

TRAINING COURSE

Innovation to enhance the sustainability of sheep and goat production systems

INNOVATION AND PARTICIPATORY RESEARCH IN SHEEP AND GOAT FARMING

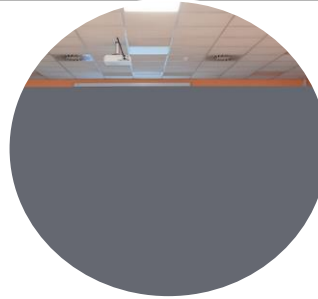
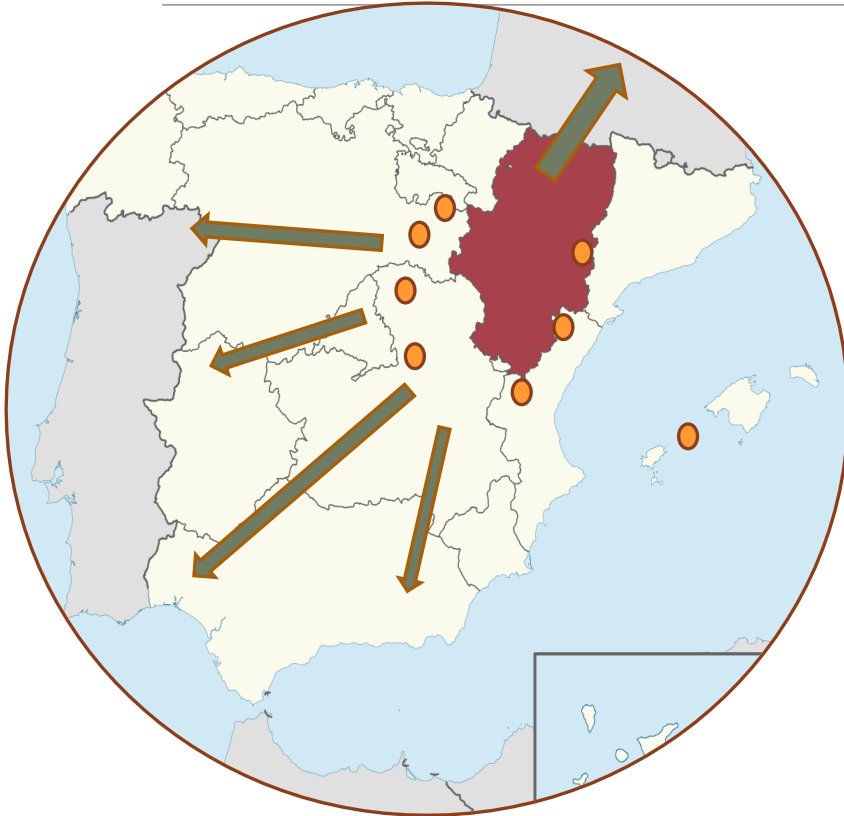


Meknes 21-22 of October 2019

Oviaragón

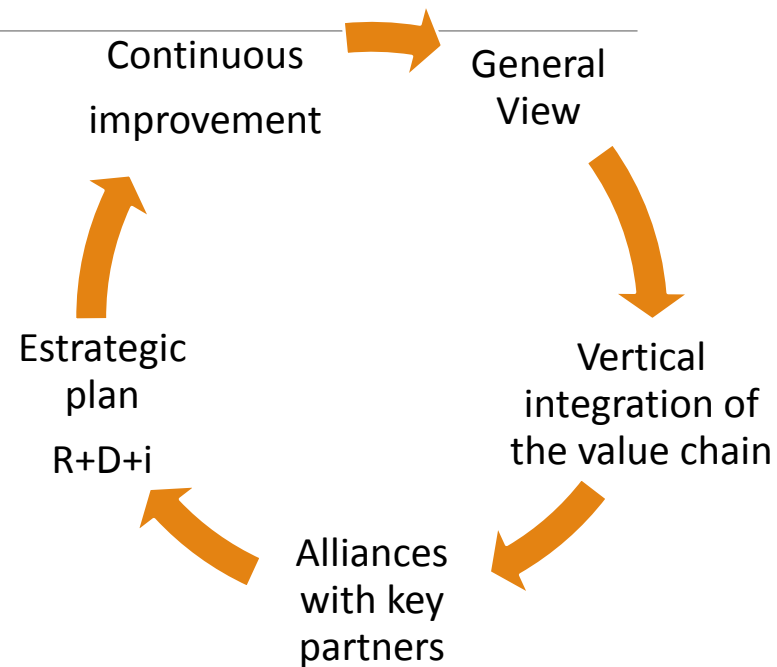
**800 pastores que dan vida
a 400 pueblos
y 1.000.000 de hectáreas**

