

Meeting of the ICAR Sheep, Goat and Camelid Working Group (SGC-WG)

Prague, Czech Republic, 18th June 2019



ICAR 2019 **17 – 21** June
IDF/ISO 2019 **21 – 25** June



THE GLOBAL STANDARD
FOR LIVESTOCK DATA

Agenda 1

Opening and welcome

18 June 2019

8:30 – 13:00 am

Prague Congress Centre

Room Club A

Apologies from A Carta, D Brown, S McIntyre, M Antonini, E Ciani, E Wall

Agenda

- 1-Opening and welcome
- 2-Overview on the activities of the WG **Jean-Michel**
 - ✓ Inclusion of large camelids, membership, highlights 2018/2019, website
- 3-Activities of the meat recording EAG **Joanne**
 - ✓ Draft guidelines: discussions
- 4-Activities of the fiber recording EAG **Jean-Michel**
- 5-Large camelids **Pamela**
 - ✓ Survey on large camelids and preliminary results, future actions
- 6-Activities of the milk recording EAG **Jean-Michel**
 - ✓ Survey dairy sheep and goats
- 7-Information on SMARTER project **Jean-Michel**
- 8-Technical session 8
- 9-Date of next meetings
- 10-Any other business
- 11-Closure

Agenda 7

SMARTER project



SMARTER: a European project on selection on efficiency and resilience in small ruminants with strong ICAR commitment and implication

J.M. Astruc, J.J. Arranz, J. Conington, R. Rupp, B. Servin, R. Pong-Wong, D. Berry, V. Thénard, A. Rosati, C. Mosconi, A. Meynadier & C. Moreno-Romieux



**ICAR 2019: Prague, Czech Republic,
17-21 June 2019**





H2020-SFS-2016-2017

Research and Innovation Action

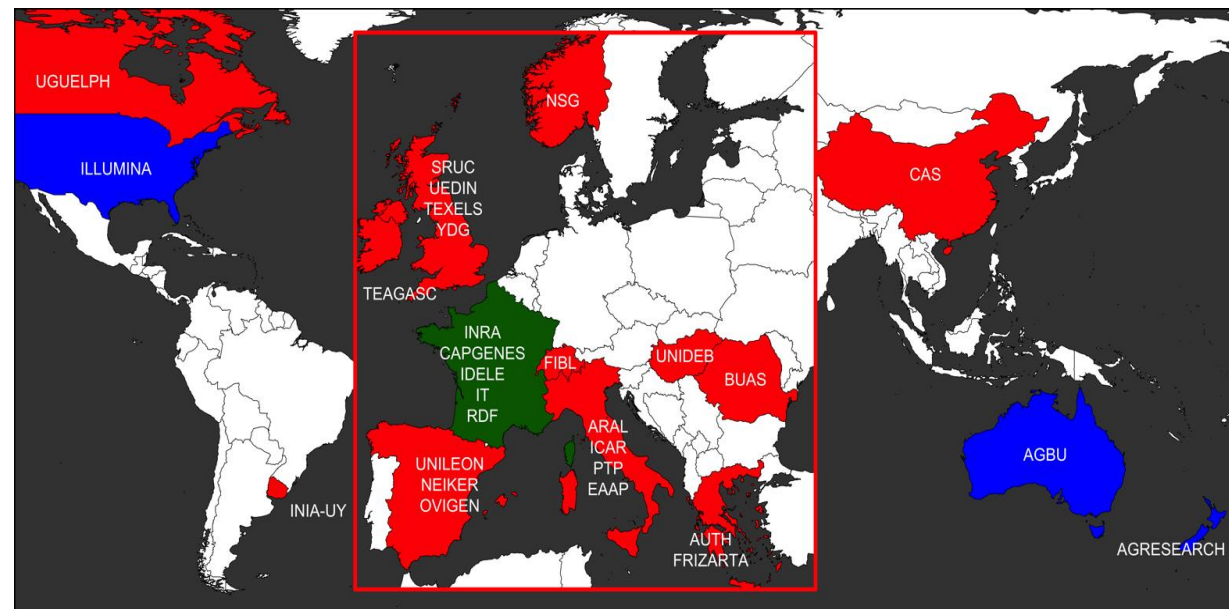
SMALL RuminanTs breeding for Efficiency and Resilience

Project period: Nov 2018 to Oct 2022

Coordination: INRA Toulouse (Carole Moreno-Romieux)

**26 partners, 13 countries (10 EU + Uruguay + Canada + China),
50% of non-academic partners**

Coordinator, partners,
stakeholders (to implement)



SMARTER is structured around 2 definitions of RESILIENCE and EFFICIENCY

RESILIENCE

The ability of an animal/system to maintain or revert quickly to high production and health status when exposed to a diversity of challenges, with a focus on nutritional and/or health challenges.

EFFICIENCY

Considered as the efficiency of feed resource use by animals: feed efficiency, the dynamics of body tissue mobilization and its impact on the environment. Focus on agro-ecological issue: competition with human nutrition (grains), water consumption, greenhouse gas emission.

