LIFE GREEN SHEEP : Discover 2 low carbon and sustainable sheep farms in Italy and Romania

4th European webinar

January, 20th 2026

LIFE19 CCM/FR/001245 - LIFE GREEN SHEEP

INSTITUT DE L'ELEVAGE idele

eagasc
AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

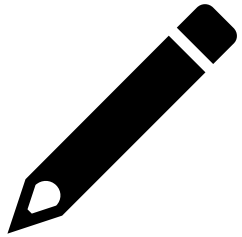
Agris

NEIKER
MEMBER OF
BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

IBNA
INSTITUTUL DE BIOLOGIE ȘI NUTRIȚIE ANIMALĂ

Life

Welcome to you !



Small tips for a confortable meeting on Teams

-  : to ensure that the meeting is audible and free of unwanted noise, please turn off your microphone
-  : to see the presenter, please also turn off your camera
-  : in case your internet speed is not enough to receive the sound, you may attend the webinar by phone.
  - The phone number and the code for the meeting are available in the chat. You will also find them in the email you have received with the link to connect.

Other informations…

-  : if you have any question during the presentation, you may write your message in the chat.
  - The chat is moderated and questions will be asked to the speakers at the end of their speech. In case there are a lot of questions, there will be a selection.
- 

: all the presentations of the webinar will be soon available on the LIFE Green Sheep website, as well as the recording of the webinar.
  - An email will be sent later to inform you of the release.
-  : a short survey will be launched at the end of the webinar. Please, spend 2 minutes to give your feedback!

Programme of the webinar

- Update of the LIFE Green Sheep project – Q&A session
- Presentation of a Italian dairy sheep farm sustainability and carbon action plan – Q&A session
- Presentation of a Romania dairy sheep farm sustainability and carbon action plan – Q&A session

Update of the LIFE Green Sheep project

Sindy Throude – Institut de l'Elevage (France) – Project manager

sindy.throude@idele.fr

Key figures of the project

LIFE GREEN SHEEP IS:

5 years
European project, from October 2020 to ~~September 2025~~ December 2026

€ 4,6 M
budget

1 355
demonstrative farms involved

40 partners from **5** European countries

Reduce by **12 %** GHG emissions while making sure farms are sustainable

282
innovative farms involved in the implementation of action levers

Objectives of the project

Reduce by 12% the carbon footprint of milk and meat produced in sheep farms

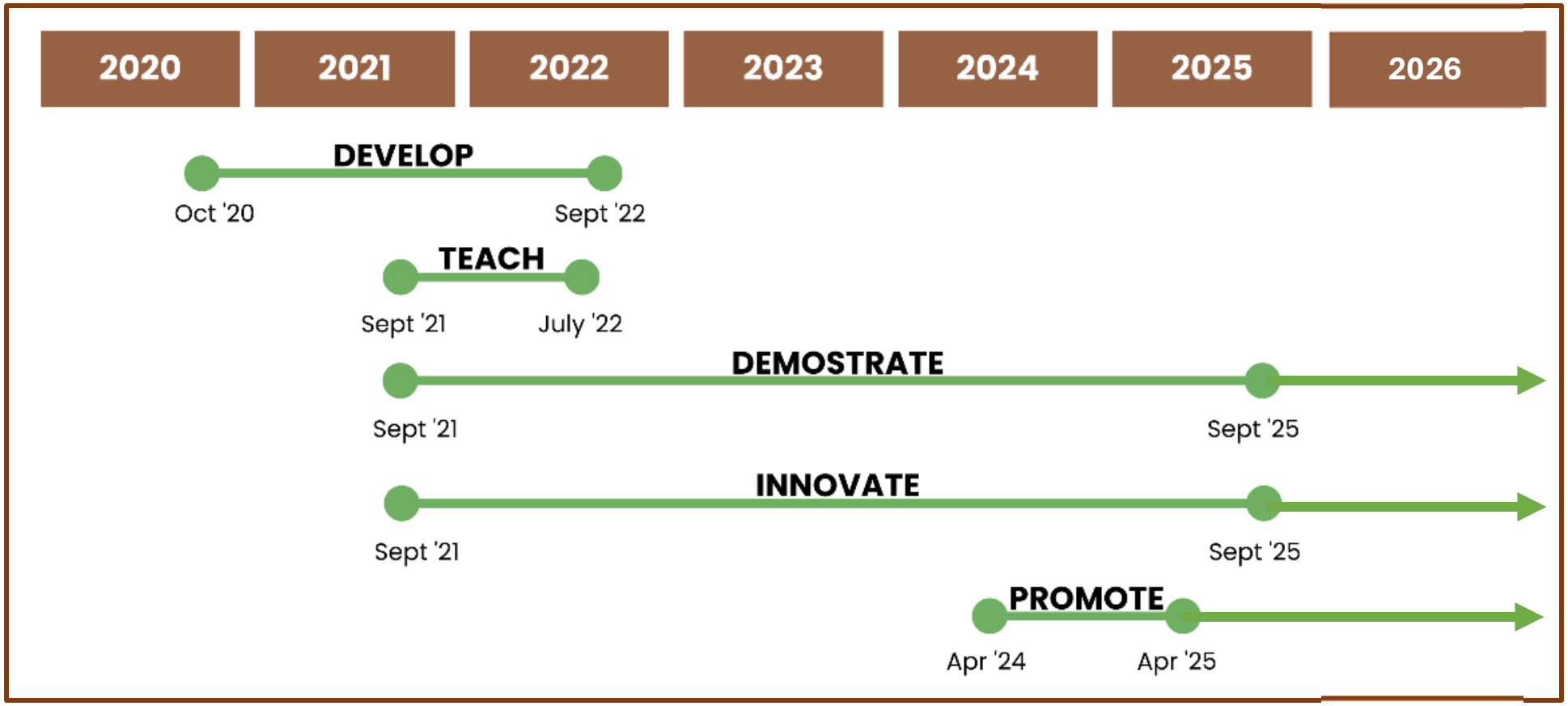
Launch a national and European dynamic progress initiative to reduce greenhouse gas emissions while ensuring sustainability of sheep farms

Create an national and European observatory of environmental and sustainable performances of sheep production systems

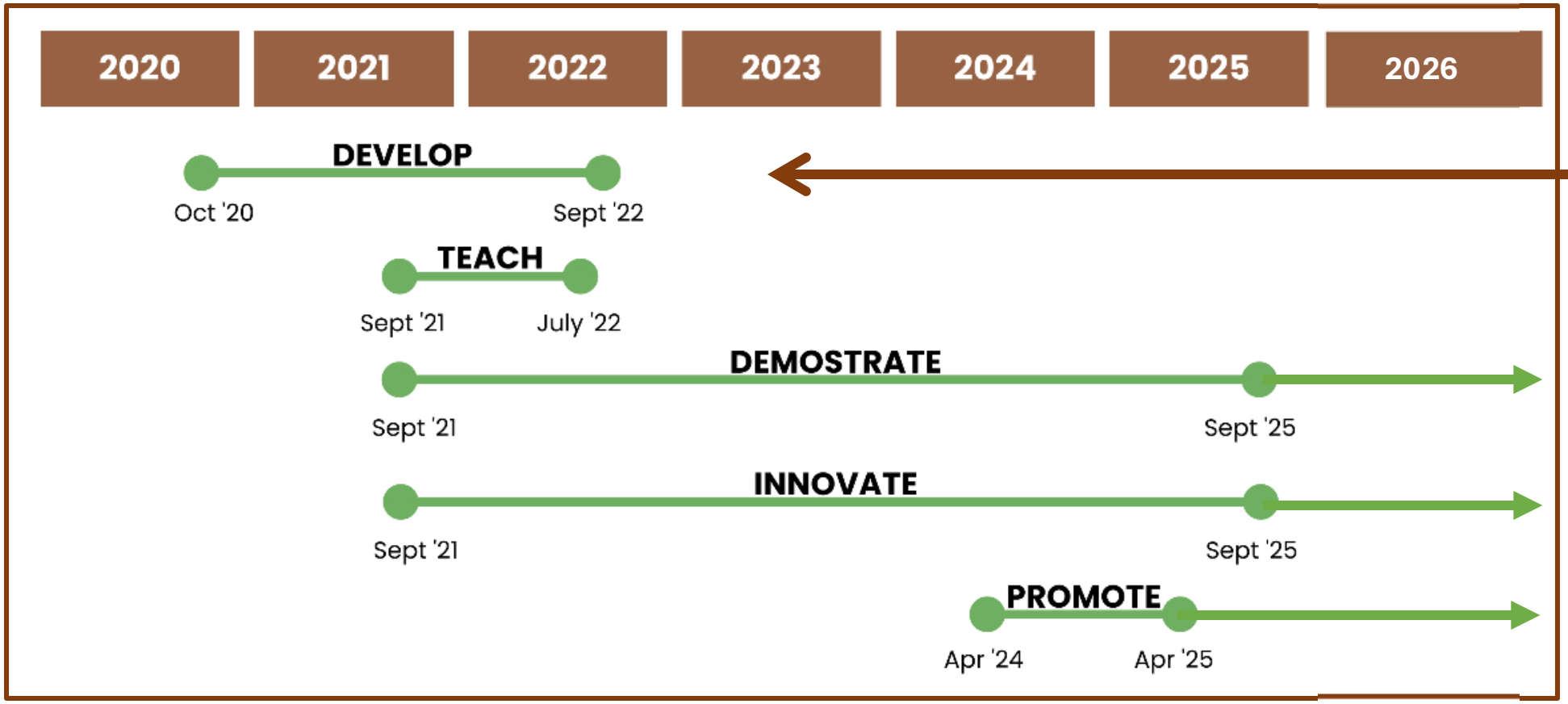
Promote innovative practices associated with GHG emissions mitigation to ensure the economic, environmental and social sustainability of farms

Train current and future generations

How can we meet these objectives ? 5 main actions !



