



Food and Agriculture
Organization of the
United Nations



ASF: FAO work on carcass detection

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FAO Regional office for Europe and Central Asia (REU)



Awareness & Training

- VLC trainings on ASF for veterinarians (Module on wild boar management)
- VLC training on stamping out (Module on carcass disposal)
- Face-to-face trainings for hunters
- Training manuals
- Awareness materials

Understanding risk and gaps, and where to prioritize

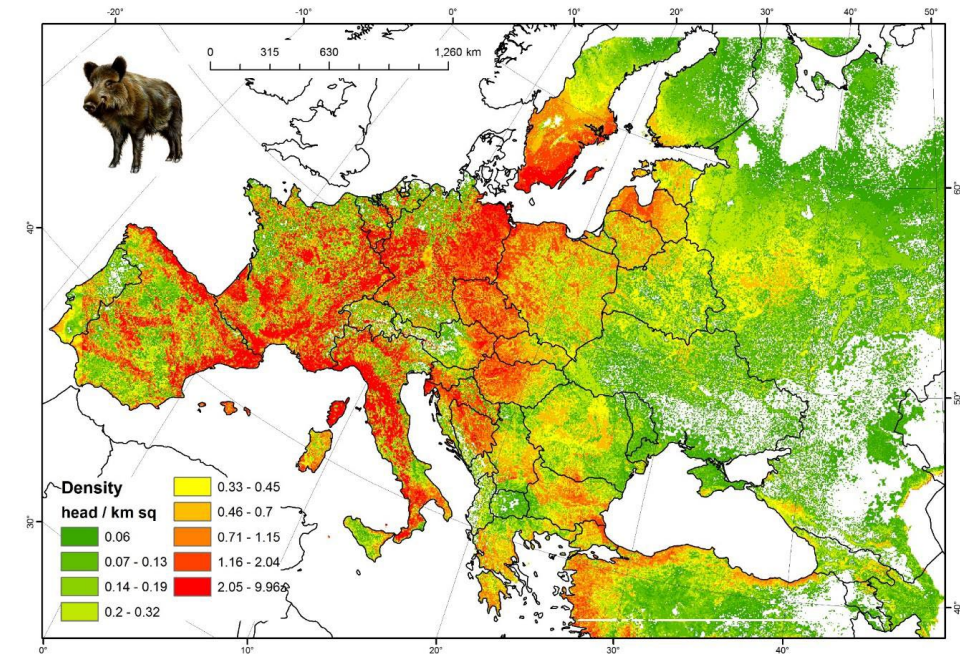
- Risk factors to find wild boar
- Hunting ground surveys
- OutCosT

Improving reporting

- iMammalia reporting App.

Improving disposal

- Wild boar carcass composting experiment



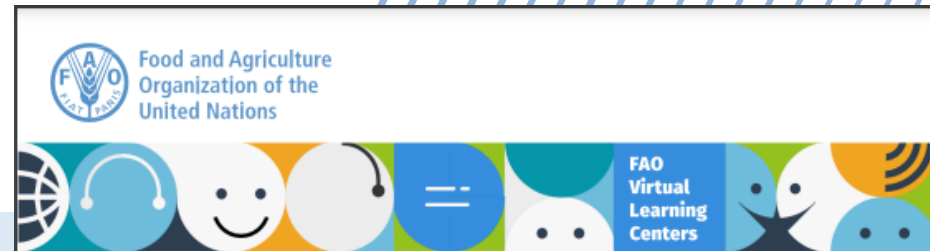


Online training – The Virtual Learning Centre

The Virtual Learning Centers (VLCs)

- [ASF preparedness courses](#) (tutored, 4-week) *Over 1,000 vets trained in 2023*
 - **Spain I.** Feb-Mar 2023. 487 part.
 - **Europe.** May-Jun 2023. 206 part
 - **Romanian.** last quarter 2023
 - **Spain II.** last quarter 2023.
- [African Swine Fever Introductory Course](#) (open access)
- [Course on stamping out](#) (EN and RU)

Contact us under: reu-vlc@fao.org



African Swine Fever Preparedness Course

This course was initially developed by the Food and Agriculture Organization of the United Nations (FAO) Regional Office for Europe and Central Asia (REU), together with the Friedrich-Loeffler-Institut, and has been adapted, translated and delivered in multiple FAO regions.

