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SOA15 Task 2 Terrestrial

Challenges for the implementation of biosecurity practices in extensive and alternative production systems with outdoor access in Spain

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First Conference on Animal Biosecurity, 06/06/2025



**World
Animal
Biosecurity
Association**



BETTER

Background

A large, spreading tree with dense green foliage stands on the left side of the frame. The ground is a mix of dirt and grass. In the background, a line of smaller trees stretches across the horizon under a clear blue sky. In the foreground, two pigs are grazing in a field of green grass and yellow wildflowers.

Strengths of farms with outdoor access
(e.g. extensive, organic, etc.)

- ✓ **Behavioural needs** of animals
- ✓ Adapted breeds to ecosystem
- ✓ Local products/circular economy

Background

Weaknesses of farms with outdoor access (e.g. extensive, organic, etc.)

- ✓ Interaction with wildlife
- ✓ Low investment capacity
- ✓ **Challenging to implement biosecurity**



Objective

To determine the **main challenges** for the implementation biosecurity measures in farms where animals have access to **outdoor** premises or areas

Secondary objective: identification of solutions (observed) for these challenges




Methods

Definition of challenge?

Reason why the implementation of a given biosecurity measure is **not efficient**, may create a **problem or conflict** and/or is **not feasible** in a **given context**. Also, **lack** of specific or valid **measures** for a given pathway can be considered as a **challenge**.

Farmer does not implement or invest even it is possible

A given disease



Investment is not feasible

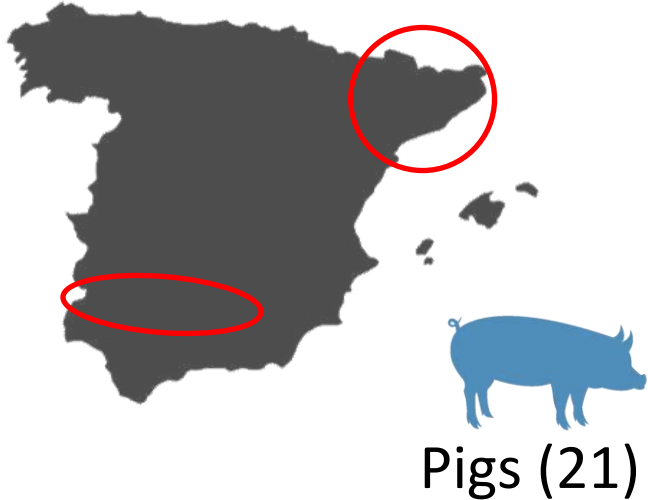
Geographical complexity

Incompatibility with law

The measure jeopardize the sustainability of the system

Methods

Study 2024



Cattle (14)

Extensive beef and dairy with access to pastures



Goats (21)

Dairy, access to pastures

Organic with outdoor runs



Extensive iberian

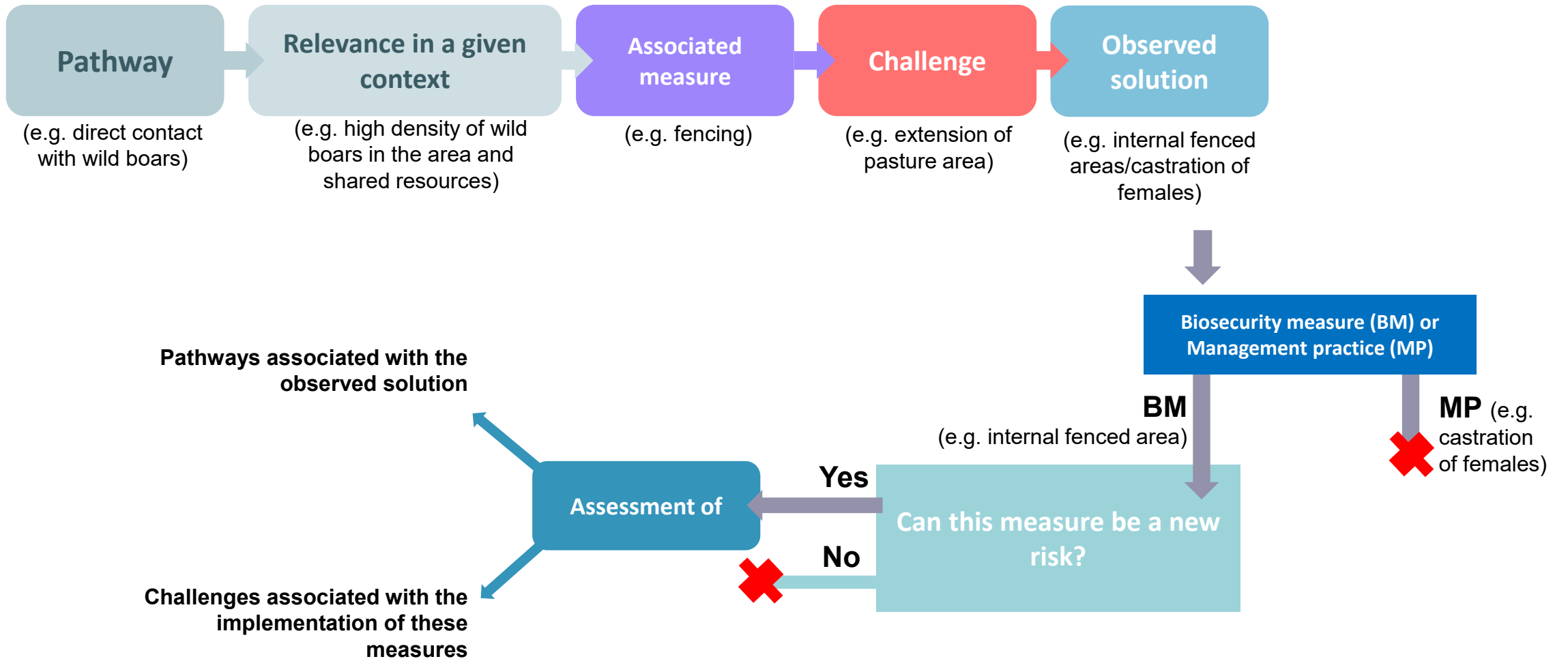


Biosecurity farm assessment

(Individual semi-structured interview with farmers/veterinarians)



Methods: Identification and classification of challenges



Results: Challenges

Overall **identified challenges** and solutions for pigs and ruminants (**only if observed** or identified in the visited farms)



Pigs	Non-domestic	Domestic
Challenges	12	16
Solutions	19	12

11 seen in pigs

- Crossing paths (small animals)
- Cross-fostering policies
- Different batches of production using the same lands
- Hunting (ASF/Aujeszky)
- ...