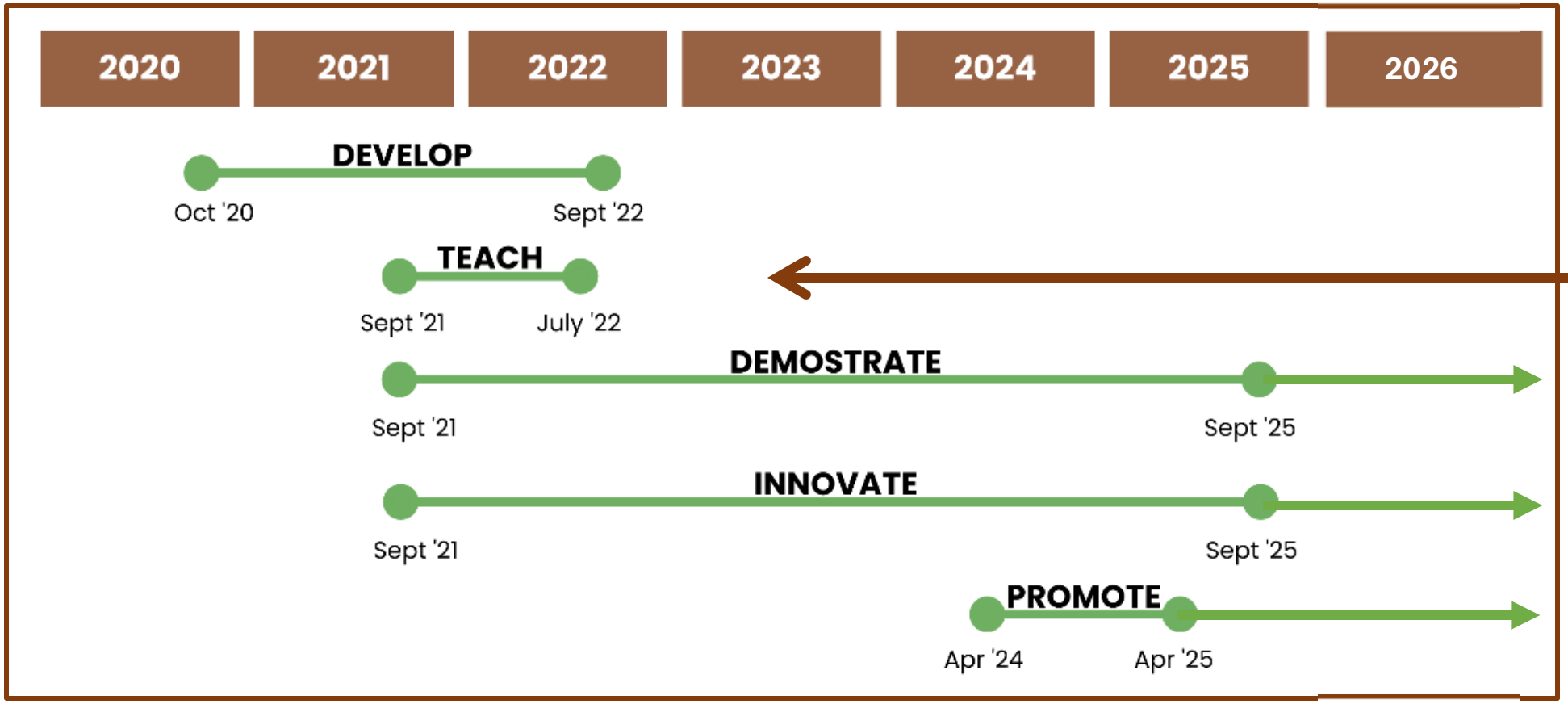
How can we meet these objectives ? 5 main actions !



Action 1 : DEVELOP

Review, benchmark and harmonize the tools for assessing GHG emissions and sustainability indicators at the European scale

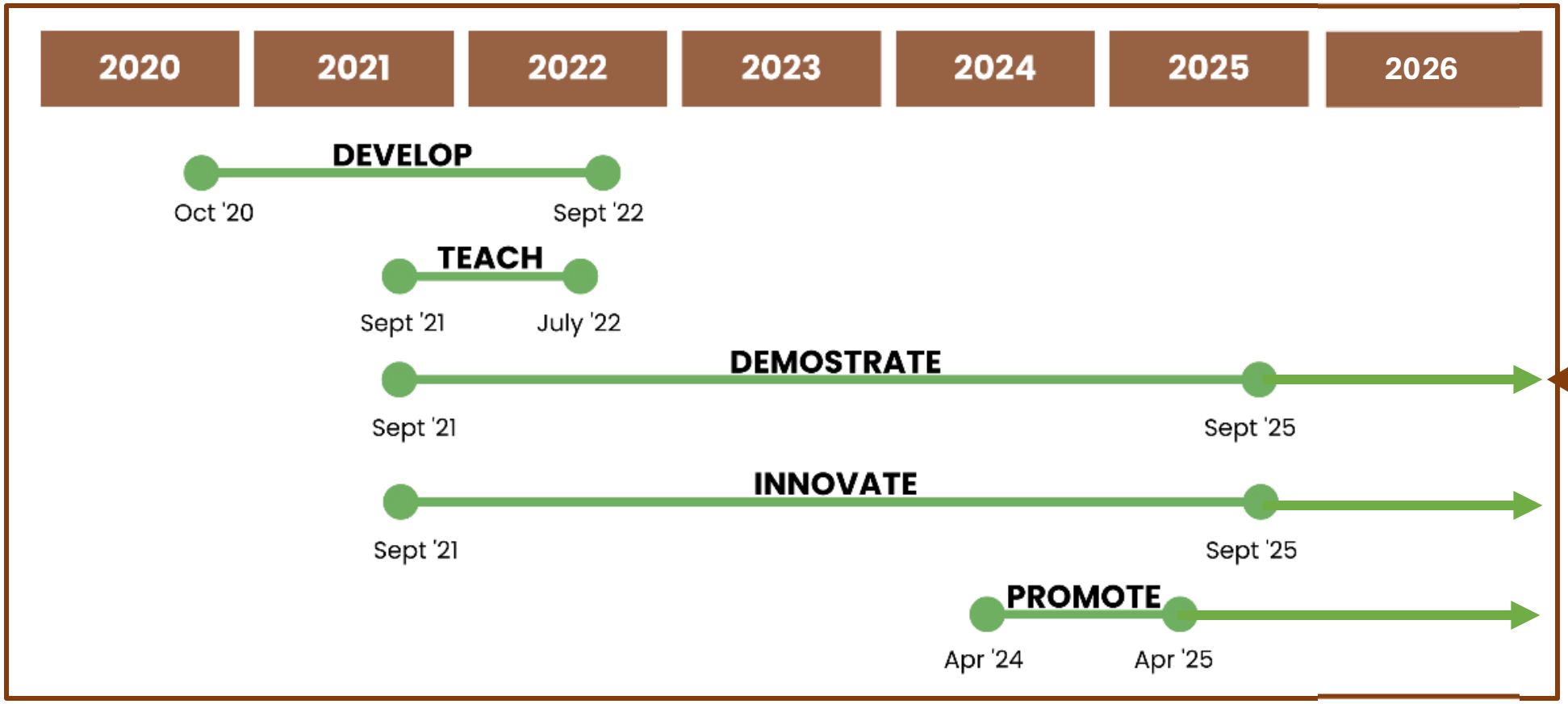
How can we meet these objectives ? 5 main actions !



Action 2 : TEACH

Raise awareness and train advisors and technicians on the tools: background, methodologies, analysis of the results and construction of action plans

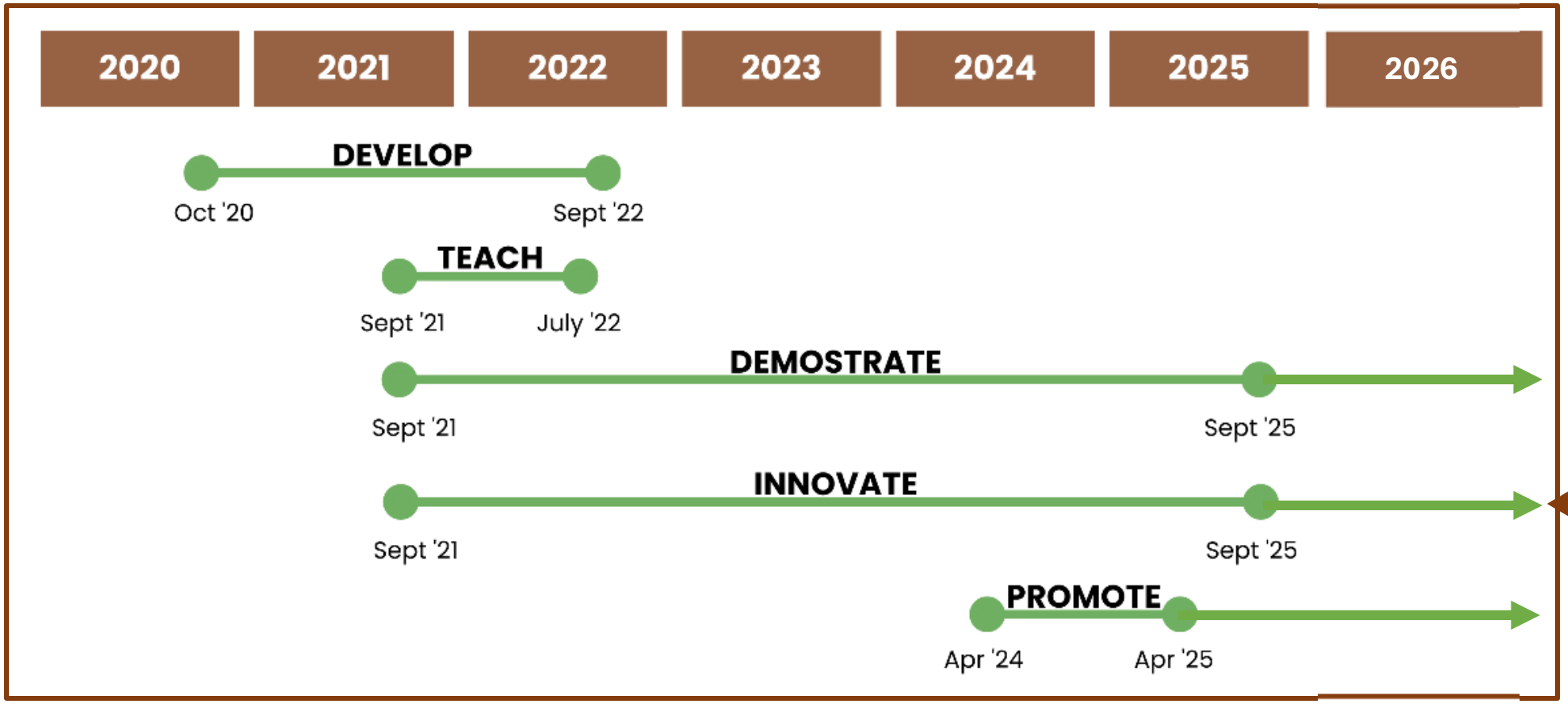
How can we meet these objectives ? 5 main actions !