COURSE LENGTH	15 hours (4 WEEKS)
PARTICIPANTS	400 (MAX)
FORMAT	TUTORED – a mix of online webinars, self-paced interactive modules, discussion forum and additional resources

Who is the course for?

The primary audience of the course is official and private practice veterinarians who may be involved in diagnosing, investigating and responding to an outbreak of African swine fever (ASF). However, the course is also suitable for swine industry personnel who may also be engaged in response activities.


What will you learn?

- Impact and importance of ASF
- Clinical diagnosis
- Laboratory diagnosis
- ASF outbreak investigation
- Control measures
- Biosecurity
- ASF in wild boar in Europe

What does the course involve?

The course is studied entirely online and will take approximately 15 hours to complete. Around 400 participants can take the course at the same time, and it is open for four weeks.

The course opens with a live interactive webinar, where trainees meet their trainers, and are introduced to the course. Trainees then progress through seven interactive online modules, enriched with photographs, videos, exercises and self-test questions. During the course, expert trainers are available through a discussion forum to answer questions from the trainees, and to lead interactive discussions. Towards the end of the course, there will be a second live interactive webinar, to discuss topics raised during the course in more detail. All trainees must complete a comprehensive assessment and finish all the coursework. Successful trainees are provided with a certificate.



vlc-global@fao.org | <https://virtual-learning-center.fao.org>

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Trainings for hunters on ASF in wild boar and hunting biosecurity

- In collaboration with local hunting associations
- Half day, small groups (~20), hands-on, interactive, certified
 - ASF in wild boar
 - Detecting ASF in wild boar
 - Hunting biosecurity
 - Practical demonstration on dressing of wild boar
- Targets hunting ground managers
- Translated/implemented in Albanian, Macedonian and Serbian

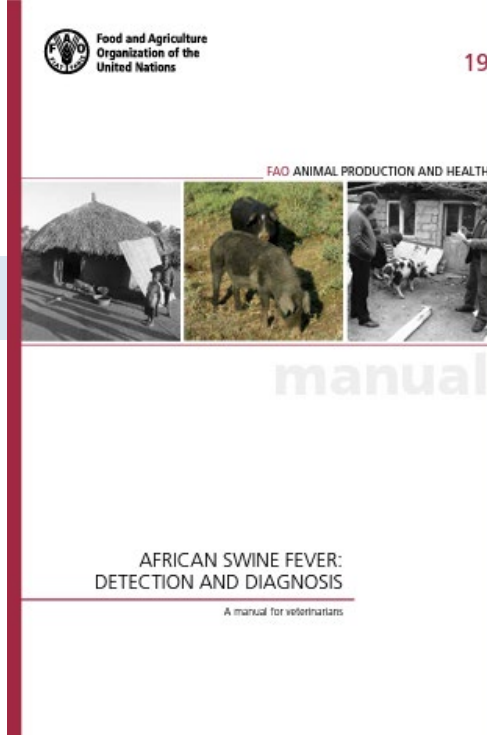


Dates	Location	# of trainings	# of hunters trained
July-Aug 2021	Serbia	10	262
July-Aug 2021	Kosovo*	2	46
Aug-Oct 2021	North Macedonia	12	236
Oct 2021	Montenegro	3	68



Technical materials on ASF relevant to wild boar management

- [African swine fever: detection and diagnosis – A manual for veterinarians](#) (available in Albanian, Chinese, Lithuanian, Macedonian, Russian and Serbian)
- The [second edition of the handbook African swine fever in wild boar - Ecology and biosecurity](#)
- [Template for a control and eradication plan for African swine fever in wild boar](#) - short guide on how to structure such a plan (Upcoming translations in Russian and Serbian)
- [Carcass Management Guidelines](#) - Effective disposal of animal carcasses and contaminated materials on small to medium-sized farms (also available in Albanian, Arabic, Chinese, Macedonia, Russian, Serbian and Spanish)
- 2-pager on [What hunters need to know about African swine fever and biosecurity measures during hunting](#) (Upcoming translations: Bulgarian, Romanian, Russian and Serbian)



African swine fever in wild boar ecology and biosecurity

AFRICAN SWINE FEVER: DETECTION AND DIAGNOSIS
A manual for veterinarians

Template for a control and eradication plan for African swine fever in wild boar

What hunters need to know about African swine fever and biosecurity measures during hunting

What is African swine fever?

