MIXED

Data Collection Step 1 – Report

Network presentations.

Contents

1. About Mixed

MIXED was launched on 1 October 2020. The partners are from 10 countries and in each country they form a National Team (NT) consisting of an Academic Partner (AP), 1-2 Network Coordinators (NC), and 1-2 Farmer Networks (FN). The farmers are not partners (beneficiaries) in the project but are represented in the MIXED consortium through the NCs. Some of the APs also have the role as NCs. There is a total of 14 groups of farmers associated to the project – one in each country except for the UK, Germany, France and Denmark where there are two.

In MIXED data will be collected from the network of farmers in 10 countries collaborating with the project to provide inputs for the assessment of resilience and efficiency of Mixed Farming and Agroforestry Systems (MiFAS). This report provides the results of the first part of the farm level data collection.

2. Completion of data collection – part 1

The first part of the farm level data collection had the purpose of visualising and understanding the types of material flows within and between farms in each network to illustrate variability of the MiFAS configurations and agricultural outputs etc. It was initiated a head of the project meeting in September 2021 where individual meetings were held with each national team to explore and understand the complexities of the farms within the networks to ensure an appropriate and complete data collection procedure. The 'mixed' character and components were then discussed at the project meeting.

This first data collection exercise furthermore involved a process where each network provided data in the form of flow diagrams showing the major components of the MiFAS systems, whether internal to single farms or on two partner farms and the exchanges between them. Step 1 of the data collection process was concluded at the project meeting April 2022 where all network coordinators presented farm level resource flows of a standardized typical farm of their network.

The flow diagrams from each of the project are provide on the following pages in the order of:

DK Agroforestry network – livestock (pork)
DK Nutrient cycling and landscape synergies
UK Grazing cattle/fodder exchange
UK Winter grazing of sheep
DE (Re)wetting of arable land, exchange of land between arable and livestock farmers
DE Agroforestry network – silvopastorale & silvoarable agroforestry
CH Agroforestry network – Hochstamm
AU Agroforestry network – apple/hens
FR Agroforestry network – pigs & trees
FR Crop & livestock manure exchange
RO Network with fruit, livestock and agro-tourism
NL Network: a multi-farm landscape MiFAS
PL: One farm – one network (mixed farming)
PT: Agroforestry network: Montado

2.1 Conclusions

This first round of data collection gave important input to the next step, the individual farm level data collection as it became clear that the networks had to be treated as individual cases when defining the system boundaries to ensure a complete and appropriate collection of farm data.

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EFFICIENT AND RESILIENT
MIXED FARMING & AGROFORESTRY

Network Description

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MIXED FARMING & AGROFORESTRY

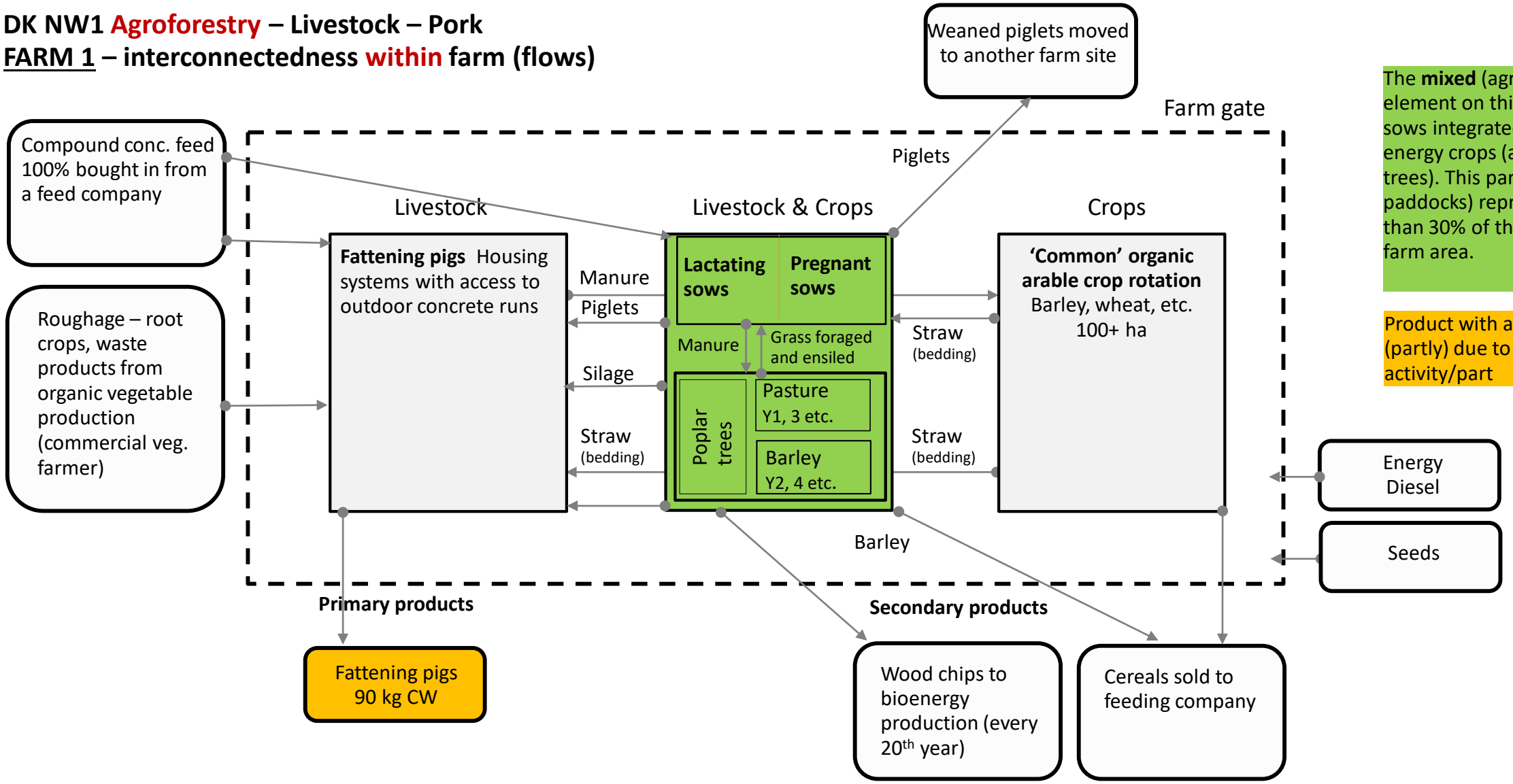
Agroforestry for organic livestock farmers [Denmark, NW 1]

Anne Grete Kongsted[1] and Julie Rohde Birk[2]

[1]Aarhus University, Dept. Agroecology
[2]Innovation Centre for Organic Farming

AARHUS UNIVERSITY
DEPARTMENT OF AGROECOLOGY

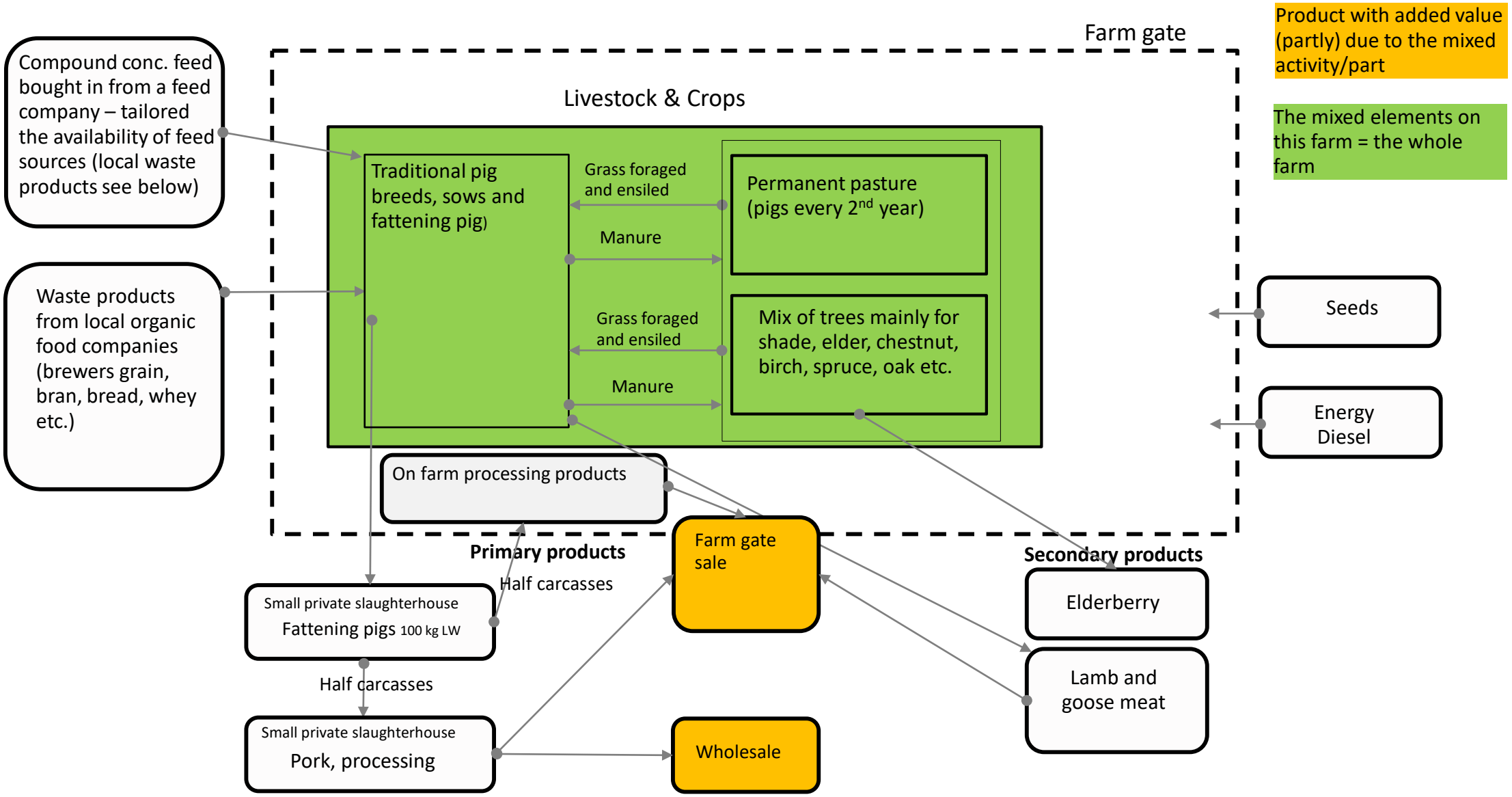
DK NW1 Agroforestry – Livestock – Pork
FARM 1 – interconnectedness within farm (flows)



The **mixed** (agroforestry) element on this farm = sows integrated with energy crops (and other trees). This part (all sow paddocks) represents less than 30% of the total farm area.

Product with added value (partly) due to the mixed activity/part

DK NW1 Agroforestry – Livestock – Pork
FARM 2 – interconnectedness within farm (flows)



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Nutrient cycling and landscape synergies

- exchange of biomass and land between arable and livestock farmers

[Denmark, NW 2]

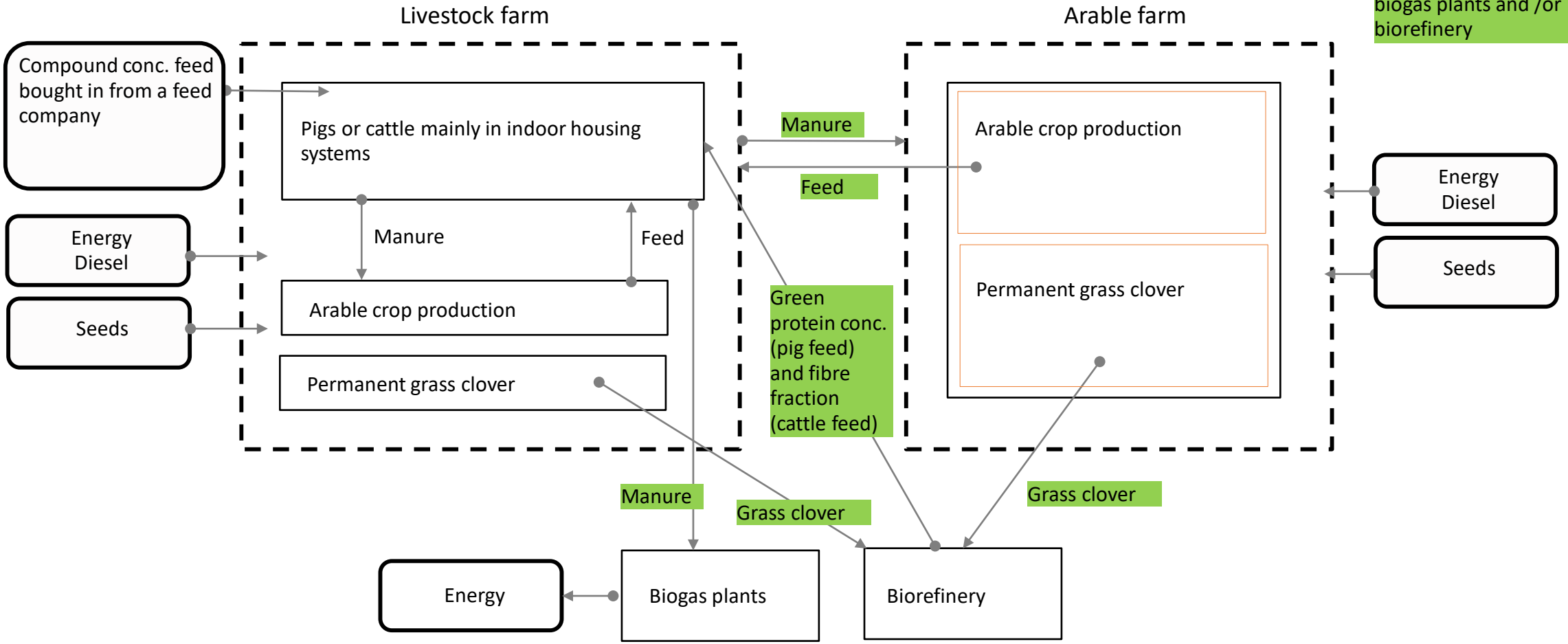
Tommy Dalgaard, Mette V. Odgaard, Sara Iversen et al.