Action 3 : DEMONSTRATE

Creation of an EU observatory of environmental and sustainability performance

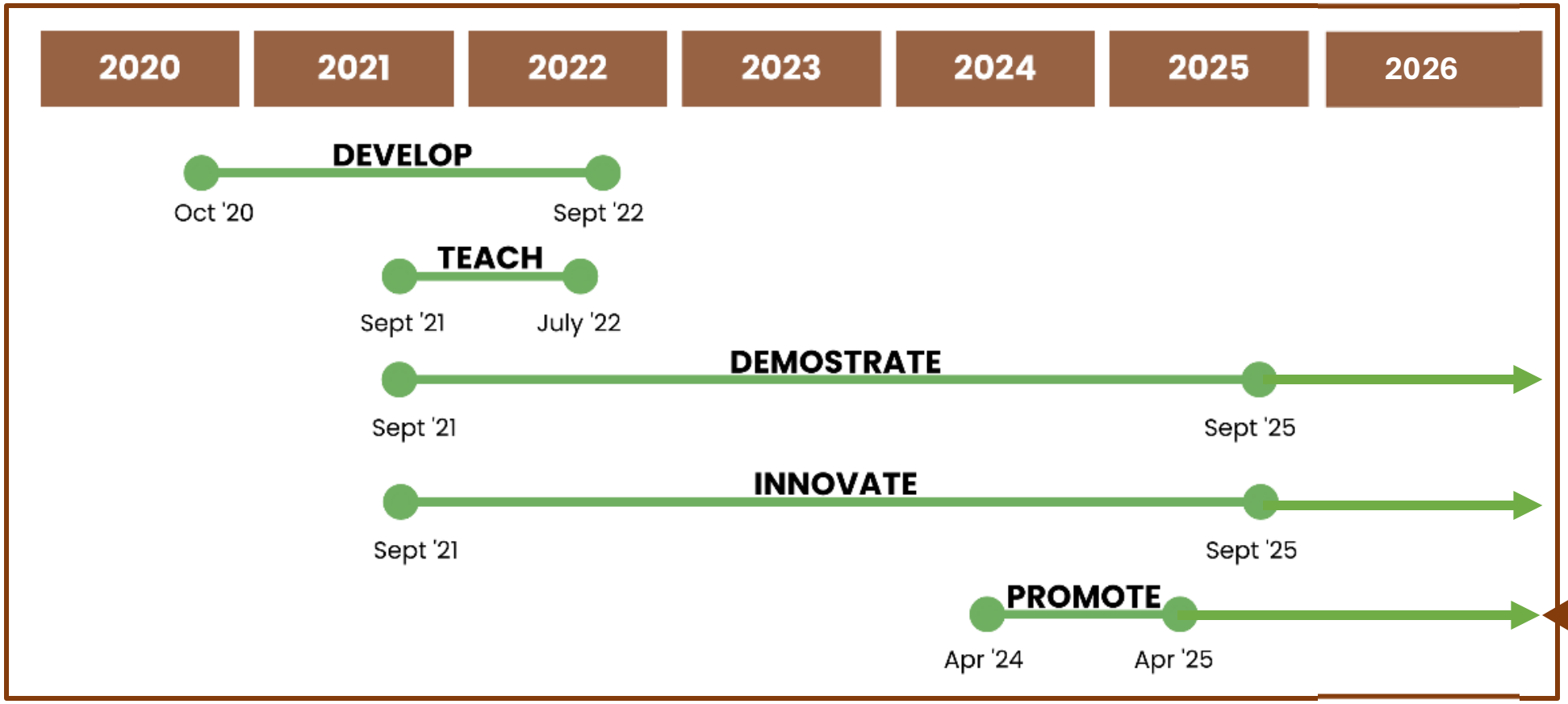
How can we meet these objectives ? 5 main actions !



Action 4 : INNOVATE

Development and promotion of low-carbon farms by demonstrating the feasibility of action mitigation practices in real conditions

How can we meet these objectives ? 5 main actions !

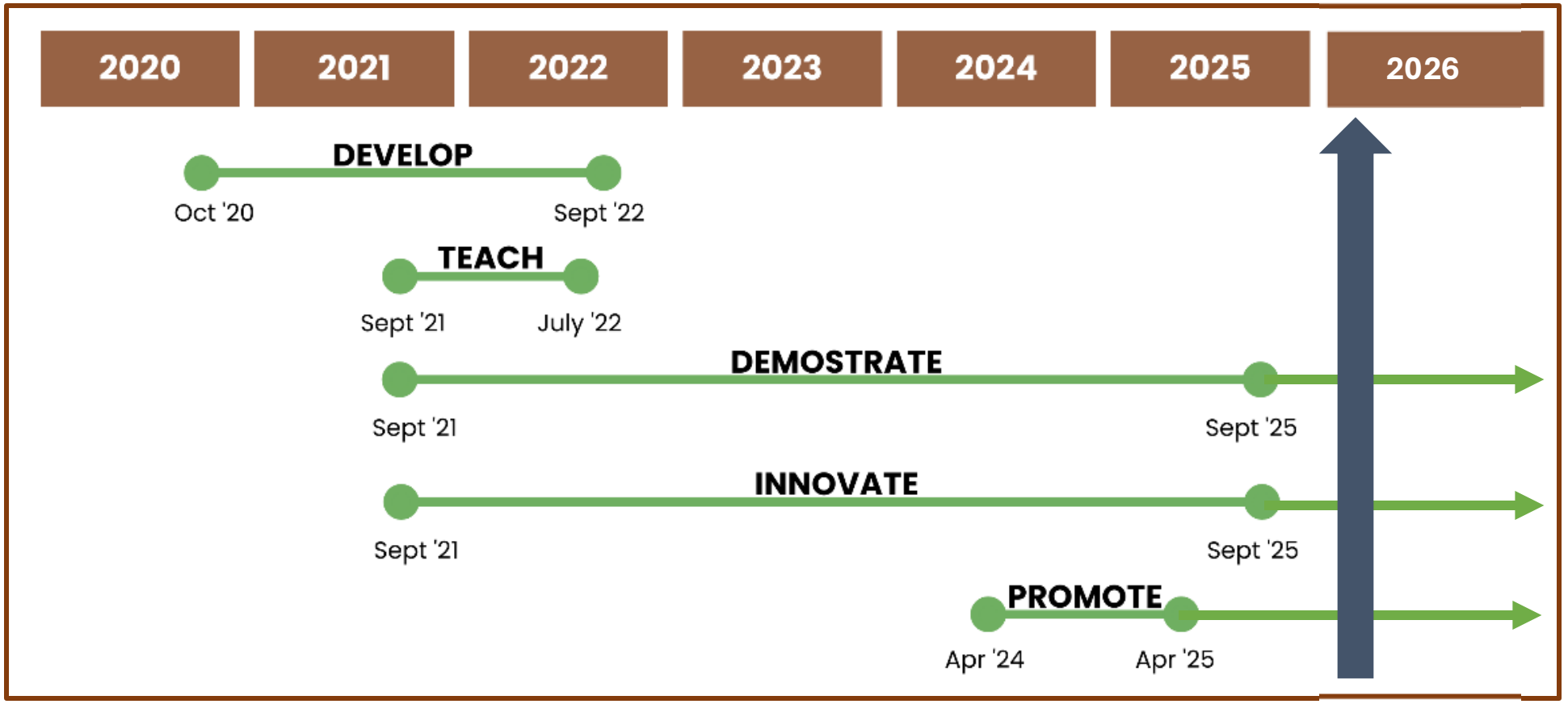


Action 5 : PROMOTE

-Synthesis of all the knowledge

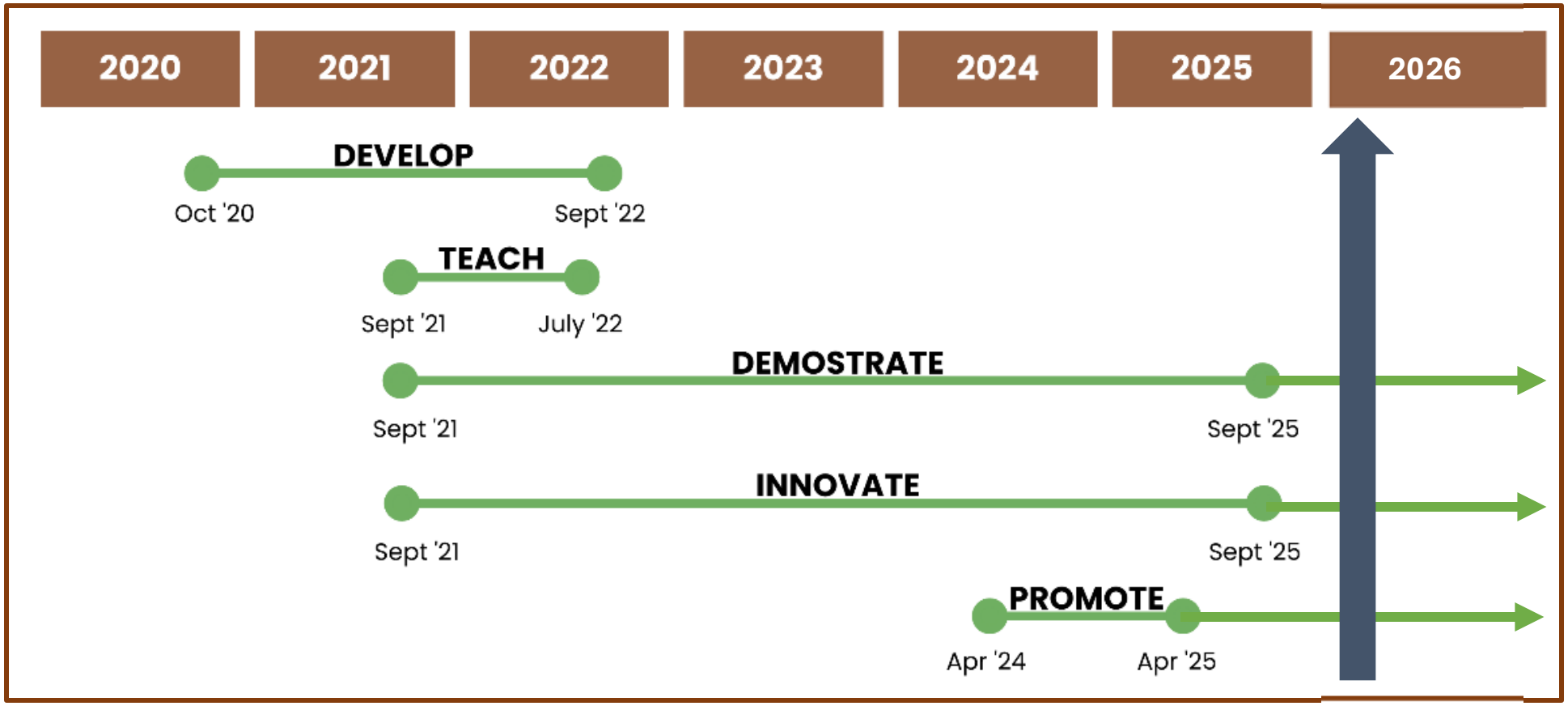
-Definition of the national strategy and partnerships to be built for the deployment of a low carbon plan

How can we meet these objectives ?
5 main actions !



Where are we ?

How can we meet these objectives ? 5 main actions !