17 common challenges

- Fencing
- Feeder and water sources
- Confinement
- Sources of males
- Trucks
- ...



Ruminants	Non-domestic	Domestic
Challenges	17	20
Solutions	16	12

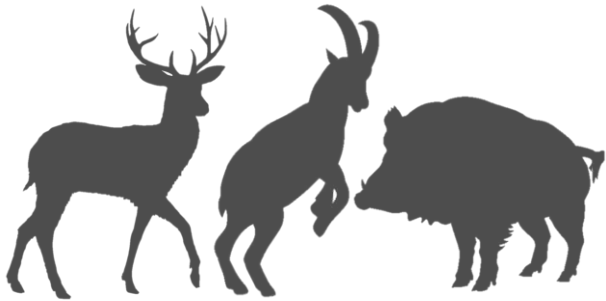
20 seen in ruminants

- Muddy areas in drinkers
- Storage of bedding and food
- Sharing pastures with other farms
- Interaction with civilians
- ...



Results: Non-domestic

**Wildlife: herbivores,
predators and birds**



Indirect or direct contact
might occur when
attracted by or through

Feed and water

**Shelter (from
hunting)**



**Reproductive
interaction**



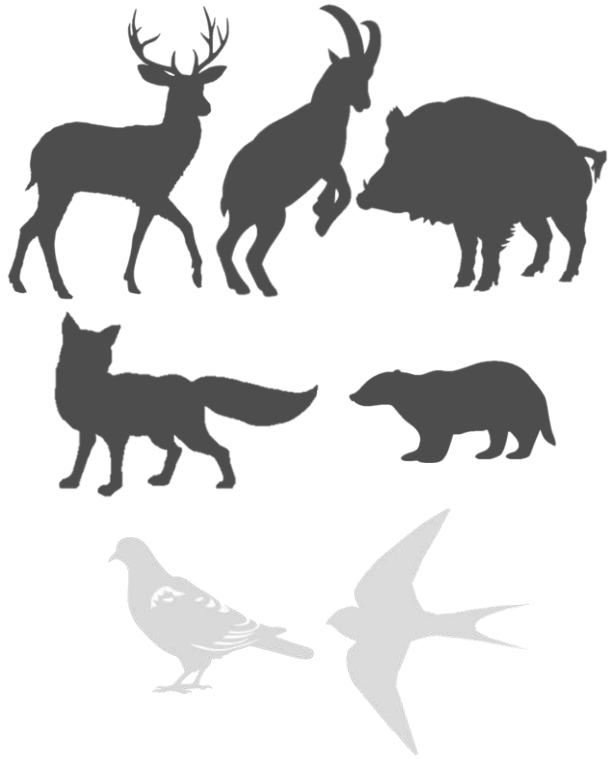
**Newborns
(predation)**

Fomites (hunters)



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

Reproductive interaction

Newborns (predation)

Fomites (hunters)

1. Double fencing or fences buried in concrete

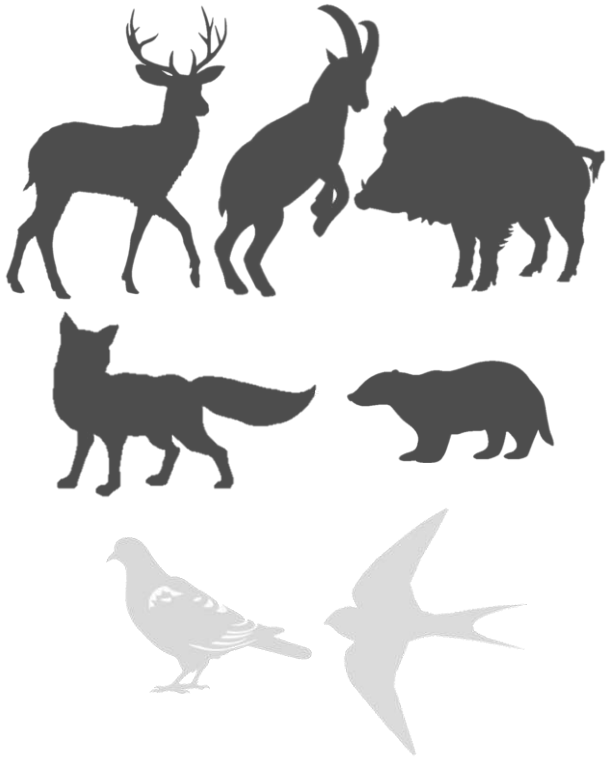
Presence of fences:

- 21/21 pig farms (only 14 do maintenance)
- 2/14 cattle farms
- 15/21 goat farms



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

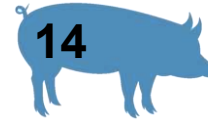
Shelter (from hunting)

Reproductive interaction

Newborns (predation)

Fomites (hunters)

1. Double fencing or fences buried in concrete



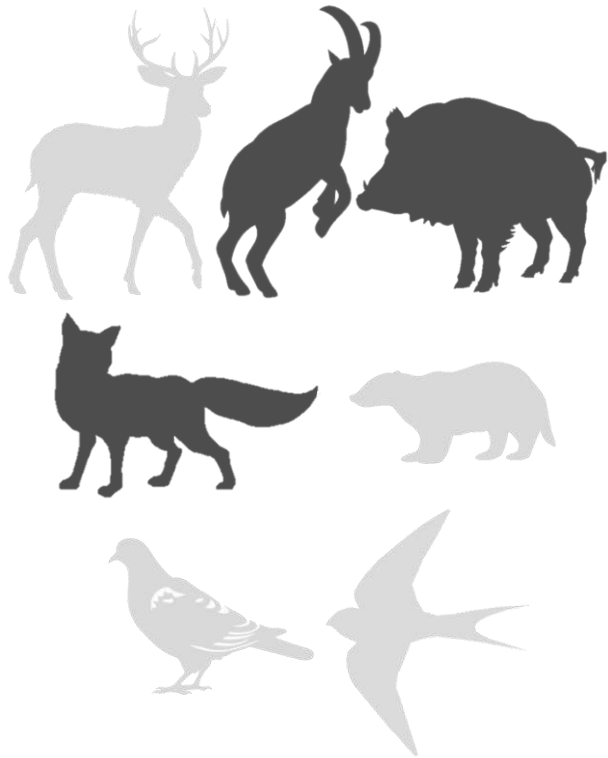
Challenges

Due to the extension of some farms the investment is not possible or may jeopardize the economic sustainability of the farm.