- African swine fever (ASF) is a viral, lethal, infectious disease of pigs that kills both domestic pigs and wild boar.
- Animals of all ages and sexes can be affected.
- The disease is not transmissible to humans.
- The clinical signs in infected live wild boar are rarely seen because infected animals hide and only their carcasses are found.




Why is African swine fever an important disease for wild boar?

- The disease causes large economic losses to the hunting sector and to pig production.
- Over 90 percent of infected animals die.
- Because of the disease, wild boar populations can significantly decline or almost disappear.
- There is no effective vaccine or treatment for ASF.
- The virus is very resistant and survives in wild boar carcasses for a long time.

What are the most important sources and routes of African swine fever transmission in wild boar?

- The ASF virus can survive in the meat and offal of infected wild boar and pigs for a long time. Also in their carcasses. All fluids of an infected animal contain the virus, particularly the blood.
- The disease is transmitted mostly through direct contact of healthy animals with infected or dead pigs and/or wild boar.
- If wild boar eat food leftovers that contain pork or other products from infected animals, they can contract ASF.
- The disease can also spread through objects, clothing, footwear, equipment, and vehicles contaminated with blood, faeces, or other secretions from infected animals.

Targeting the search of African swine fever-infected wild boar carcasses: A tool for early detection

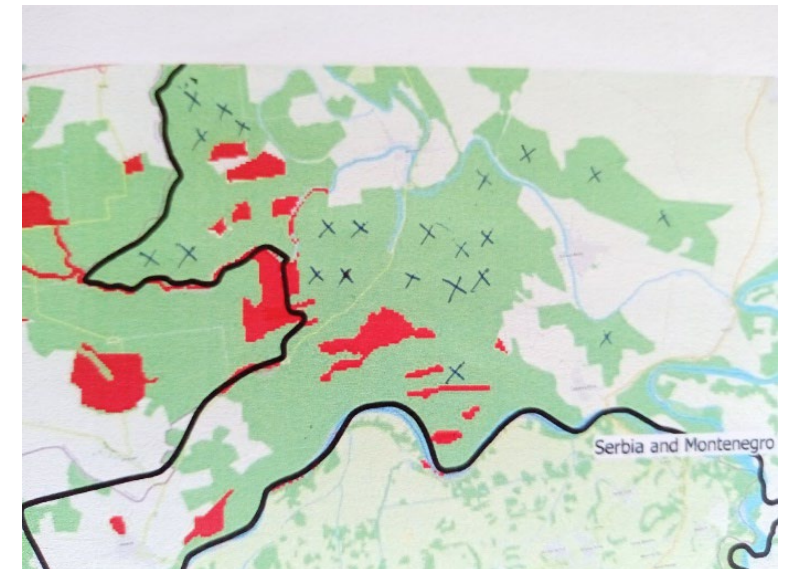
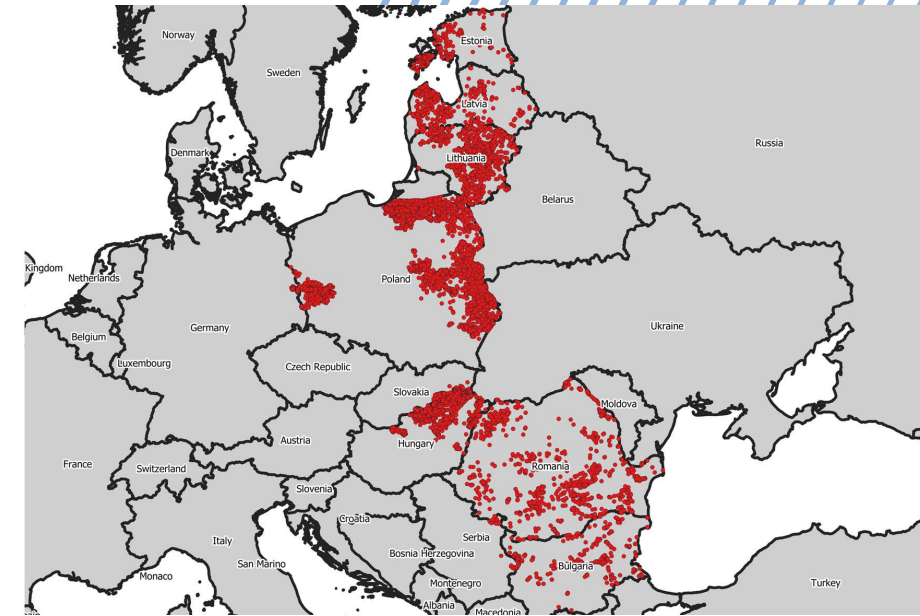
Alberto Allepuz¹  | Mark Hovari² | Marius Masiulis^{3,4,5}  | Giovanna Ciaravino¹  | Daniel Beltrán-Alcrudo²

