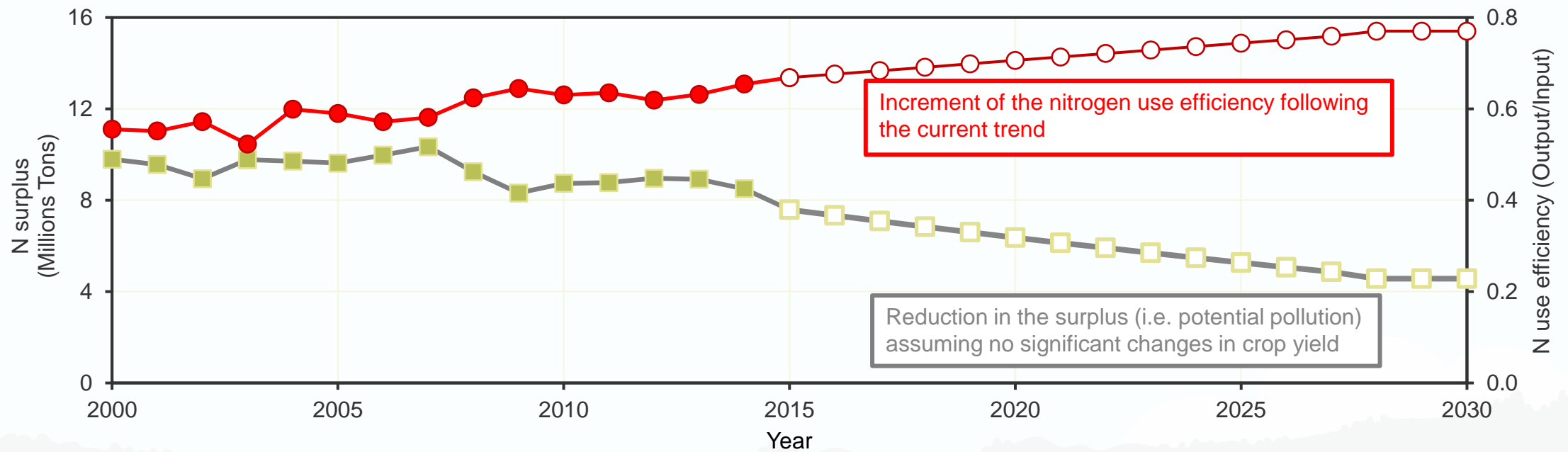
Farm Sustainability Tool for Nutrients – FaST

FARM to FORK and Biodiversity strategies



The **excess of nutrients** in the environment is a major source of air, soil and water pollution, negatively impacting biodiversity and climate. The Commission will act to

- **reduce nutrient losses by at least 50%**, while ensuring no deterioration on soil fertility
- **it will result in the reduction of the use of fertilisers in at least 20%**



