European Commission

DG Health and Food Safety

OVERVIEW REPORT

African swine fever – preparedness

Health and Food Safety

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OVERVIEW REPORT
ON
PREPAREDNESS IN MEMBER STATES
TO RESPOND TO
AFRICAN SWINE FEVER IN WILD BOAR

Executive summary

Member States have invested in systems to detect cases of African swine fever in wild boar, recognising the pivotal role that hunters play in notifying cases of suspicion. To a greater or lesser extent, the veterinary authorities engage with their hunting counterparts to explain the need to reduce the wild boar population.

One of the greatest challenges that Member States face is to develop and implement national wild boar management strategies that resonate with farmers, hunters and environmentalists alike. To succeed, future wild boar management strategy must recognise the changes that have occurred in wild boar population dynamics. However, Member States still rely on hunting and natural processes (hard winters, starvation and enzootic diseases) to control their wild boar populations. The veterinary authorities have made little headway in embedding additional measures, such as culling of breeding animals (using traps and targeted hunting of young female animals for example) and feed resource management (using feeding bans and fences, for example) to establish a new equilibrium.

All the non-affected Member States visited are taking measures to prevent and prepare for the possible incursion of African swine fever onto their territories. In many cases, the discussions with stakeholders and cooperation between authorities were ongoing with a view to improving the national plans, actions or division of responsibilities.

There is generally cooperation and dialogue between veterinary authorities, hunters and hunting/forestry authorities, whereas agricultural authorities are generally not involved in preparations for the disease.

The veterinary authorities in areas bordering affected regions systematically test sick or dead wild boar for African swine fever. However, passive surveillance levels in unaffected territories that are more distant are much lower. This means that they may not detect the introduction of African swine fever at an early stage – especially if the disease appears far from a known affected region, as occurred in Belgium in September 2018.

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ABBREVIATIONS USED IN THIS REPORT

Abbreviation	Explanation
ADNS	Animal disease notification system
ASF	African swine fever
BTSF	Better Training for Safer Food
DG Health and Food Safety	Directorate-General for Health and Food Safety of the European Commission
EFSA	European Food Safety Authority
EU	European Union
EU strategic approach	The strategic approach to the management of ASF for the EU - working document SANTE/7113/2015
EU VET	EU Veterinary Emergency Team
GF-TADs	Global Framework for the Progressive Control of Transboundary Diseases

1. INTRODUCTION

This overview report presents the results of analysis undertaken by the Directorate for Health and food audits and analysis during 2019 to inform the development of European Union policy on the prevention, control and eradication of African swine fever. Despite the passage of time, the information that it presents continues to be relevant and the case studies are still instructive. While many of the practices already form part of national arrangements in Member States, the analysis is likely to interest a wider audience.

African swine fever (ASF) is a devastating viral disease affecting domestic and wild pigs. The disease has already had a huge impact on the European pig industry and it has reshaped global meat and feed markets.

Between 2014 and 2020, the Animal Disease Notification System (ADNS) of the European Union (EU) registered over 12,000 ASF cases in wild boar (*Sus scrofa*) and the increased densities in wild pig in most EU countries over the past decades make the control of the disease challenging.

The number of ASF cases in wild boar continues to increase each year across the EU. The infection now threatens densely populated wild boar areas, in unaffected Member States that are major pig producers. The best way to address these issues is through the application of preventive measures in a consistent and coherent manner across administrative boundaries. By working together, the veterinary and hunting authorities can reduce the wild boar population in front line areas at greatest risk from contiguous spread. Robust contingency arrangements can help to ensure the rapid containment and elimination of any cases that might occur.

Experiences in Czechia and Belgium have shown that the containment of disease is possible when the veterinary authorities act quickly and mobilise the necessary resources to depopulate affected areas.

2. METHODOLOGY, OBJECTIVES AND SCOPE

This overview report summarises the information collected during a series of Commission fact-finding missions carried out in four Member States during late 2018 and early 2019 (see Annex I). At that time, all the visited Member States were free from the disease. In July 2019, ASF was detected on a domestic pig holding in Slovakia and in December 2020 ASF was detected in a dead wild boar in Germany.

The report also reflects on information gathered during Commission audits to Member States affected by ASF. It uses information from scientific articles and publications on the disease and wild boar. It also makes an analysis of the information contained in the ADNS and of data provided by national authorities and bodies.

The report draws together relevant information that provides the basis for EU guidance on the prevention, control and eradication of ASF in wild boar and on the preparations being made in Member States that are currently free of the disease to prevent its introduction and establishment on their territories. It also highlights good practices and common challenges identified by the Commission.