Aarhus University, Dept. Agroecology

AARHUS UNIVERSITY
DEPARTMENT OF AGROECOLOGY

DK NW2 Nutrient exchange – livestock – arable farms
FARM prototype – interconnectedness between farms (flows)

The mixed elements in this system is the nutrient exchange between farms + between farms and biogas plants and /or biorefinery



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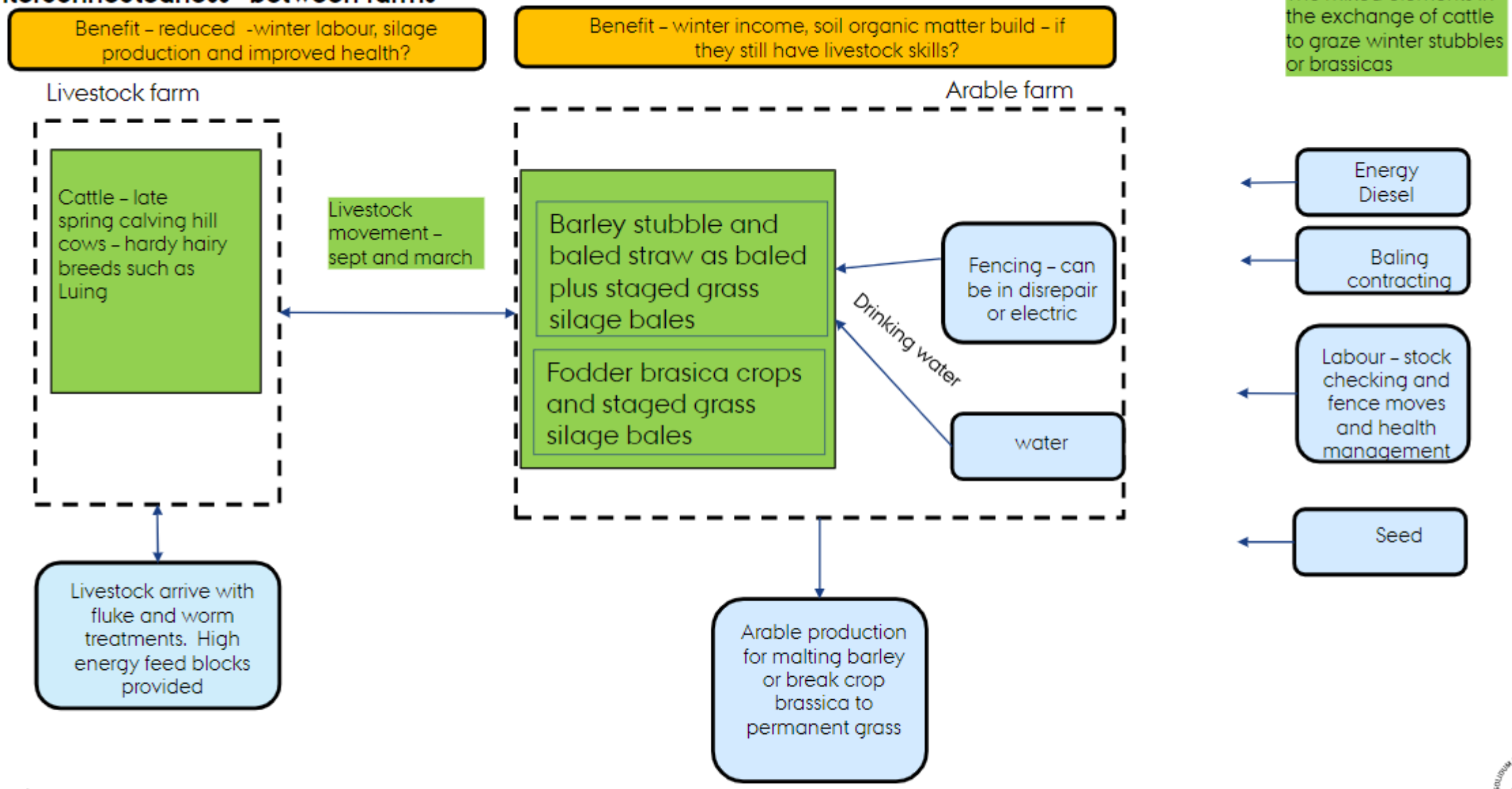
UK – Grazing cattle / fodder exchange

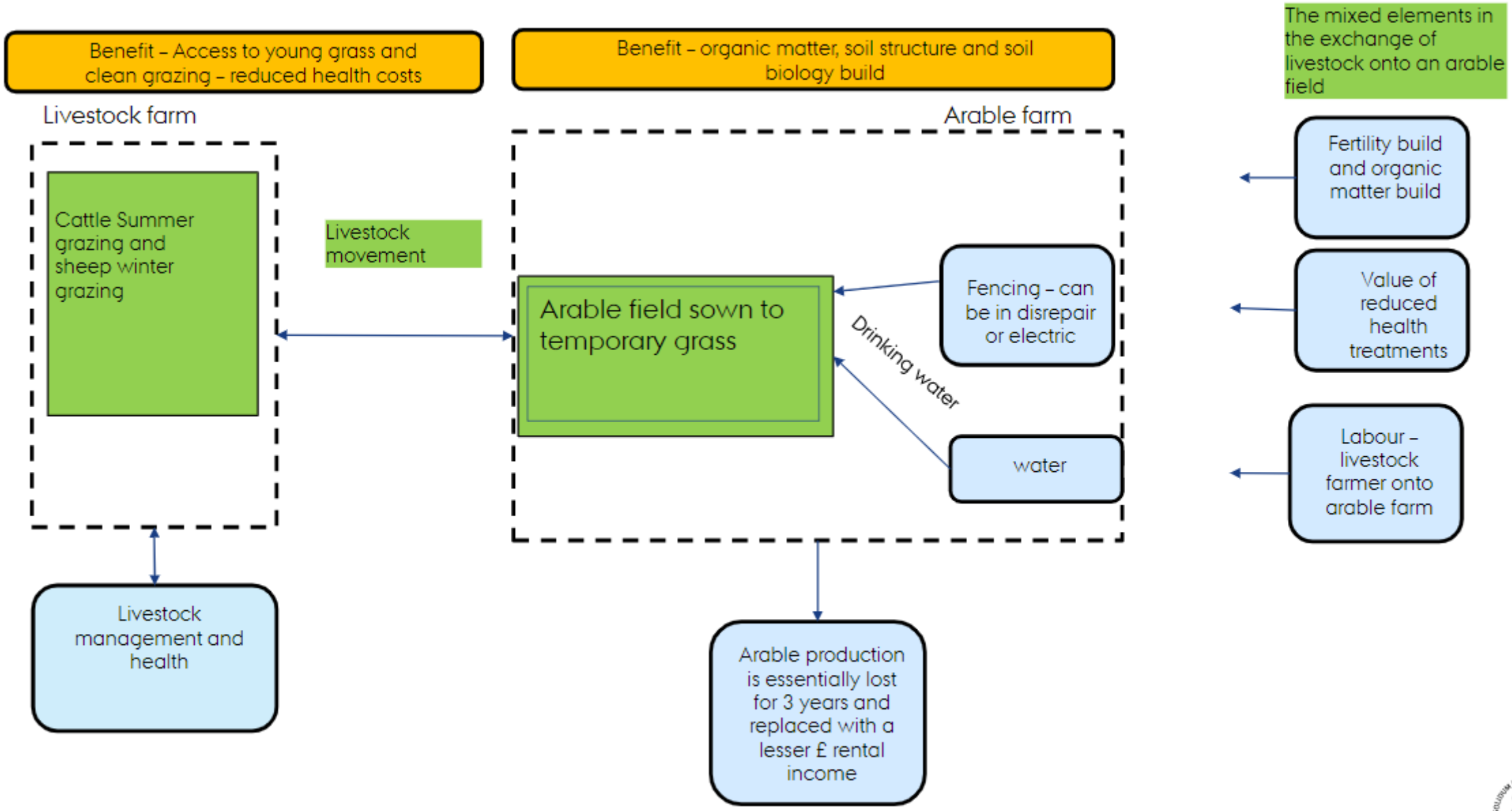
Fergus Younger, SAOS

AARHUS UNIVERSITY
DEPARTMENT OF AGROECOLOGY

1.Scotland Winter grazing of stubbles and fodder crops by cattle – interconnectedness –between farms

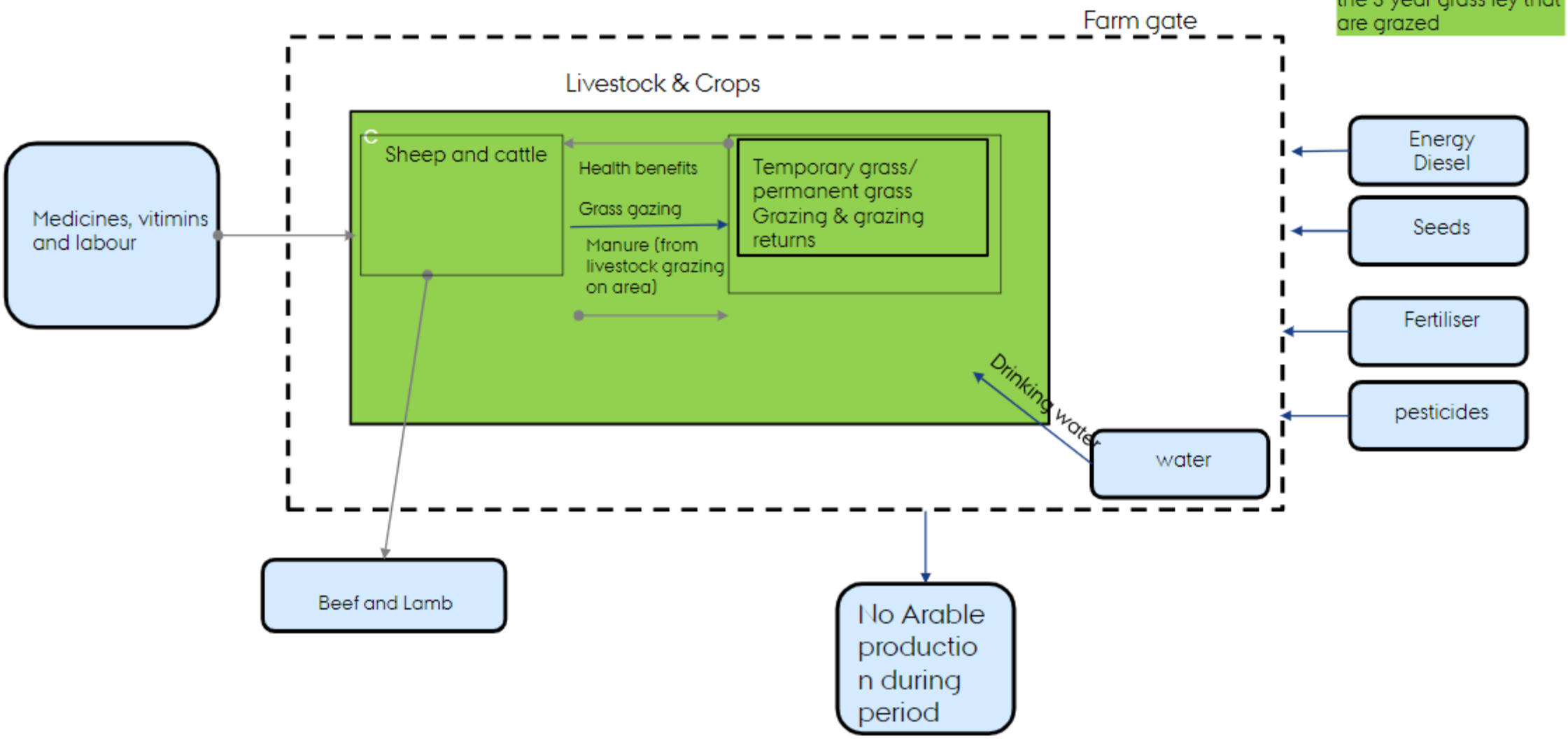


2. Scotland 3-year grass grazing-between livestock and arable farms



Scotland 3-year grass grazing on arable farm interconnectedness within farm (flows)

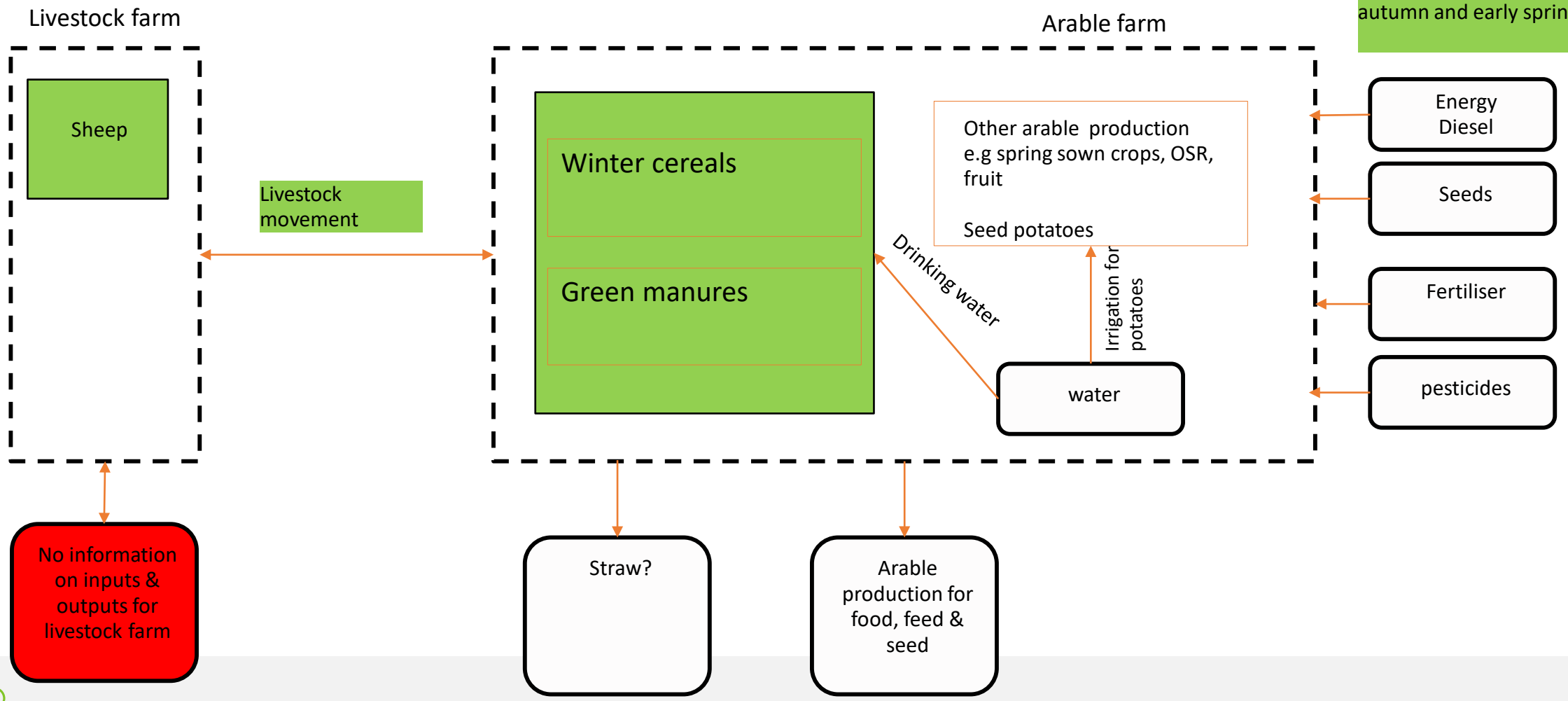
The mixed elements on this farm = the area of the 3 year grass ley that are grazed



under grant agreement No 862357

Scotland Winter grazing of cereal by sheep - interconnectedness between farm (flows)