Source: Eurostat



European Commission

Innovation and Modernization in the Future CAP

Innovation and Modernization

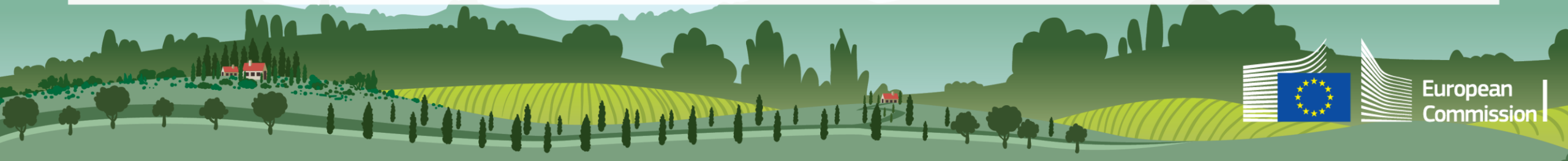


European
Commission

Analysis of links between CAP Reform and Green Deal

SWD(2020) 93 final

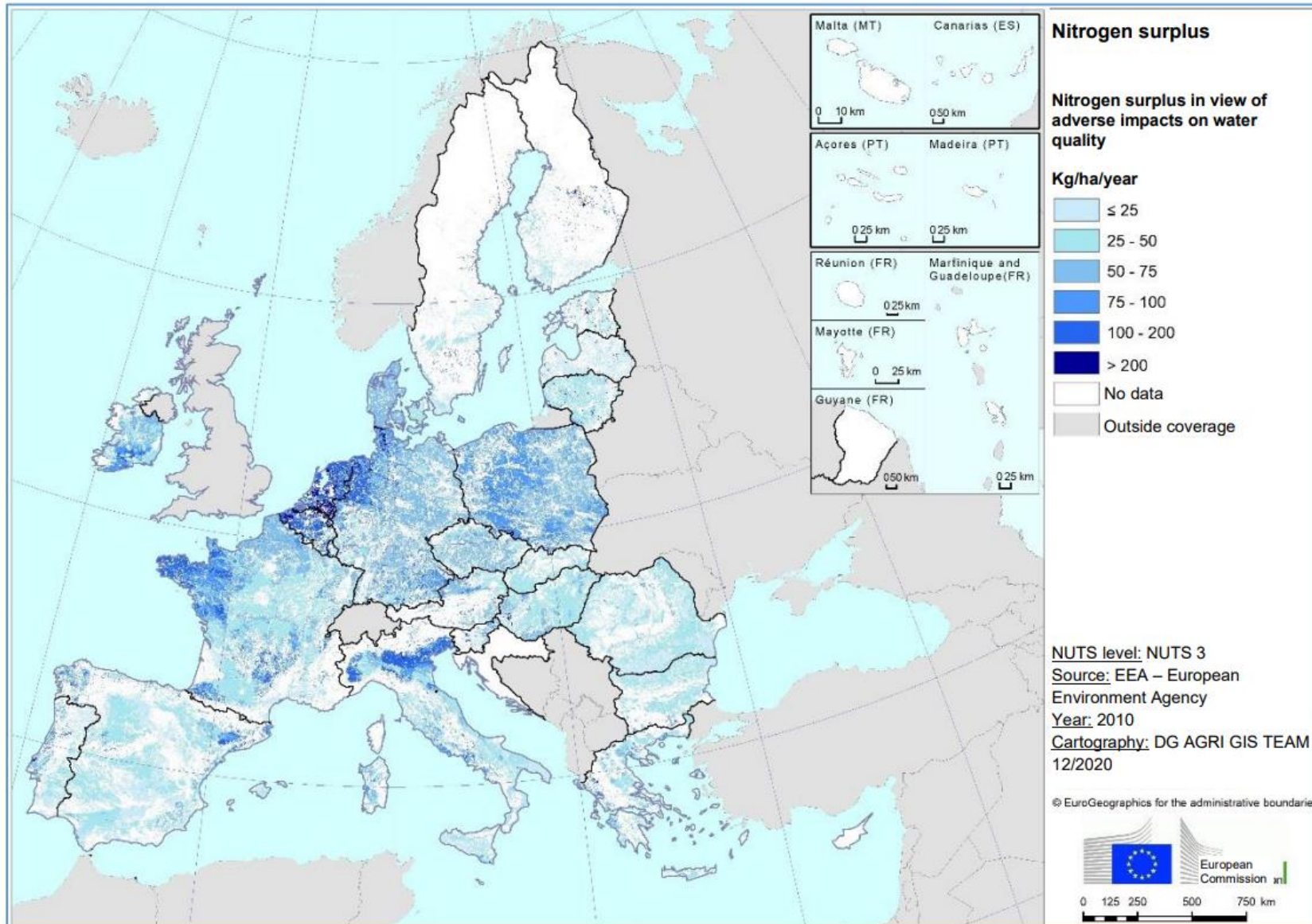
- The CAP proposal is compatible with the GD and its associated strategies and has the potential to accommodate its ambitions
- specific actions in the CAP to help to achieve the GD ambition:
 - creating a structured dialogue for preparation of CAP strategic plans, including by providing recommendations to each Member State. Member States would be asked to address the new quantified GD in their CAP Strategic Plans.
 - proposing legislation to enlarge the scope of the current Farm Accountancy Data Network (FADN) in order to include sustainability indicators and strengthen its links with advisory services.