The report intends to assist EU policy makers and decision takers involved in preventing the spread of ASF in the wild boar population. This includes officials at EU and national levels responsible for animal health matters, for the protection of the environment (including hunting and biological diversity), and for rural development. It also makes information more accessible to all stakeholders.

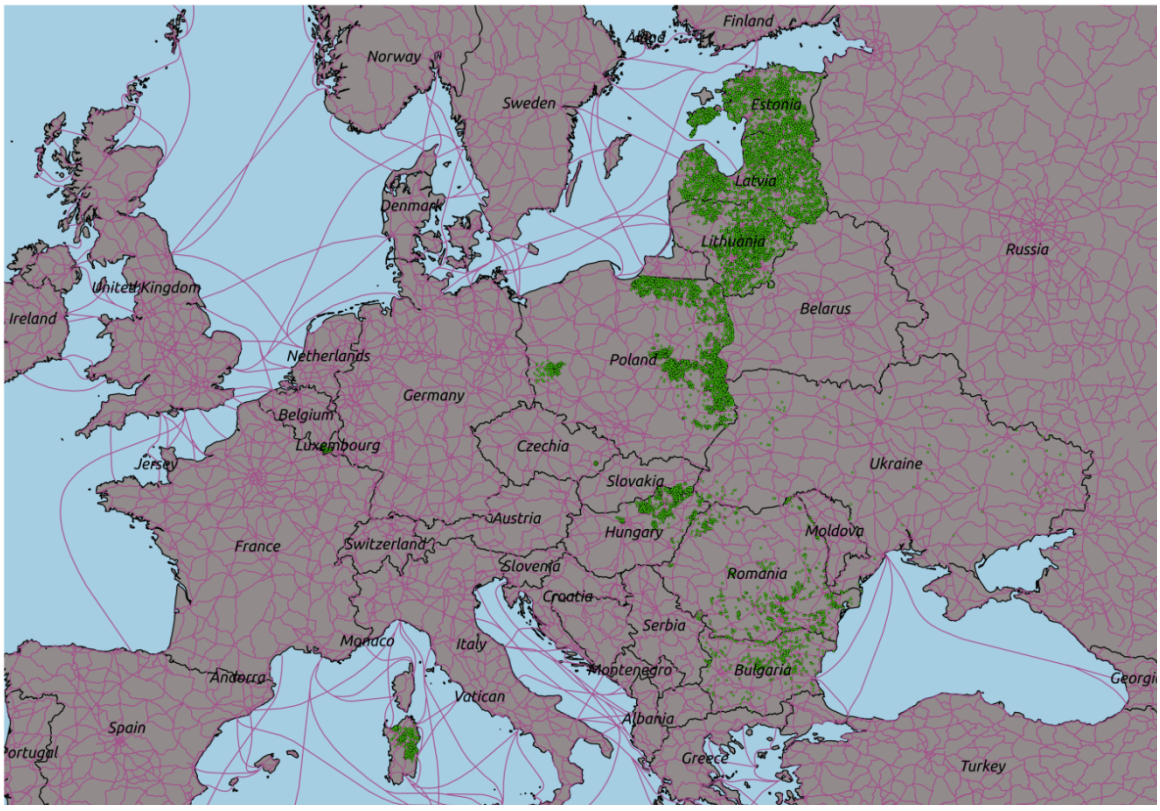
The report evaluates the implementation of the EU strategic approach for ASF in relation to prevention, control and eradication of the disease in wild boar (see section 4.1). It also provides an updated picture of the spatial and temporal evolution of ASF in the affected Member States since 2014 according to information contained in the ADNS as on 8 March 2020 and to some additional data provided by national authorities and bodies.

The report focuses on the guidance and measures taken to prevent and control the disease in wild boar. It does not cover activities to prepare for, or to respond to, ASF in domestic pigs, including free-range pigs (for example, East Balkan swine).

3. THE CURRENT SITUATION

Following its introduction into Georgia in 2007, ASF quickly spread to neighbouring countries, including Armenia, Azerbaijan and the western parts of the Russian Federation. It was subsequently reported in Ukraine (2012) and Belarus (2013) before reaching Lithuania in 2014. Poland, Latvia and Estonia reported cases in wild boar and outbreaks in domestic pigs the following year. By 2020, 12Member States and three neighbouring countries had reported cases. (Not including Italy where the island of Sardinia has an unrelated infection with ASF since 1978.)

The following map and charts summarize the notification data posted on the EU's ADNS ([1]):



(see Annex II for charts by country)

([1]) The ADNS data used to generate the map and charts used in this report were downloaded on 8 March 2020.