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

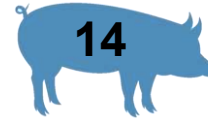
Shelter (from hunting)

Reproductive interaction

Newborns (predation)

Fomites (hunters)

1. Double fencing or fences buried in concrete



Challenges

In extensive systems, animals reach puberty, attracting wild boars (pigs) or wild ruminants (goats)

Pigs: 21 farms with adult animals or reaching puberty. 14 having access in outdoor surfaces



Ruminants: problem in goat farms

Some animal by-products and newborns might increase the need of predators to access the farm

Pigs: 10 farms with piglets in outdoor surfaces

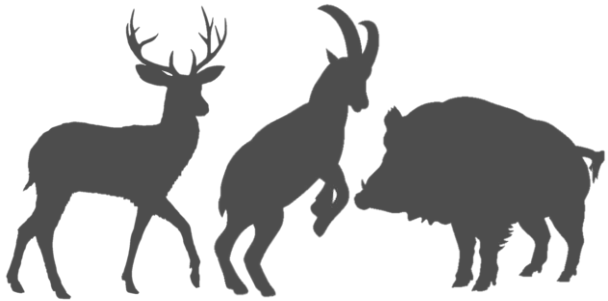


Ruminants: 8 farms with newborns in outdoor surfaces



Results: Non-domestic

Wildlife: herbivores, predators and birds



“Secuestro”: secondary fenced area within the farm used in case of emergency



1. Double fencing or fences buried in concrete

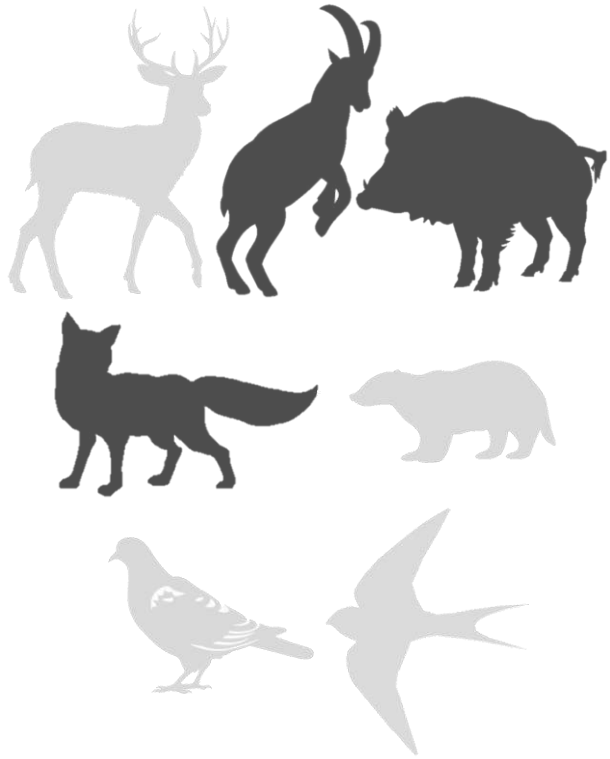
Observed **solutions** that farmers apply to solve the challenge

Fences adapted to the **daily routine**. Removable and electrical fences



Results: Non-domestic

Wildlife: herbivores, predators and birds



Female castration

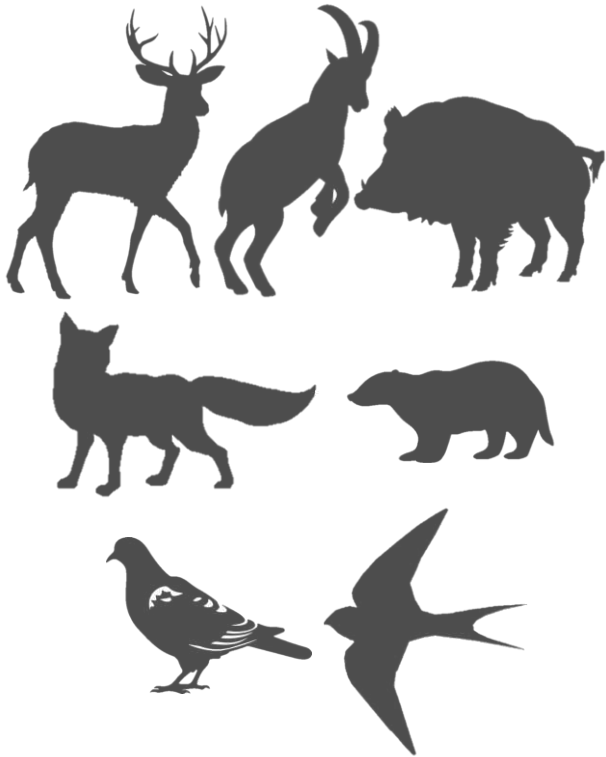


Selective hunting as population control measure



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact
might occur when
attracted by or through

Feed and water

Shelter (from
hunting)

Reproductive
interaction

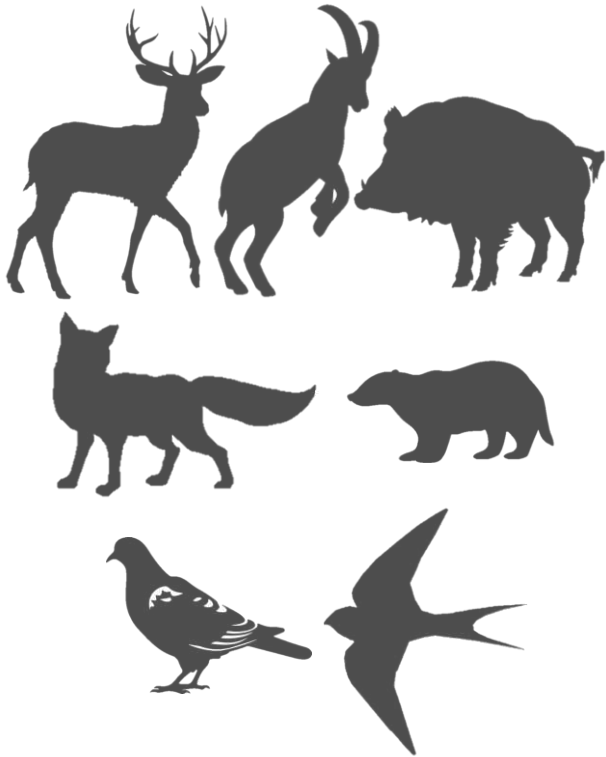
Newborns
(predation)