- Spatio-temporal analysis of found dead ASF-positive wild boar carcasses from 2017 to January 2021 in 10 countries: 21,785 cases.

Main results:

- Temporal:
 - Southern countries → higher number of cases between January and April
 - Northern countries → no clear temporal pattern.
- Space-time clustering within distances of 2 km and within 1 week.
- Risk factors:
 - Land use: transition areas between woodland and shrub, green urban areas and mixed forests.
 - Presence of a path and a higher abundance of wild boar


Recommendations to design a search strategy to find ASF-infected wild boar carcasses, which is a crucial activity for surveillance purposes, but also for control





Article

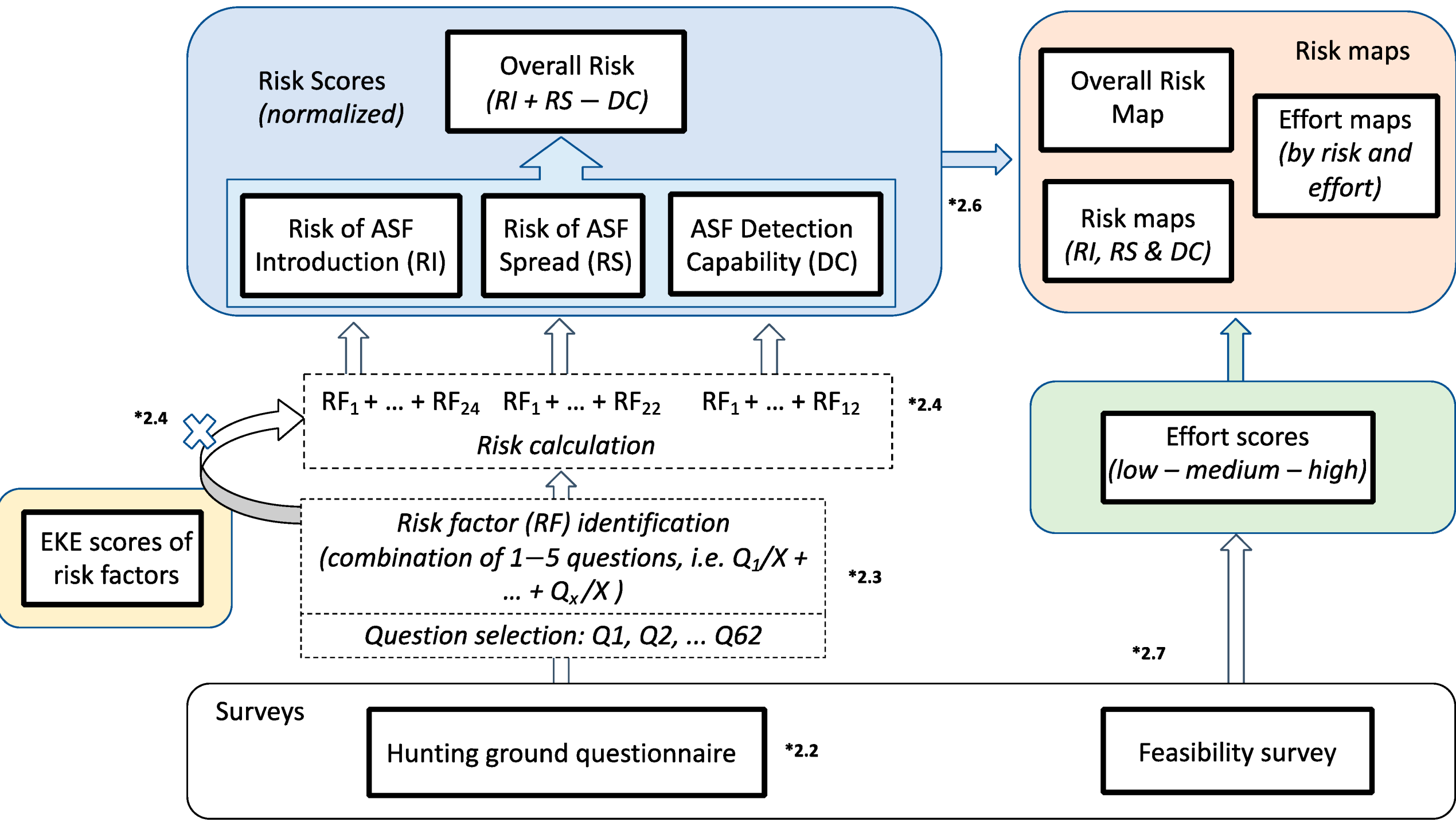
A Novel Tool to Assess the Risk for African Swine Fever in Hunting Environments: The Balkan Experience

