SUSTAINBEEF -Co-definition and evaluation of sustainable beef farming systems based on resources non edible by humans

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EUROPEAN RESEARCH AREA ON SUSTAINABLE ANIMAL PRODUCTION

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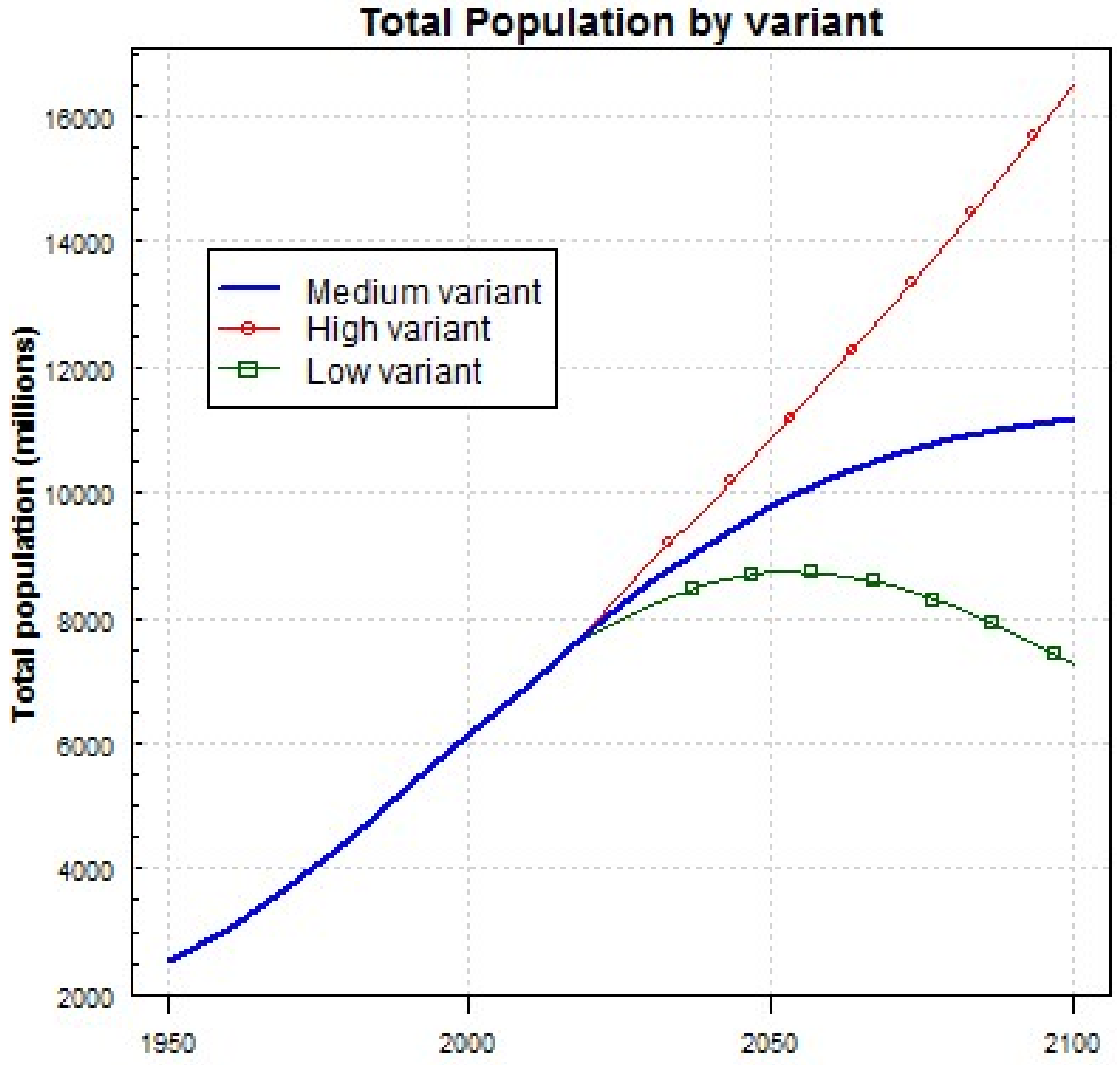
Challenge