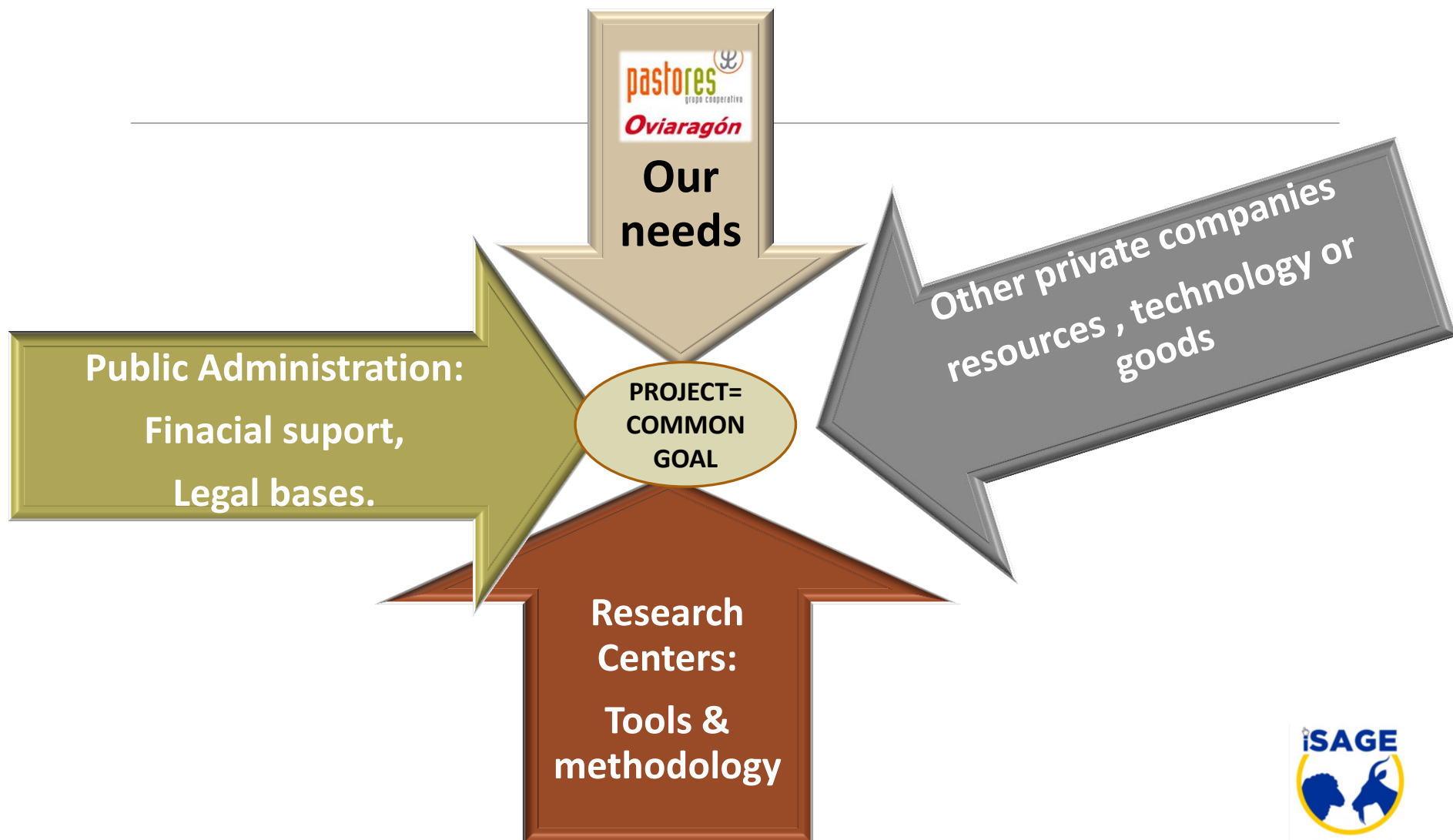




The main goal of the cooperative is to increase the profitability of farms and improve farmers quality of life, providing the best products in terms of quality and safety for the final consumer.

Innovation projects: areas and methodology





Current research projects

Marketing: NEW
CUTS, PRODUCTS
& RECIPES

NO ANTIBIOTICS &
NEW FEED FOR
LAMBS

SHEEP FEED
CROPS

NEW GENETICS VARIANTS/
MALES/
EARLIEST GESTATIONAL AGE

MILK SHEEP
PRODUCTION
& CHEESE

COLOSTRUM

Interreg
poctefa:
PIRINNOVI:
2016-2019

H 2020
Isage:
2016-
2020



Rasa Aragonesa Breed

.... Rasa Aragonesa is a local meat sheep breed raised in extensive systems in Aragón

Phenotypic Prolificacy =
1,37 lamb/birth
(17th catálogo selección
Upra)

Heritability = 0,034
(Jurado et al.,2008)



Prolificacy improving is a Good way to increase the Gross Margin

Increase of 1% in:	Gross Margin Change for sheep	Gross Margin change for UTA
Nº births for sheeo and year= X_2	+ 3,0%	+ 3,0%