Farm Sustainability Tool for Nutrients – FaST

Recommendations to the MS as regards their strategic plan for the CAP

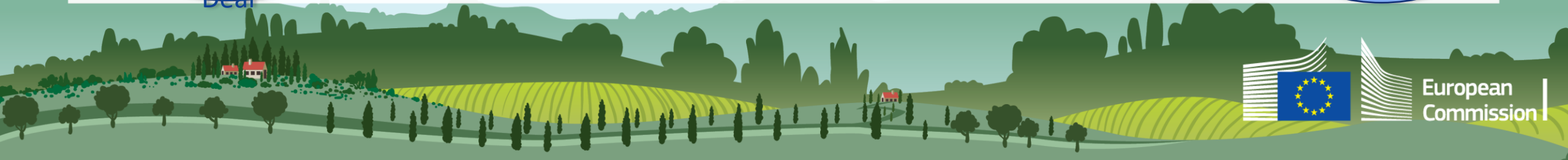
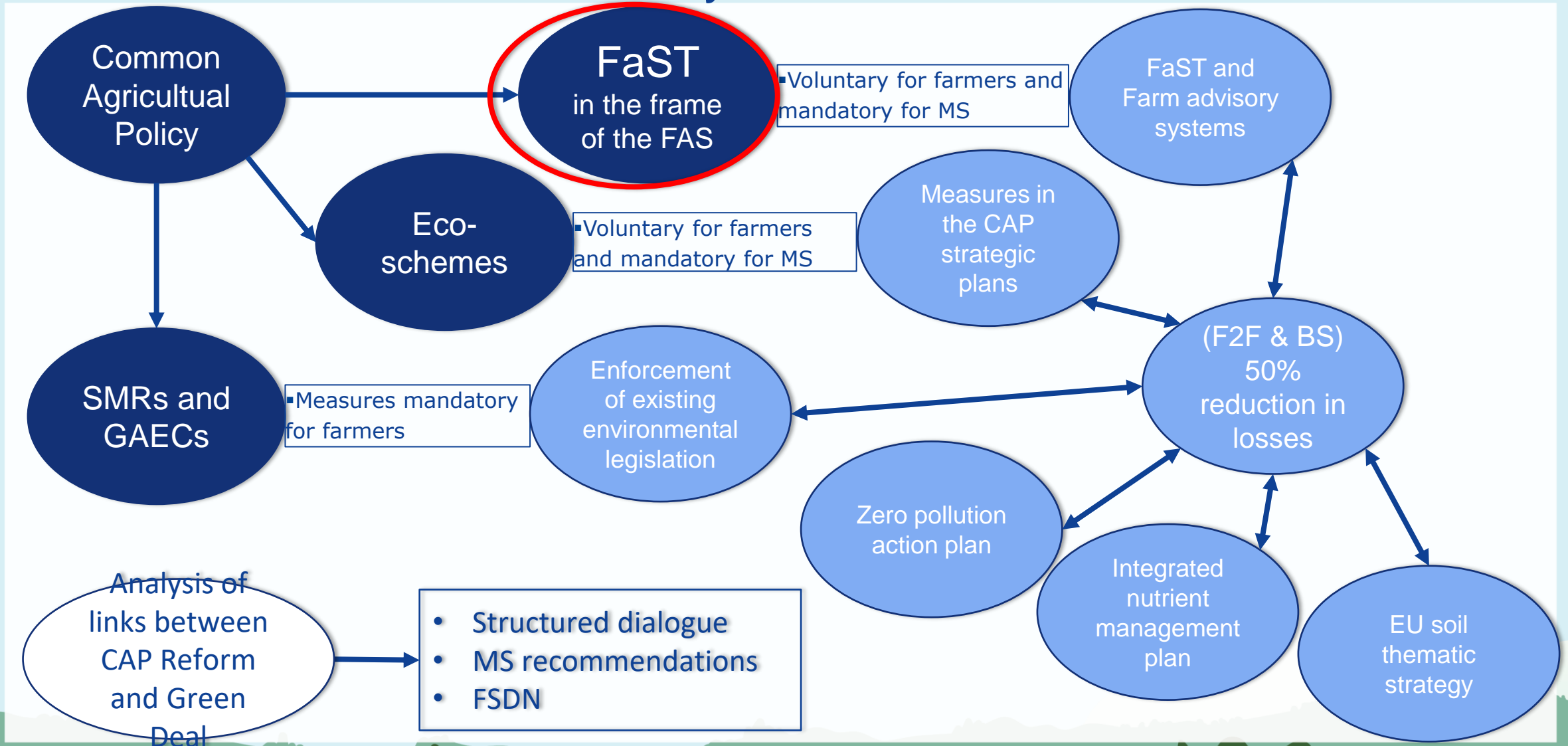
COM(2020) 846 final



- The recommendations aim to show the direction to jointly contribute to achieving the GD's objectives.
- National and regional differences at EU level
- Reference values for N & P surplus: 2012-2014 at MS level.