(I) World population projected to reach 9.8 billion in 2050, and 11.2 billion in 2100 (United Nations, 2017)



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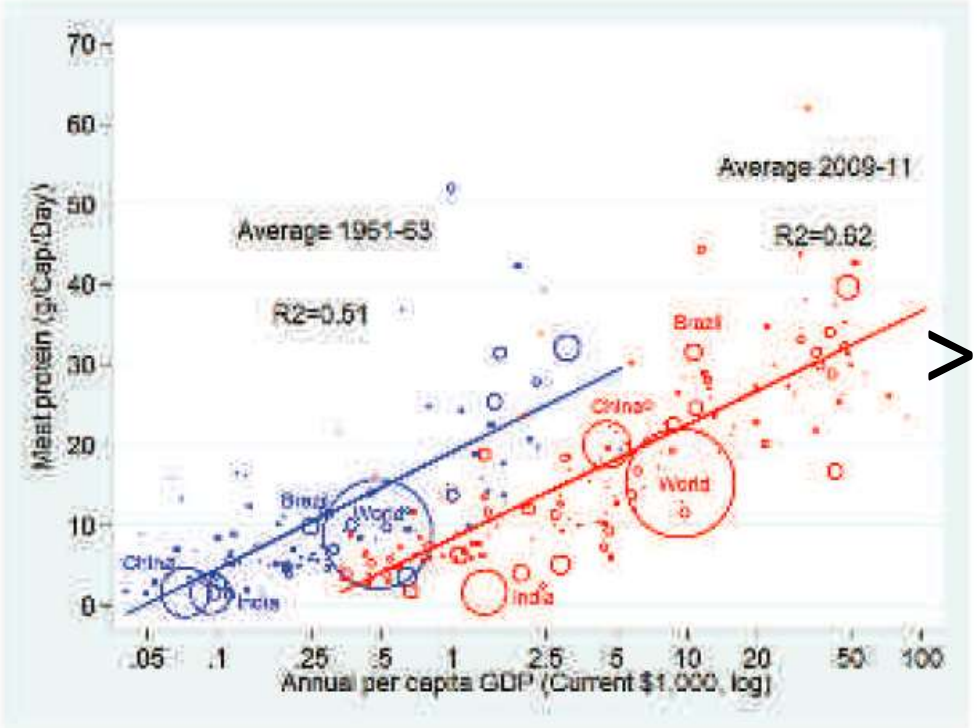
Challenge

(II) Dietary habits evolution



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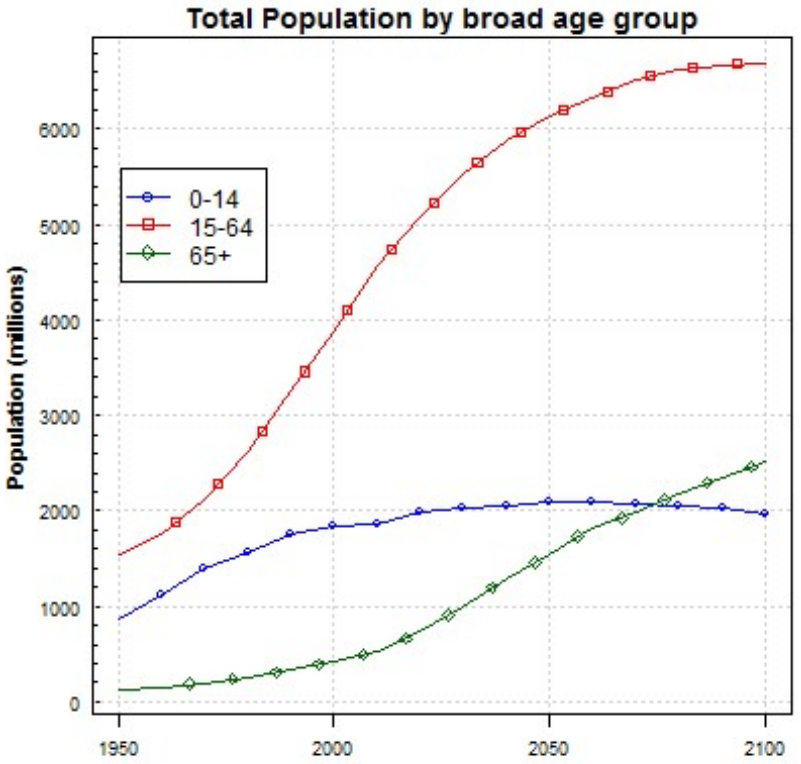