The mixed elements in the exchange of sheep to graze the winter cereal & green manures in the autumn and early spring



MIXED FARMING & AGROFORESTRY SYSTEMS

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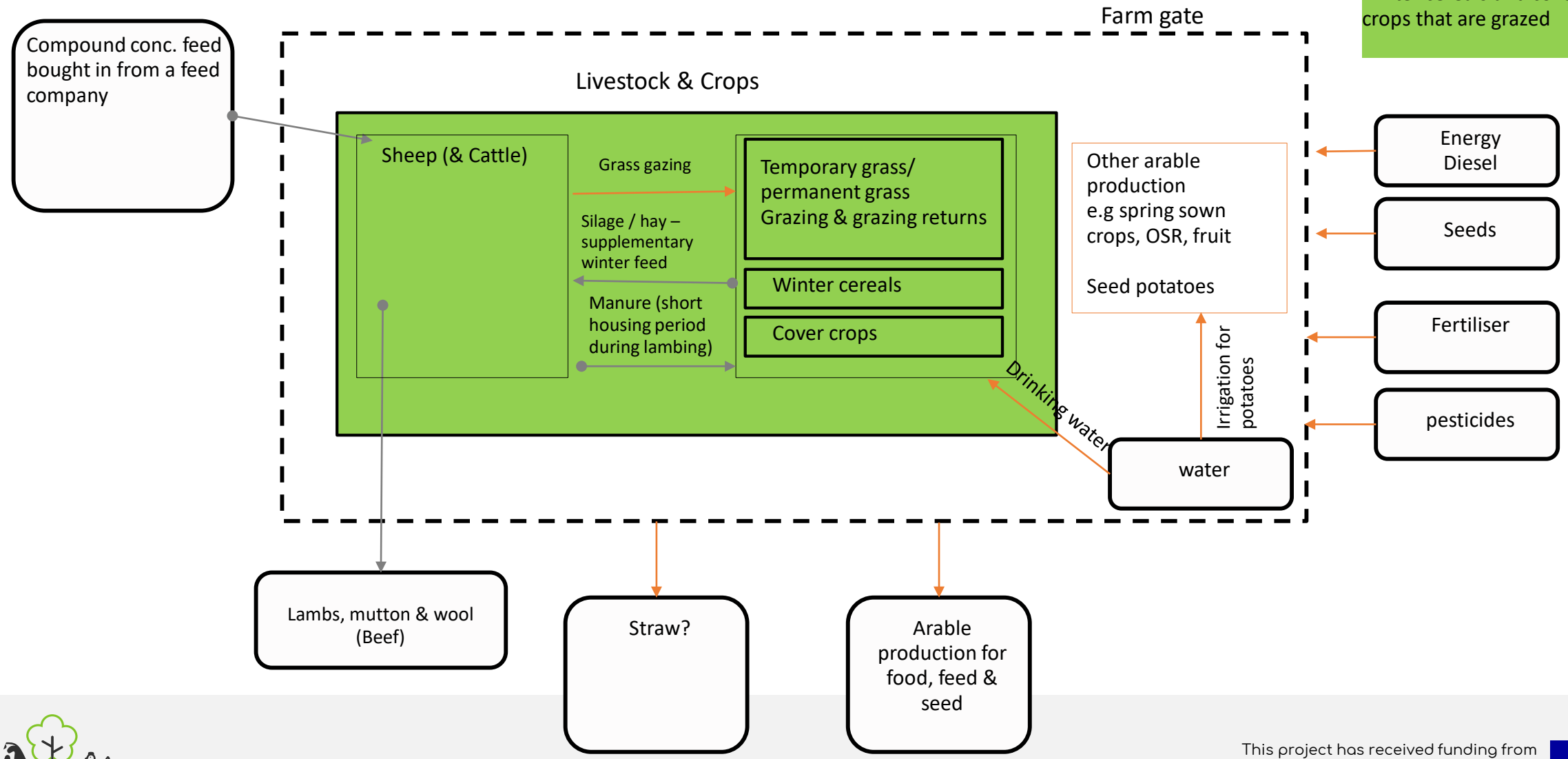
UK Winer grazing of sheep

Zach Reilly (SAC), Robin Walker (SRUC)

Scotland Winter grazing of cereal by sheep - interconnectedness within farm (flows)

The mixed elements on this farm = the area of winter cereals and cover crops that are grazed



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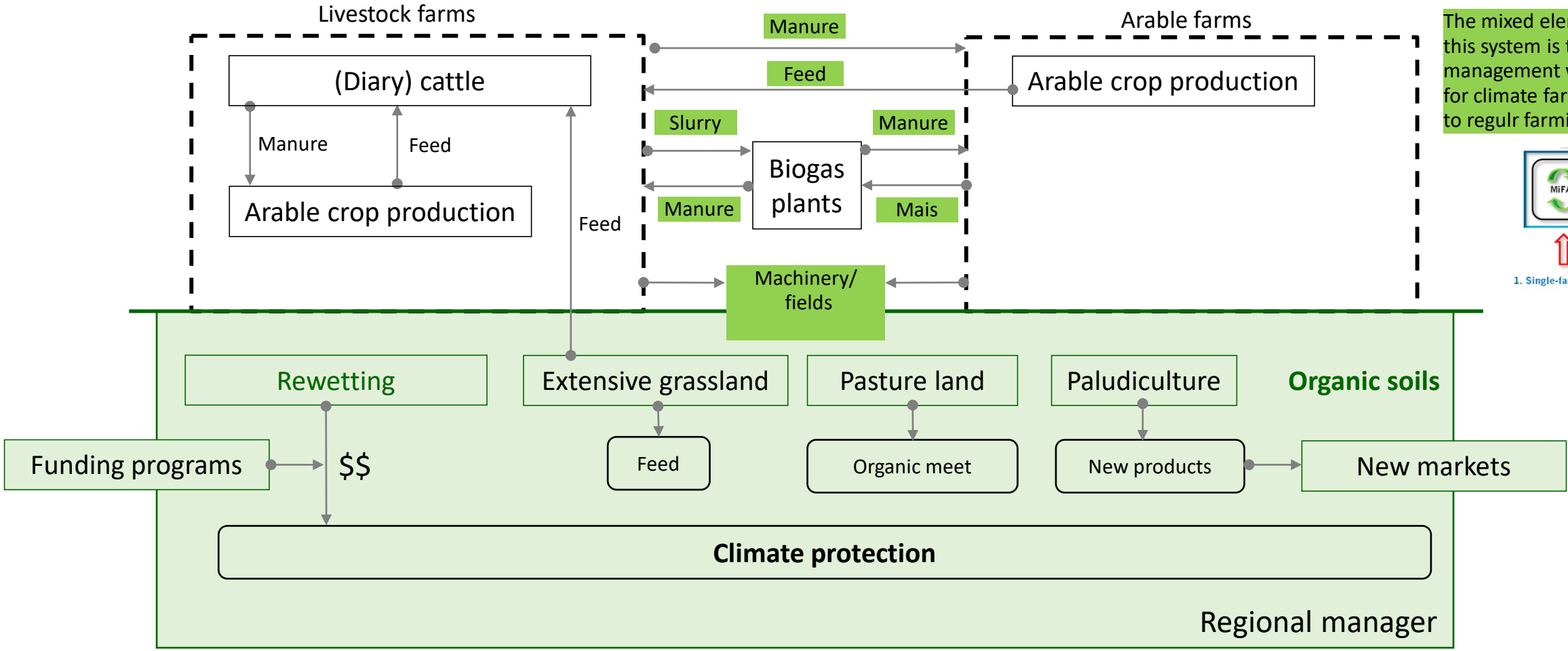
(Re)wetting of arable land, exchage of land between arable and livestock farmers

[Germany, NW 5]

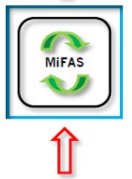
Dr. Ulrich Mäck, Anja Schumann, Raphael Rehm

ARGE Donaumoos

MAIN FLOWS & MIXED PART



The mixed elements in this system is the management with water for climate farming next to regulr farming



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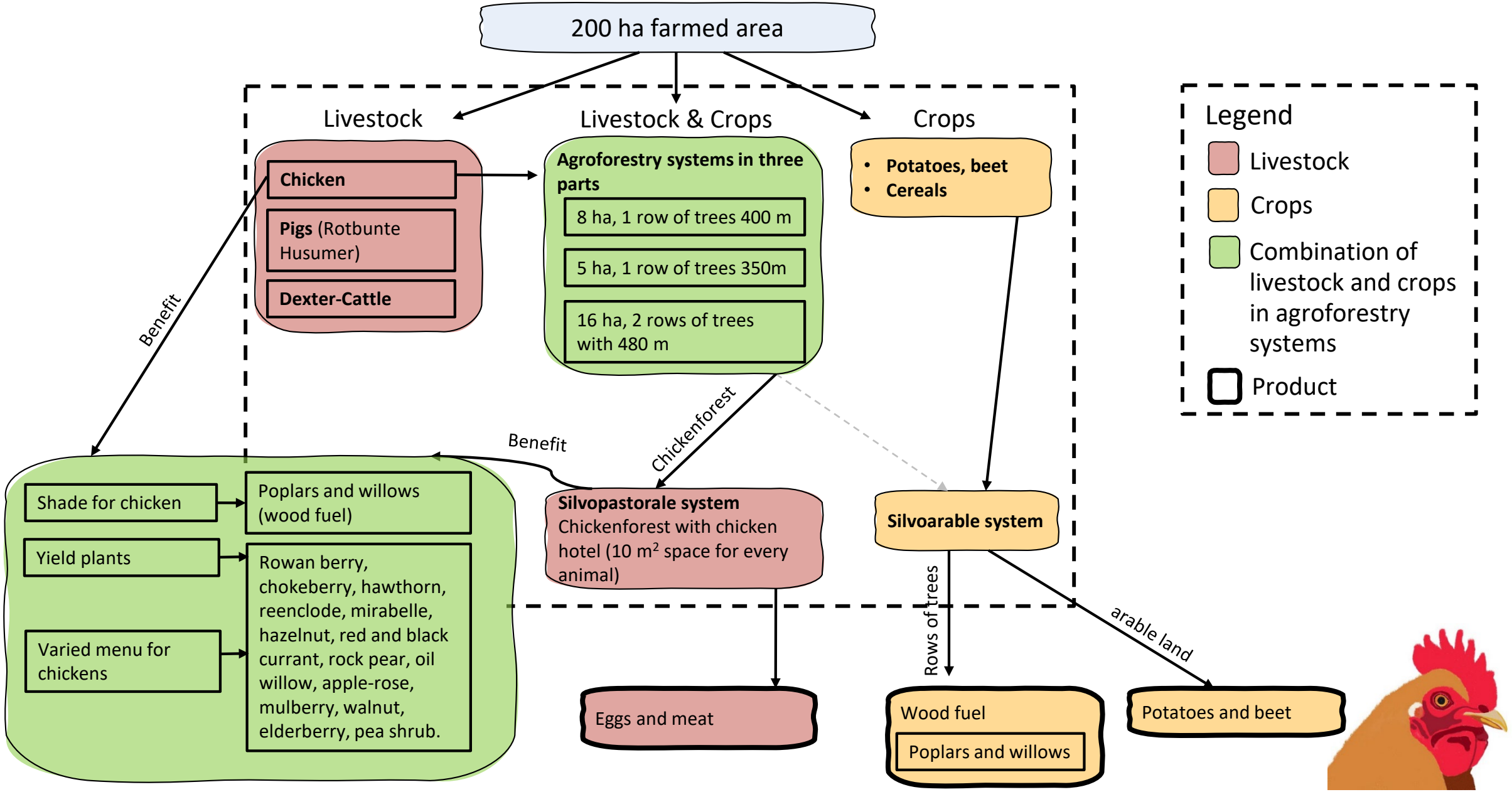
2nd Project Meeting