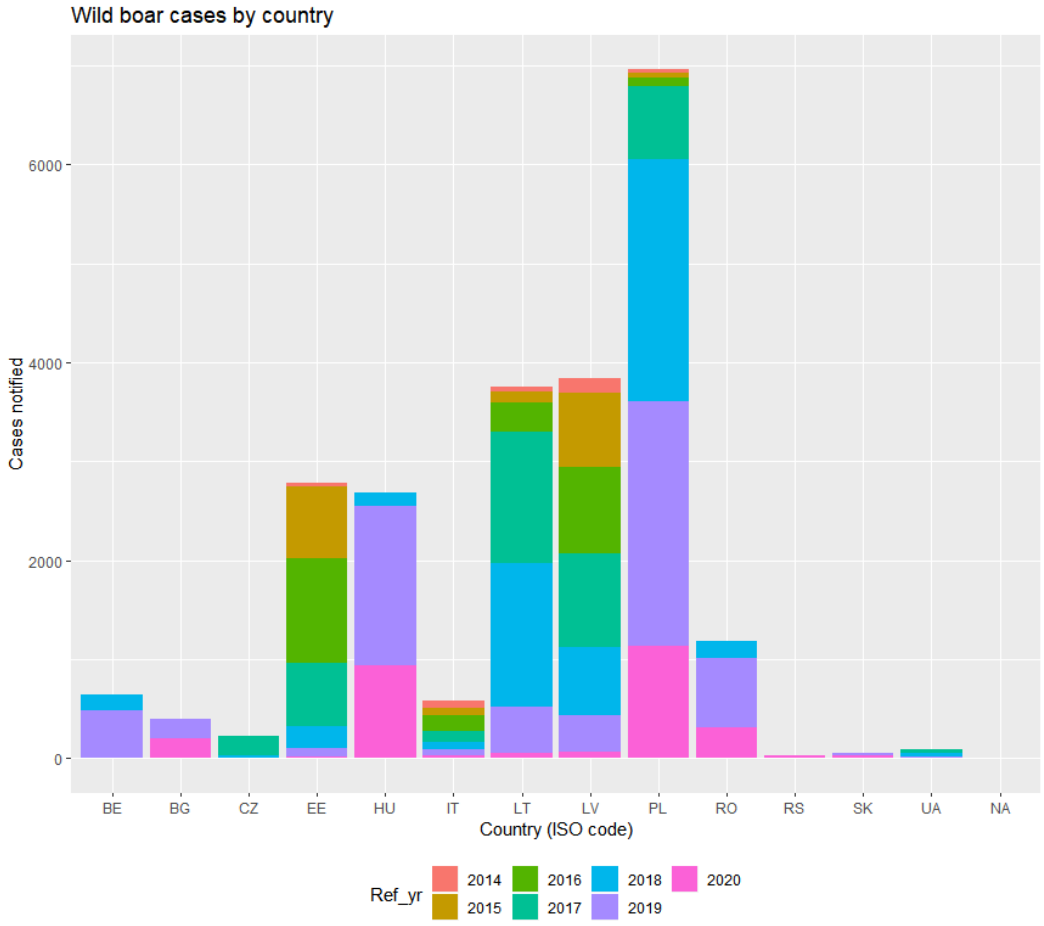
There are two distinct patterns of spread in this EU epizootic disease:

- Slow contiguous spread to wild boar in neighbouring habitats, largely driven by direct or indirect contact between wild boar;
- Long distance 'jumps' caused by the introduction of infected material to naïve groups of wild boar, mainly caused by a failure to follow biosecurity requirements and recommendations (the 'human factor').

The former pattern is evident in four Member States on the southern shores of the Baltic Sea: Estonia, Latvia, Lithuania and the eastern part of Poland. Reports submitted to the World Organisation for Animal Health (but not included in the ADNS data) show that the disease is also present in the Kaliningrad Region, which is an exclave of the Russian Federation.

The disease also jumped long distances to create pockets of infection in south-eastern Czechia, south-eastern Belgium and western Poland. The first two of these pockets have been extinguished.