Farm Sustainability Tool for Nutrients – FaST

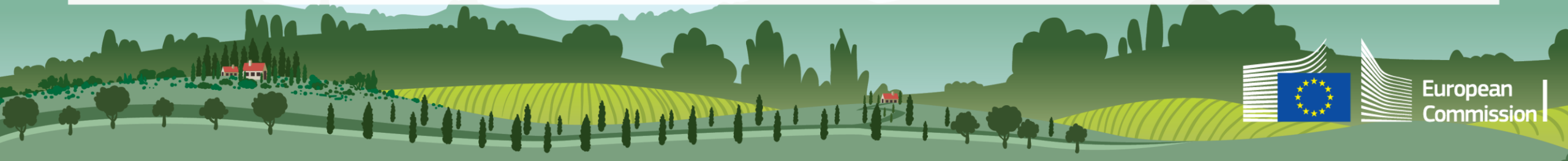


Farm Sustainability Tool for Nutrients – FaST

Use of the Farm Sustainability Tool for nutrients. FaST

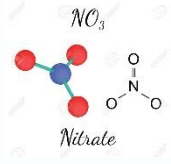
Recital 24 and Article 13 of the CAP proposal after political agreement

- To support the agronomic and the environmental performance of farms, information on nutrient management will be provided using an electronic Farm Sustainability Tool made available by MS to farmers.
- The Commission may provide support to the MS in the design of FaST.
- Main elements:
 - a balance of the main nutrients at field scale,
 - the legal requirements on nutrients,
 - soil data, based on available information and analyses,
 - IACS data relevant for nutrient management.



Farm Sustainability Tool for Nutrients – FaST

Elements and functionalities



**Data
requ.**

- Integration of information from IACS;
- Management practices, crop history, yield goals;

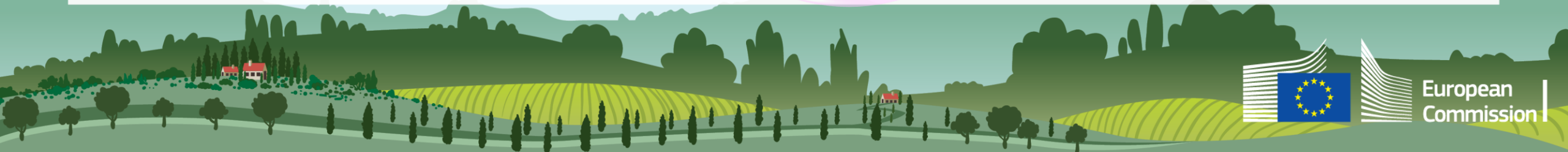
FaST

- Digital tool in the hands of the farmer

**Technical
development**

- Complete nutrients balance
- Legal limits and requirements
- Soil information

**Knowledge and
data availability**



European
Commission

Farm Sustainability Tool for Nutrients – FaST

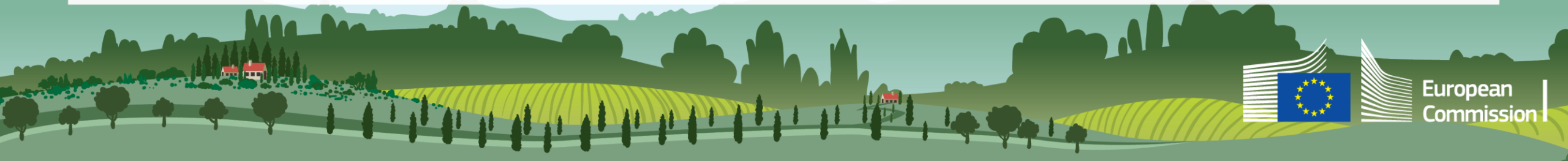
Support of the Comm.

Results of the pilot project for the implementation of the FaST in 3 MS-4PA
Study managed by DG DEFIS in coordination with DG AGRI and DG DIGIT.

(1st Phase January 2020 / May 2021)