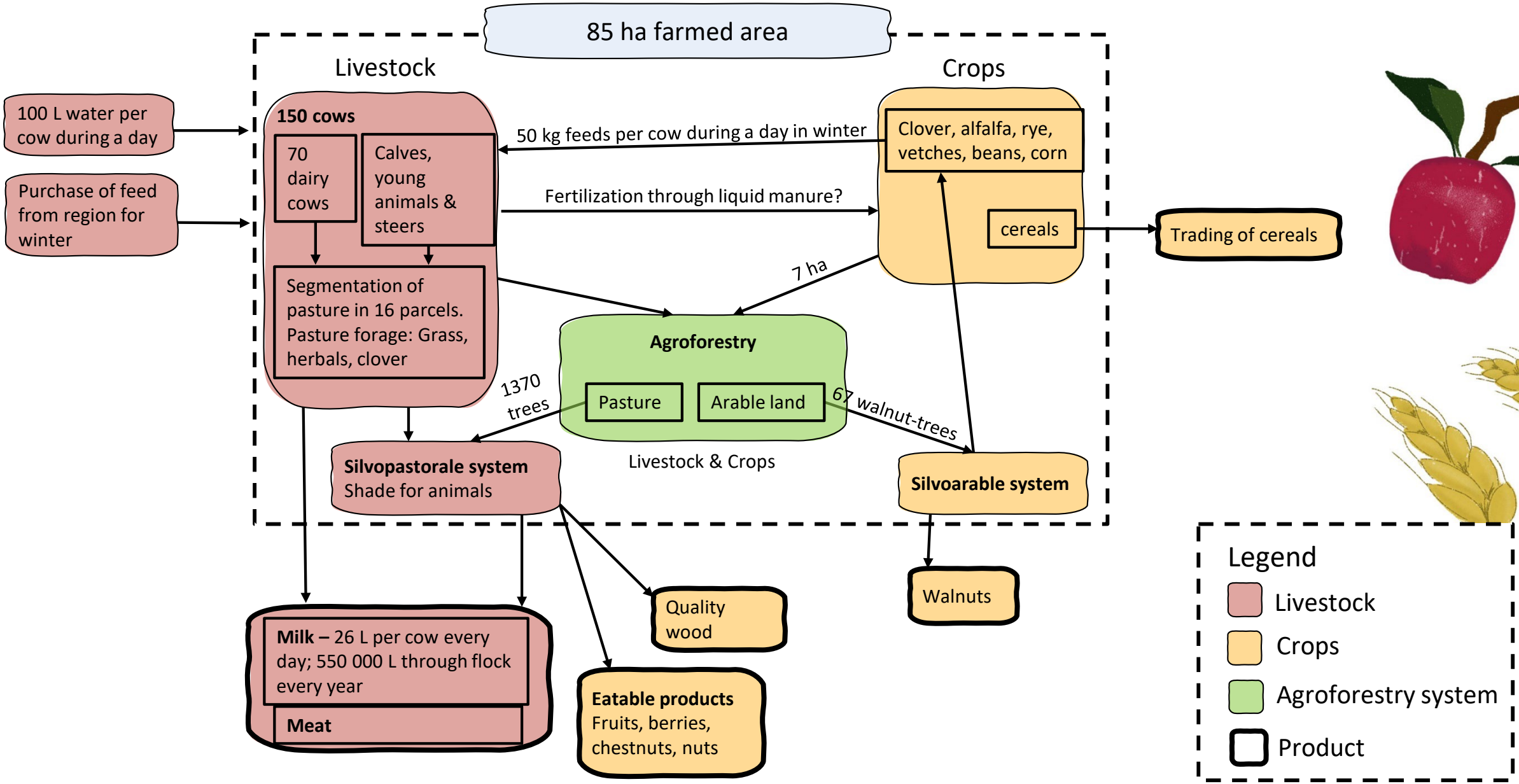
26.-29.04.2022 | Billund, DK

Network Presentation DE - Agroforestry

DE Farm1 Agroforestry – silvopastorale & silvoarable agroforestry – Chicken & Potatoes
Hof Hartmann – interconnectedness within farm (flows)



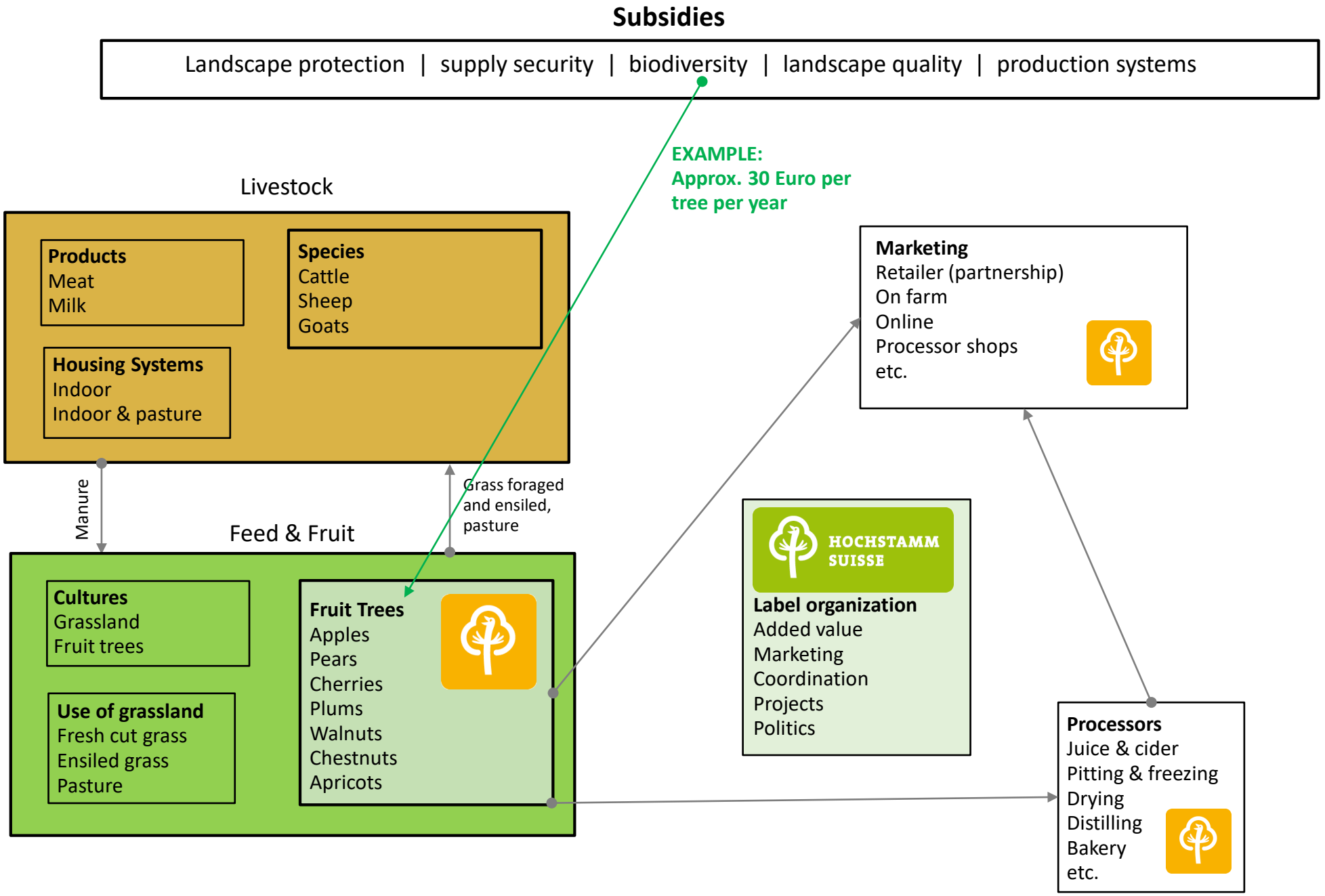
DE Farm2 Agroforestry – silvopastorale & silvoarable agroforestry – Cows & feed
Riekens Landmilch – interconnectedness within farm (flows)



The Swiss Network

FiBL

HOCHSTAMM SUISSE


Subsidies
Landscape protection | supply security | biodiversity | landscape quality | production systems
EXAMPLE:
Approx. 30 Euro per tree per year
Livestock
Products
Meat
Milk
Species
Cattle
Sheep
Goats
Housing Systems
Indoor
Indoor & pasture
Manure
Grass foraged and ensiled, pasture
Feed & Fruit
Cultures
Grassland
Fruit trees
Use of grassland
Fresh cut grass
Ensiled grass
Pasture
Fruit Trees
Apples
Pears
Cherries
Plums
Walnuts
Chestnuts
Apricots
Marketing
Retailer (partnership)
On farm
Online
Processor shops
etc.
HOCHSTAMM SUISSE
Label organization
Added value
Marketing
Coordination
Projects
Politics
Processors
Juice & cider
Pitting & freezing
Drying
Distilling
Bakery
etc.

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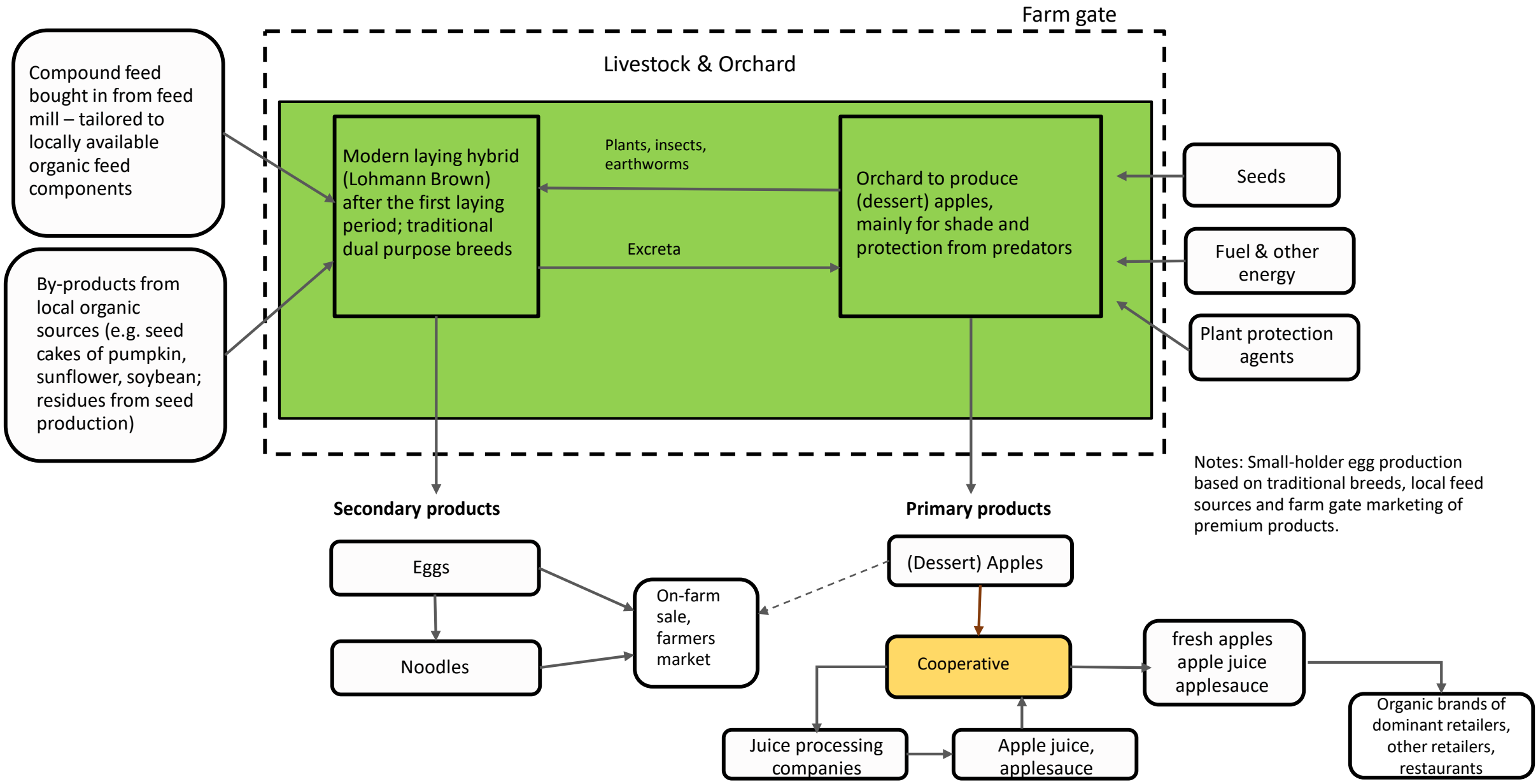
Austrian Network: <*Apple hens*>

Reinhard Gessl Roswitha Weissensteiner Werner Zollitsch

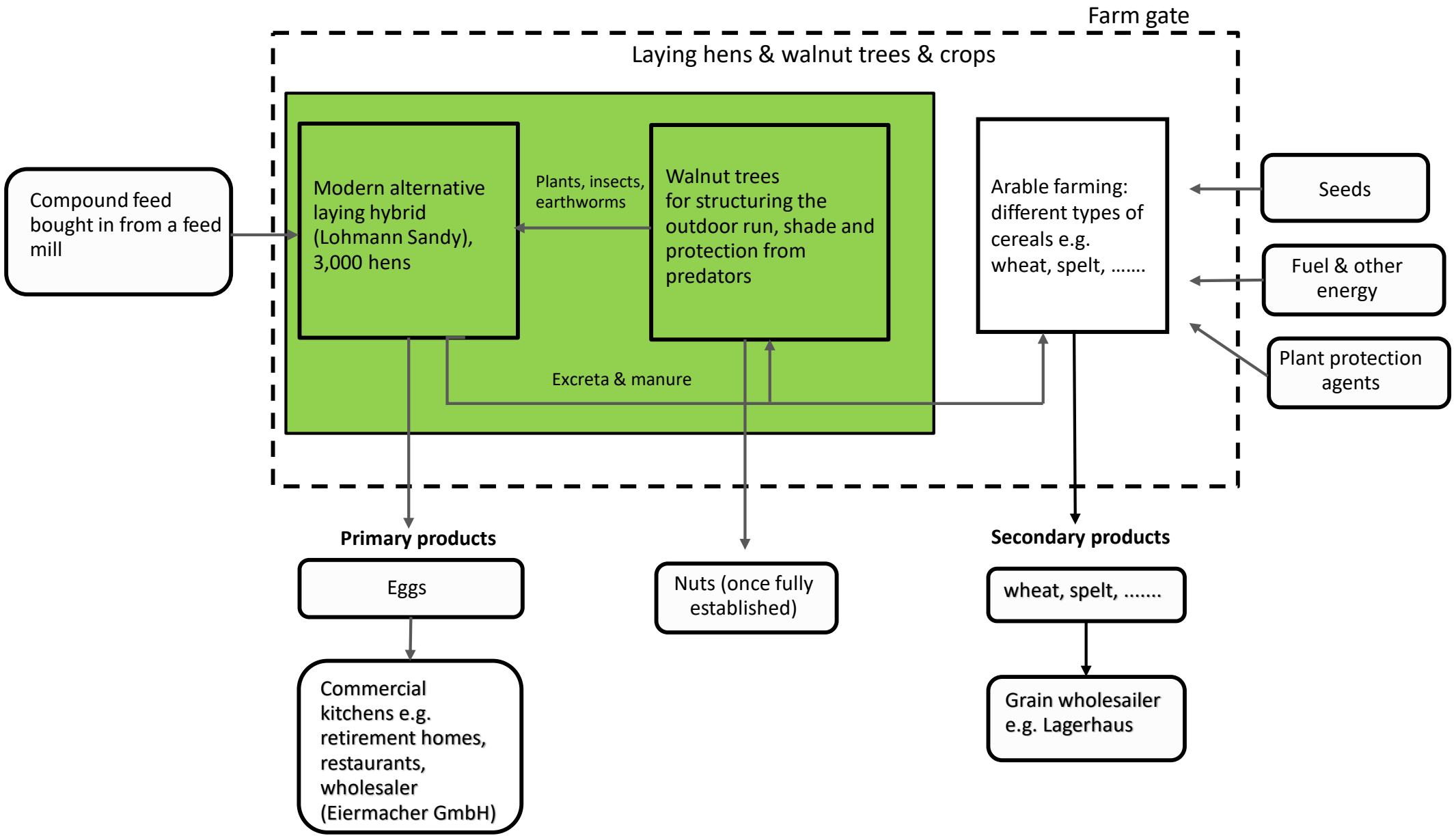
BOKU
150 YEARS FEATURING FUTURE
1872 - 2022
UNIVERSITY OF NATURAL RESOURCES AND LIFE SCIENCES, VIENNA

AT Orchard – Laying hens <*Apple hens*> interconnectedness within farm (flows)



Notes: Small-holder egg production based on traditional breeds, local feed sources and farm gate marketing of premium products.