Actions 1 DEVELOP & 2 TEACH : Done

Actions 3 & 4 DEMONSTRATE & INNOVATE : 2nd wave of assessments in progress

Action 5 PROMOTE : In progress

Focus on action 4 : INNOVATE

LIFE GREEN SHEEP IS:

5 years
European project, from October 2020 to September 2025

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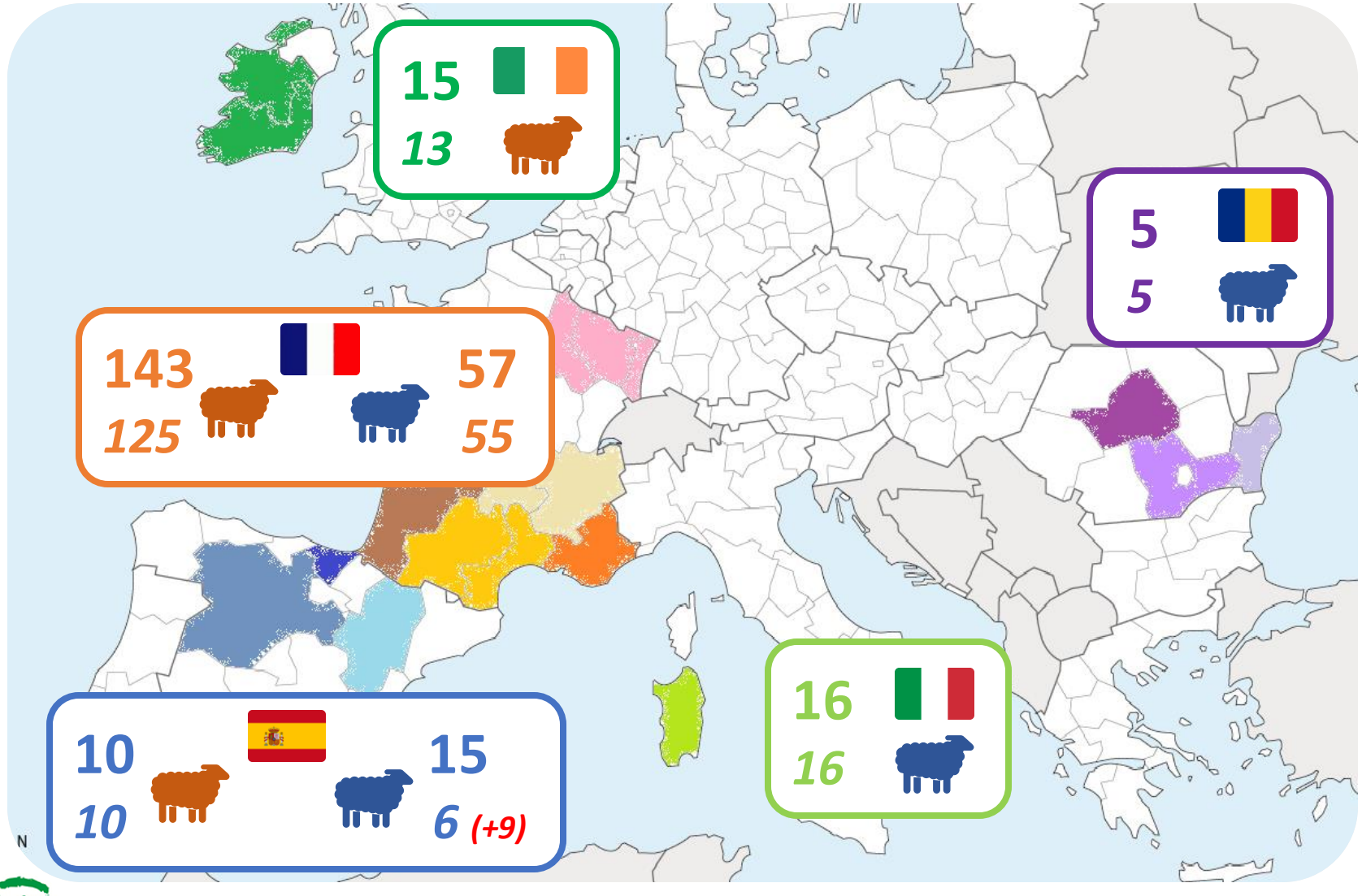
1 355
demonstrative farms involved

Testing mitigation actions to reduce GHG emissions from sheep farming in Europe

282
innovative farms involved in the implementation of action levers

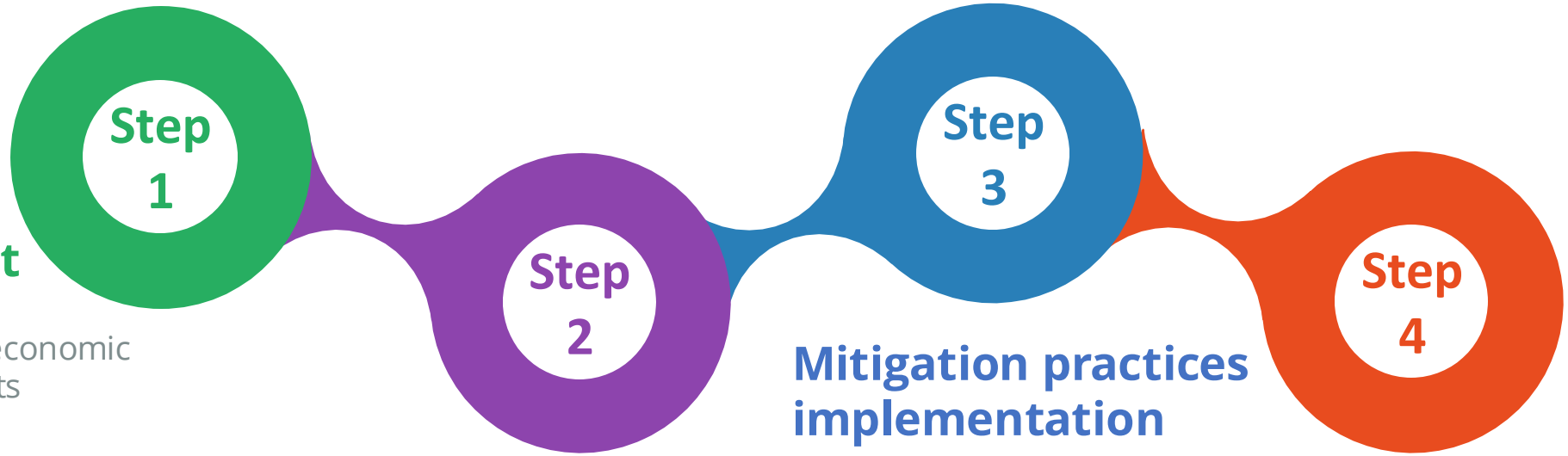
Monitoring of 261 innovative sheep farms *(168 + 93)*



For some farms, there were no carbon action plans, only the initial assessment.

The analysis of mitigation practices is therefore based on **230** *(148+82)* action plans *(identified in italics)*

Testing and demonstrating the possibility of taking action to reduce GHG emissions



Initial assessment

Assessment of environmental, economic and social aspects

Carbon action plan

Identification of mitigation practices and preparation of the carbon actions plan with mitigation practices & estimation of theorical gains

Mitigation practices implementation

Farm's monitoring

Final assessment

Calculation of CO_2 avoided

WORK IN PROGRESS

Results being updated !

QUALITATIVE ANALYSIS

QUANTITATIVE ANALYSIS

A variety of mitigation practices cited

48% **Flock**

Improving health management
Improving female reproductive performance
Optimizing milk/meat production
Improving genetics
Reducing the number of unproductive animals
Managing herd size

15% **Feeding**

Improving feed self-sufficiency
Optimizing feed consumption
Improving feed efficiency

10% **Energy and manure**

Reducing energy consumption
Optimizing manure spreading
Optimizing manure management in buildings and in storage
Producing electricity

27% **Surface**

Optimizing N,P,K fertilisation
Better crop rotation management
Improving soil fertility

C Storage

Changing in land use
Maintaining / increasing the presence of agroceological elements
Changing in practices

majority theme for France

theme not mentioned by Spain

WORK IN PROGRESS Results being updated !

A variety of mitigation practices cited

25% **Flock**

Optimizing milk/meat production

Improving health management

Improving females reproductive performance

Reducing the number of unproductive animals

Managing herd size

43%

Feeding

Improving feed self-sufficiency

Improving feed efficiency

Optimizing feed consumption

15%

Energy and manure

Reducing energy consumption

Optimizing manure management in buildings and in storage

Producing electricity

Optimizing manure spreading

17% **Surface**

Better crop rotation management

Optimizing N,P,K fertilisation

C Storage

Changing in practices

Changing in land use

Maintaining / increasing the presence of agroceological elements

majority theme for France

theme not mentioned by Spain

WORK IN PROGRESS

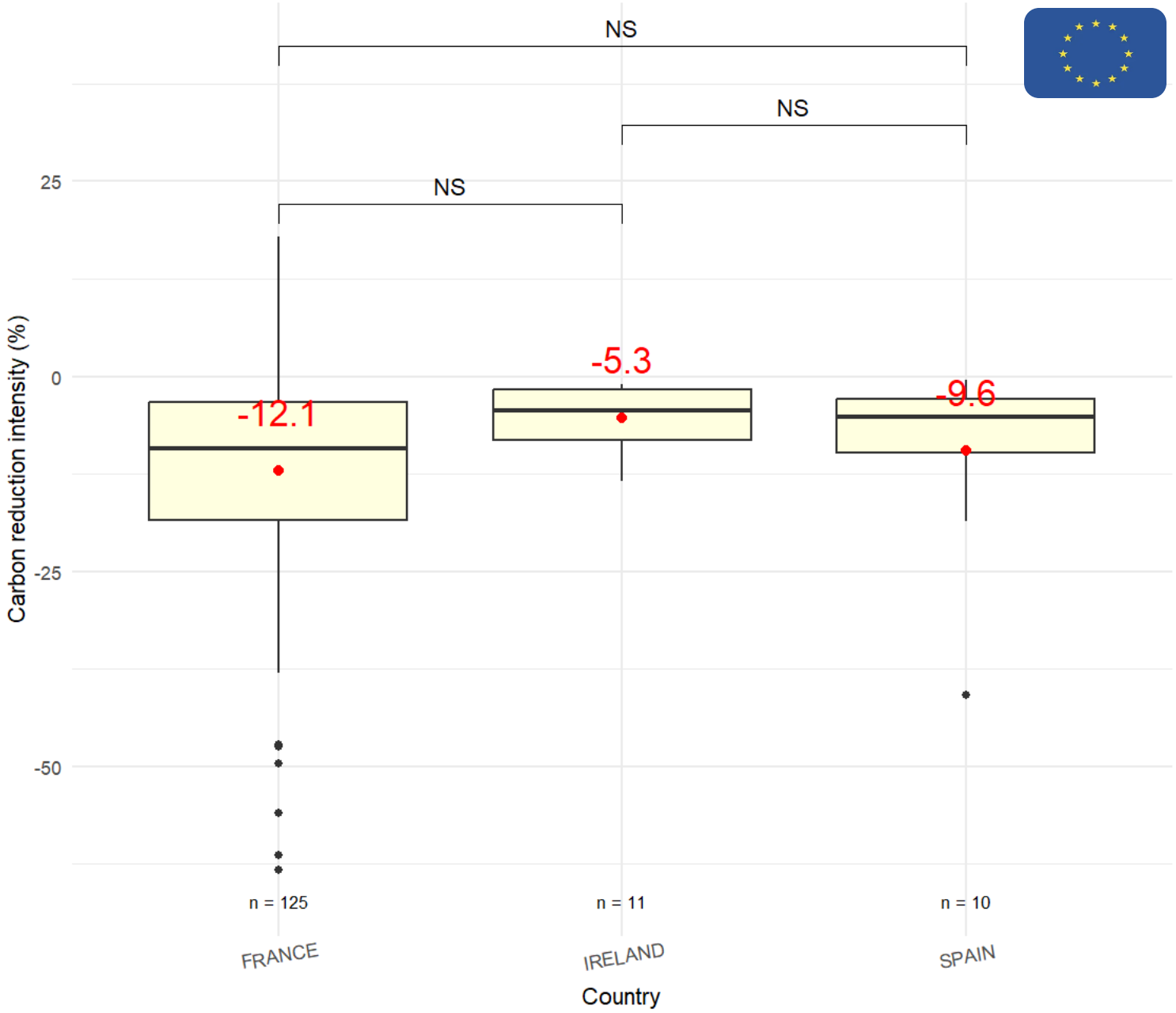
Results being updated !