SMARTER has its counterpart in cattle : GenTORE

“GENomic management Tools to Optimize
Resilience and Efficiency”

“Resilience is the capacity to safeguard future ability to continue contributing genes to the next generation when confronted with environmental perturbations.”

“Efficiency is the ratio of energy in the product to the energy ingested to achieve that production, measured over a time period that is relevant to ensure that an efficiency gains are sustainable.”

What are resilience and efficiency traits studied in SMARTER?



Resilience

- **Disease resistance:** parasite, footrot, mastitis
- **Longevity / Survival:** lamb & embryo mortality, functional longevity
- **Trade-Off between** parasite resistance, longevity, production, feed efficiency and resource allocation when disease and/or nutritional challenge



Efficiency

- **Feed efficiency:** concentrate/hay/grazing, new predictors
- **Resource allocation**
- **Microbiota:** to predict GHG emission
- **Gas emission:** new tools

But also at the system level ...

Some figures to appreciate the impact of SMARTER

- ❖ 5 000 farmers, 1 500 000 ewes/goats will be directly targeted by SMARTER
- ❖ HD data set (existing or newly generating) : 500 000 phenotyped + 70 000 genotyped animals
- ❖ 46 breeds in SMARTER = 20% of the sheep and goat populations in EU but via our non academic partners 70% of the EU populations will be impacted

19 meat sheep breeds



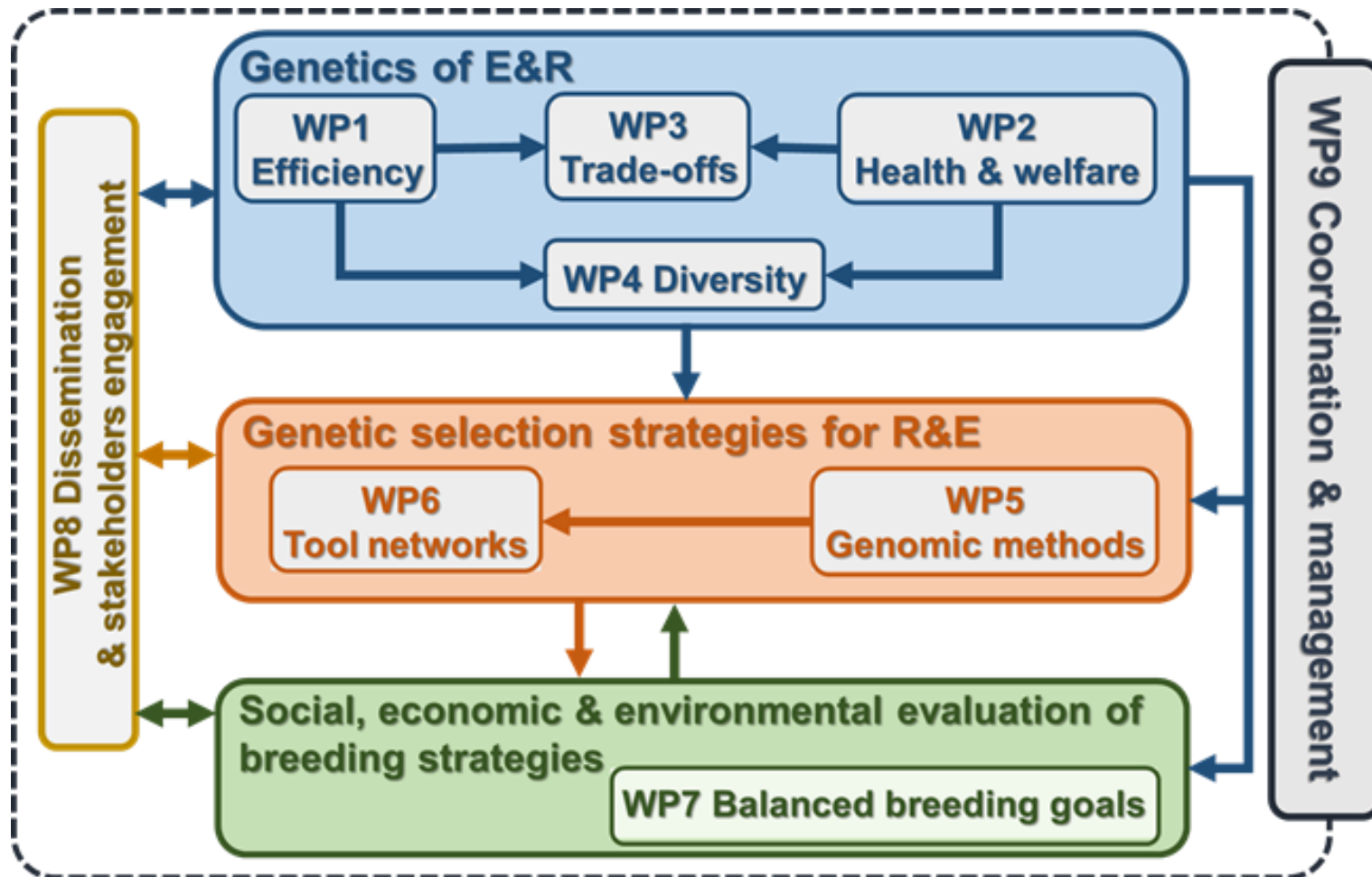
13 dairy sheep breeds



14 dairy goat breeds



Organization of SMARTER project



ICAR committed in WP6 “Practical Selection Tools to Benefit from International Cooperation”