AT Laying hens- walnut trees interconnectedness within farm (flows)



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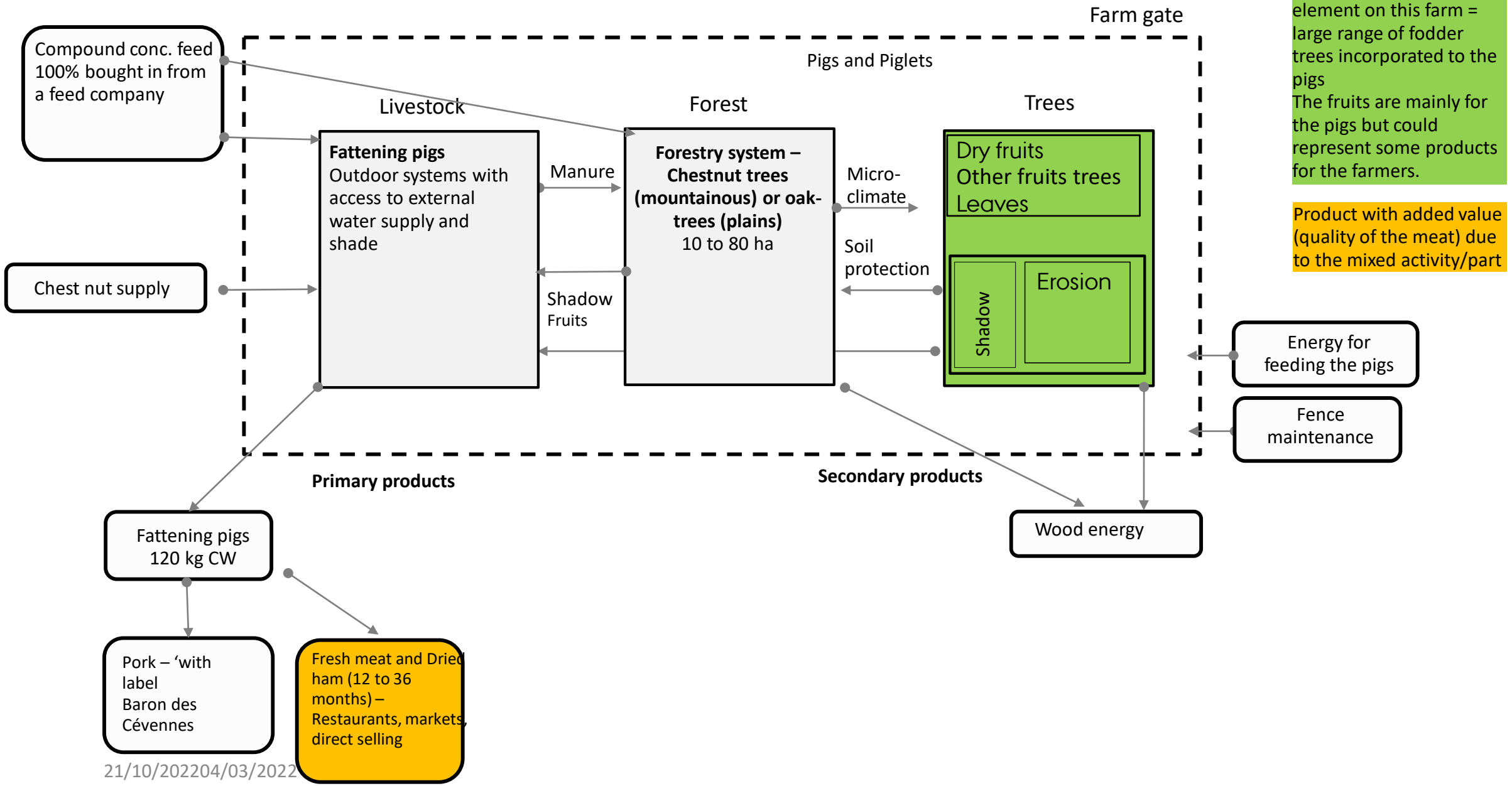
French network – pigs & agroforestry

FRA NW1 Agroforestry – Livestock – Pork
FARM 1 – interconnectedness within farm (flows)



The **mixed** (agroforestry) element on this farm = large range of fodder trees incorporated to the pigs
The fruits are mainly for the pigs but could represent some products for the farmers.

Product with added value (quality of the meat) due to the mixed activity/part

FRA NW1 Agroforestry – Livestock – Pork
FARM 2 – interconnectedness within farm (flows)

The **mixed** (agroforestry) element on this farm = large range of fodder trees incorporated to the pigs
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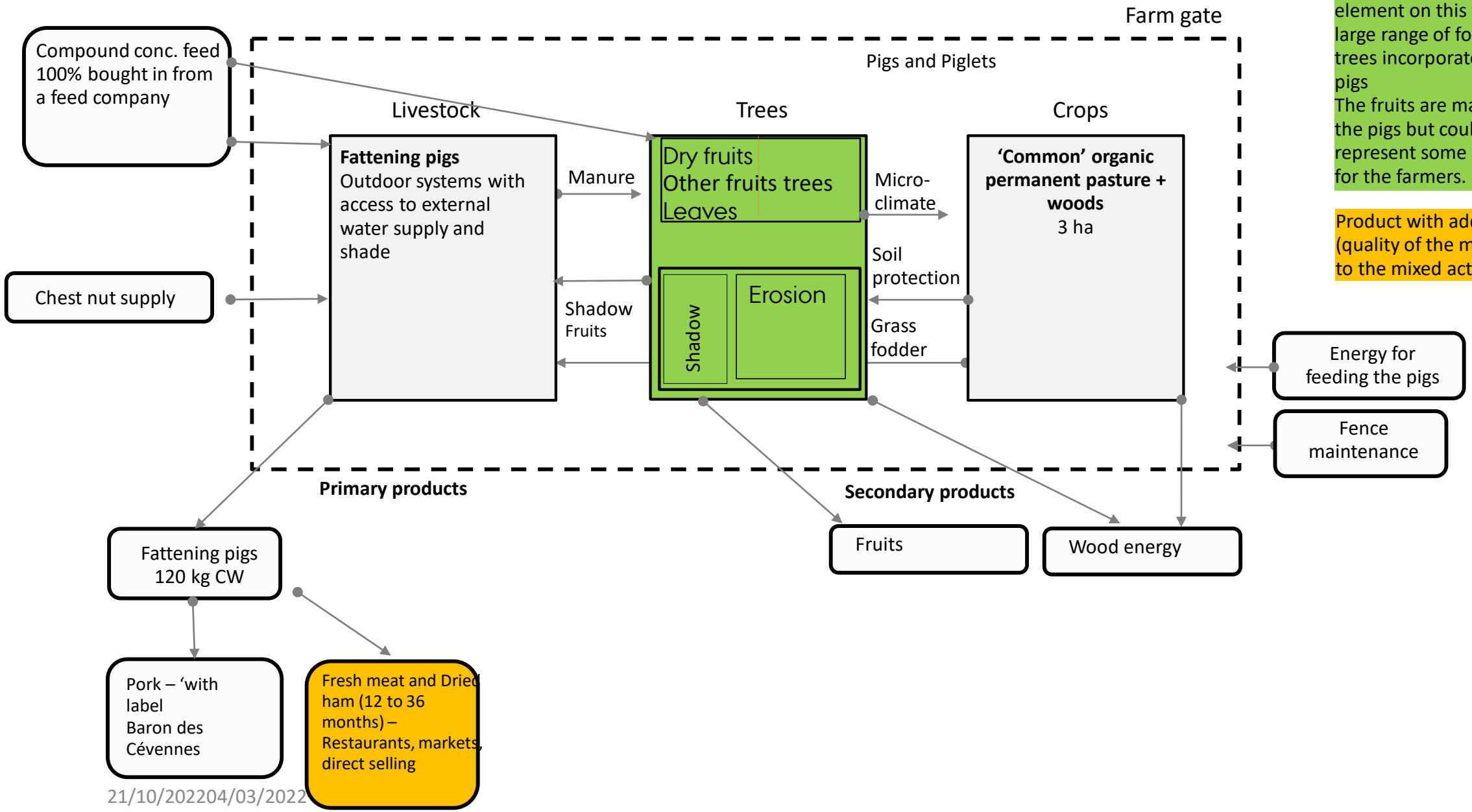

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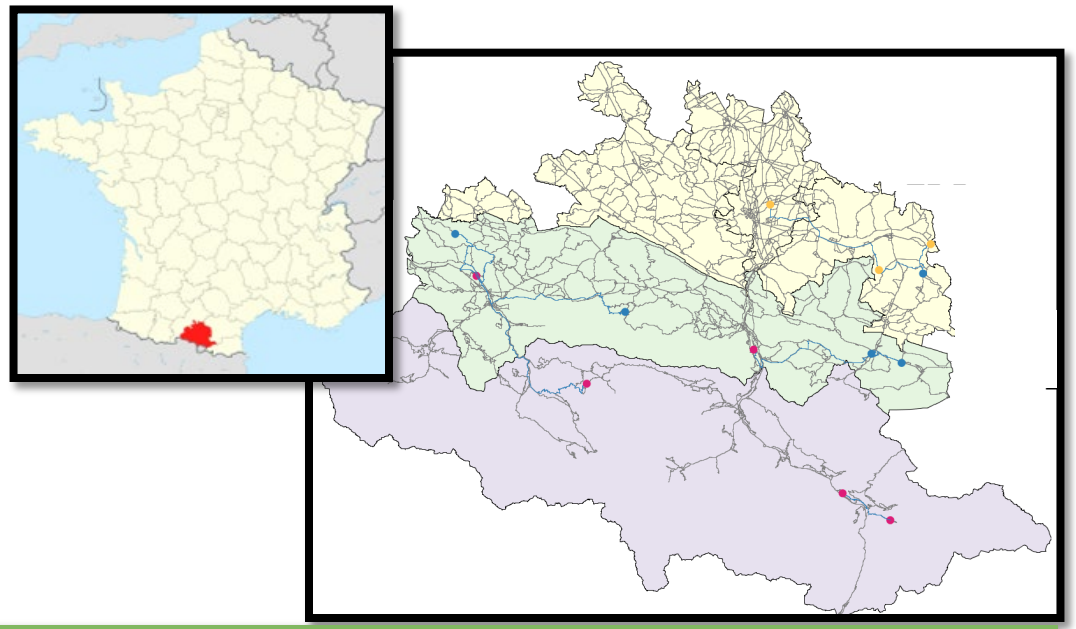
French network – crop & livestock manure exchange

1. General information about the network



Our network = 13 farms

- Crop-livestock farms (2); Crop farmers (4) ; Livestock farmers (7)
- **58-262 ha** + gradient of permanent grassland

Livestock farmers :

- 10-16 t/year concentrates
- 150-200 t/year hay

Crop farmers :