Fig. 2. Changes in protein from meat versus per capita Gross Domestic Product (GDP)[a]. A circle size proportional to country population.

(Sans & Combris, 2015)

(United Nations, 2017)

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(III) Significant increase of animal products needs

		annual *per capita* consumption		total consumption		
		meat (kg)	milk (kg)	meat (Mt)	milk (Mt)	
developing	1980	14	34	47	114	
	1990	18	38	73	152	* 2,9 / * 1,9
	2002	28	44	137	222	
	2015	*32*	*55*	*184*	*323*	
	2030	*38*	*67*	*252*	*452*	* 1,8
	2050	*44*	*78*	*326*	*585*	
developed	1980	73	195	86	228	
	1990	80	200	100	251	* 1,2 / * 1,2
	2002	78	202	102	265	
	2015	*83*	*203*	*112*	*273*	
	2030	*89*	*209*	*121*	*284*	* 1,1
	2050	*94*	*216*	*126*	*295*	

Thornton 2013 (base FAO 2006)

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Challenge

(IV) Competition between food and feed

Consumption of Human Food by Livestock

Every year: 1 billion tonnes!

Wheat, barley, oats, rye, maize, sorghum, millet

A third of the world's cereal grain

Enough for 3.5 billion humans

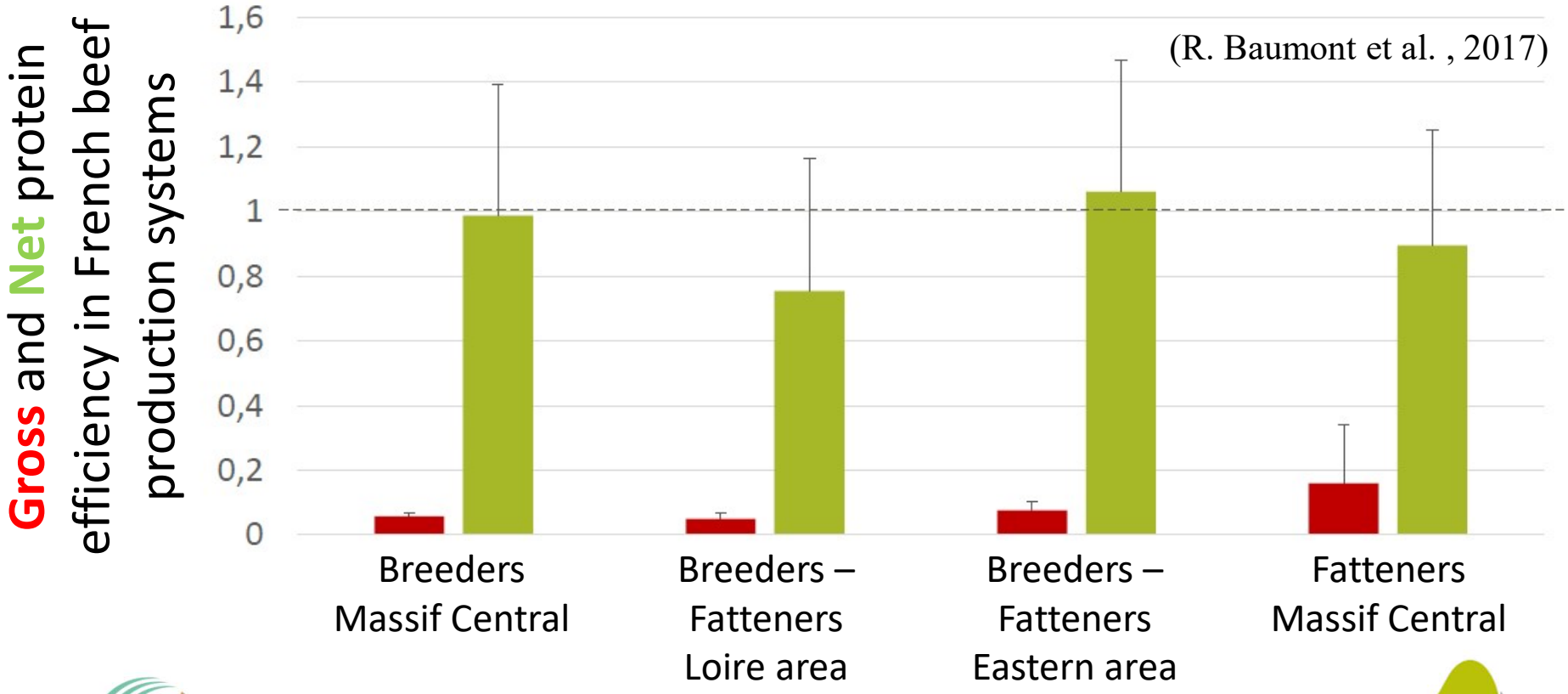
Developed countries:

70% of grain produced is for livestock; 40% for ruminants

(in Eisler 2015)

Challenge

(IV) While resources are limited and conversion efficiency is different from 100 %



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Objectives

- Postulate : Livestock farming systems based on grasslands (70% of world agricultural surfaces) and agro-industry by-products ➔ key part of the solution
- Identification of innovations aiming to increase the share of these resources in animal production ➔ Barriers and lock'ins to their implementations
- Implementation scenarios ➔ sustainability at farm, value chain and territorial scales

Photo : CRA-W

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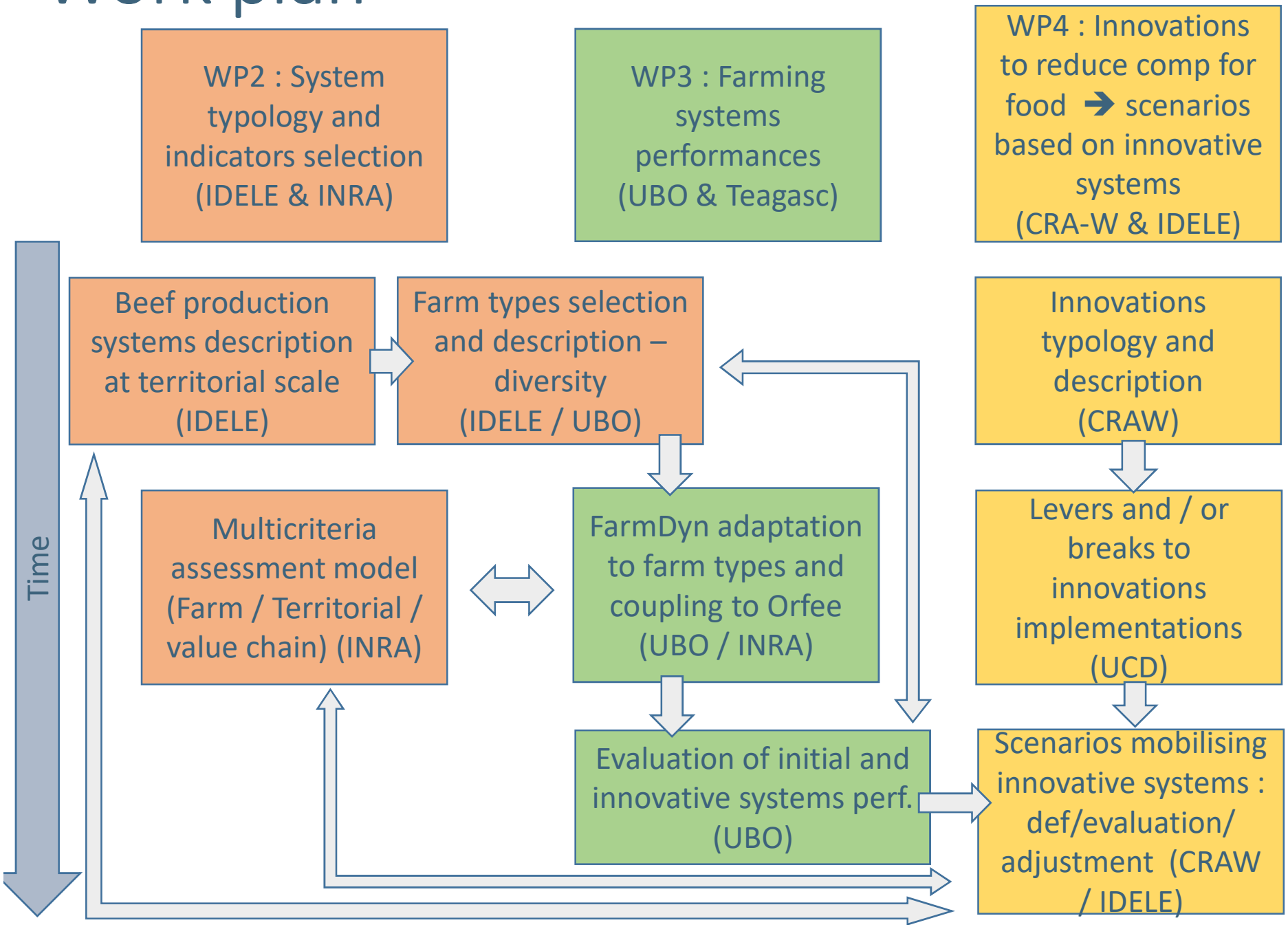
Consortium

