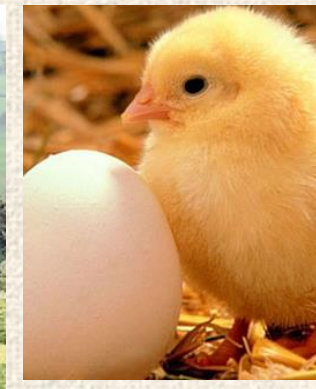


# Improving the agricultural modelling in PEF

## About the mandate for the agricultural modelling group.

John E Hermansen, Dept Agroecology  
Aarhus University (AU)

Copenhagen November 18'th 2019



# Slides

Work headed by the Commission and co-chaired by Vincent Colomb, ADEME (French National Institute focussing on environmental issues)

Slides borrowed (and slightly adapted) from a presentation by Vincent in Brussel November 13'th

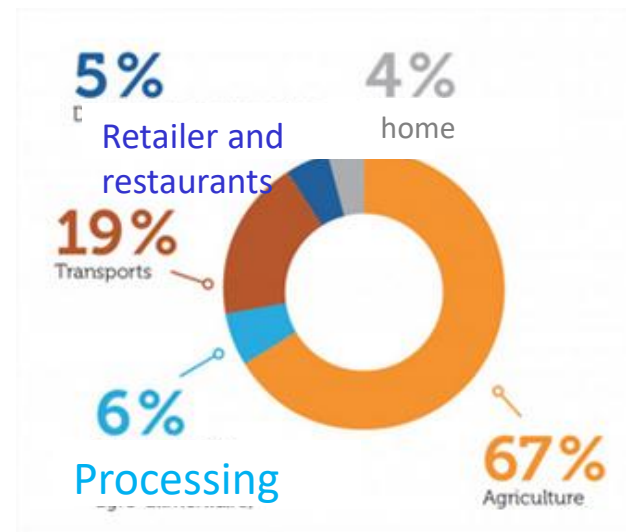
## Vincent Colomb

- Agronomist, expert on food LCA at ADEME
  - Member of the Dairy PEF TS
  - Coordinator of AGRIBALYSE Database
- ⇒ The french LCI database for agricultural and food products. Partnership with INRA, Technical Institutes, Agroscope etc.



## Why an agricultural modeling working group ?

- Applies to 10 food PEFCR initially, new ones expected + all biobased products
- Food : 25% of Climate impact, main driver for biodiversity and water
- Agriculture, **definitely a HOTSPOT !**



Carbon balance of French diets (ADEME 2019)

# Agriculture related PEFCR's from pilot-phase

- Feed                      Dairy                      Beer
- Wine                      Pasta                      Olive oil
- Leather                      Pet –food
- (Red Meat, discontinued)
- (Coffee, discontinued)

## New sectors in transition phase

- Apparel (clothing)
- Cut flowers and potted plants

## Main challenges for modelling

- Emissions depends on soil, climate and farming practices. Large variations.
- No direct measurement of emissions => modeling required
- Stakeholder diversity : family farm to multi-national firms  
=>challenge for data availability
- Comparability scope => from very specific ( yogurt A vs yogurt B) to much broader (water vs soda vs milk)

## Goal of the modeling group

- Expert discussion at Life cycle Inventory and impact assessment level.
- Outcomes : recommendations for the EC and presented at the TAB.
- Not to be used by the new PEFCRs/OEFSRs under development => to be considered by EC after the transition phase
- Large expertise scope => composition of the group needs to be flexible.

## TOPICS identified

- **LCI modelling of pesticides;**
- **LCI modelling of fertilisers;**
- **Harmonising direct emissions related to feed digestion and manure management**
- **LCI modelling of water use;**
- **Biodiversity impacts**
- **Work on primary data requirements, in line with the EF methods.**



## Milestone 1: LCI modelling of pesticides

Two main issues :

- Accurate estimate of the share of emissions between the compartments (air, soil, water) depending on agricultural practices ( **pt fixed ratios between air, soil and water**).
- Clear boundary between LCI and LCIA, ecosphere/technosphere (consequences on the emission model).

This milestone will deliver a more detailed approach answering the questions:

- which ratios to be applied at the LCI level, taking into account the type of application and field situation?

Depending on the availability of data, a trier 1/2/3 approach is to be foreseen and linked to the Data Needs Matrix (DNM) of EF.

## Milestone 2: LCI modelling of fertiliser

- Covers both nitrogen and phosphorus LCI modelling, at crop and rotation scale.
- Tier 1 approach recommended in PEF. Tiers 2/Tiers 3 approaches available for some countries (pt. eg. fixed ratio (1/3) of nitrogen supplied is lost to water as nitrate leaching).
- Depending on the availability of data, a tier 1/2/3 approach is to be foreseen and linked to the DNM of EF.

Steps forward :

- Review of existing approach for a more accurate modelling
- Proposal to improve/replace the current EF approach

## Milestone 3: Flows/direct emissions related to feed digestion and manure management

- Aim : Define a common modelling for animal digestion emissions and manure emissions (pt no general guidance but specified for dairy PEFCR)
- Take into account existing as well as emerging technologies for reduced enteric methane emission and for improved manure management
- Depending on the availability of data, a tier 1/2/3 approach is to be foreseen and linked to the Data Needs Matrix of EF.

## Milestone 4: LCI modelling of water use

- Agriculture is the sector with the biggest water consumption, yet no detailed guidance on its quantification.
- Aim : produce guidelines about water use LCI in the EF methodology.
- Depending on the availability of data, a trier 1/2/3 approach is to be foreseen and linked to the DNM of EF.

## Milestone 5: Biodiversity impacts

- A key topic for agriculture and forestry. Today, covered by different ICs but eg not including impact of land use *per se*
- Aim : Characterize biodiversity impacts with a single indicator

### Steps:

- Mapping of existing methodologies quantifying biodiversity
- Selecting suitable options, depending on the scope, covering one or more ICs;
- Testing the options selected, if seen necessary;
- A proposal on the how to assess better biodiversity in the EF context, this can include different recommendations.

Strong involvement of JRC and the EU-hosted B@B platform

## Milestone 6: primary data collection/quality requirements for farm related activities

- Challenge: Impact of bio-based products appear mainly at the farm level. However, for processed products the EF methods do not require primary data at farm level.
- Aim : assess if and what additional primary data requirements are needed, for the agricultural and forestry activities. It shall assess in which cases (and what types) of primary data is mandatory and must be collected, taking into account the costs this may imply.

## Agriculture relevant cross cutting areas

- Soil biogenic carbon (agriculture and forest) is a key topic, not addressed in the Agricultural WG but at the EF level -> worked done by JRC
- Maybe the impact category for land use will be reconsidered in the working group in relation to the biodiversity work
- Allocation : dealt with at the TAB

## Gouvernance and organisation

- Group co-chaired by EC and ADEME
- Open to any TAB member with significant contributions (scientific, technic publications, guidelines) on one of the topics
- Contribution on a voluntary basis.
- Aim to work by consensus. EC takes final decision if needed (reporting all viewpoints). EC decide on the implementation in the EF framework.
- Executive summary of the minutes available into the public section of the wiki page.

3 to 4 Meetings a year, for 1 day each

Open for online participation + Email discussions



## Next steps

- Final mandate by November
- Member wiki page with agenda, timeline and mandate
- Call for interest for experts opens from 20 November till 11 December 2019: online survey
- Final mandate + call for interest: published on TAB wiki page
- First meeting : 29/01/2020 (Brussels)

# Questions ?