

# Can we achieve climate targets avoiding trade-offs with biodiversity and resource efficiency?

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Views from the Ten Years For Agroecology scenario / TYFA

ATF special session: Towards a climate smart European  
Livestock Farming // Ghent, 26<sup>th</sup> August 2019

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# The Institute for Sustainable Development and International Relations (IDDRI)



- Independent policy research institute
- A non-profit organisation acting for the common good, funded by donations / grants / subsidies

- Fostering the transition to sustainable development and prosperity for all
- Identify drivers of sustainability and ways to implement them: international cooperation, domestic & corporates policies

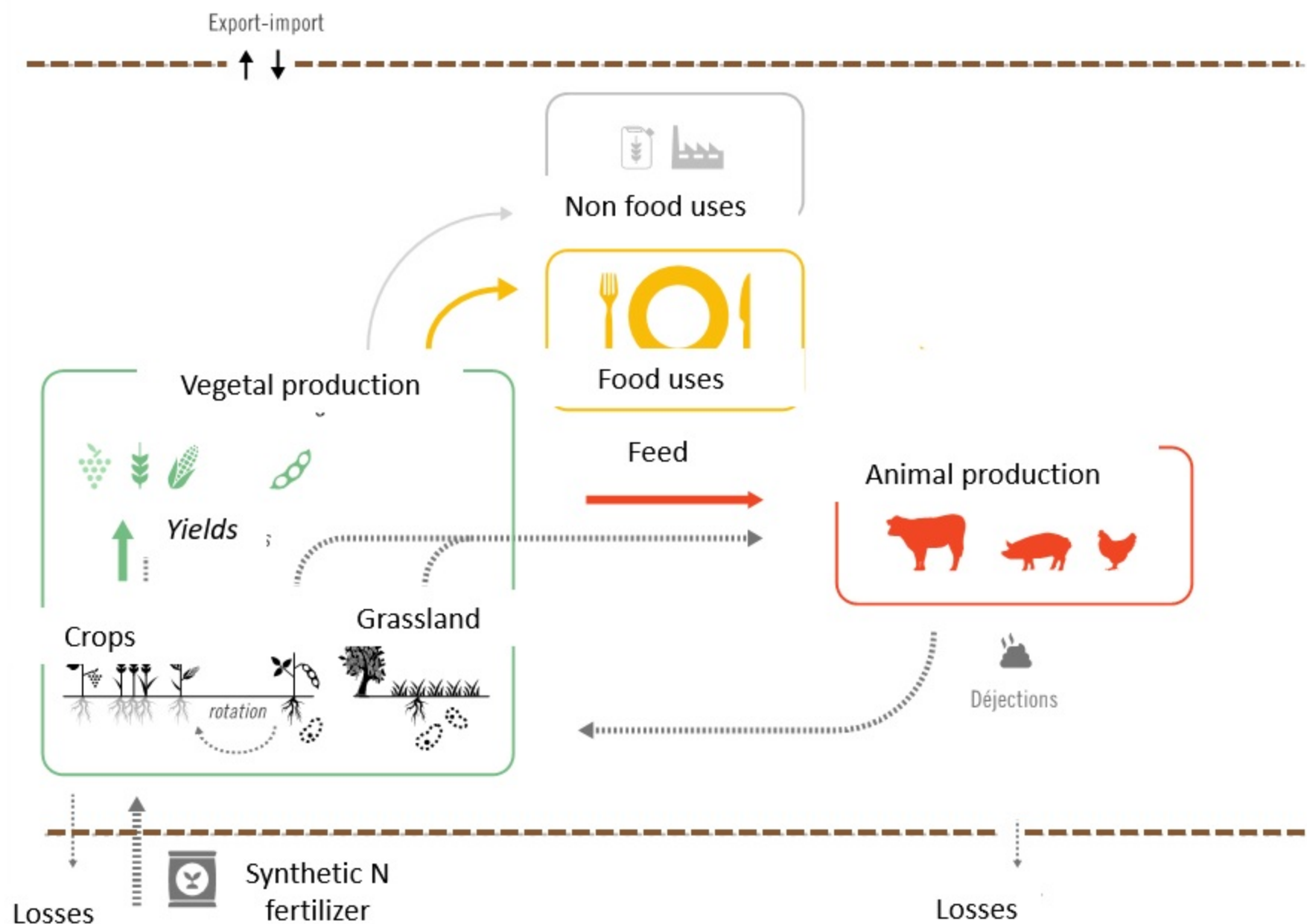
# TYFA's ID

- *Ten Years For Agroecology* :
  - A foresight study
  - Designing an agenda for a 10 years transition making agroecology a credible option for Europe
  - A joint IDDRI and AScA initiative, with a diversity of funders
- First step: a biotechnical modelling
  - What is agroecology? What are the explicit assumptions?
  - Modelling at the EU scale
  - An unprecedented scientific project
- Work in progress: socio-economic and policy aspects