Assessment of reduction intensity

- Average carbon reduction intensity at the project scale =
  - 11,4 +/- 13,7%

Reminder
Objective = -12%

WORK IN PROGRESS
Results being updated !



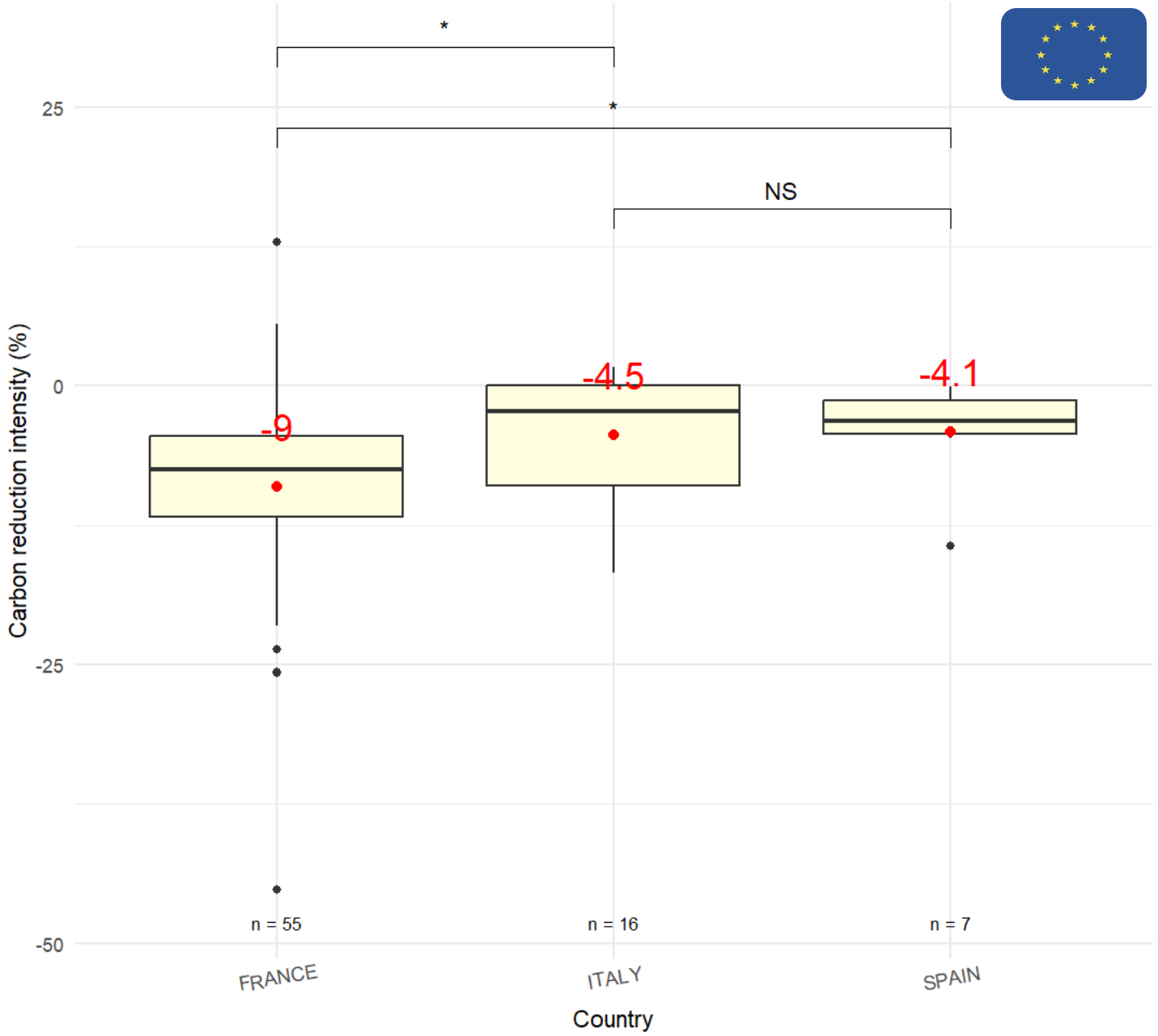
Assessment of reduction intensity

- Average carbon reduction intensity at the project scale =
  - 7,6 +/- 8,0%

Reminder
Objective = -12%

WORK IN PROGRESS Results being updated !

ROMANIA : Data not available
SPAIN : Some farms missing



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- X : https://mobile.twitter.com/LIFEGREENSHEEP1
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- Subscribe to our newsletter : here !

Do you have any questions ?

Sindy Throude – Institut de l'Elevage (France)

Presentation of an Italian dairy sheep farm sustainability and carbon action plan

Giovanni Murru – Farmer

Maria Gabriella Serra – Agris

Marco Acciaro – Agris

Overview of Sardinian Dairy Sheep Sector

- About 11,000 active dairy sheep farms
- 2.368 million breeding ewes
- 1.5 million dairy ewes
- 303.265.261 liters of milk
- 960.727 lambs solded (75% Italy + 25% Spain)
- 55.000 lambs for self-consumption
- 310.000 lambs raised
- 210 days of average lactation
- 275 liters/years of average annual production

Sources: Laore (2024), Contas 2026)

Presentation of Murru farm

- Livestock production combined with crop production

  UAA = 148 hectares

  128 hectares cultivated (cereal grains+hay+wrapped hay)

  30 hectares pastoral area

- 450 sheep total
- 330 adult ewes
- 120 replacement ewes
- 16 rams
  - 25% of replacement rate
  - 80% of fertility rate
- 330 liters/ewe/year

GHG and sequestration indicators - Baseline

MILK PRODUCT RESULTS

Net carbon footprint

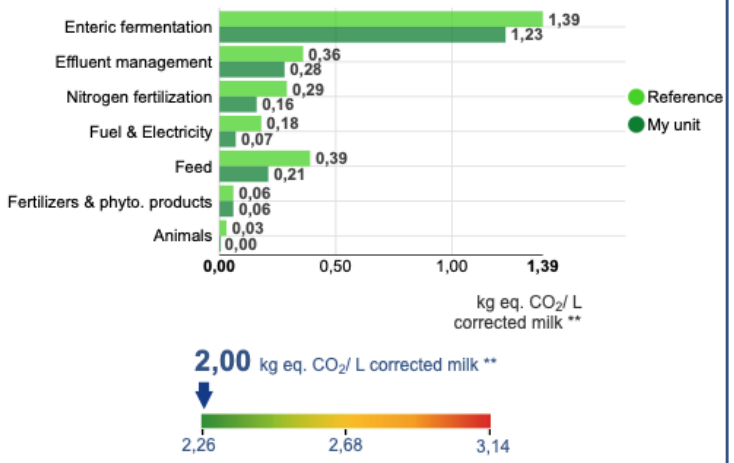
Net carbon footprint = Gross GHG emissions * - Carbon storage

86% of my GHG * emissions are offset by carbon storage

0,28 kg eq. CO_2/ L corrected milk **

1,13 — 2,00 — 2,52

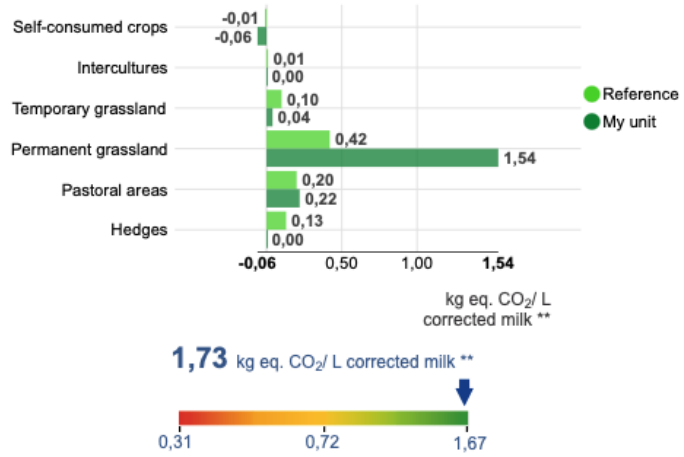
GHG emissions* (CH_4, N_2O and CO_2)



2,00 kg eq. CO_2/ L corrected milk **

2,26 — 2,68 — 3,14

Carbon storage



1,73 kg eq. CO_2/ L corrected milk **

0,31 — 0,72 — 1,67

Comparison to an equivalent system

➢ **3,25 – 6,40** kg CO2eq/kg FPCM average range for Sardinian farms

SheeptoShip LIFE, 2020

Practices proposed to enhance sustainability

1. Early reform of low productive ewes (February vs May)

   - 30 ewes with low milk production (1 liter/day) reformed in early winter

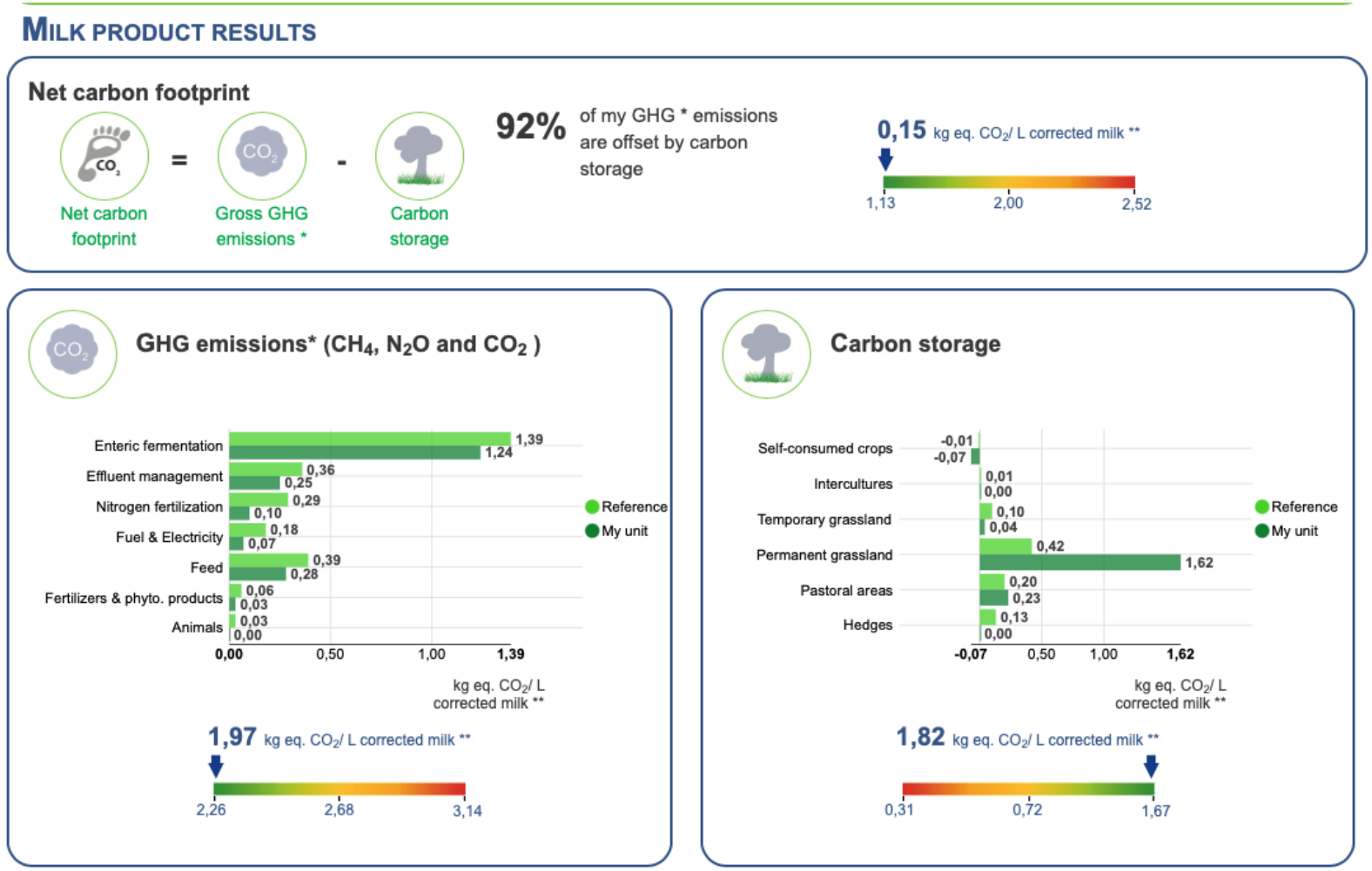
2. Self-production of energy

   - 2 photovoltaic systems

3. Improving the quality of forage fiber (wrapped hay)

   - Availability of good quality fiber and more protein in home made forages

GHG and sequestration indicators – simulation results



Comparison to an equivalent system

** GHG = Greenhouse Gas - ** L of corrected milk sold/processed to 130 g of UDM*

- **Energy autonomy**
- **Feed self sufficiency 60%**
- **Farm management improvement**