The following chart summarizes the cases of ASF in wild boar that were notified to the ADNS since between 2014 and 2020:

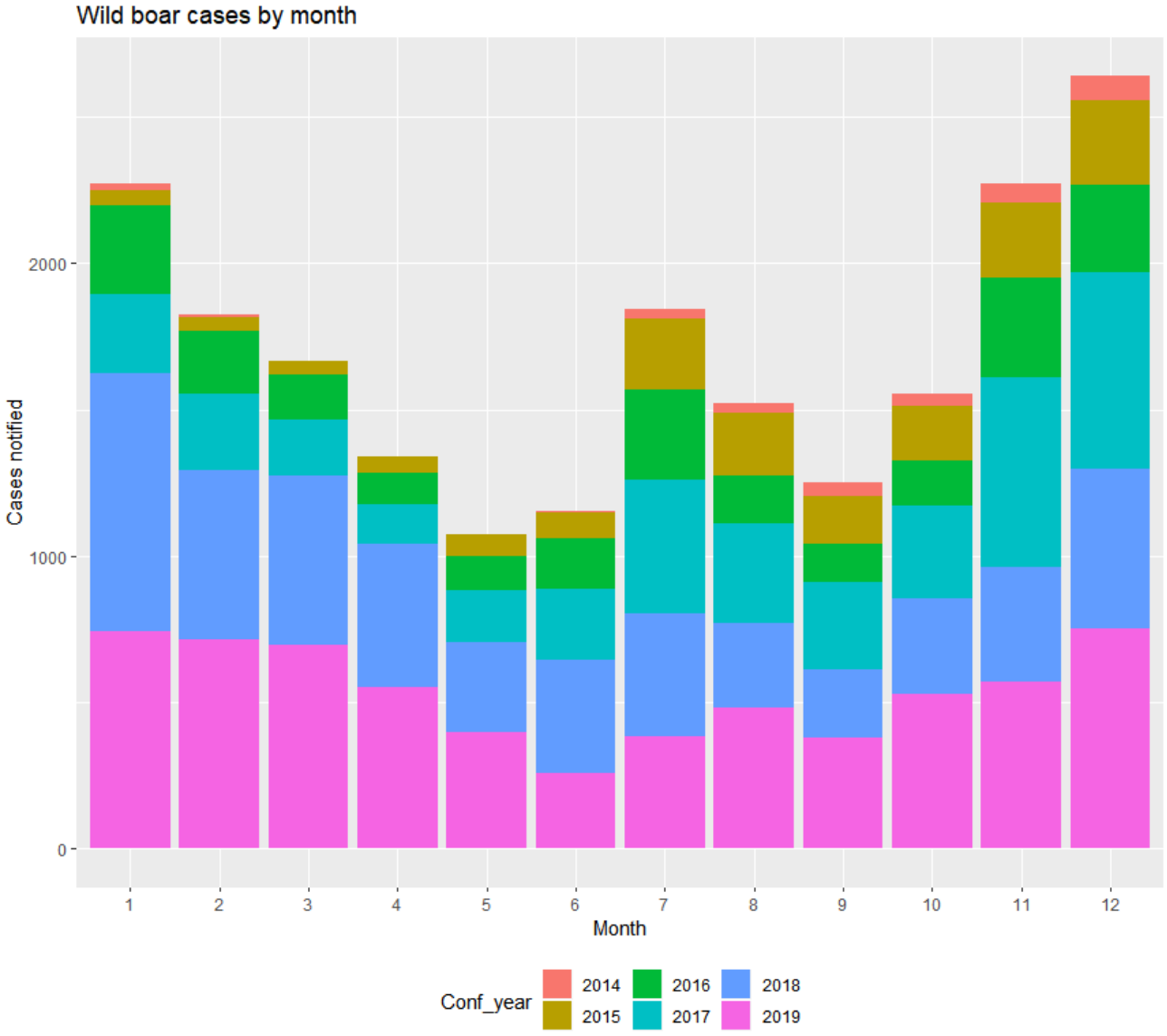


It is worth noting that the pattern of disease spread in Romania is quite different. Here, the domestic pig population is more severely affected[2]. Clusters of cases in wild boar are less evident.

[2] see further details in the EFSA analysis published in January 2020 as listed in Annex III

In terms of seasonality, most cases of ASF in wild boar are detected during the winter months. This is the normal hunting period, during which more trained hunters are in the forests. In addition, it coincides with the period when vegetation and available feed are sparse, meaning that it is more likely that people can see and detect wild boar carcases.

The following chart, which shows the number of confirmed ASF cases in wild boar detected month-by-month (covering the period 2014 to 2019), illustrates that there is a second peak in the late summer. This follows the end of the farrowing season (most wild boar are born between March and May, with a peak in April).



A timeline showing the evolution of the ASF epizootic since 2014 in the wild boar population in the Member States and some neighbouring European countries is presented in Annex II.