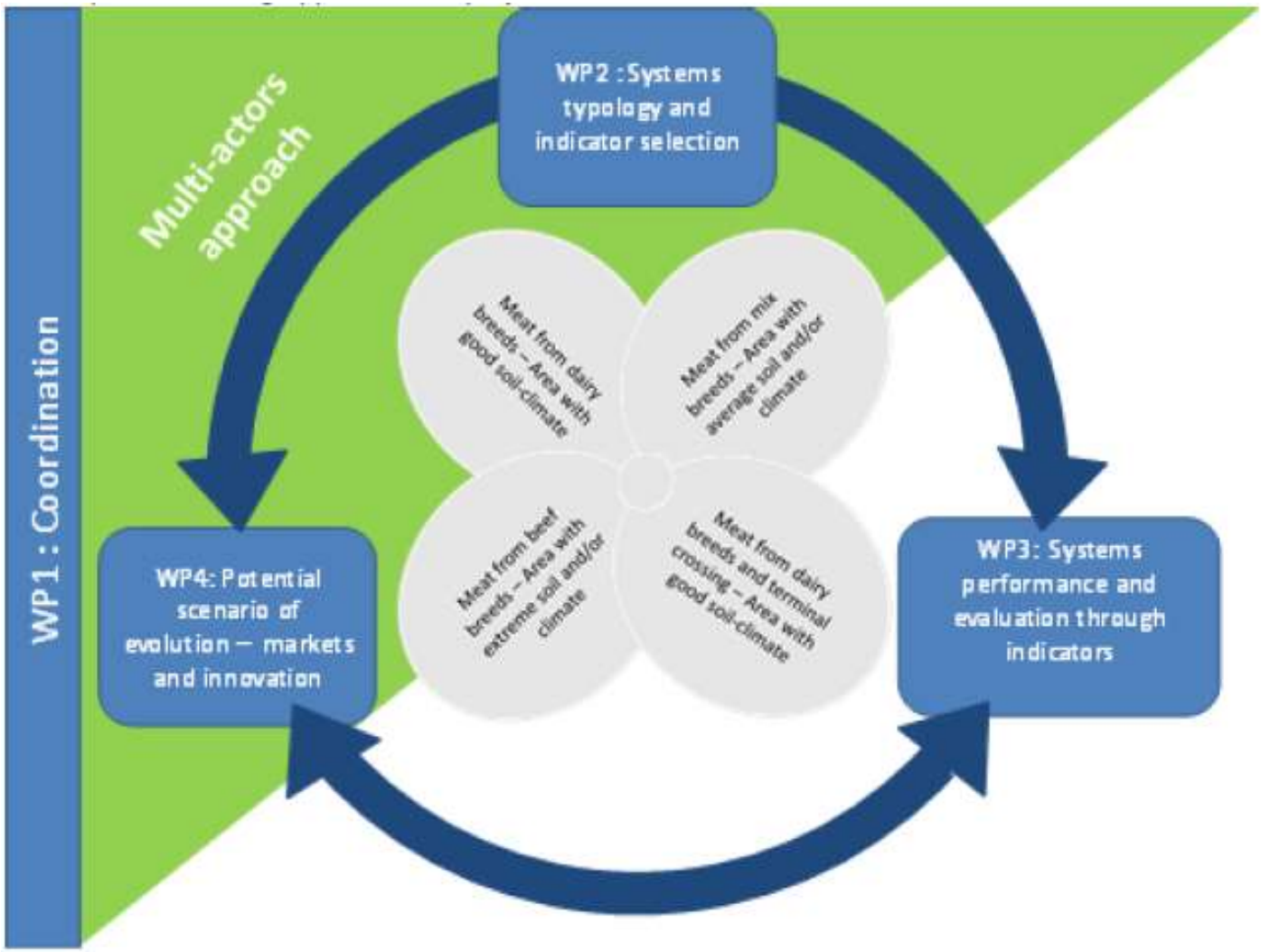

UCD & Teagasc
KOM – 26 & 27 September 2017


U-Bonn
CRAW
AWE
INRA
IDELE
CREA

Work plan


WP2 : System typology and indicators selection (IDELE & INRA)
WP3 : Farming systems performances (UBO & Teagasc)
WP4 : Innovations to reduce comp for food ➔ scenarios based on innovative systems (CRA-W & IDELE)
Time
Beef production systems description at territorial scale (IDELE)
Farm types selection and description – diversity (IDELE / UBO)
Innovations typology and description (CRAW)
Multicriteria assessment model (Farm / Territorial / value chain) (INRA)
FarmDyn adaptation to farm types and coupling to Orfee (UBO / INRA)
Levers and / or breaks to innovations implementations (UCD)
Evaluation of initial and innovative systems perf. (UBO)
Scenarios mobilising innovative systems : def/evaluation/ adjustment (CRAW / IDELE)

Stakeholders involvement



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Stakeholders involvement

- Farmers
- Farmers' unions / Breeders' associations;
- Advisory services;
- Meat processors;
- Maketing agencies (i.e. Bord Bia in Ireland);
- Retailers;
- Citizens / cosum'actors;
- Territorial manager (local action groups – Natural parc manager).