social and economic sustainability aspects have gained more than the environmental ones, which already showed excellent results

Do you have any questions ?

Presentation of a Romanian sheep farm specifics & audits & action plan

Catalin DRAGOMIR – IBNA
Mihai GRAS – IBNA
Catalin Mircea ROTAR – IBNA
Popa GHEORGHE – Ovis Cap Negru SRL

Romanian sheep sector - specifics

 # sheep livestock: 11-12 mil. heads,
of which 9.5 mil. ewes

 # main races in RO: Țurcană, Țigaie, Merinos, Karakul, Carabașă

most of the livestock = **in small exploitations** (owned by physical persons)
only **a small part** of the animals = in large exploitations that can be **fully qualified as farms**
(also depend on the **definition of a "farm"** / depend on the **definition of "small"**)

even **in some large exploitations**, the conditions = "**extensive approach**"
(e.g. no modern milking parlors,
no feeding equipment,
low concentrates use, etc.)

In general, in RO there is **no problem with the feed resources – large surfaces of pastures** (mountain, hilly, plain);

also **widely available roughages**, also **widely available cereals**.

The **animals** are generally **concentrated in mountain & hilly areas**.

Some exceptions:
e.g. in Dobrogea, **Teleorman**… many animals in **flat areas too** (socio-cultural trait).

In general, the **ratio surface: animals still very good**

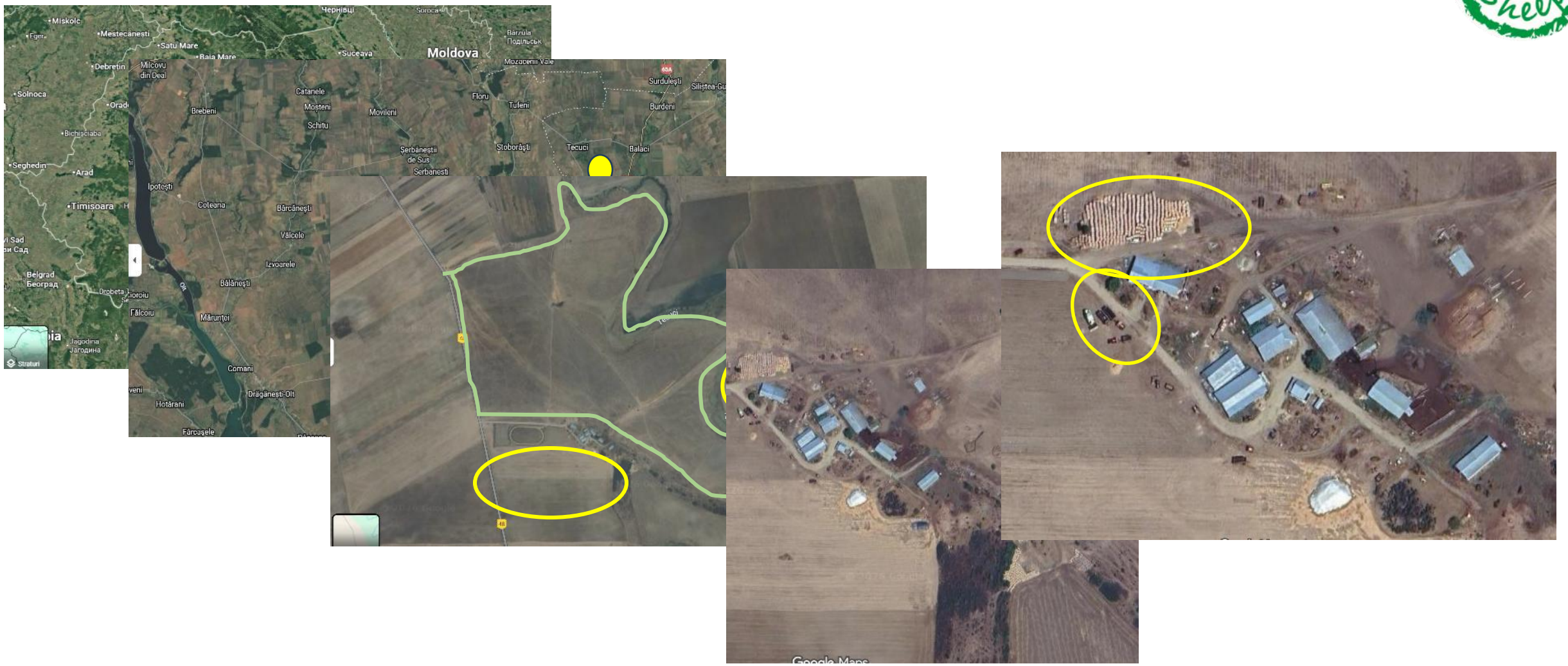
Many farmers are **not interested in using mineral-vitamin premixes** (also correlated with the **low level of production levels**). On the other hand, the **meat production** (lambs) is **more associated** with the **use of compound feeds** (some specialised farms).

Most of the sheep breeds = are **used for milk**; there are also **some mixt races** (Karakul, Carabasa).
Wool is not valorised (generally disposed). Many lambs are slaughtered in the spring (Easter habit).

There are **many professional associations** of sheep breeders – lots of **local associations,** several at national level.

There are also **several local, rather small, RD centres / units** (some 5-6, spread across the country)

About the farm – Ovis Cap Negru SRL



Few characteristics:

in lowlands, surrounded by crop fields, yet benefiting of pasture
(Tecuci river on the right, some wetlands – good influence during drought/heat waves)

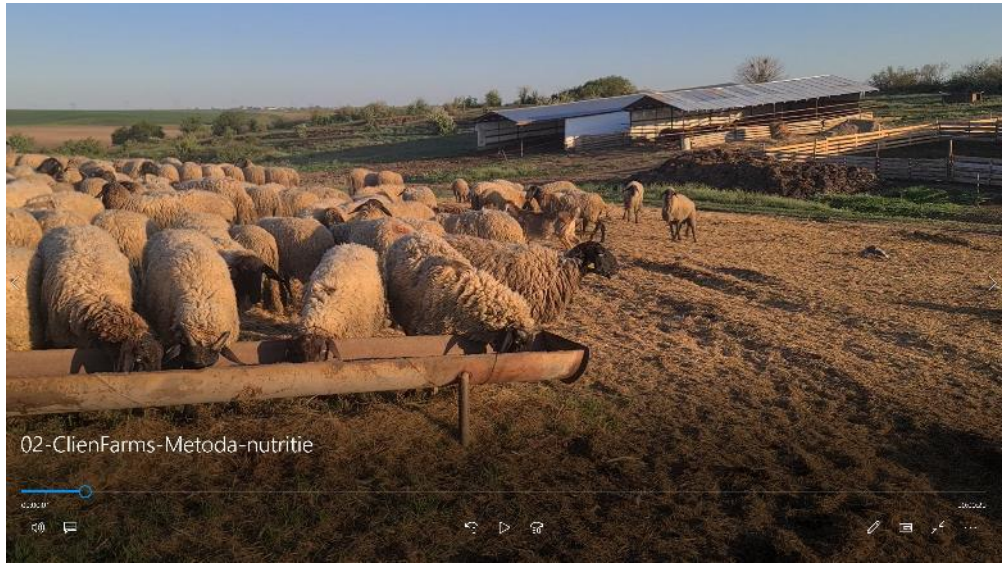
although innovative, it's a low-input farm (as most of the Romanian farms),
- no electric grid nearby,
-no modern milking parlour / manual milking (labour-intensive),
- manual feeding, etc.

benefits of the own crop cultures & related know-how

Cap Negru de Teleorma (Carabasa sheep) = mixt, large breed (milk & meat), quite productive (comparing to the national average.... Turcana), drought-resistant, etc.

registered in local breeding association, undergo official milk production monitoring


POPA-03-testimonial


02-ClienFarms-Metoda-nutritie

Farm presentation

Livestock units

400 Sheep

Carabasa

My cash crops unit:

8,3 Ha

Farm in

Ruminant livestock farming
Unconstrained zone

My areas

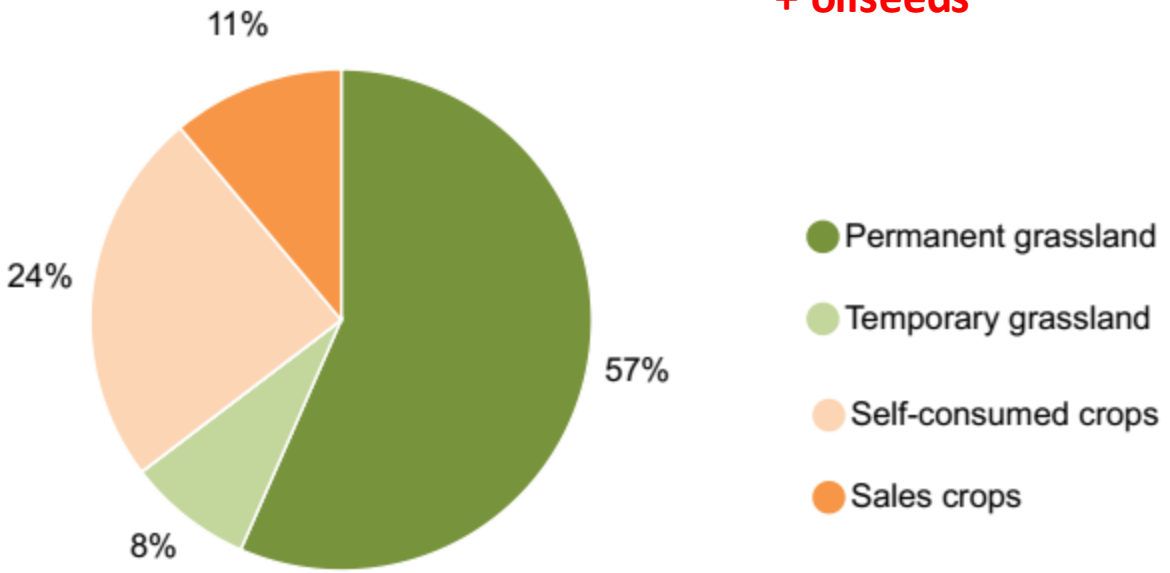
total surface

73,0 ha of ~~UAA~~ *

of which 47,0 ha of MFA ** (grazing / hay) **pasture + mixed use**

and 0,0 ha of pastoral areas

+ alfalfa
+ cereals (corn, wheat)
+ oilseeds



THE ACTION PLAN (chosen measures)

background for the action plan:

innovative farm (within Romanian landscape);

the farmer = **open to novelties**;

the farmer = **agronomist** by education

= sheep breeder by tradition

previous collaborations => **trust already built**;

however, the **drawbacks of a low-input** production system

- farm records = minimal / law-compliant only, etc.)
- reduced investment power;
- cannot afford certain services (e.g. nutritionists, feed analyses, etc.)

also the **lack of DIRECT rewarding mechanisms** (for climate mitigation actions) **influenced the choice of the mitigation measures**

!! dual-purpose: climate-friendly
economic benefits (efficiency, etc.)