Prolificacy = X_3	+ 3,4%	+ 3,4%
% Lambs mortality= X_4	- 0,6%	- 0,8%
Average prize of the sold lamb= X_5	+ 3,6%	+ 4,3%
€ for feeding for sheep and year= X_6	- 2,6%	- 2,7%
Total laboral cos = X_7	- 1,2%	

Starts

In 1994 with the aim of increasing prolificacy

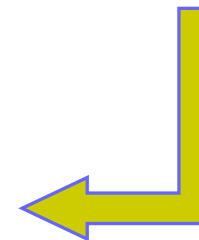


ALLIANCES

- **INIA:** Genetic values. Annual rams catalogue.
- **Regional Government:**
 - **Regional Animal Breeding Centre** – Rams selection nucleus. AI doses.
 - **CITA** – Ram production by MOET.




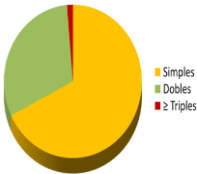

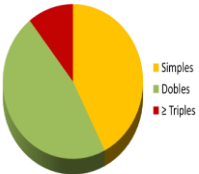
Methodology

- **BLUP**
- **AI to connect herds** to connect herds and spread the genetic improvement
- **Herds with data:** 348
- **Connected herds in 2017:** 150
- **Nº ewes:** 519.733
- **Nº births:** 2.270.934



Effects of ROA Allele



	 <p>No ROA</p>	 <p>ROA</p>
Sin tratamiento	 <p>1,34</p>  <p> ■ Simple ■ Double ■ Triple </p>	 <p>1,71</p>  <p> ■ Simple ■ Double ■ Triple </p>