Fomites (hunters)



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact
might occur when
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Feed and water

Shelter (from
hunting)

Reproductive
interaction

Newborns
(predation)

Fomites (hunters)

2. Protected systems for feed and water provision and storage / Automated Systems/

Increase the efficacy of fencing

Adds a layer of protection reduce interaction if fencing is not possible



Automated system for
pigs with integrated silo

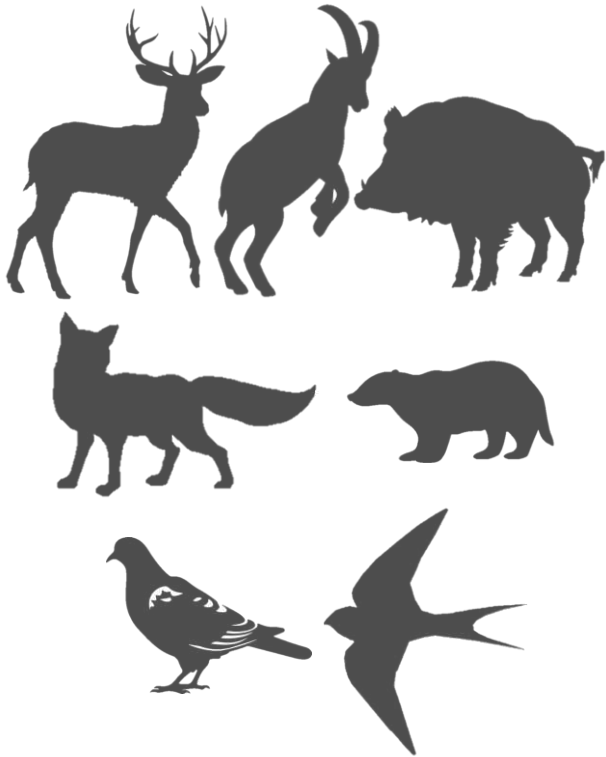


5/21 protected storage
areas



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

Reproductive interaction

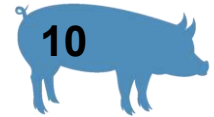
Newborns (predation)

Fomites (hunters)

2. Protected systems for feed and water provision and storage / Automated Systems/

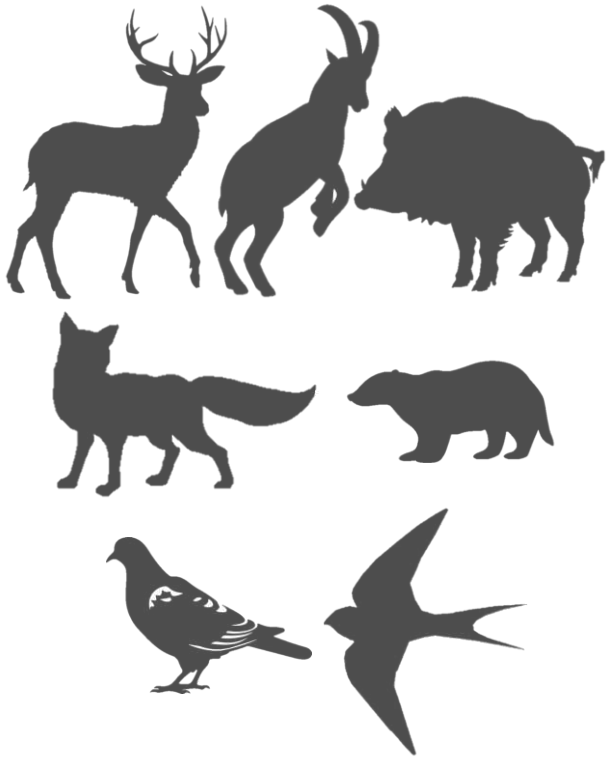
Challenges

Cost of automated systems is too expensive for the majority of extensive farms.



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

Reproductive interaction

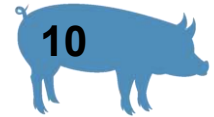
Newborns (predation)

Fomites (hunters)

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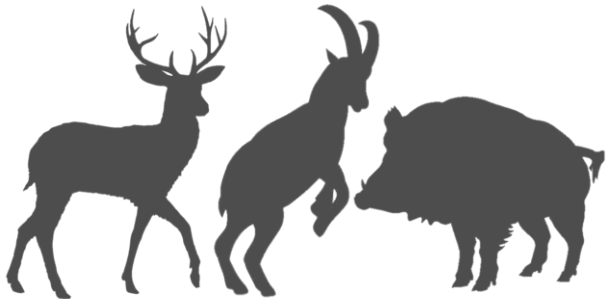


Protecting food storage areas impair daily management



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

Reproductive interaction

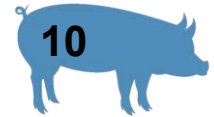
Newborns (predation)

Fomites (hunters)

2. Protected systems for feed and water provision and storage / Automated Systems/

Challenges

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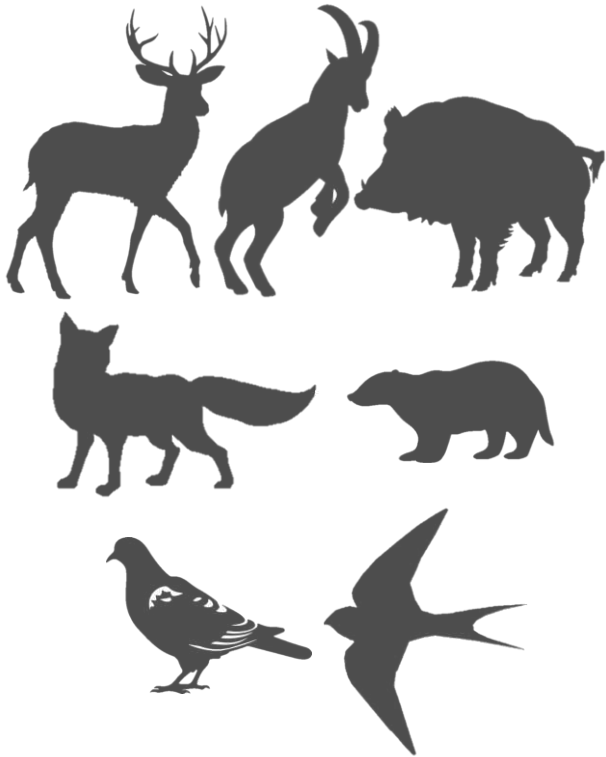
Protecting food storage areas impair daily management