# TYFA : why?

- Contribute to a (policy) debate structured by two narratives
  - *A productivity oriented, smart agriculture* narrative, with implicit maintenance of industrial livestock production
  - *A climate smart agriculture* narrative – land sparing – with less livestock, industrial vegetal production and afforestation
- Different shortcomings in such scenarios
  - Environment : blindspots on pesticides, biodiversity, landscapes, *CC adaptation*
  - Socio-economy: capital intensive scenarios
  - Food: what is the quality of what we eat?
- Proposing an alternative scenario
  - Going beyond a collection of niche “success stories”

# TYFA's model - TYFA $m$



Input variables:

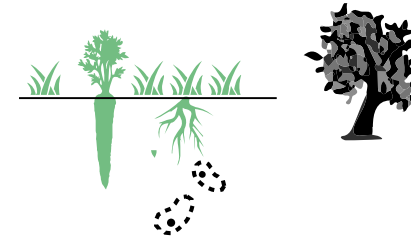
- Cropping systems
- Livestock systems
- Diets
- Waste and losses
- Non food-uses

Output variables:

- Production
- Land use
- GHG emissions
- Biodiversity

# An agroecological Europe: main hypotheses

**1** Fertility management at the territorial level



**2** Pesticide-free farming and extensification of crop production  
Organic farming as a reference model



**3** Redeployment of permanent grassland



**4** Livestock extensification (phase-out of industrial modes)



**5** Healthy and sustainable diets



**6** Food first, then feed, then biodiversity, then non-food use

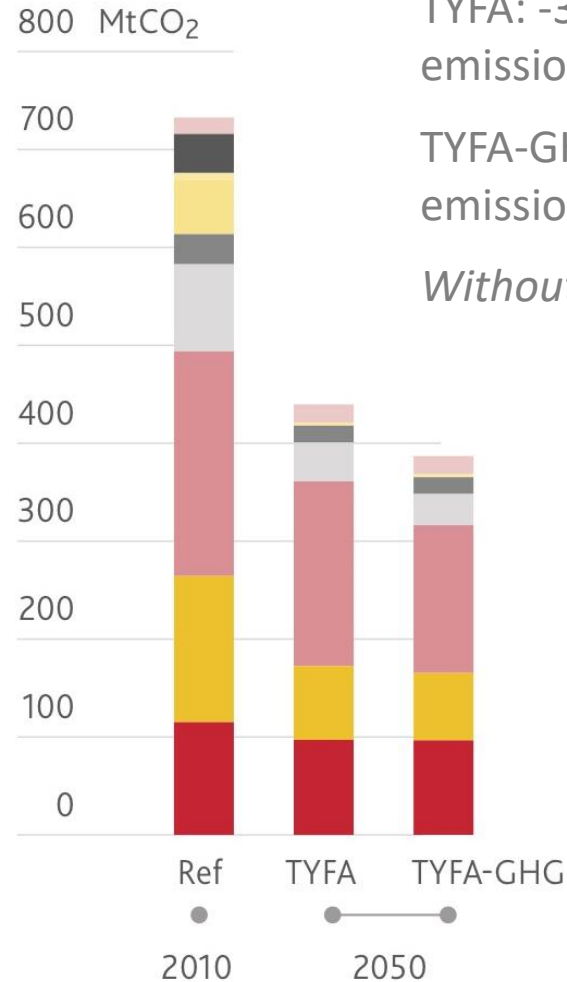


# Main features of an agroecological Europe by 2050

**Table 20.** Summary of

|                           |  |
|---------------------------|--|
| Soil life                 | Nitrogen<br>Biocides                   |
| Cultivated crops          | Crop diversity<br>Nitrogen<br>Biocides |
| Grasslands and rangelands | Nitrogen<br>Density                    |
| Landscapes                | Plot size<br>IAE<br>Landscape          |
| Summary                   |  |

Source: authors. The signs “ - ” /



TYFA: -36% non CO<sub>2</sub> direct emissions, -40% all emissions

TYFA-GHG: -47% non CO<sub>2</sub> direct emissions, idem for all emissions

*Without considering the GWP\**

- Agricultural machinery
- Imported deforestation linked to soybean imports
- Other inputs fabrication
- Nitrogen fabrication
- Provision of energy
- Manure management
- Enteric fermentation
- Agricultural soils
- Energy consumption

2050

Microbiota.