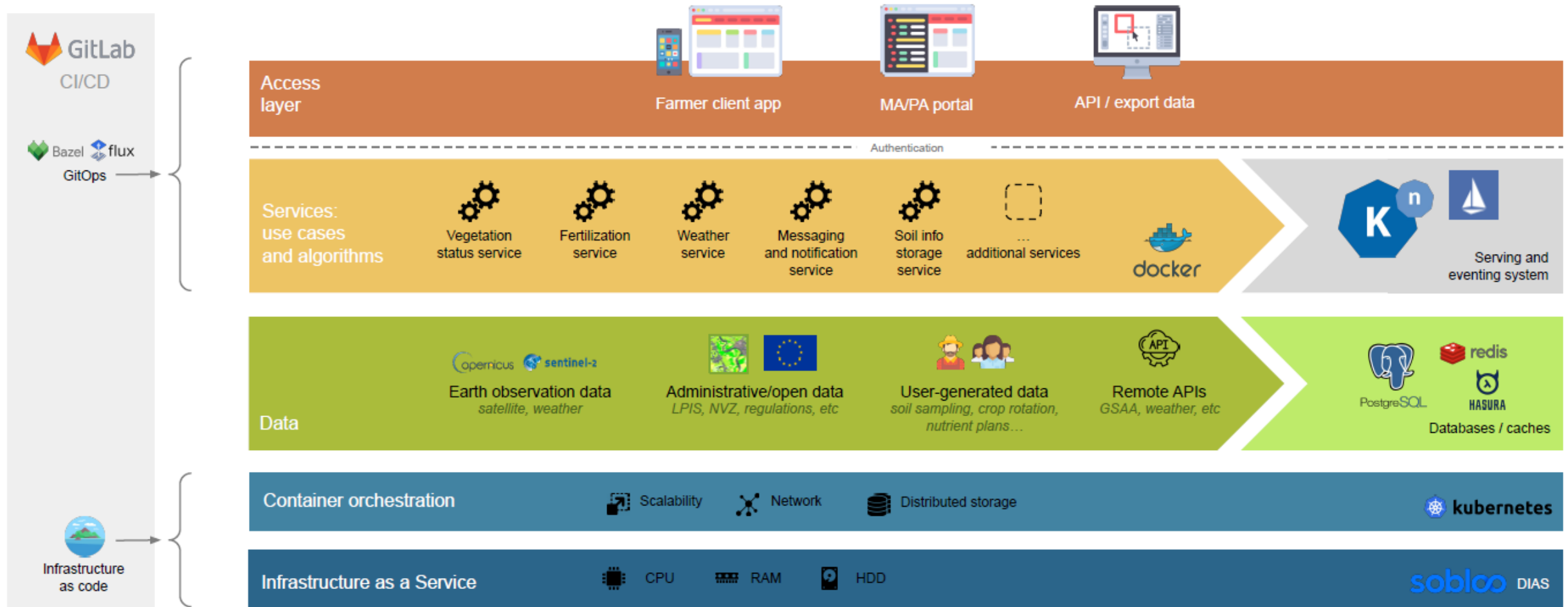
(2nd Phase June 2021 / May 2022)

Featured results:	Project summary, audio-visual material:	Availability of the FaST demo:
<ul style="list-style-type: none"><input type="checkbox"/> Development and customisation of the digital architecture<input type="checkbox"/> Pilot implementation of the tool<input type="checkbox"/> Road map and training material for other MS/PA interested	<ul style="list-style-type: none">- https://fastplatform.eu/	<ul style="list-style-type: none">- https://gitlab.com/fastplatform: access to all the code produced for the application and the platform (public repository)



Development of the FaST as a IT system

FaST High Level Design



Farm Sustainability Tool for Nutrients – FaST

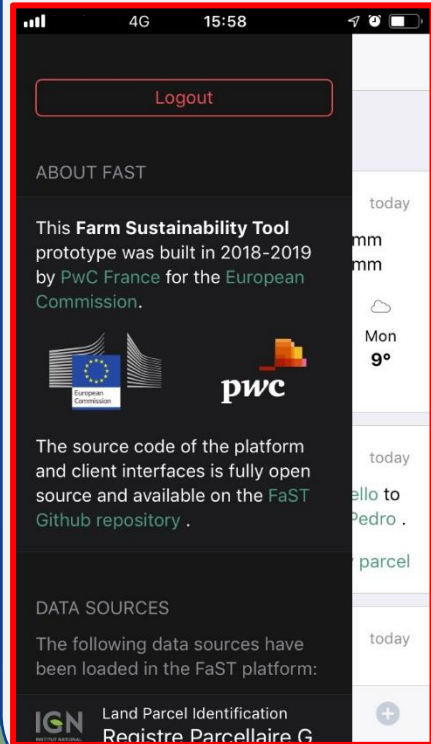
Support of the Comm.

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(January 2020 / May 2021)

- The steps envisaged for the FaST are:

1

Access to the APP
or web browser
using unique
identification



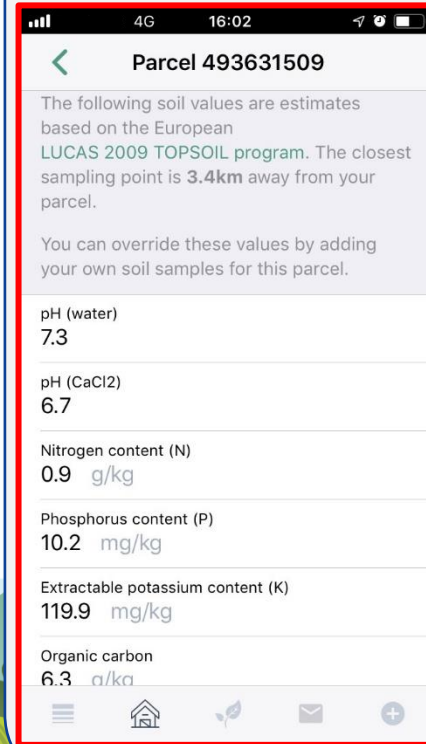
2

Confirmation of
the parcels based
on the LPIS limits



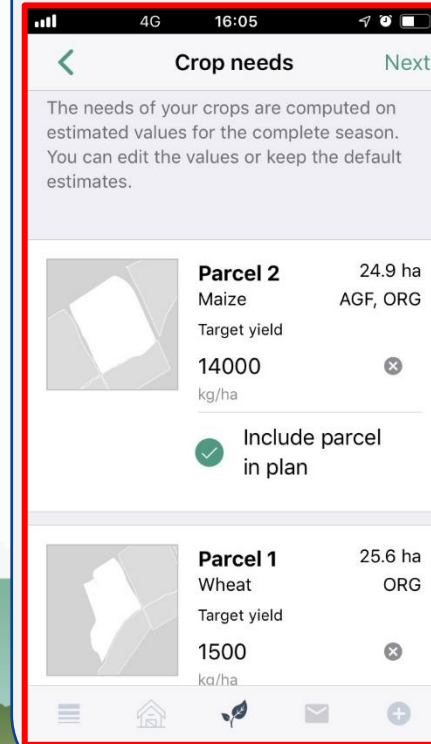
3

Integration of data
sources:
Soil data, Natura2000



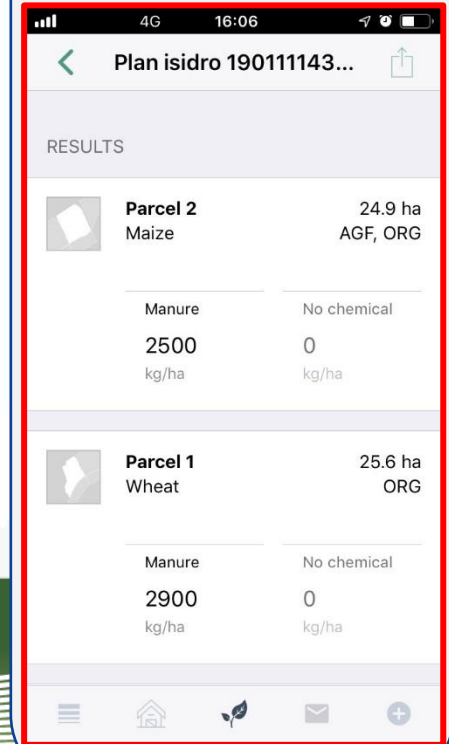
4

Data entry and
confirmation
(Crop and expected
yield)



5

Nutrients
Management Plan
(Field/Farm scale)



Examples of the demo version from
the Feasibility study.

Farm Sustainability Tool for Nutrients – FaST

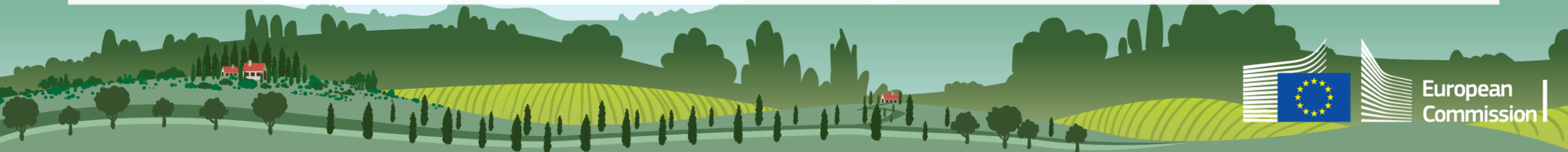
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(January 2020 / May 2021)

Interaction with existing services and databases

(D. Sanchez FEAGA)

	Estonia	Piemonte	Castilla y Leon	Andalucia
Fuentes de datos	(Geometrías “parcelas/FOIs”, ZV Nitratos, Hidro, Natura2000, suelo, etc.)			
Algoritmo de fertilización	ARCO	Visione	Fertilicalc	Fertilicalc y Vegsys
Autenticación	TARA	SPID	OPCyL	DAT
Conector de datos IACS	PRIA	ARPEA	OPCyL	Reafa
Pronóstico del tiempo	ILMATEENISTUS	ARPA	SiAR + AEMET	SiAR + AEMET



Farm Sustainability Tool for Nutrients – FaST

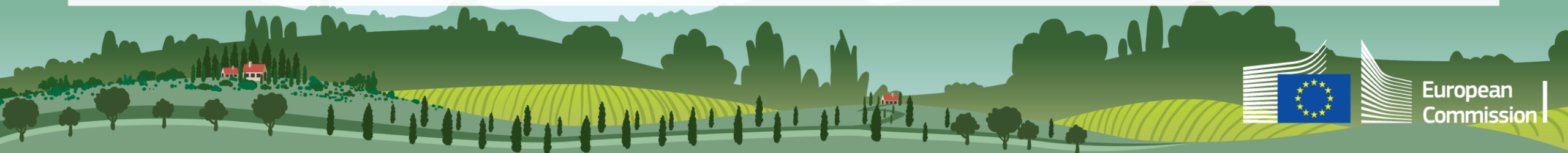
Support of the Comm.