Mario Orrico ^{1,2}, Mark Hovari ¹ and Daniel Beltrán-Alcrudo ^{1,*} 

- To estimate the risk of ASF introduction, spread and capacity of detection on hunting grounds. Plus the overall risk
- Conducted in Kosovo*, Montenegro and Serbia
- Face-to-face survey for hunting ground managers looking into general management, husbandry and biosecurity practices at the hunting ground (*epicollect5*). 62 questions:
 - Hunting ground characteristics;
 - ASF-Status;
 - Active and passive surveillance for ASF;
 - Pig-wild boar interface;
 - Control of wild boar hunting procedures;
 - Disinfection measures;
 - Control of the procedures for the safe removal of offal or dead animals;
 - Awareness;
 - Feed ban control;
 - Previous controls.

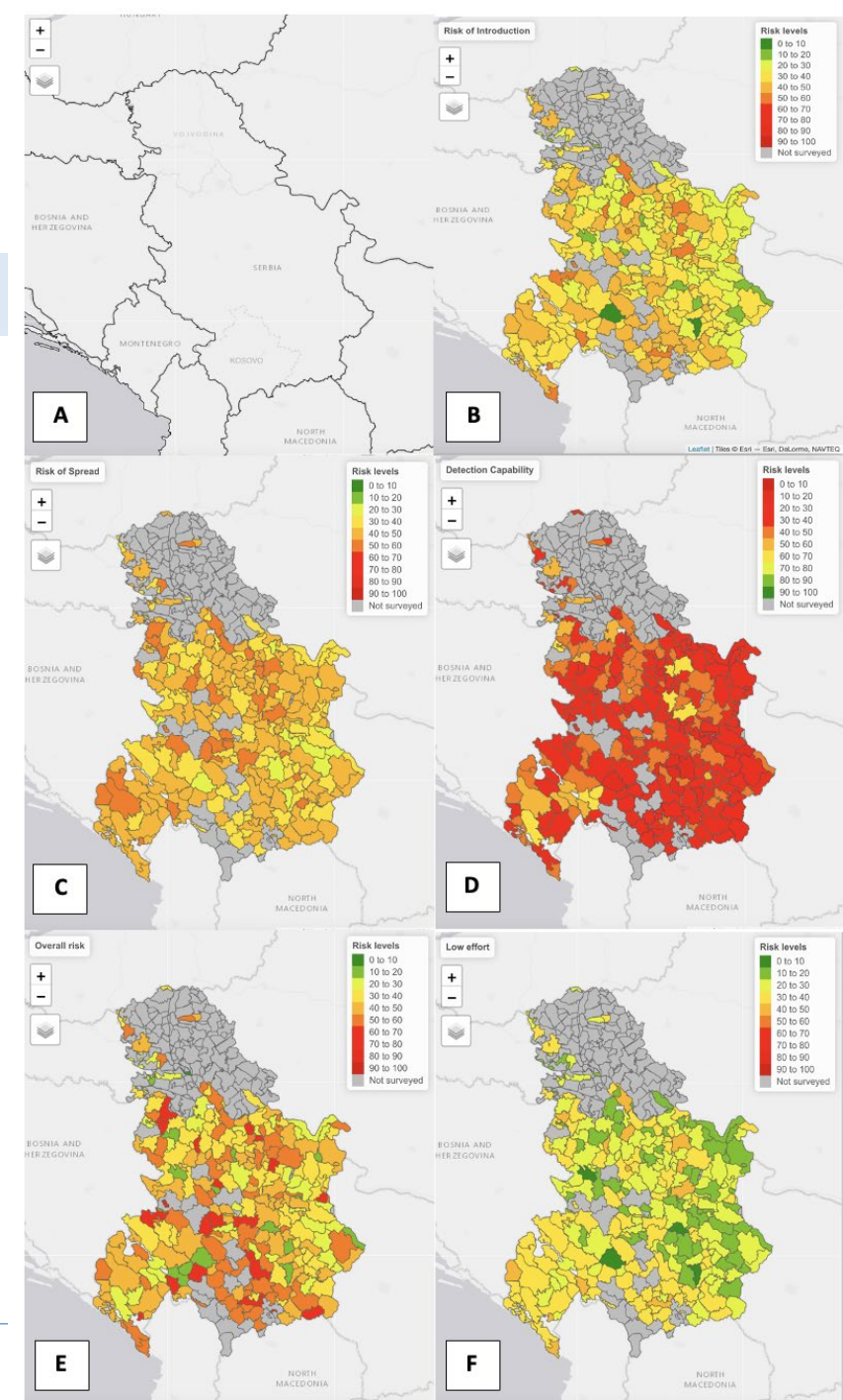


*As per United Nations Security Council resolution 1244





- Map the risk based on a 0-100 scale
- Outputs can be used to guide policy makers, highlighting gaps or geographical areas to prioritize.
 - identify the weakest hunting grounds (i.e., those at higher risk).
 - identify the easiest or cheapest (i.e., most feasible) mitigation measures to decrease the ASF risk.
 - compare the level of hunting biosecurity between countries or regions.
 - monitor the change of risk over time, by repeating the surveys and analyses.



Evaluation of the economic impact of classical and African swine fever epidemics using OutCosT, a new spreadsheet-based tool

Jordi Casal¹  | Damián Tago² | Pilar Pineda¹  | Blagojcho Tabakovski³ | Imelda Santos⁴ | Carolyn Benigno⁵ | Tran Huynh⁶ | Giovanna Ciaravino¹  | Daniel Beltran-Alcrudo⁷