Plant diversity and

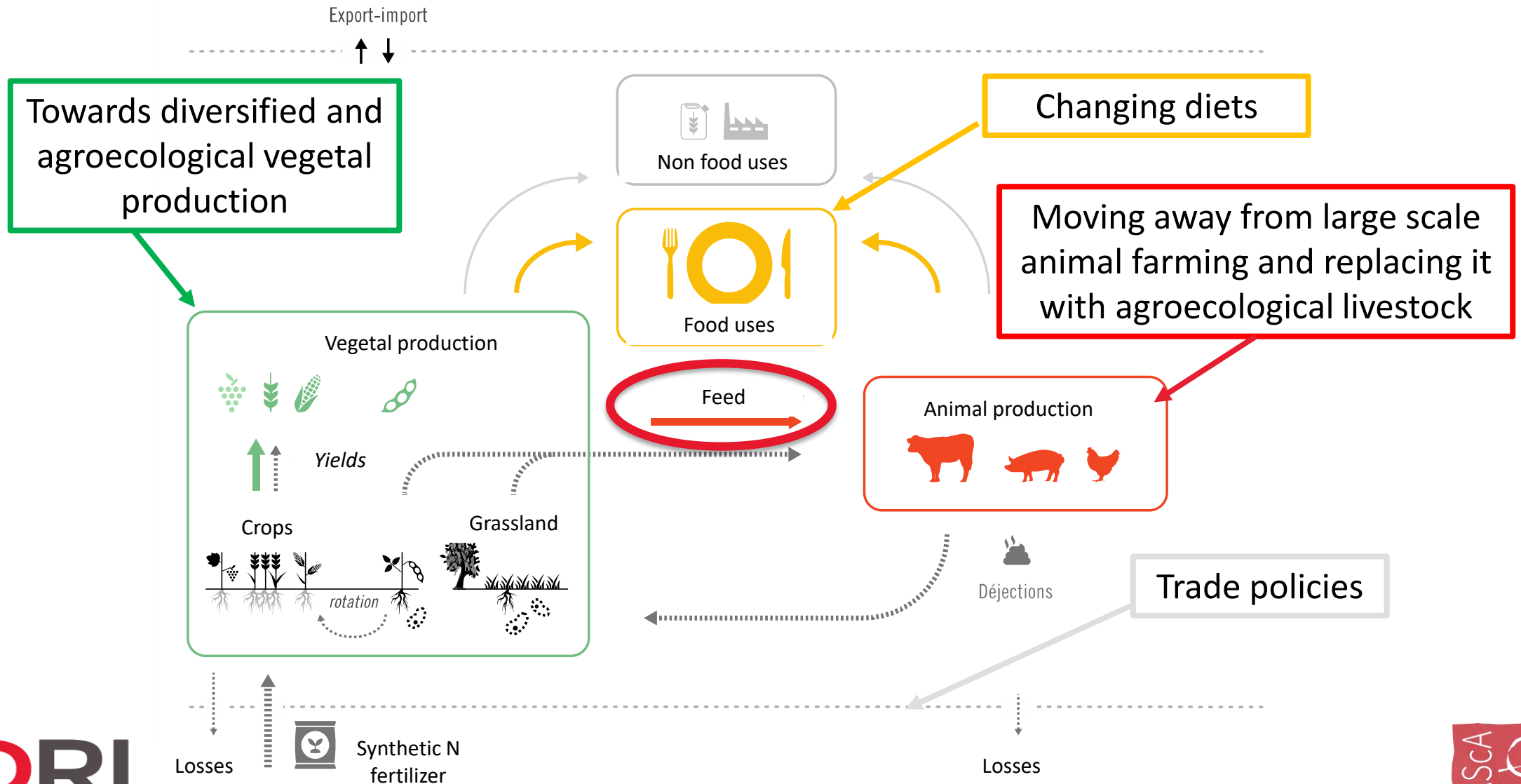
Large pollinators

Food chains and trophic chains and favorable to fauna.

Fields and habitats protection.

- Viande de porc
- Ovins / caprins
- Viande de bœuf

# How to get there?





# THANK YOU FOR YOUR ATTENTION!

## CONTACT

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