Case study: Successful control of ASF in Czechia, preventing spread

On 21 June 2017, the Czech veterinary authorities received a report of a dead wild boar in Zlín district (Region of Zlín). Investigations confirmed the presence of ASF virus. Over the following 2-3 weeks, a further 24 dead wild boar were found in the surrounding area

With the nearest reported case of ASF being more than 400 km from this location, the most likely means of introduction of the disease was through human activities. The suspicion pointed towards migrant workers coming from an infected country.

An infected area was set up in accordance with the requirements of Council Directive 2002/60/EC. The veterinary authorities divided this area into a high-risk zone (in which all of the infected wild boar had been found) and a surrounding low-risk zone. Hunting data indicated that the wild boar density within the area was between 200 – 300 head per 100 km^2. Fortunately, the affected region does not have a large domestic pig population.

The veterinary authorities applied all of the measures recommended in the EU strategic approach, including a total ban on feeding and on hunting (within the high-risk zone). They organized active patrols within the affected district to search for dead animals. Any wild boar carcases found were tested and safely removed.

Some of the additional measures applied:

- Use of traps within the high-risk zone.
- Use of olfactory and electric fences on the periphery of the high-risk zone.
- Organized hunting in the surrounding low risk zone. Advanced hunting methods were permitted (including hunting from cars, nighttime hunting and no restrictions on age/gender). All hunted animals were tested and destroyed by rendering.
- Bounties of more than 100 euro offered for any wild boar hunted or found dead.

Initially, intensive hunting was confined to the districts surrounding the infected area. Over the following months, the authorities permitted controlled hunting in the low-risk zone. Police snipers were deployed in the high-risk zone.

The veterinary authorities reported the last positive cases of ASF in wild boar in April 2018. In total, they had found 230 cases of ASF in wild boar (18 among hunted animals). All of these cases were confined within a high-risk zone of 89 km^2. No outbreaks in domestic pigs occurred at any stage during this period.

When they first detected the disease in June 2017, the authorities estimated that there were no more than 250 wild boars within the infected area. Over the following 10 months, 580 wild boar were hunted or found dead. By August 2018, game camera data and thermovision surveillance indicated that no more than 20 individual wild boar remained within the area.

4. EU RESPONSE

The European Commission has taken concerted action to assist the Member States deal with the ASF epizootic, in wild boar as well as in domestic pigs. We summarized below the key interventions.

4.1 EU strategic approach

The Commission mandated the European Food Safety Authority (EFSA) to review the epidemiology of ASF in Europe and to analyse the risks associated with the spread of the disease. Between 2014 and 2020, EFSA has published four scientific opinions and six scientific reports on the subject (see Annex III). Together with other reliable research sources, such as the ASF-STOP project (see Annex IV), these analyses provide the evidence base on which the Commission has developed policies for the control and eradication of the disease.

The Commission works regularly with Member States veterinary authorities to update the EU strategic approach. The Member States are not obliged to adopt the recommended measures set out in the working document. However, the recommendations are consistent with the legal requirements set out in Commission Implementing Decision 2014/709/EU concerning animal health control measures relating to African swine fever in certain Member States and repealing Commission Implementing Decision 2014/178/EU. Decision 2014/709/EU contains few specific legal obligations concerning the prevention and control of ASF that apply to Member States that are still free from the disease ([3]).

A summary of the measures recommended in version 11 of this working document is in Annex V of this report.

Together with the Member States, the Commission regularly reviews the document and Revision 12 of the EU strategic approach was published in April 2020. This update includes a new Annex IV related to the development of national action plans for the long-term wild boar management in all Member States, where relevant.

4.2 EU support programmes

In addition to reimbursing certain disease control and eradication costs in Member States with ASF, the Commission may also provide financial grants to the veterinary authorities in unaffected Member States, principally to cover the cost of disease prevention and surveillance.

In order to receive these grants, they must first submit national programmes describing the epidemiological situation, the measures they will implement, defining the budget required and setting out the targets and indicators to monitor successful implementation. The Commission encourages the

([3]) Commission Decision 2014/709/EU, which concerns animal health measures relating to African swine fever in certain Member States, does contain two provisions that apply to all Member States:

- Article 15(3) obliges all Member States to prohibit the dispatch of live feral pigs to other Member States and to third countries;
- Article 15(a)(2) obliges all Member States to ensure that appropriate information on the transmission of ASF and on the control measures applicable in areas affected by the disease shall be brought to the attention of travellers in a visible and prominent manner.

veterinary authorities to align their proposed national measures with the recommendations included in the EU strategic approach.