Making better use of pasture
- appropriate pasture maintenance
- awareness of the nutritive values

... usually a barrier...

Incorporate legumes in grassland
(being agronomist)
- quick understanding of afvantages
- the know-how to do it;

Reduce number of unproductive animals
- although obvious, not always a farmer's choice (esp. when enough land, less competition...)

Finishing lambs on grass with concentrates
- more inclined to use concentrates than average farmers

Making better use of pasture
- appropriate pasture maintenance
- awareness of the nutritive values

... usually a barrier...

Incorporate legumes in grassland
(being agronomist)
- quick understanding of advantages
- the know-how to do it;

overall positive effects - on **yields** (roughly estimated)
- on **nutritive value** (some analyses)

Reduce number of unproductive animals
- although obvious, not always a farmer's choice (esp. when enough land, less competition...)

largest effect on Carbon footprint
(also on farm' **economics**,
but also on farm' management – **work load** !!!)

~~**Finishing lambs on grass with concentrates**~~
~~- more inclined to use concentrates than average farmers~~

more **lambs** sold **on Easter** (however, upon market success)
many of the remaining **lambs sold** one month **earlier** than usual

*+ changes of the **flock structure** (selection of **new ewes**...)*
+ mongevity of high-yielding ewes

Agronomic and technical references

Part of the area in grassland	64 %
MFA productivity (with catch crops)	3 T DM / ha
Spread mineral nitrogen	34 kg N / ha
Fuel consumption excluding livestock barn	16 l / ha
Electricity consumption excluding livestock barn	0 kWh / ha
Average number of passages of tillage implements	- nb / ha
Part of the area without ploughing	59 %
Part of the area with irrigation	0 %
Part of fodder consumed distributed	55 %
Average season working time	3 h / ha / year

RO: 3 – 15 t green biomass / ha

- T1~>T0
- T0=T1
- T1<T0

  (-1 L / ha)

Farm' overview T1 vs T0

- T0

MY HERD

Sheep	Milk production	Gross dairy production	FC/PC corrected milk production*	Concentrates	Apparent stocking rate
400	119	34 000	35 308	240	8,5
heads	litres gross/ewe	litres gross	corrected litres	kg gross/ewe	ewe/ha MFAs

lamb' effect not excluded...

- T1

MY HERD

Sheep	Milk production	Gross dairy production	FC/PC corrected milk production*	Concentrates	Apparent stocking rate
400	140	40 000	41 538	240	8,5
heads	litres gross/ewe	litres gross	corrected litres	kg gross/ewe	ewe/ha MFAs

Environmental impact

283 > 262: obvious (milk yield / same resources)

1115 = 1115: not enough tools / know-how to differentiate the pasture quality

• T0

I FEED*
262 *ppl./year*
4 *ppl./ha UAA*
Source : PerfAlim.com

*on the basis of the total protein content of agricultural production

I EMIT IN THE FORM OF GHGs*
3 566
kg eq. CO2/ha UAA

*GHG = Greenhouse gas

I STORE*
1 115 *kg eq. CO2/ha UAA*
AND **0** *T eq. CO_2* **

*thanks to grassland, hedges and outdoor runs
**thanks to pastoral areas

I MAINTAIN
3,4 *eq. ha of biodiversity/ha UAA*
AND **0,0** *eq. ha of biodiversity* *

*thanks to pastoral areas

I PRODUCE
0
MJ/ha UAA*

*1 MJ = 0.022 litres of fuel oil

• T1

I FEED*
283 *ppl./year*
4 *ppl./ha UAA*
Source : PerfAlim.com

*on the basis of the total protein content of agricultural production

I EMIT IN THE FORM OF GHGs*
3 707
kg eq. CO2/ha UAA

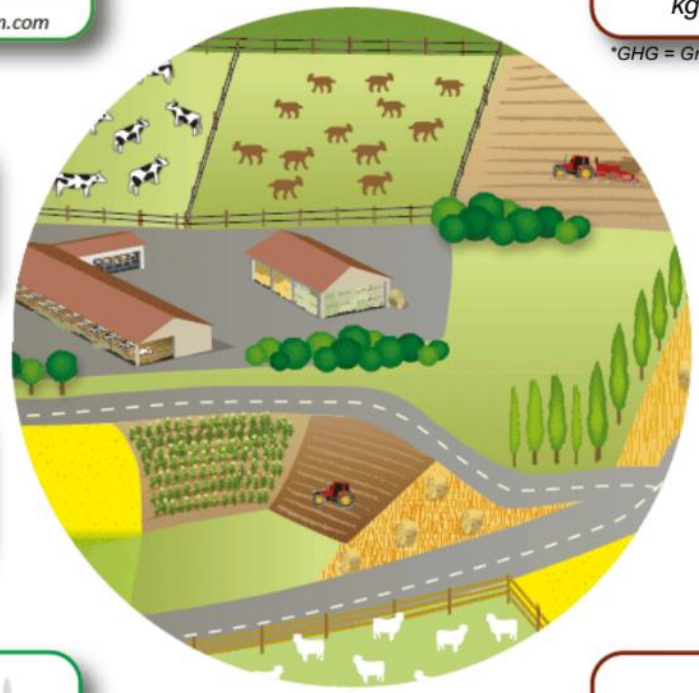
*GHG = Greenhouse gas

I STORE*
1 115 *kg eq. CO2/ha UAA*
AND **0** *T eq. CO_2* **

*thanks to grassland, hedges and outdoor runs
**thanks to pastoral areas

I MAINTAIN
3,4 *eq. ha of biodiversity/ha UAA*
AND **0,0** *eq. ha of biodiversity* *

*thanks to pastoral areas



I POTENTIALLY LOSE
26 *kg N*/ha UAA*
to air

*N = Nitrogen

I POTENTIALLY LOSE
0 *kg N*/ha UAA*
to the water (leaching)

*N = Nitrogen

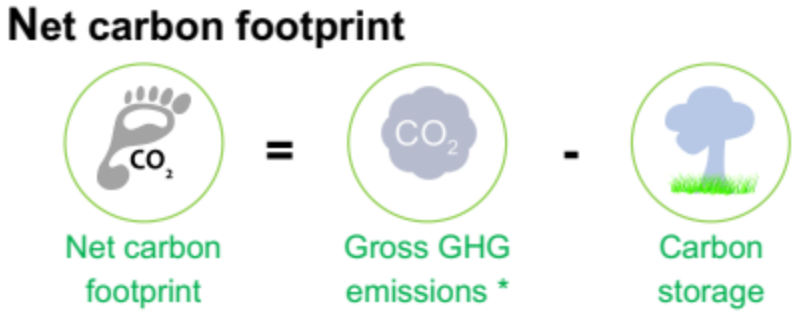
I PRODUCE
0
MJ/ha UAA*

*1 MJ = 0.022 litres of fuel oil

73 *ha UAA*

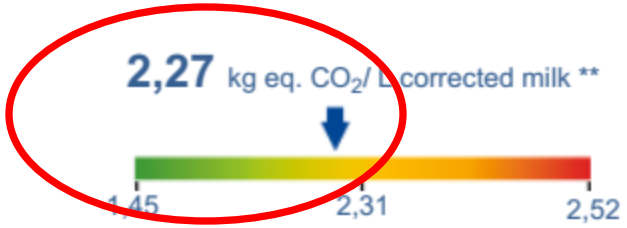
I CONSUME
5 404
MJ/ha UAA*

*1 MJ = 0.022 litres of fuel oil



- T0

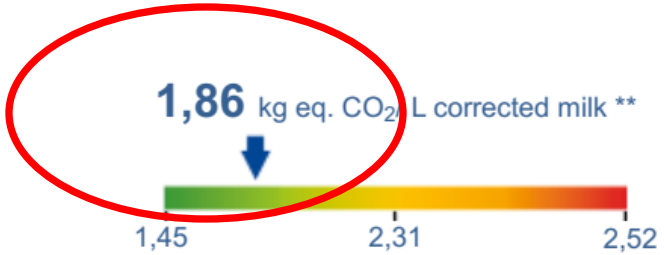
33% of my GHG * emissions are offset by carbon storage



- 17.2 % (T1 vs T0)

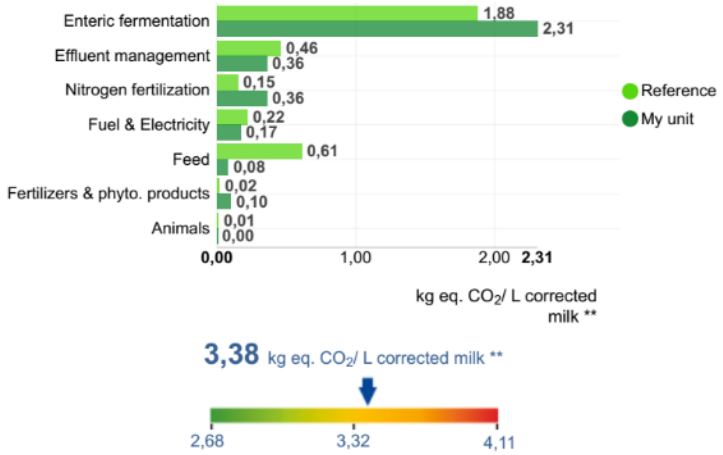
- T1

32% of my GHG * emissions are offset by carbon storage

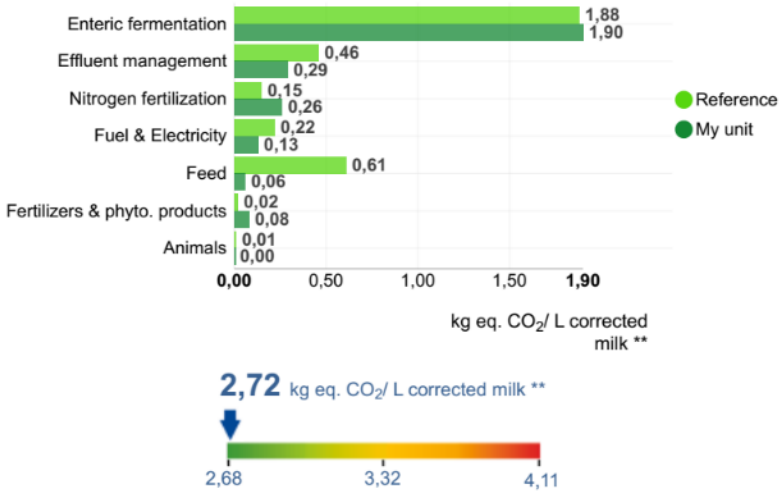


GHG emissions* (CH_4, N_2O and CO_2)