OUTbreak COSTing Tool for swine diseases

- to evaluate the cost of swine epidemics and their control
- Resource allocation/planning & mobilization
- used in Bulgaria, North Macedonia and Romania (ongoing)

>100 cost items are calculated:

- Direct cost of the disease (11)
- Control and eradication measures in affected (36) and connected farms (28)
- Prevention and surveillance activities in non-affected farms (14) and in wildlife (10)
- Awareness and training campaigns (7)

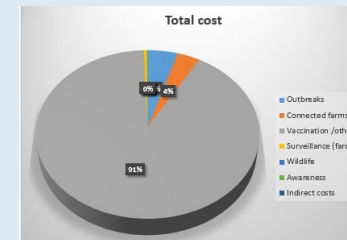
Results

Total cost of the outbreaks in thousands of US \$.

Disease	ASF	ASF	ASF	CSF
Country	Philippines*	Viet Nam*	Rep. North Macedonia	Colombia
Year	2019	2020	Scenario	2015/16
# of outbreaks	18,000	976	18	91
Total cost	68,844	826.9	3,324	4,156
Infected farms	67,743	791.2	76	196
Connected farms	-**	34.6	2,784	148
Vaccination	-	-	-	3,788
Surveillance (farms)	982	0	208	18
Wildlife	0	0	129	0
Awareness	119	1.1	127	6
Veterinary service	52,147	729.0	2,726	3,002
Farmer	16,698	97.9	568	1,030

* Values from a region/province.

** : not evaluated



Classical Swine Fever COSTS	Total cost for the country	Percentage
Outbreaks	196.387	4,7%
Connected farms	147.921	3,6%
Vaccination /other	3.787.681	91,1%
Surveillance (farms)	18.428	0,4%
Wildlife	0	0,0%
Awareness	5.770	0,1%
Indirect costs	0	0,0%
Total	4.156.186	100%

Cost of CSF outbreaks in Colombia (2015/16) (in thousand US \$)



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- Veterinary Chamber of North Macedonia
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Thank you!