Subject to its technical approval, the Commission provisionally awards grants. Payment is subject to verification of the annual reports submitted by Member States to account for the programme's technical and financial performance. Three of the four countries visited during the fact-finding missions had received grants (see Annex VI).

A chronology of the main ASF-related initiatives taken or supported by the European Commission is available at:

https://ec.europa.eu/food/sites/food/files/animals/docs/ad_control-measures_asf_chronology_en.pdf

The **BTSF** (Better Training for Safer Food) initiative is actively participating in the fight against ASF with the training of officials in the Member States and neighbouring countries.

The European Commission has arranged several BTSF courses on ASF, e.g. Belgrade 6-8 November 2018 and 27 February to 1 March 2018, Prague 25-27 October 2017, Minsk 16-18 November 2016 and Warsaw 3-5 October 2016. (Training material from these courses is available at: https://ec.europa.eu/food/animals/animal-diseases/control-measures/asf/btsf-training-material_en.

In times of crisis, animal disease experts have been called upon to support the authorities of the EU countries or third countries that were affected by ASF via the EU Veterinary Emergency Team (**EU VET**) which was established by Commission Decision 2007/142/EC. The Commission selects EUVET members in the event that a request for assistance is submitted by an EU country or a non-EU country during an ASF outbreak. The Commission informs EU countries about the EUVET support activities through the Standing Committee on Plants, Animals, Food and Feed on the activities of the team. More information is available at: https://ec.europa.eu/food/animals/animal-diseases/emergency-team_en.

The Commission is also an active participant in the Standing Group of Experts on African swine fever in Europe **(**SGE ASF) which was set up under the Global Framework for the Progressive Control of Transboundary Diseases (**GF-TADs)** umbrella to build up a closer cooperation among countries affected by ASF and thereby, address the disease in a more collaborative and harmonised manner across Europe. More information is available at: http://web.oie.int/RR-Europe/eng/Regprog/en_GF_TADS%20-%20Standing%20Group%20ASF.htm.

4.3 EU ministerial conference

The broad impact that wild boar have on many areas of rural life was reflected in a ministerial conference organised by the Commission in December 2018. Hosted jointly by the Commissioners for Health and food safety, for Environment, Maritime affairs and fisheries and the Austrian Presidency of the European Union, the event considered the eradication of ASF in the EU and the long-term management of wild boar populations. Copies of all of the presentations made during the conference are available at:

https://ec.europa.eu/food/animals/animal-diseases/control-measures/asf/conference_en.

In a joint statement issued at the conclusion of the event, the Commission and Member States agreed on the need for national strategies in countries unaffected by ASF to improve farm biosecurity and ensure proper wild boar management, as a means to prevent and prepare for the possible introduction of the disease.

Together, they undertook to develop:

> *A long-term EU management strategy of wild boar population, including its appropriate reduction. This should be determined after an impact assessment, specific objectives, measures and joint programmes of cooperation between the agriculture and environmental sector (hunting management, ban of supplementary feeding, agricultural practices) tailored to the particular situation of the Member States.*

5. MAIN FINDINGS AND CONCLUSIONS

5.1 Cooperation between different authorities

Member States' veterinary authorities are aware of the need to control and decrease their wild boar populations. However, generally other authorities have the competences over wild life.

The control and eradication of disease in wildlife species demands cooperation and information sharing between the veterinary authorities and the agencies and authorities responsible for hunting, environmental protection, forestry management and agriculture. Areas where the responsibility of these combined authorities overlap include:

- management of wildlife populations (including the registration of hunting areas and allocation of hunting licences);
- animal health controls in wildlife (including the hunting biosecurity, collection of surveillance samples and the enforcement of hunting restrictions following ASF cases).

The authorities in Member States that are free of the disease should prepare themselves for the immediate and long-term demands of a possible epidemic.

As part of their preparation to avoid the disease entering and spreading in their wild boar populations, central veterinary authorities have already strengthened their coordination and cooperation with hunting and wild life authorities. However, the level of engagement between veterinary authorities and authorities in charge of environmental protection (including those in charge of protected areas, where hunting is forbidden) and agriculture is unclear.

The cooperation between different authorities plays an important role in increasing the likelihood to detect early the incursion of the disease and in facilitating the management of wild boar. Because of this cooperation, the veterinary and hunting authorities in most Member States have agreed legislative changes to extend hunting periods, increase hunting quotas, incentivize hunters and raise their awareness.

On the other hand, the veterinary authorities do not routinely monitor hunting activities throughout the hunting season. Instead of receiving summarised periodic performance reports from each hunting ground or region, they typically rely on the end of season reports provided by the hunting authorities.