♀ $X X^R$ +0,36 lambs/birth

♀ $X^R X^R$ STERILITY

♂ $Y X^R$ MALE R®



Disseminate the allele across interested farms

AI



RAMS



250.000

200.000

150.000

100.000

50.000

0

206.907

15.208

161

256

Nº Animals

Nº flocks

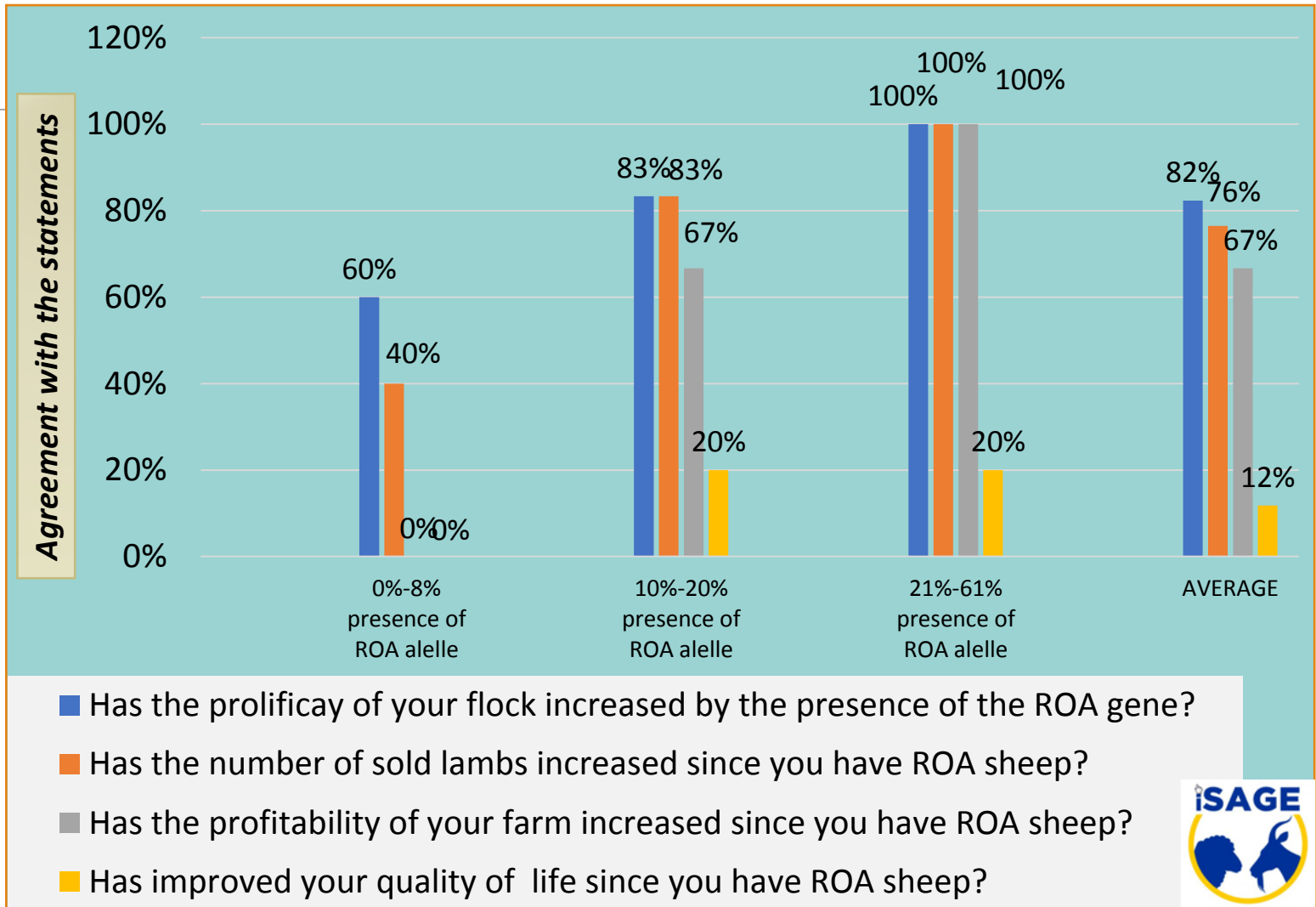
ROA
ANIMALS

TOTAL
ANIMALS



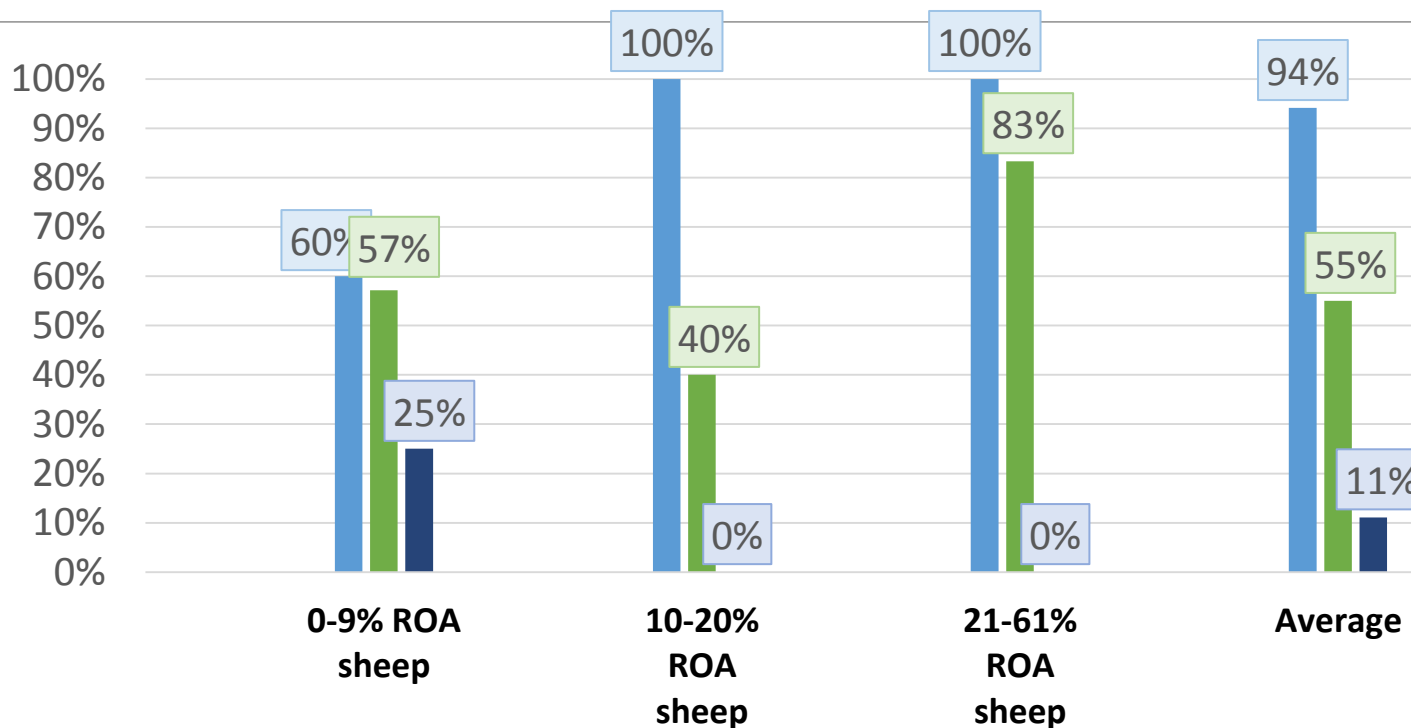
Perception of the effect of the ROA allele across farms with different proportions of ROA sheep

ISAGE
FARM
ANALYSIS



Perception of the effect of the ROA allele across farms with different proportions of ROA sheep

Agreement with the statements



- I'm happy to have ROA sheep
- I'm going to increase the number of ROA sheep
- There is more mammary disease since I have ROA sheep



A GOOD GENETIC MANAGEMENT IS CRITICAL
BECAUSE HOMOZYGOSITY RESULTS IN STERILITY.

KEY FACTORS ARE:

- 1-THE IDENTIFICATION OF ANIMALS CARRYING THE ALLELE
- 2-STRICT CONTROL OF PROGENY
- 3-RECORDING OF PRODUCTION DATA
- 4-WELL-ESTABLISHED HERD BOOK
- 5-GENETIC ANALYSIS OF ALL MALES

Prolificacy genes increase farm profitability without increasing flock size or intensifying production



The ROA allele has been successfully spread across the Rasa Aragonesa sheep population, increasing to those farmers willing and technically prepared to increase prolificacy.

Drivers and constraints for a successful implementation of the innovation



Joining the best
of each one



**The successful
implementation
of innovations
needs of the
active
participation of
every actors
joined in one
only goal**



Thanks for
your
attention !!