Study for the development of a common framework for the quantitative advice of crop nutrient requirements and GHG emissions & removal.

(December 2020 / December 2021)

Expected results:

- to describe the methodological frameworks: quantitative advice for fertilizer use and GHG emissions/removal assessment;
- to parameterize the frameworks in real systems representing EU ag diversity
 - MO1 – description of variables & timescales
 - MO2 – calculation methodologies
 - MO3 – optimize economic performance
 - MO4 – estimate reliability of results
 - MO5 – implement in digital tool for farm/advisors

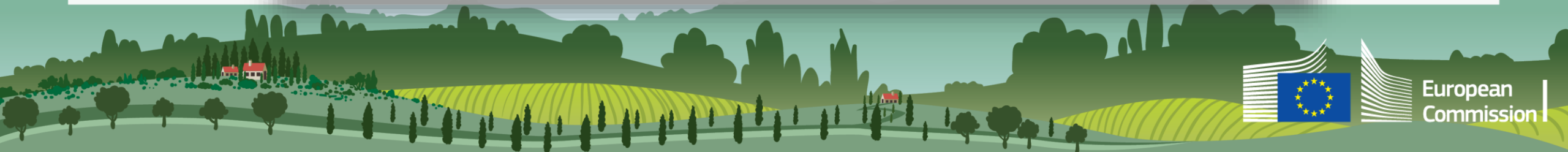
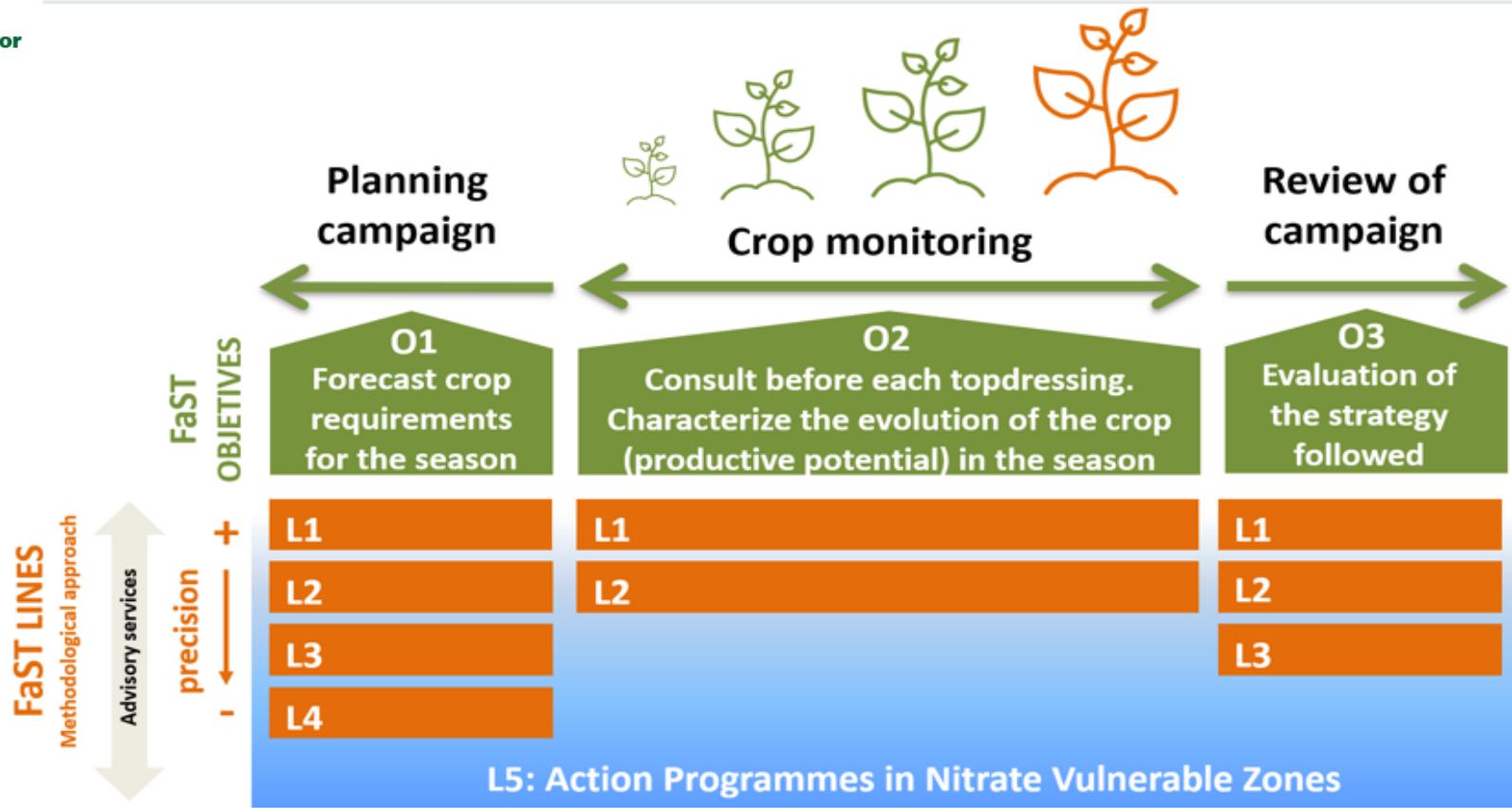