These reports contain aggregated information from several hunting areas. In most cases, the veterinary authorities do not receive details of the age and gender of the shot wild boar and are unable to confirm whether appropriate samples have been collected and tested. As a result, they are unable to monitor or improve progress against hunting and sampling targets during the course of the hunting season.

There is less evidence of practical cooperation between the veterinary authorities and the authorities responsible for environmental protection and agricultural policy. Some veterinary authorities have been able to establish carcase collection, culling and testing arrangements for wild boar within protected areas (such as national parks and nature reserves). However, there are additional challenges in implementing surveillance programmes on the wild boar populations in protected areas which most Member States are addressing.

The fact-finding visits observed cases where regional veterinary authorities had initiated simulation exercises and awareness campaigns as a means to establish cooperative links with other authorities and stakeholders. In many cases, particularly in federal states, these initiatives were not evaluated at central level or shared as good examples between authorities. This is a lost opportunity to make efficient use of the insights gained and to maximise resources.

Slovakia developed a specific contingency plan for ASF in wild boar, which establishes the roles that other authorities and agencies will play if the disease occurs. In most other Member States, the veterinary authorities have not estimated the resources that would be required during the disease containment phase. The experiences of both Czechia and Belgium highlight the need for prompt and decisive action, followed up by a long-term commitment on the part of all relevant authorities to eradicating the disease before it gets out of control.

Examples of good practice:

Slovakia

The authorities published a “National Control Plan for African swine fever in the feral pig population in Slovakia in 2018". It clearly sets out roles and responsibilities of the competent authorities involved in the control system for ASF including cooperation between the veterinary services and the Ministry of agriculture, with responsibilities for hunting and hunting ground management.

Spain

Given the relevance of the risk of ASF and its possible incursion in wild boar in Spain, there was an urgent need for a more coordinated national policy encompassing all the factors that may affect prevention, surveillance and control of the disease in the wild boar population. In order to facilitate that, the competent authority created a specific expert group in 2018 that has been providing intensive advice on ASF in wild boar. That group brings together a wide variety of knowledge and expertise, including experts on ASF, on animal health emergency preparedness, on wildlife management and hunting, etc.

Austria

Austria has prepared a draft ASF eradication plan for wild boar at provincial level in consultation

with the national ASF Task Force, delivery partners and external experts, including hunting authorities and hunting associations. It consists of a catalogue of measures that may be implemented to control and eradicate the disease in the wild boar population in the event of ASF being confirmed in wild boar.

Germany

The stakeholders, e.g. hunting associations, foresters, environmentalists, wild life experts, are involved in the planning process of ASF surveillance and control measures. In particular, ASF expert groups established at different administrative level, including districts, put together experts with adequate knowledge of the situation at their level and outcome of their work is reported to higher level for further analyses and processing.

5.2 Involvement of relevant stakeholders

The veterinary authorities rely on hunters, game wardens, forestry workers, farmers and the general public to spot and to report the presence of dead wild boar. They also rely on these stakeholder groups to change their behaviour by taking active measures to prevent the accidental introduction of disease. Following a case of ASF, the veterinary authorities will have to call on these groups to assist them in the containment of disease within affected areas.

Recognising the role that humans can play in the long distance transmission of ASF, Article 15a of Decision 2014/709/EU concerning animal health control measures relating to ASF in certain Member States requires all Member States to display information on disease risks and control measures on all major international routes. This information should be easy to understand for travellers coming from, and going to, affected countries.

The EU strategic approach emphasizes the importance of involving stakeholders in the programme to prevent, detect and contain ASF in wild boar. In particular, it calls on the veterinary authorities to develop ASF awareness campaigns to suit different target groups (hunters, farmers, and general public). These campaigns should explain clearly the biosecurity measures that each group should take and their role in notifying suspected cases of the disease and ensure that travellers and professional drivers are informed about the disease risks associated with the transport and disposal of meat products. For this, the authorities should display notices and signs explaining these risks along major highways.

Member States have intensified their activities to involve relevant stakeholders. The main one consisted of information campaigns to raise awareness of ASF in different groups, e.g., farmers, hunters, foresters, lorry drivers, and the general public. These campaigns include the key messages recommended in the EU strategic approach and made use of traditional (websites, posters, flyers and brochures) and novel communication channels (social media, video sharing platforms).

Some countries (e.g. Germany, Austria) also targeted travellers; in particular, those arriving from ASF infected regions in Europe. The distribution of free postcards carrying ASF prevention messages to the public at motorway service stations and resting points proved to be very popular.