Areas of provision of supplements and concentrate are also available for wild ungulates/birds (provision of concentrate in the floor)



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

Reproductive interaction

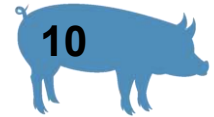
Newborns (predation)

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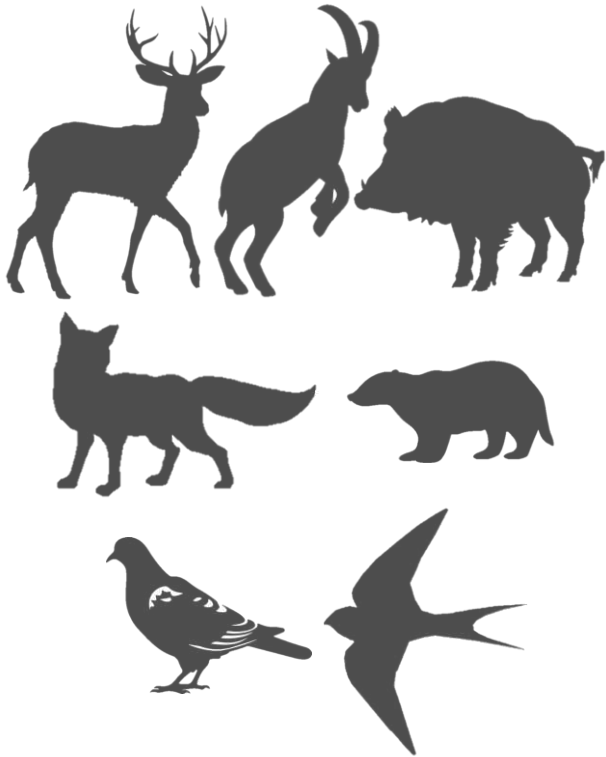


Presence of muddy areas around drinkers



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

Reproductive interaction

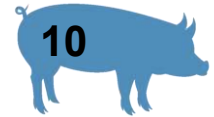
Newborns (predation)

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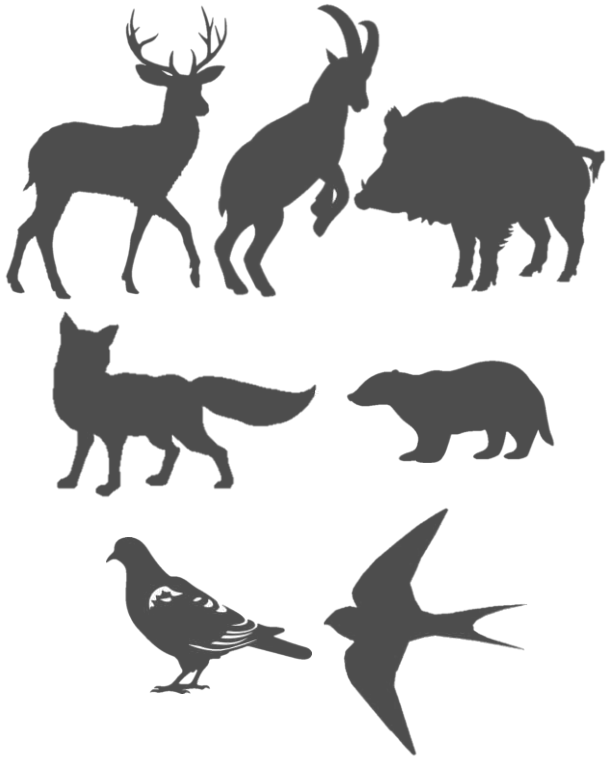
Presence of muddy areas around drinkers

Natural water sources may be used by wildlife outside (or even inside) the parcel.



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

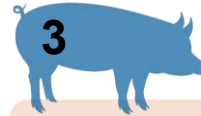
Reproductive interaction

Newborns (predation)

Fomites (hunters)

2. Protected systems for feed and water provision and storage / Automated Systems/

Observed solutions that farmers apply to solve the challenges



Portable silos with feeders/bird-proof feeders

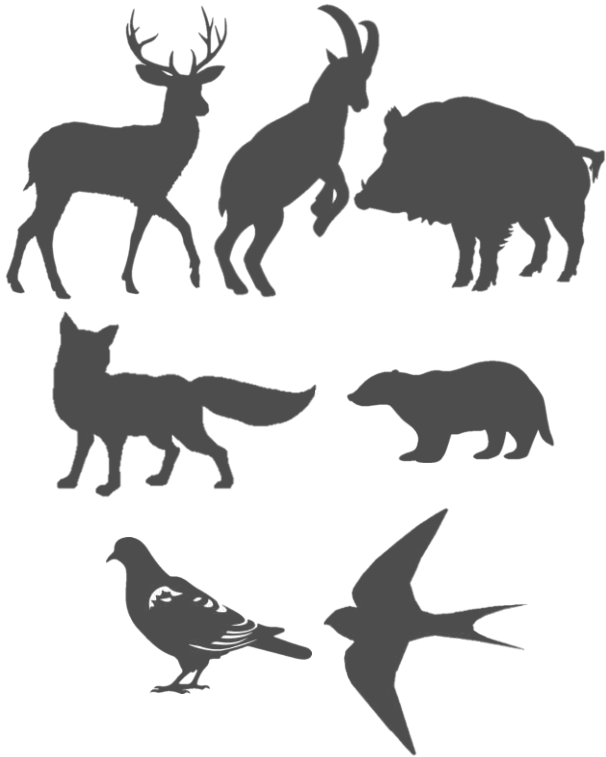


Changed shape and structure of feeders and drinkers



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

Reproductive interaction

Newborns (predation)

Fomites (hunters)

2. Protected systems for feed and water provision and storage / Automated Systems/

Observed solutions that farmers apply to solve the challenges



Change composition of silage (from corn to sorghum) to make it less attractive for boars