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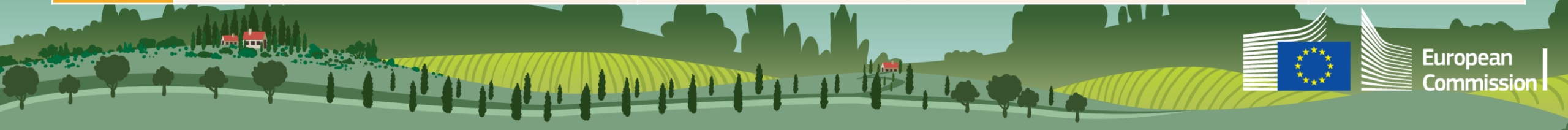
Support of the Comm.

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(December 2020 / December 2021)



	Nutrient models	Q1: Variables	Q2: Scale
Line 1	<p>Daily nutrient balance.</p> <p>Spatial and temporal variability.</p> <p>FATIMA/AgriSAT</p> <p>Sensor monitoring.</p> <p>Parcel and crop characteristics.</p>	<p>Tool: remote sensing data, daily meteorological data, prediction models for yield, sensors: N and P, humidity sensors, VR Maps, MZM, soil samples and analysis, soil map, fertilizer characteristics.</p> <p>Farmer: on time inputs, complete crop data, soil analysis.</p>	<p>Field Level</p> <p>Time scale: daily.</p>
Line 2	<p>Complex models</p> <p>CERES, AGROasesor (quantitative models)</p> <p>Daily nutrient balance.</p> <p>Crop modeling.</p> <p>Parcel and crop characteristics.</p>	<p>Tool: daily meteorological data, phenological stages of crop, fertilizer characteristics.</p> <p>Environmental modification, irrigation, residue placement, tillage, soil-plant-atmosphere, soil temperature, evapotranspiration, soil dynamics, soil water, soil N, soil P, Ceres organic matter, Century organic matter.</p> <p>Farmer: on time inputs, complete crop data, soil analysis data, crop yield rate.</p>	<p>Field Level</p> <p>Time scale: daily.</p>
Line 3	<p>Empirical models.</p> <p>FertiliCalc</p> <p>Crop cycle nutrient balance.</p> <p>parcel and crop characteristics.</p>	<p>Tool: agroclimatic, administrative regional or agroclimatic data.</p> <p>Soil inorganic N (residual N), ratio of N in roots, N accumulated in the harvest organ and residues both in previous and in present crop, mineralization coefficient, residues of crops in the field, symbiotic fixation and irrigation water, leaching, volatilization, denitrification, soil organic matter and soil texture.</p> <p>Farmer: parametric data of soil plot and crop.</p>	<p>Field Level</p> <p>Time scale: seasonal.</p>
Line 4	<p>Simple mass balance equations (default).</p> <p>Réglette Azote Colza</p> <p>Seasonal nutrient balance.</p> <p>Extractions replacement model.</p>	<p>Tool: general data (regional, national).</p> <p>Experimental basis of trial and error over many years.</p> <p>Soil depth, organic fertilizer type, doses and richness, frequency of application,</p> <p>Farmer: average expected yield, field yield estimation, preceding crop of pea and legume association.</p>	<p>Crop Level</p> <p>Time scale: annual</p>



THANK YOU

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