- 5-35 ha
- 1-4 new crops or grassland

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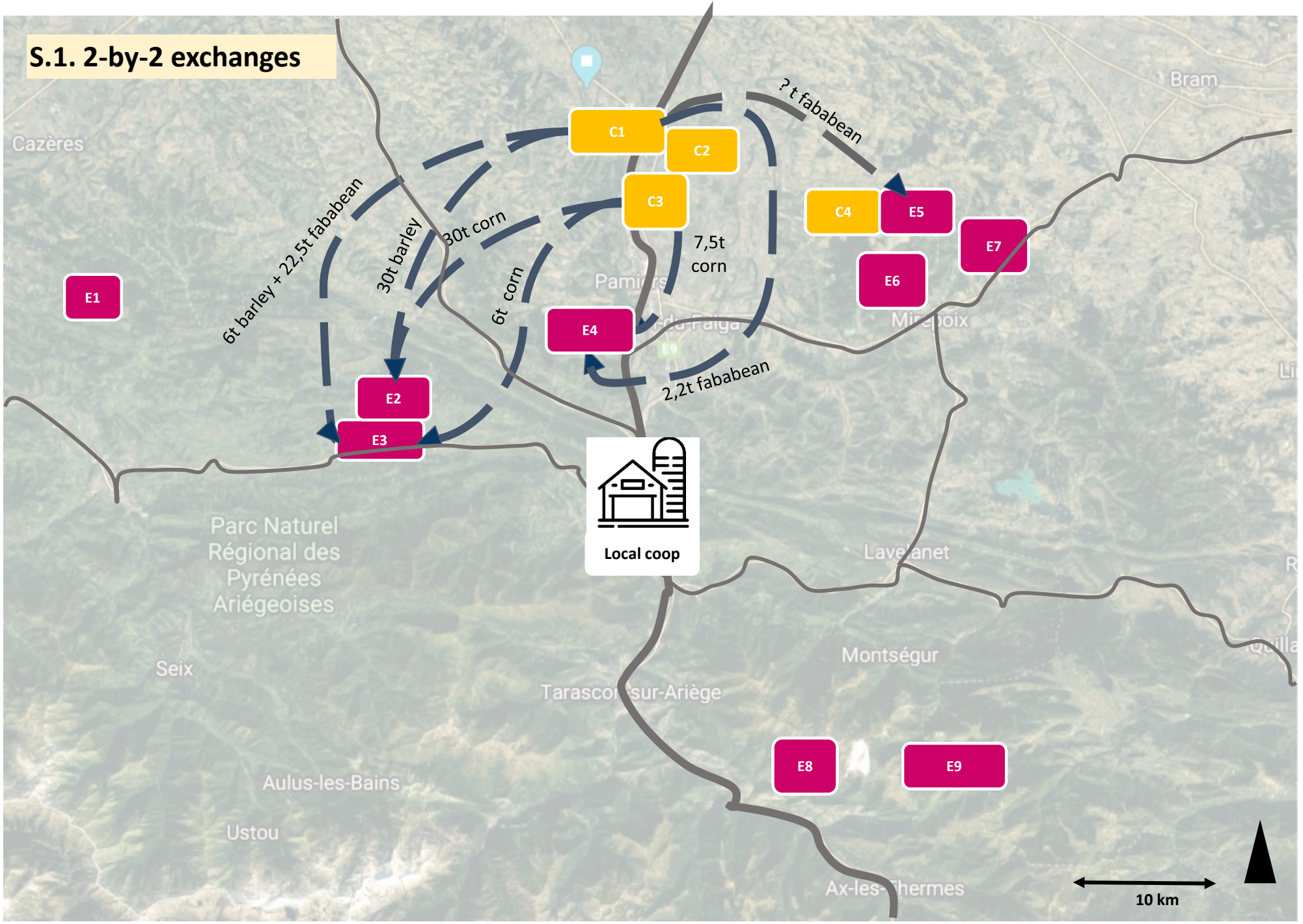
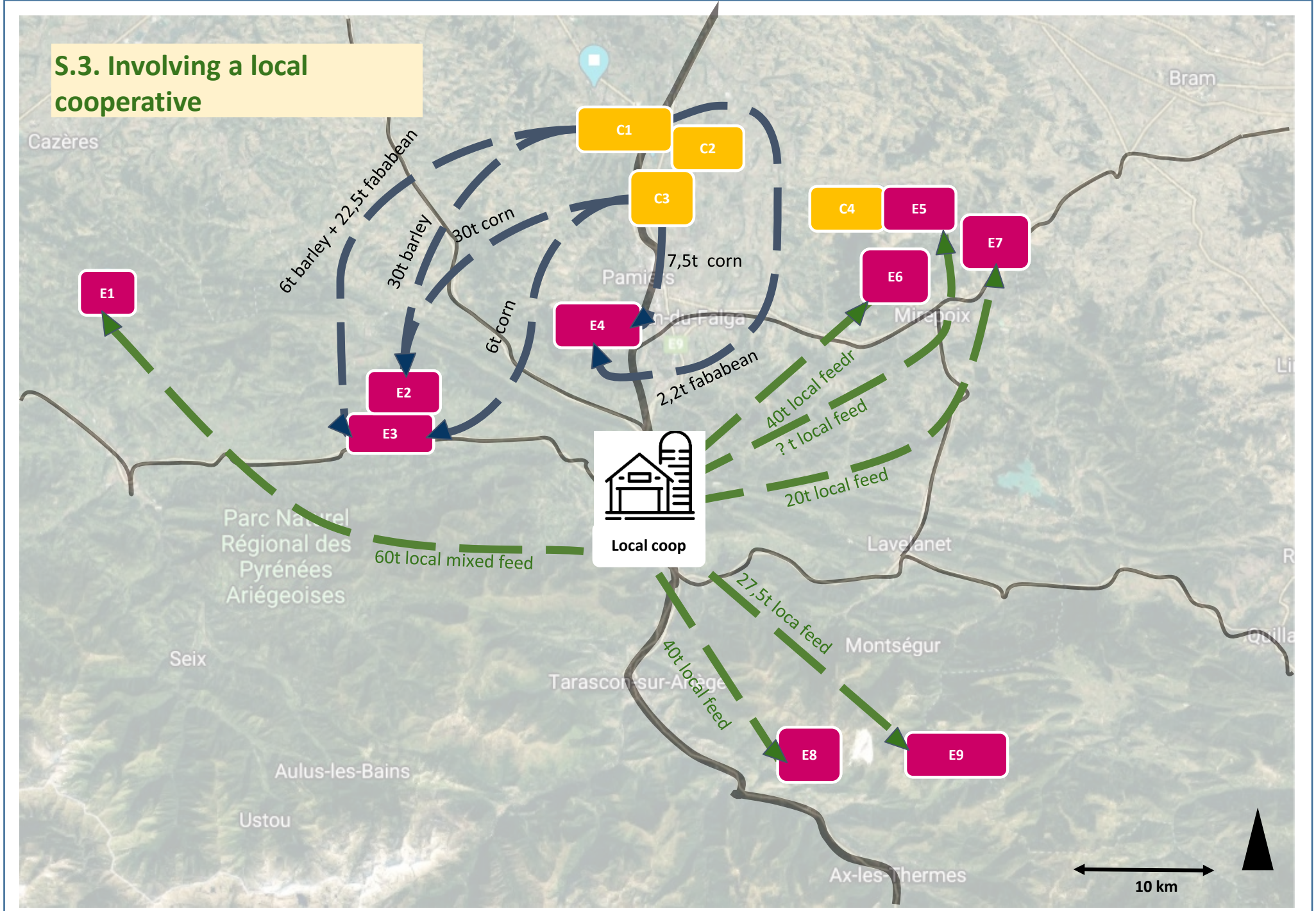

S.1. 2-by-2 exchanges
C1
C2
C3
C4
E1
E2
E3
E4
E5
E6
E7
E8
E9
? t fababean
6t barley + 22,5t fababean
30t barley
30t corn
6t corn
7,5t corn
2,2t fababean
Local coop
Cazères
Bram
Parc Naturel Régional des Pyrénées Ariégeoises
Seix
Aulus-les-Bains
Ustou
Montségur
Ax-les-Thermes
10 km


S.3. Involving a local cooperative
C1
C2
C3
C4
E5
E7
E6
E1
E4
E2
E3
6t barley + 22,5t fababean
30t barley
30t corn
6t corn
7,5t corn
2,2t fababean
40t local feedr
? t local feed
20t local feed
60t local mixed feed
27,5t loca feed
40t local feed
Local coop
E8
E9
Cazères
Bram
Pamiers
Mirepoix
Parc Naturel Régional des Pyrénées Ariégeoises
Seix
Lavelanet
Montségur
Tarascon-sur-Ariège
Aulus-les-Bains
Ustou
Ax-les-Thermes
10 km

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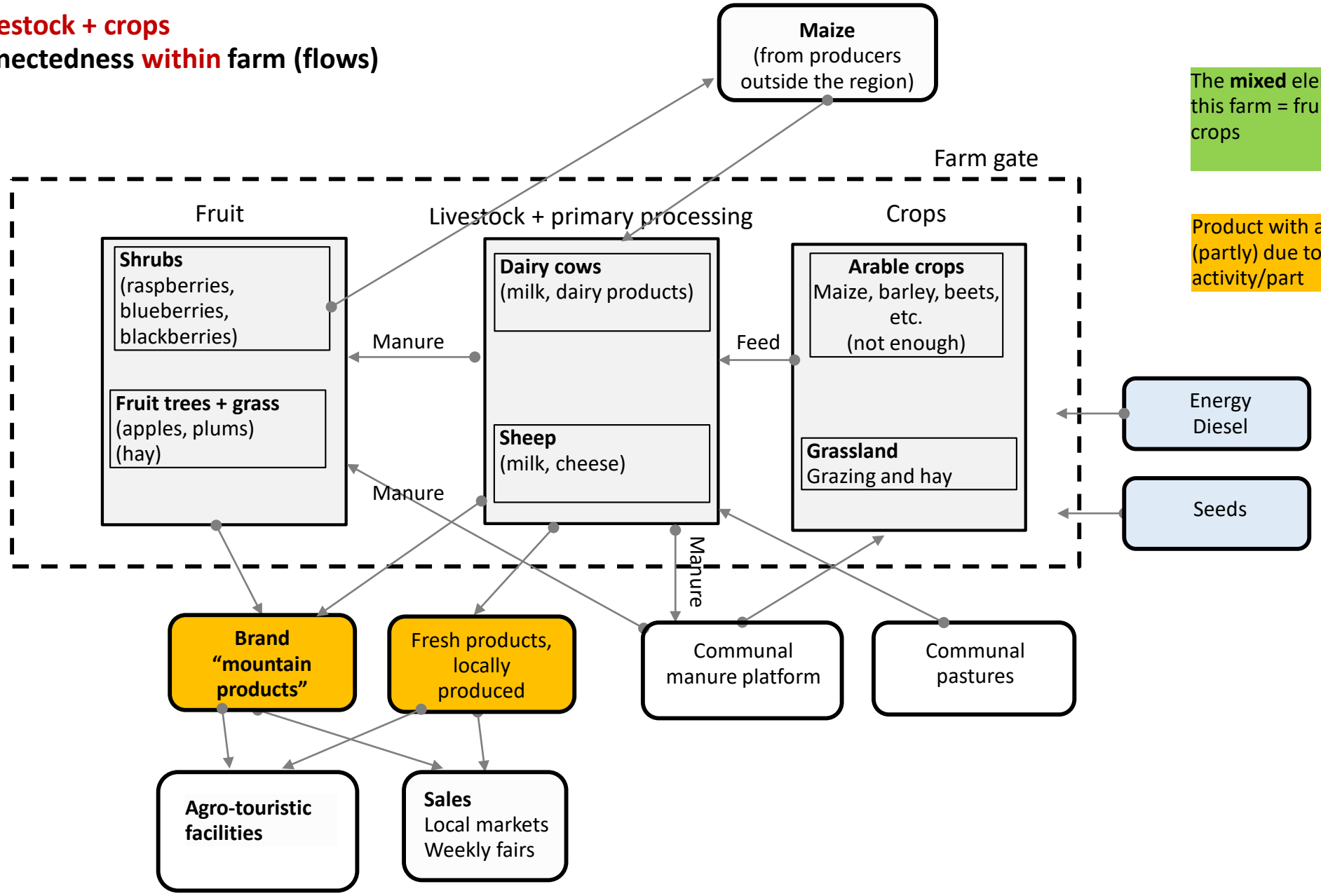
The Romanian network: fruit, livestock and agro-tourism

Camelia Gavrilescu (IEA-AR), Vergina Chiritescu (GAL-TP)

GAL Tinutul Posadelor

RO NW1 Fruit + livestock + crops

FARM 1 – interconnectedness within farm (flows)

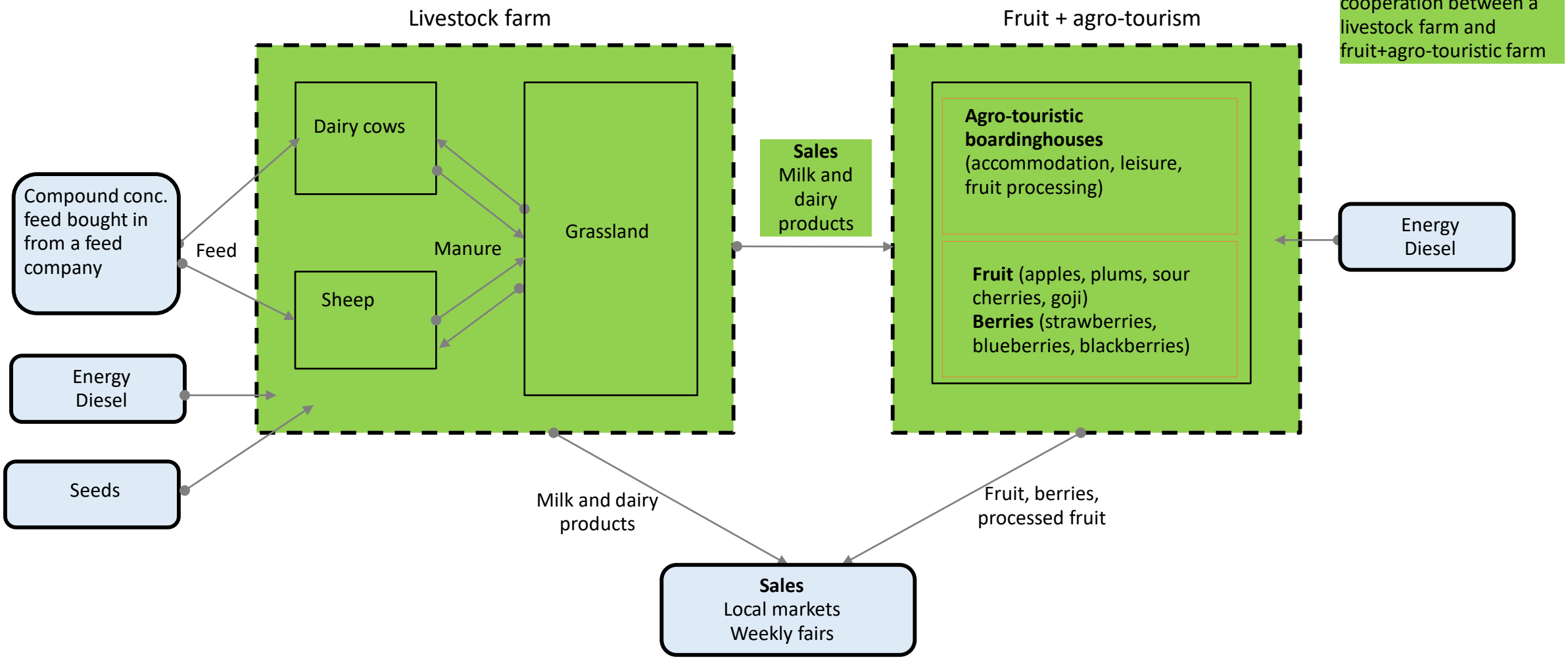


The **mixed** element on this farm = fruit, livestock, crops

Product with added value (partly) due to the mixed activity/part

RO NW2 Cooperation / product sales – livestock farm with mixed fruit and agro-touristic farm
interconnectedness between farms (flows)

The mixed elements in this system is the cooperation between a livestock farm and fruit+agro-touristic farm



