



European
Commission



A common framework for the quantitative advice of crop nutrient requirements and GHG emissions & removal assessment at farm level

Susanne Köppen

IFEU Heidelberg

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- 1 Project objectives
- 2 GHG calculations – general principles
- 3 FaST Navigator and carbon farming

AgriSat Iberia s.l. (group leader)
with group members

ITAP - Instituto Técnico Provincial de Albacete,

UCLM - Universidad Castilla-La Mancha,

INTIA - Tecnologías e Infraestructuras Agroalimentarias,

CREA - Council for Agricultural Research and Economics,

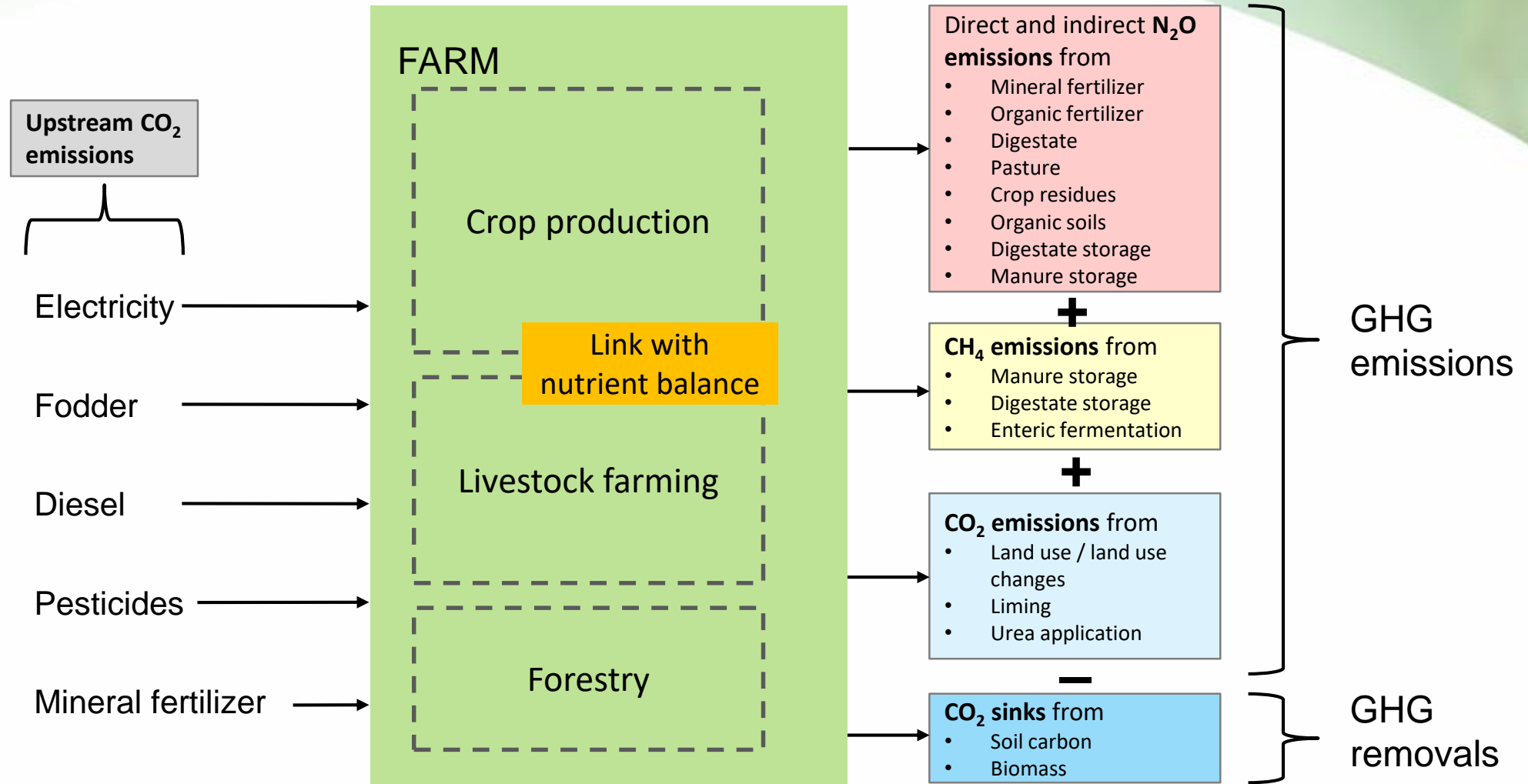
IFEU - Institute for Energy and Environmental Research,

INRAE - Institut National de Recherche pour l'Agriculture, l'alimentation
et l'Environnement,

IUNG - Institute of Soil Science and Plant Cultivation,

Ariespace- Ariespace s.r.l.

- Wider context: contribution to the Farm Sustainability Tool for Nutrients (FaST) (part of post-2020 CAP)
- In the project: development of a sound and comprehensive methodology
 - Quantitative advice for crop **nutrient** requirements at field level
 - Estimation of **GHG** emissions and removals at farm level
 - Assessment of the **economic** performance of farm management
- Methodology aims at being adaptable to the diversity of farming conditions and to reflect differences in data availability
- Results will be available in digital form (code & description of algorithms)
 - Methodology accessible by a wide range of actors, including farmers
 - Enables further development and adaptation of methodology
 - Available for tests during the study via web



➤ Benefits for the users

- Decision-support tool for farmers
- Ex-ante testing of (agri-environmental) measures and strategies
- Allows tailoring advices and services
- Potential standardisation of calculation: monitoring / certification

➤ Elements of carbon farming included

- Carbon storage in biomass (e.g. hedges, trees, forests) / agroforestry
- Maintaining / enhancing soil organic carbon in mineral soils
- Peatland restoration / rewetting

➤ Challenges

- Carbon removals are reversible → sinks may become sources
- Carbon accumulation takes a long time
- FaST methodology works on an annual basis

- Covers cropland, grassland, pasture
- Linked to the nutrient model where certain aspects are asked for (climate, soil characteristics)
- Calculation of carbon stock changes due to management changes
 - First approach
 - SOC of current practices is compared to the SOC of the worst case management options
 - based on IPCC Tier 1 stock changes factor
 - delta is referred to as an increase of SOC content
 - Second approach
 - type and time duration of certain management change practices is asked for (e.g. the switch from conventional tillage to no till or the start of compost application)
 - for each change the annual and accumulated carbon stock changes is calculated

Thank you

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