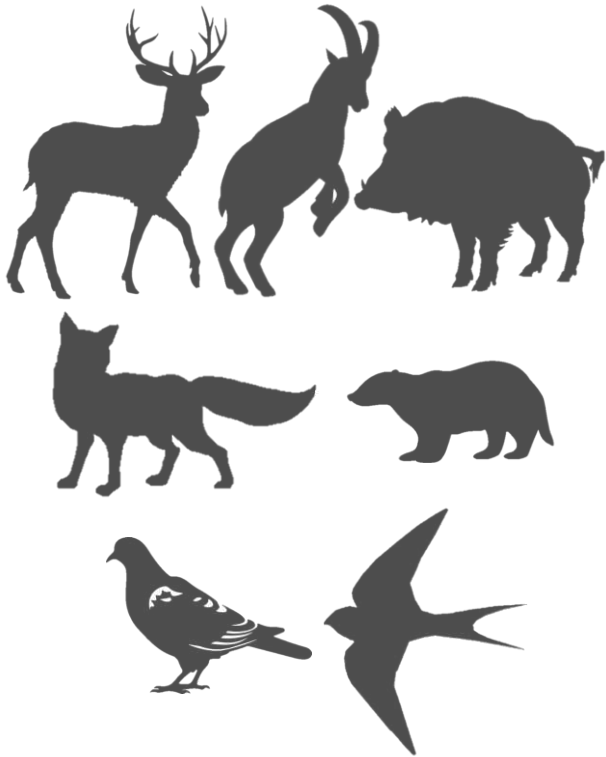


Feeding during daylight and avoid scattering feeding



Results: Non-domestic

Wildlife: herbivores, predators and birds



Indirect or direct contact might occur when attracted by or through

Feed and water

Shelter (from hunting)

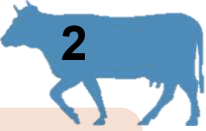
Reproductive interaction

Newborns (predation)

Fomites (hunters)

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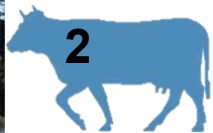
Observed solutions that farmers apply to solve the challenges



Install **float valves** in the animal water troughs to prevent overflow or add **concrete areas** around the drinker



Use of **water probes** within the extension of the farm and **protection of own lakes with fencing** → further treatment of water