ICAR-connected

Task 1: HARMONIZATION: phenotypes, genotypes, pedigree

Task 2: INTERNATIONAL EVALUATION: genetic, genomic

Task 3: PRACTICALITIES of international evaluations

Task 4: ASSESS BENEFIT: modelled benefit of harmonization of phenotyping & int'l evaluation on long-term genetic gain

ICAR committed in WP6 “Practical Selection Tools to Benefit from International Cooperation”

Guidelines

- Recommendations to measure efficiency and resilience traits in a similar way in each country => facilitate possible future common evaluation
- Suggest/define recording of new environmental effects
- Add a new brick to the section of the ***guidelines of the SGC WG***



**Section 16: Dairy
Sheep and Goats**



**Section 14:
Alpaca & Goat
ID & Fiber**



**Section XX: Meat
and Reproduction in
Small Ruminants**



**Section YY: Resilience
& Efficiency in Small
Ruminants**

ICAR committed in WP6 “Practical Selection Tools to Benefit from International Cooperation”

Across-Countries genetic & genomic evaluation

Is it worth carrying out multi-country evaluation in small ruminants?

Background = few exchanges, low connectedness, small reference population in most countries, genotyping costs

- 3 pilots studies to assess feasibility

Dairy sheep	Manech & Latxa	FR,SP	A Legarra
Dairy goats	Alpine & Saanen	FR, CN, IT, UK, CH	H Larroque, L Brito
Meat sheep	Charollais, Vendéens, Texel, Suffolk	IR, UK, FR, UY, HU	D Berry

=> Common int'l pedigree file, file formats for exchanging genot/phenot/pedigree

=> Practical and cheap community SNP panels in a common and agreed format

ICAR committed in WP6 “Practical Selection Tools to Benefit from International Cooperation”

Across-Countries genetic & genomic evaluation

Towards a routine multi-country evaluation in small ruminants?

- Practicalities of international evaluation
 - Propose specification for routine evaluation in an organized international framework (cf. Interbull?, Interbeef?, alternative model?)
 - Agreement, data sharing acceptability
 - Technical issues
 - Business model, profitability
 - Needs (or no) from the countries
 - Business Plan & business model

ICAR committed in WP6 “Practical Selection Tools to Benefit from International Cooperation”

Reference center

Define, propose, conceive what could be a zootechnical reference center in small ruminants

- In cattle, Interbull is now the European Union reference centre for performance testing/genetic evaluation in bovine. What about in sheep and goats ?
 - cf. EU Regulation on Animal Breeding 2016/1012 (article 29)
 - SMARTER could help to define the outline of Reference Centre for performance testing/genetic evaluation in sheep & goats

ICAR committed in WP8 “Dissemination, training and stakeholder’s engagement”

ICAR-connected

Task 1: stakeholder’s engagement through stakeholder platform and ICAR/EAAP network

Task 3: dissemination and training for stakeholders

Task 4: dissemination tools

Task 2: dissemination and training for scientific community

ICAR committed in WP8 “Dissemination, training and stakeholder’s engagement”

Network

Stakeholders’ platform – ICAR in charge of this task

- **Provides the participatory framework through a stakeholder’s platform**
 - Platform composed of researchers, representatives of industry, farmer’s organisations, policy makers/regulators at national & EU level
- **Dialogue between SMARTER partners & stakeholders**
 - Platform plays a key role in dissemination & exploitation of results
 - Platform gives feedback to SMARTER with external points of view.
- **Interbull invited to be stakeholder**

ICAR committed in WP8 “Dissemination, training and stakeholder’s engagement”

Network

Dissemination & training for stakeholders – ICAR in charge of this task

- Presentation to stakeholders at conferences such as in **ICAR 2020** (the Netherlands) and **ICAR 2022** (Canada).
- **National seminars and conferences**
- **Organisation of (national) stakeholders round table sessions in 10 local countries**

Participation of the WG to SMARTER

Among the partners / third parties of SMARTER: ICAR (ICAR Secretariat – Martin Burke and Cesare Mosconi), IDELE (Jean-Michel Astruc & Valérie Loywyck), SRUC (Joanne Conington), AGRIS Sardinia (Antonello Carta)

Involve as much as possible all member of the SGC WG:

- ✓ Information through ICAR meeting and newsletter.
- ✓ Specific session in ICAR meeting (the Netherlands / Canada)
- ✓ Participation to elaboration of guidelines (as for current sections).
- ✓ Feedback on reflection/thoughts on business plan for international evaluation
- ✓ Feedback on reflection/thoughts on reference center

SMARTER PARTNERS



Thank you for your attention

www.smarterproject.eu