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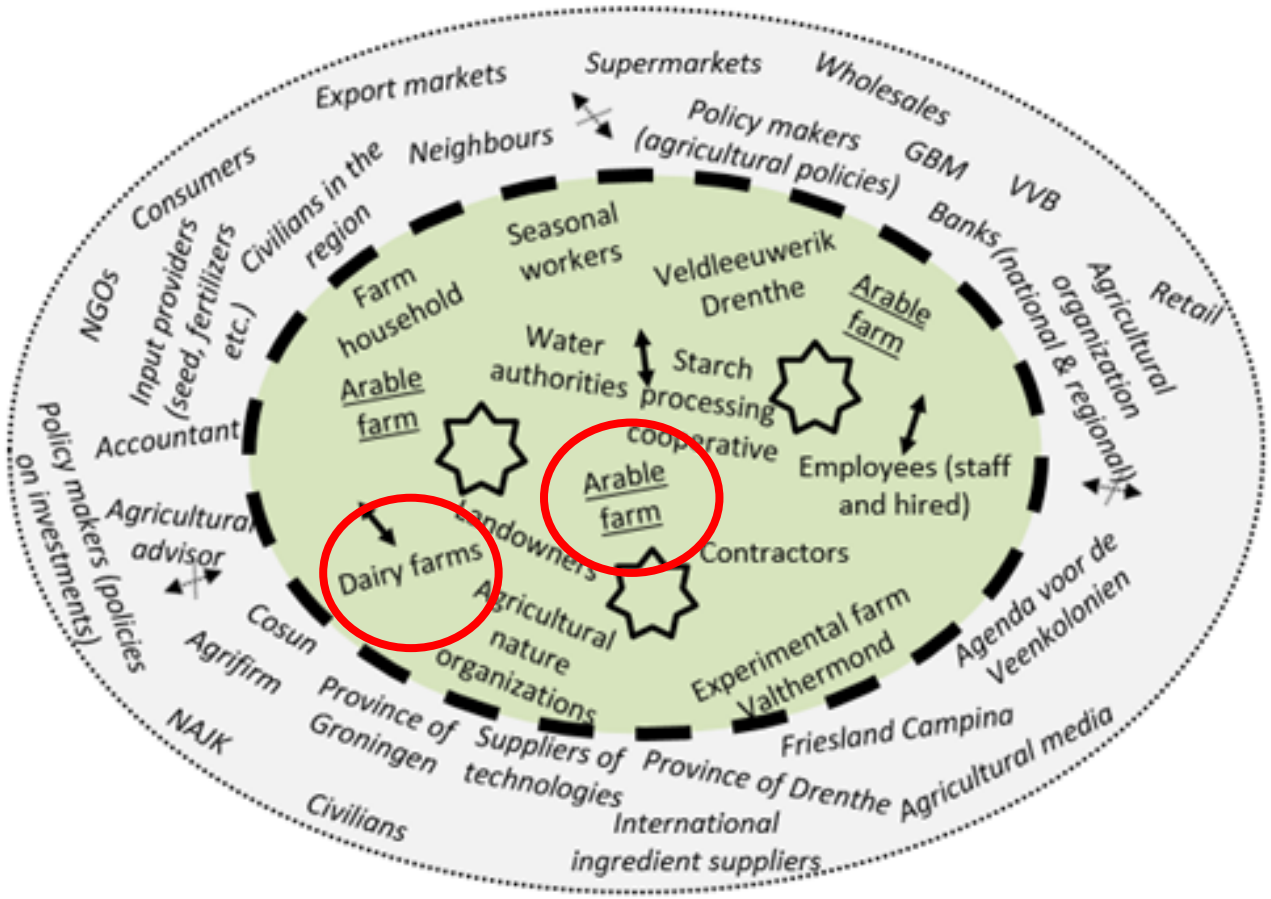
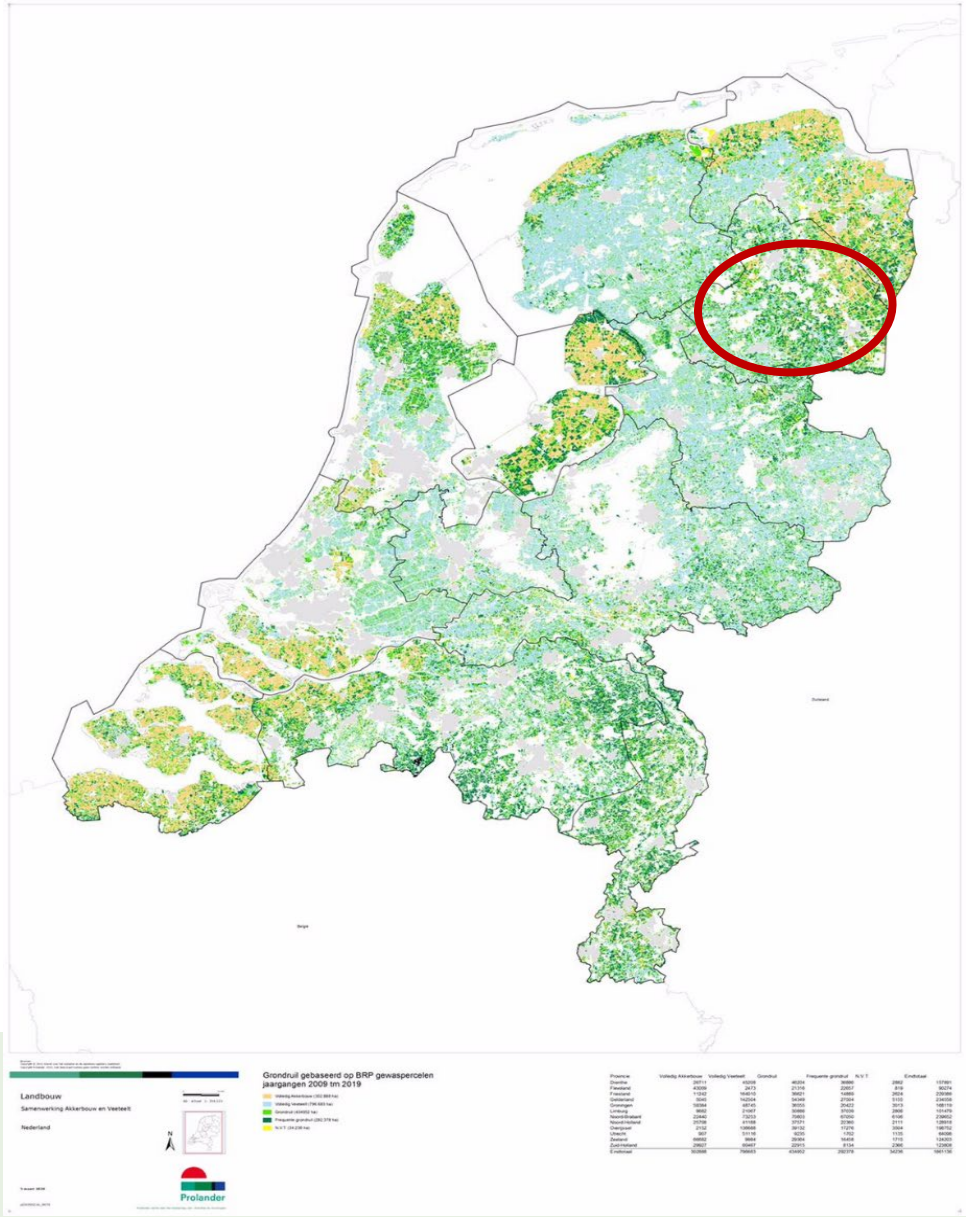
The NL network: a multi-farm landscape MiFAS

Miranda Meuwissen, Frederic Ang, Tobias Dalhaus, Murilo de Almeida Furtado, Guy Low, Lisa Wiering

& the involved farmers!

Cooperation between arable and dairy farms





Horizon 2020
Programme

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MIXED FARMING & AGROFORESTRY

national team Poland – IUNG Puławy & Juchowo Village Project

Jarek Stalenga & Anna Szumełda

IUNG Institute of Soil Science and Plant Cultivation

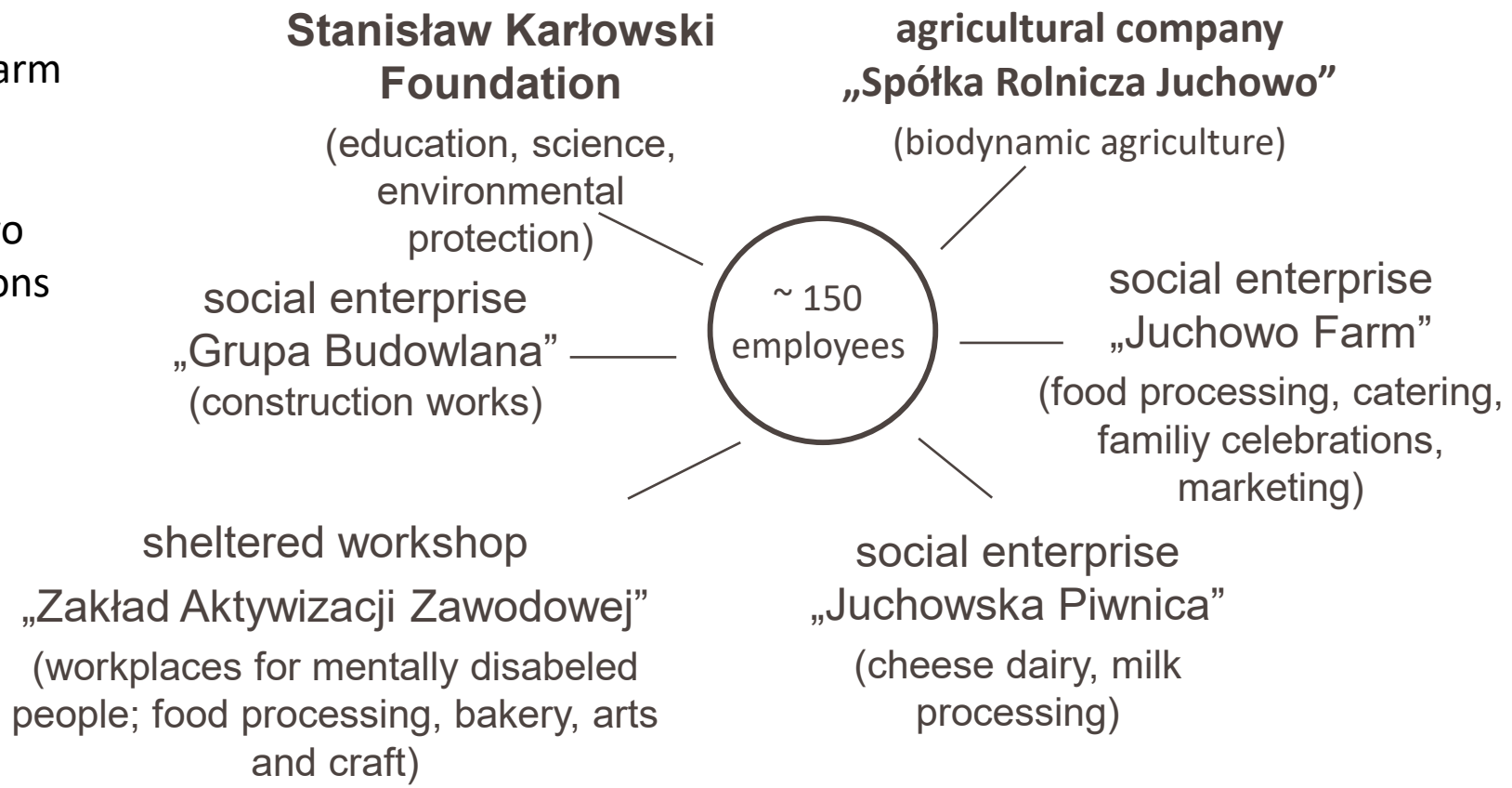
JUCHOWO Projekt Wiejski

Juchowo Village Project – one farm, one network

1. General information about the network

- Juchowo Village Project: biodynamic farm in the northwest of Poland

- Several entities present within Juchowo Village Project, with two core institutions involved in the MIXED project



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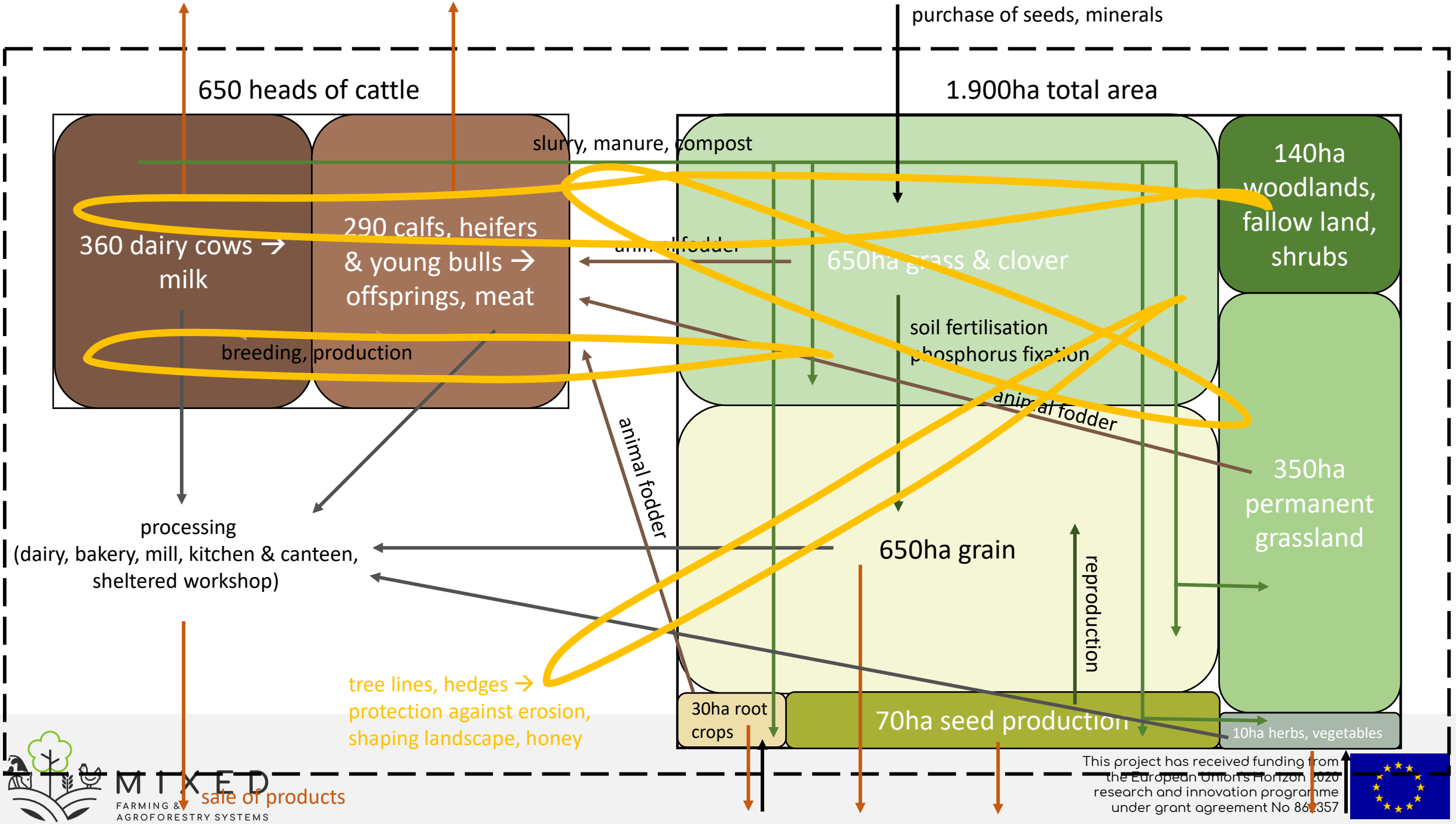