Results: domestic

Indirect or direct contact
might occur through

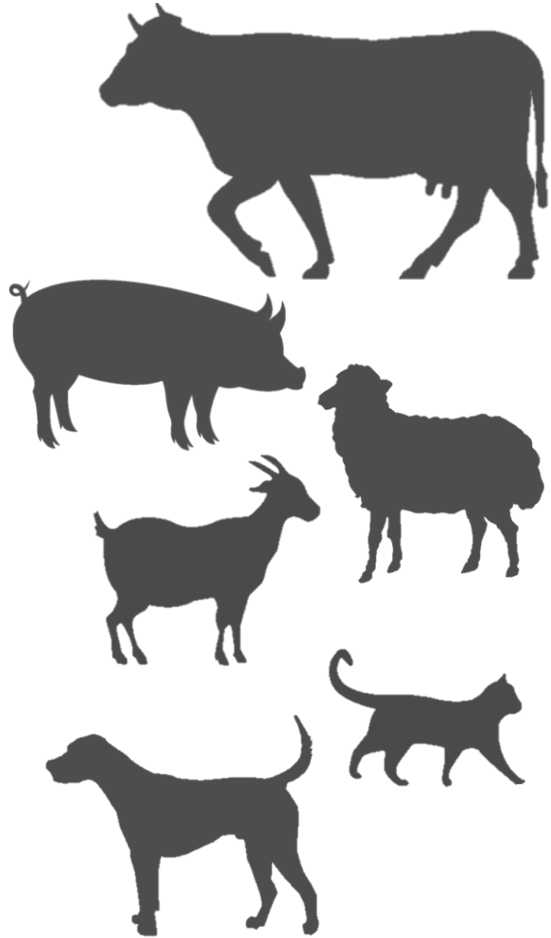
Cross-roads

Sharing lands and
resources

Fomites

External vehicles

Visits



Results: domestic

Indirect or direct contact
might occur through

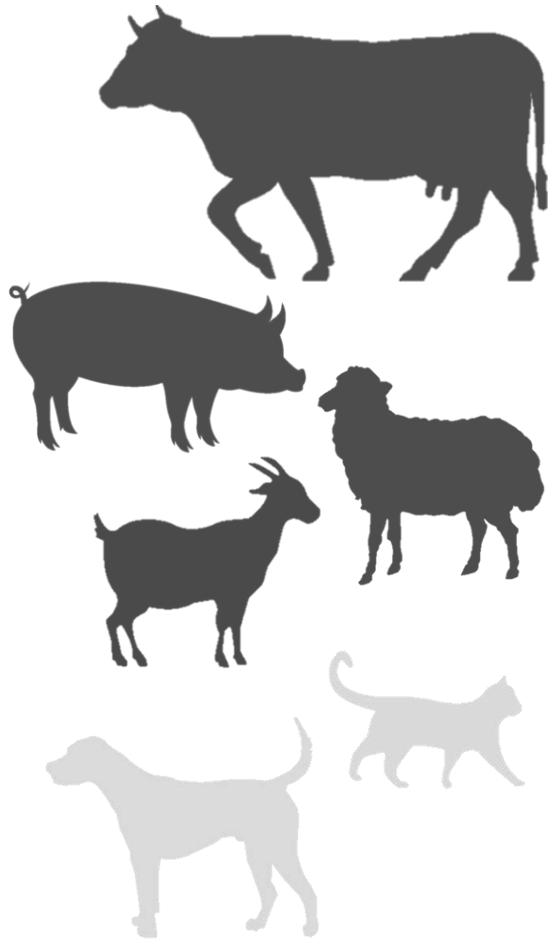
Cross-roads

Sharing lands and
resources

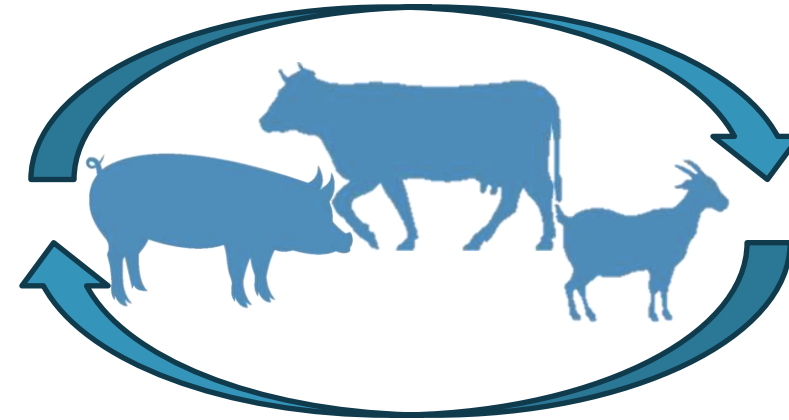
Fomites

External vehicles

Visits



1. Avoid mixing herds/batches/species



Separation of species
in pastures

Separation of
batches in pastures /
rotation of lands

Avoid mixing different
farms in the same
pasture



Results: domestic

Indirect or direct contact
might occur through

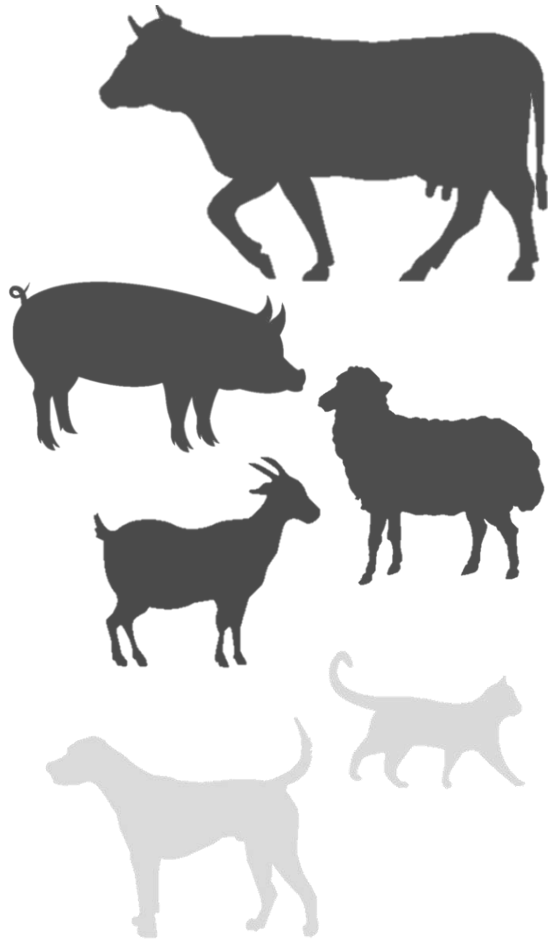
Cross-roads

Sharing lands and
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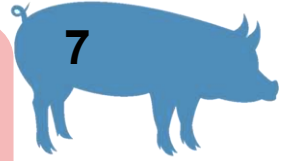


1. Avoid mixing herds/batches/species

Challenges

Extensive systems use the **same lands for different batches** (both for same and different species) for **better exploitation of resources**. Not doing it may affect the sustainability of some systems.

Shared pastures between farms is a common practice both for beef and small ruminants: economic sustainability and public pastures



Results: domestic

Indirect or direct contact might occur through

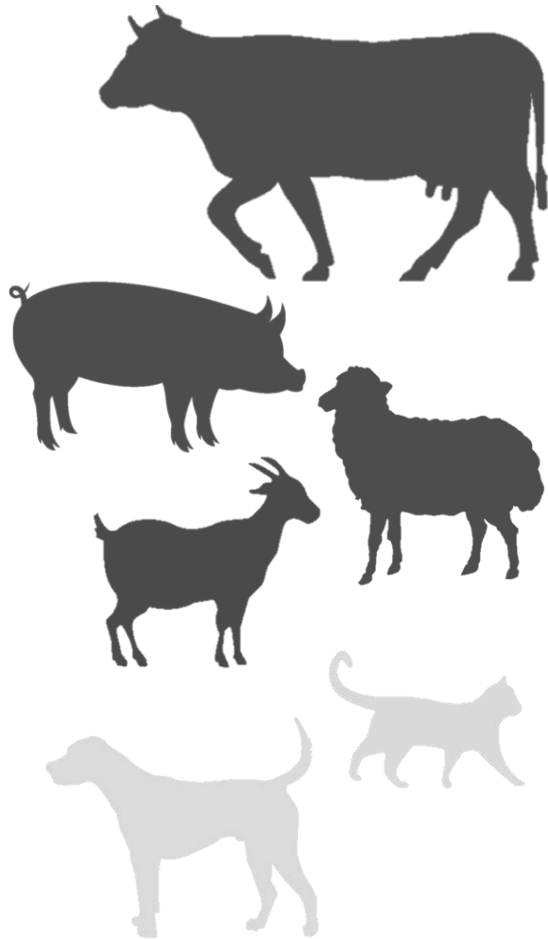
Cross-roads

Sharing lands and resources

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Visits



1. Avoid mixing herds/batches/species

Observed **solutions** that farmers apply to solve the challenges

Avoid males in pastures
→ reduce risk of STDs



Create associations to improve communication between farmers



20

Common Health program:
Contract a common veterinarian/working in cooperatives

COVAP



Results: domestic

Indirect or direct contact
might occur through

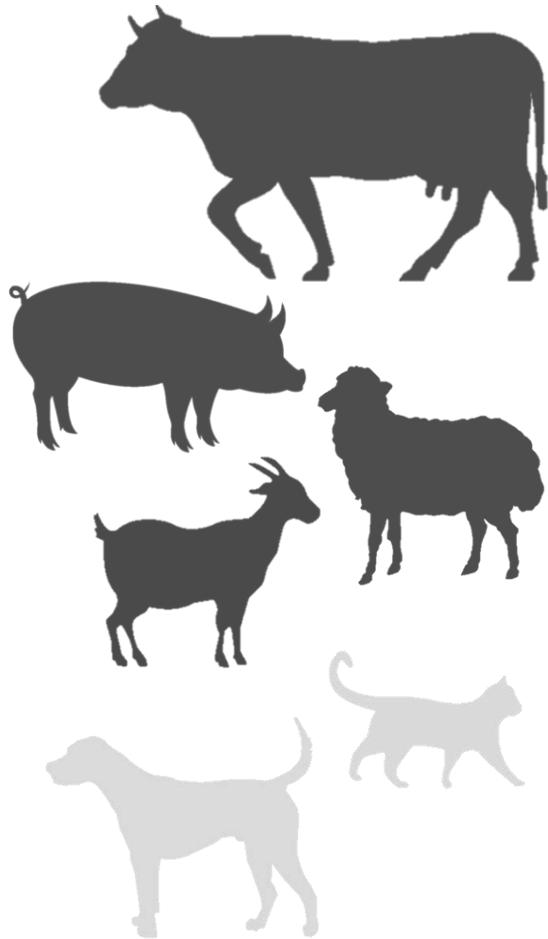
Cross-roads

Sharing lands and
resources

Fomites

External vehicles

Visits



2. Routes and cleaning/disinfection for external vehicles and their surfaces

Cleaning and disinfection of vehicles before entering the farm:

Pigs: 20/21
Goats: 6/21
Large ruminants 6/14



Results: domestic

Indirect or direct contact might occur through

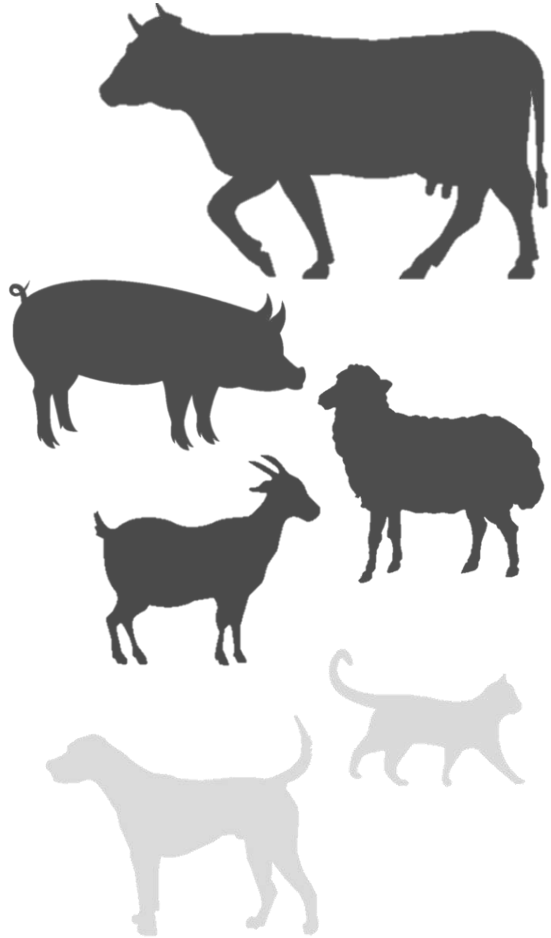
Cross-roads

Sharing lands and resources

Fomites

External vehicles

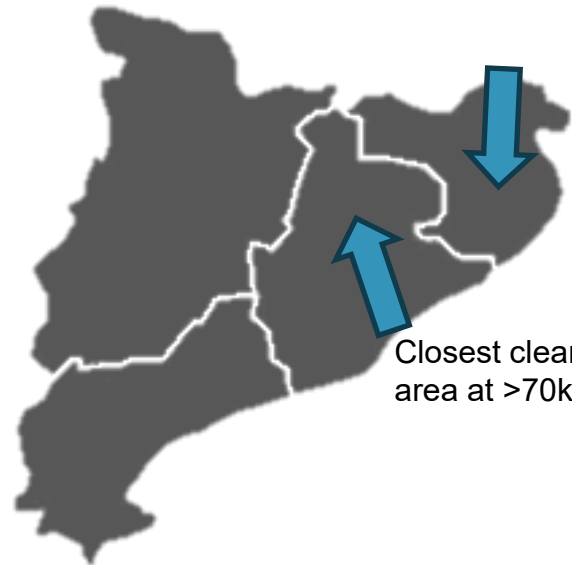
Visits



2. Routes and cleaning/disinfection for external vehicles and their surfaces

Challenges

Lack of areas for proper cleaning and disinfection of trucks in the region



Closest cleaning area at >70km



Results: domestic

Indirect or direct contact might occur through

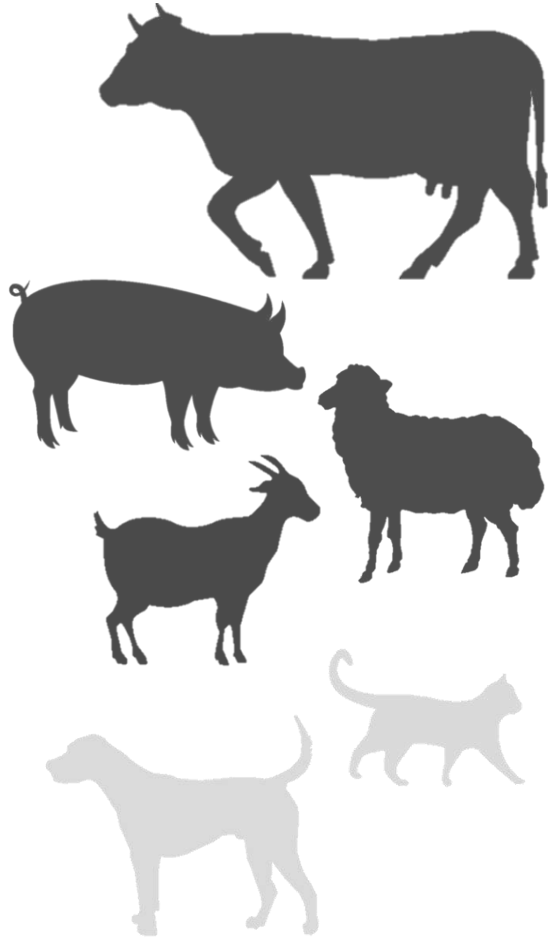
Cross-roads

Sharing lands and resources

Fomites

External vehicles

Visits



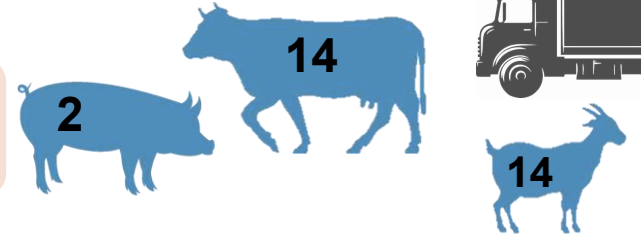
2. Routes and cleaning/disinfection for external vehicles and their surfaces

Observed **solutions** that farmers apply to solve the challenges

Self-replacements



Own trucks



Shared vehicles!

Pigs: 1/21

Goats: 6/21

Cattle: 7/14



Acknowledgements



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Mafalda Pedro Mil-Homens
Paula Rebollo

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Universitat Autònoma
de Barcelona



Ignacio Garcia-Bocanegra
Saúl Jimenez Ruiz



Miguel Hermoso
Jose M. Benítez

Veterinary Practitioners

Jordi Baliellas
Núria Caselles
Miriam Grasa
Jack Massachs
Joan Potrony
Núria del Val

Farmers and associations

COVAP

JOSELITO
DECLARADO EL MEJOR JAMÓN DEL MUNDO

PLANA DE VIC
COOPERATIVA

Junts cuidem l'origen

CADÍ

cooperativa
d'artesa

...and **all the farmers** that
participated in the present work

Thanks for your attention!