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Expected impacts

- More efficient use of resources while limiting feed-food competition, taking into account land use and quality
- Possibilities to develop beef farming systems mainly based on resources non-edible for human into food under a diversity of soil and climate conditions in Europe
- To co-define, with the actors of the value chain, scenarios of evolution towards more sustainable beef agri-food chains based on the potential adoption of innovative measures at the production scale
- To improve the competitiveness and resilience of the whole animal production chain

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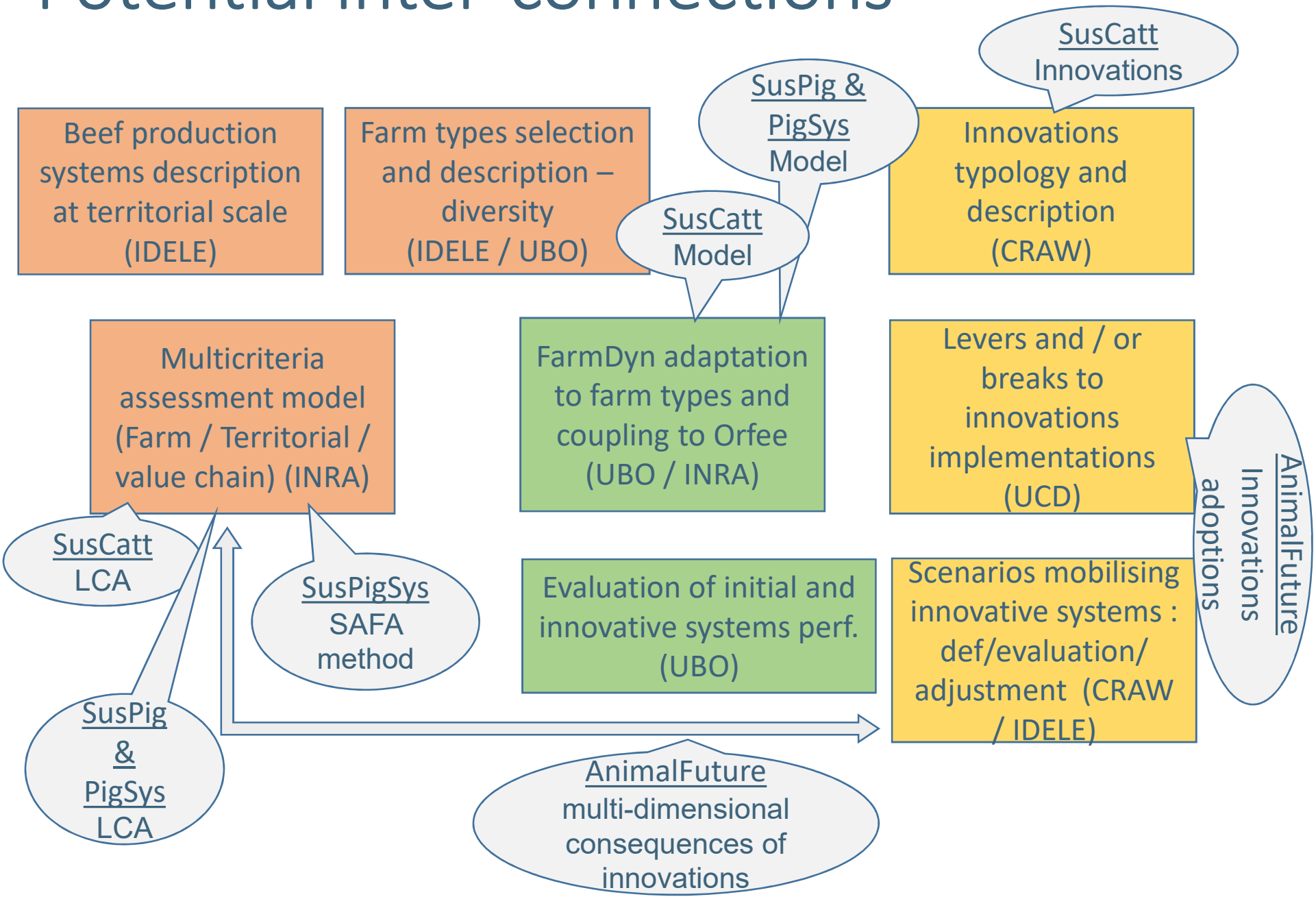
Potential inter-connections



Thanks for your attention

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Avec le soutien de la Wallonie

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