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Billund, April 27th, 2022

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EFFICIENT AND RESILIENT MIXED FARMING & AGROFORESTRY

Network Portugal: Montado, Alentejo

Carolina Ramos
Luis Mira da Silva
João Pedro Oliveira
Joana Faria Anjos

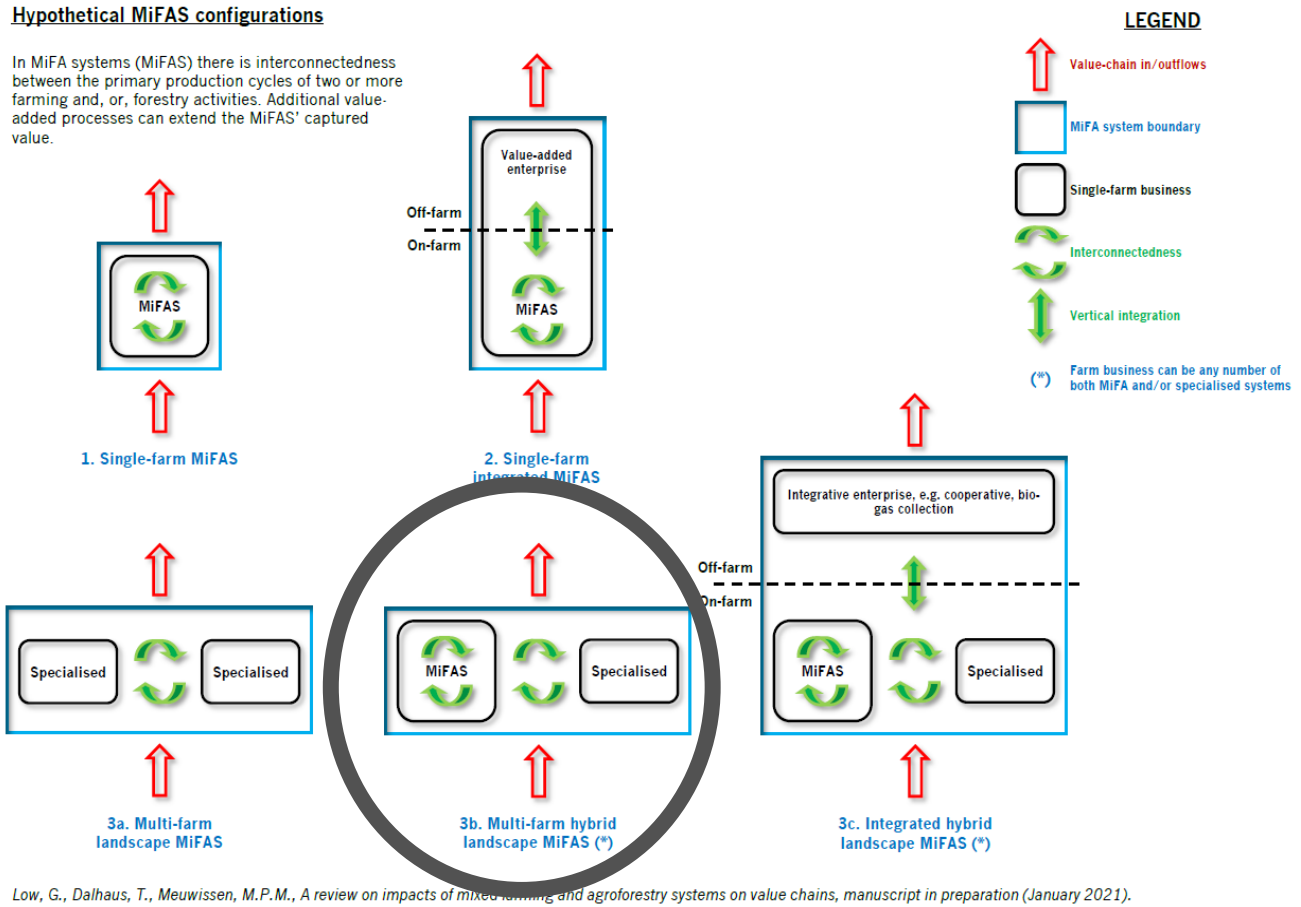
CONSULAI
www.consulai.com

Cláudia Cordovil
Joana Marinheiro

U LISBOA UNIVERSIDADE DE LISBOA

INSTITUTO SUPERIOR DE AGRONOMIA
Hinc Patriam Sustinet

“Mixedness” configuration and main components



Low, G., Dalhaus, T., Meuwissen, M.P.M., A review on impacts of mixed farming and agroforestry systems on value chains, manuscript in preparation (January 2021).

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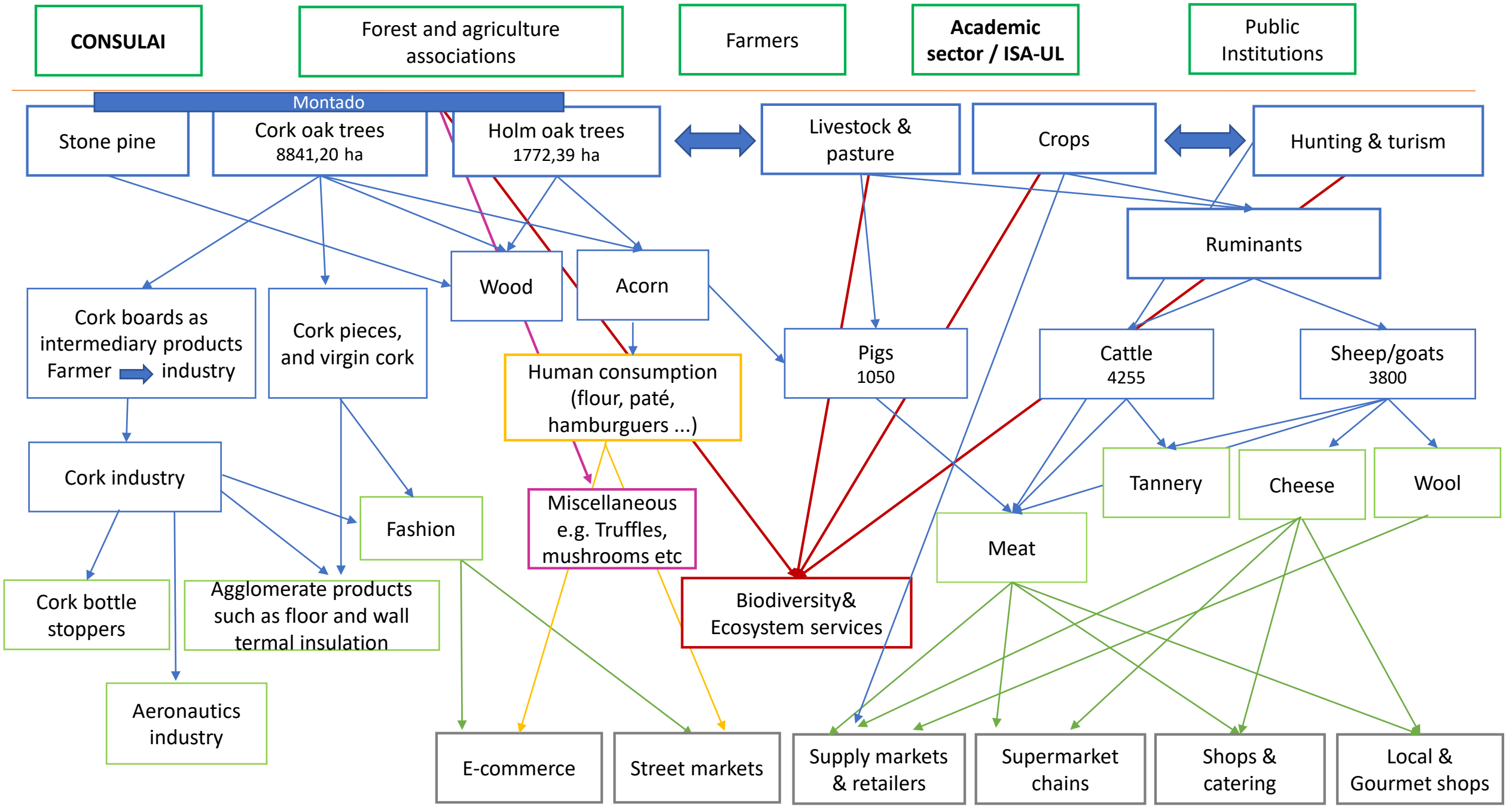
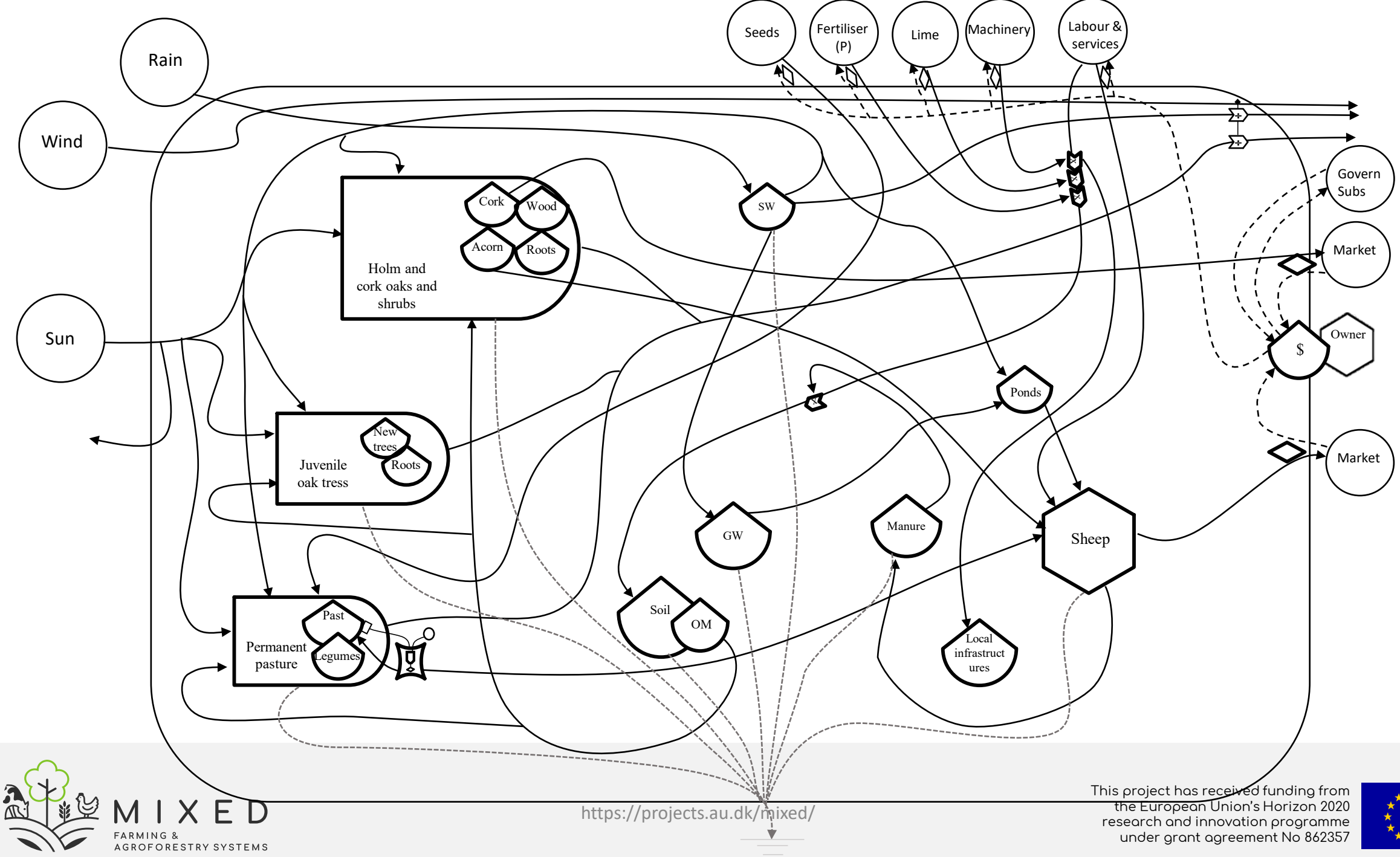

CONSULAI
Forest and agriculture associations
Farmers
Academic sector / ISA-UL
Public Institutions
Montado
Stone pine
Cork oak trees
8841,20 ha
Holm oak trees
1772,39 ha
Livestock & pasture
Crops
Hunting & turism
Ruminants
Wood
Acorn
Cork boards as intermediary products
Farmer industry
Cork pieces, and virgin cork
Human consumption (flour, paté, hamburguers ...)
Pigs
1050
Cattle
4255
Sheep/goats
3800
Cork industry
Fashion
Miscellaneous e.g. Truffles, mushrooms etc
Tannery
Cheese
Wool
Meat
Cork bottle stoppers
Agglomerate products such as floor and wall termal insulation
Biodiversity& Ecosystem services
Aeronautics industry
E-commerce
Street markets
Supply markets & retailers
Supermarket chains
Shops & catering
Local & Gourmet shops
PORTUGAL



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THANK YOU!

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