- T0

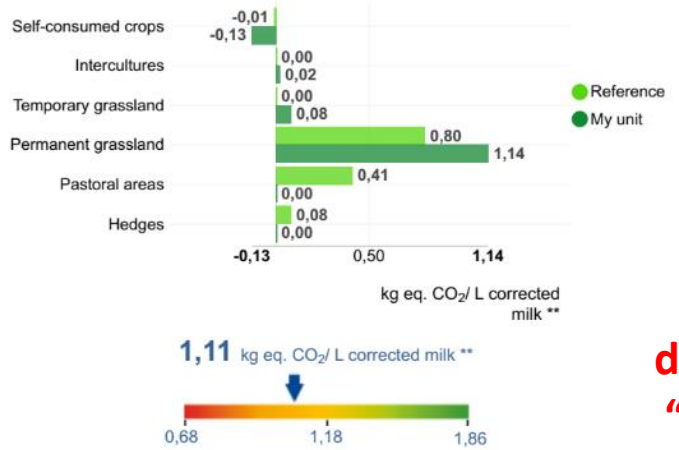


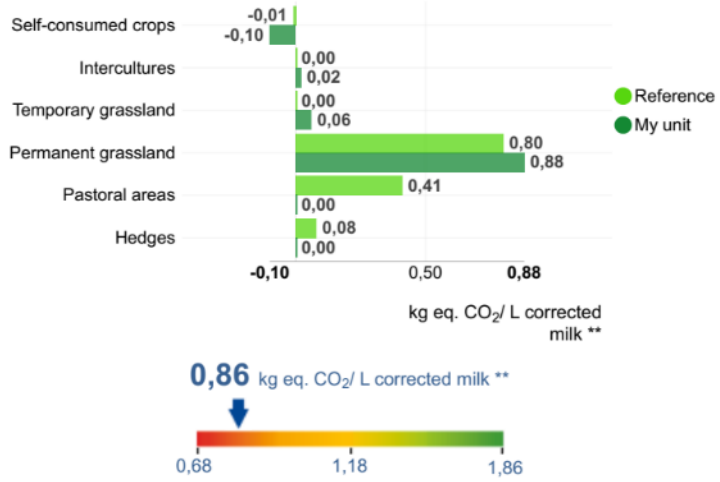
- T1



enteric fermentation (relative value): 2.31 T0 => 1.588 T1

Carbon storage

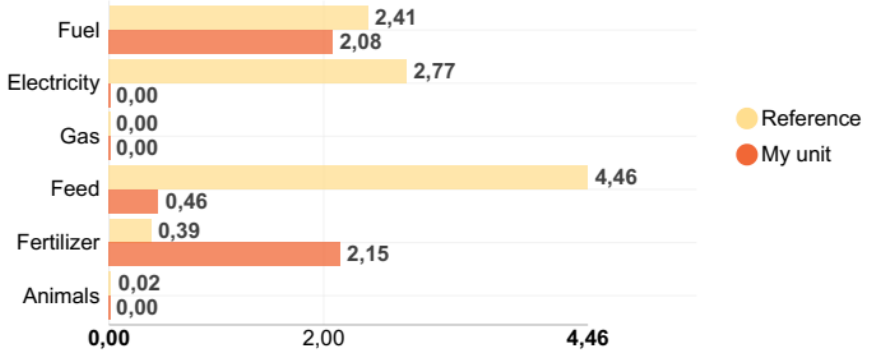




decrease... "dilution" effect

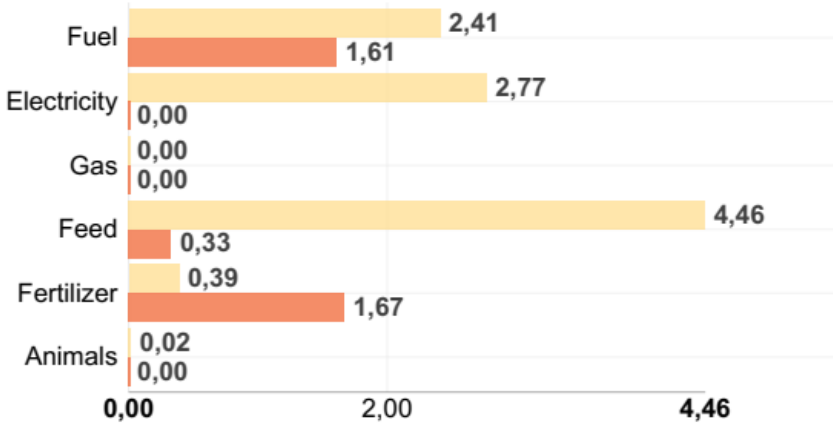
Energy consumption of my unit

- T0



** L of corrected milk sold 40-33 g / kg

- T1

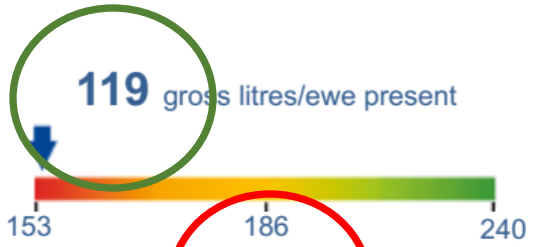


THE PERFORMANCE OF MY DAIRY SHEEP UNIT

- T0

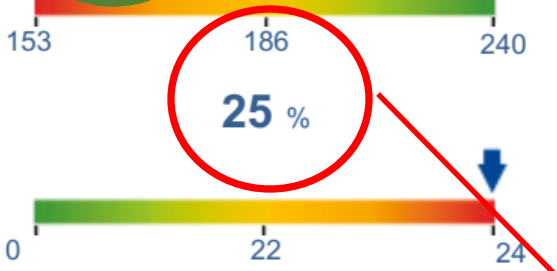
Herd management

- Milk production

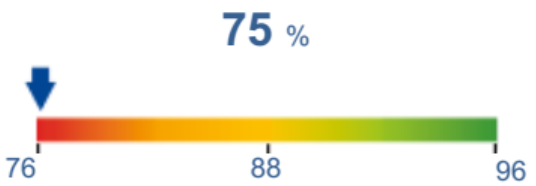


- Number of lambs produced / ewe present

- Replacement rate



- Farrowing rate

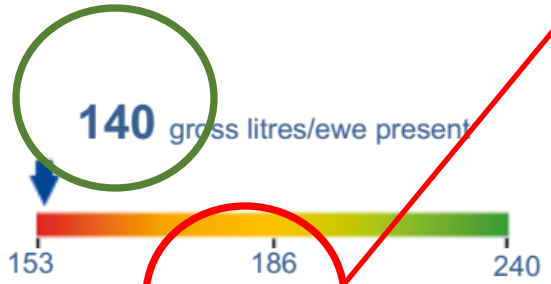


longevity of high yield' ewes was increased

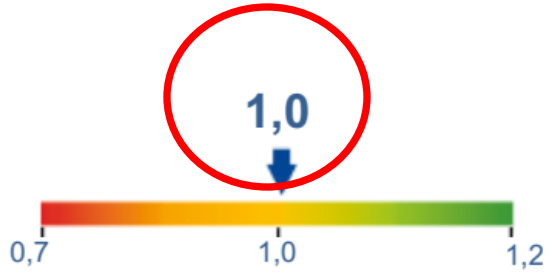
- T1

Herd management

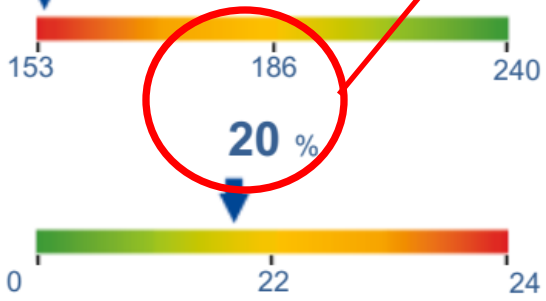
- Milk production



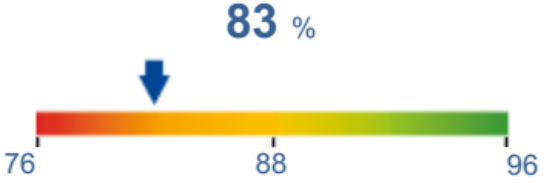
- Number of lambs produced / ewe present



- Replacement rate



- Farrowing rate



THE PERFORMANCE OF MY DAIRY SHEEP UNIT

- T0

Feeding the herd

- Concentrates use - ewe: **191** kg gross/ewe present (74 — 188 — 236)
- Concentrates use - ewe: **1 609** g/l (547 — 963 — 1 203)
- Concentrates for ewe lambs: **32** kg gross/ ewe lambs (21 — 95 — 152)
- Forage Autonomy: **89** % (61 — 84 — 92)
- Concentrate autonomy: **97** % (4 — 0 — 42)

- T1

Feeding the herd

- Concentrates use - ewe: **181** kg gross/ewe present (74 — 188 — 236)
- Concentrates use - ewe: **1 290** g/l (547 — 963 — 1 203)
- Concentrates for ewe lambs: **31** kg gross/ ewe lambs (21 — 95 — 152)
- Forage Autonomy: **89** % (61 — 84 — 92)
- Concentrate autonomy: **97** % (4 — 0 — 42)

“dilution effect” (yield);
! lamb’ effect / strategy…
also good for feeds’ autonomy

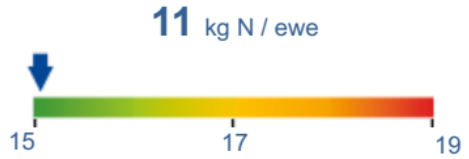
THE PERFORMANCE OF MY DAIRY SHEEP UNIT

- T0

Effluent management

- Grazing duration - Ewes

- Excreted nitrogen



- Grazing duration - Ewe lambs

although not envisaged among measures...

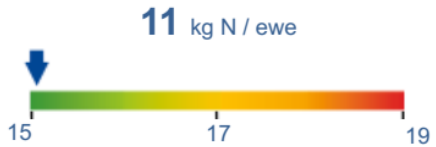
"grazing" period increased (even in cold periods, at least for few hours (nearby pasture / fields...). (also welfare improved has been noticed)

- T1

Effluent management

- Grazing duration - Ewes

- Excreted nitrogen



- Grazing duration - Ewe lambs

Do you have any questions ?

Popa GHEORGHE – Farmer

IBNA's team: catalin.dragomir@ibna.ro

Conclusion

Thank you for listening and please stay connected a few minutes for a survey ☺

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