Many Member States require members of hunting groups to participate in training on biosecurity and disease detection before they can receive hunting licences.

Examples of good practice:

Austria

The campaign comprised specific messages targeted to different audience groups:

- Messages tailored to particular audience (for example, farmers, veterinarians, hunters, tourists).
- Messages presented in many languages in appropriate settings (for example registration of care workers).
- Messages delivered through many channels and formats, such as:
    - Practical instructional videos for hunters and for farmers on internet sites for hunters, nature lovers and rural population;
    - ASF alerts printed on 40,000 tickets for the biggest hunting fair in Austria;
    - Information on ASF risks sent to cargo handling companies and to forwarding agents;
    - Multilingual posters, leaflets and weather resistant notices for travellers;
    - Displays in motorway restaurants, service areas, and bus terminals with information on the risk and the need to safely dispose of food wastes;
    - Presentation slides for officials to use them in local public meetings;
    - Information leaflets for hunters distributed through local hunting associations and with the main hunting journals;
    - Email to all veterinarians, forestry engineers and agricultural workers through their respective professional chambers.

Germany

Since 2014, Germany has intensified an information campaign to raise awareness of ASF, targeting relevant stakeholders, e.g. farmers, hunters, foresters, lorry drivers, and travellers, in particular, amongst those arriving from ASF infected regions in Europe. The information campaigns have been delivered in various ways and by several means. Apart from traditionally organised ones through ASF dedicated websites, distributed posters, flyers, brochures and social media have been used to disseminate information on ASF not only to professionals and stakeholders but also to the general public.

5.3 Estimation of wild boar populations

Many studies indicate that numbers and impact of wild boar grew steadily in Europe since the 1980s whilst the number of hunters remained relatively stable or declined in most countries ([4]). There are other signs indicating a growing number of wild boar such as the increased incidence of road traffic accidents caused by them across Europe, the reports of crop and property damage by wild boars

([4]) Wild boar populations up, numbers of hunters down? A review of trends and implications for Europe. JO - Pest Management Science 71(4), Dec 2014

(which has also raised dramatically in the last decades) and the notifications from the public of presence of wild boar in urban areas.

Recreational hunting is currently insufficient to stop wild boar population growth, mainly because the harvest rate of piglets is insufficient. The conclusion is that the wild boar population will increase further.

The growth of wild boar populations has been also positively affected by factors such as intensification of crop production, climate change (milder winters), and supplementary feeding.

In 2018, EFSA ([5]) highlighted the challenge that decision makers face when seeking reliable estimates of wild boar densities: the data is patchy and has been collected using a variety of methods. The only relevant EU wide data that is available are the reports on hunted wild boar, which provide a proxy of relative wild boar abundance.

The hunting mode used has a significant impact on the extent to which the hunting bag truly represents the population. The hunting bag reported from individual hunts is likely to over-represent the mature male animal population relative to breeding females, piglets and young adults. On the other hand, group hunts are likely to reflect quite accurately the age and gender structure of the hunted wild boar population. In either case, much of this detailed qualitative information on the hunting bag is lost in the aggregated reports available to the veterinary authorities.

EFSA concludes that it is only possible to obtain precise population density data if collected at local level (using camera trapping). However, it suggests that these data collected at local level might be linked to large-scale abundance data (based on high quality and harmonised hunting data) to produce reliable, large-scale density maps.

In order to advance the harmonized collection of reliable data, EFSA is funding the ENETwild ([6]) project, which develops tools for the collection of population data for various wildlife species, including wild boar (see Annex VII).

Most Member States hunting associations calculate the population of wild boar at local level, using traditional methods. These data are passed to local, regional and national authorities. In general, the hunting authorities at national or regional level compile the data and give them to the veterinary authorities sometime after the hunting season.

This was the case in the four Member States visited. The authorities estimated the number of animals through hunting grounds. In two out of the four countries visited, their perception did not include any increase in their wild boar populations in the last years. The frequency in passing on the information varied between every two weeks and the full hunting season.

Experience during the Czech ASF wild boar epizootic (see case study in section 3 above) showed clearly how unreliable population estimates can be. During intensive depopulation activities extending over 14 months, the number of wild boar shot and found dead was more than double the original estimate.

([5]) Wild boar in focus: Review of existing models on spatial distribution and density of wild boar and proposal for next steps. EFSA, External Scientific Report. September 2018.

([6]) https://enetwild.com/

Example of good practice:

Spain

To address the challenge of obtaining reliable estimates for the annual evolution of the wild boar population in order to improve hunting management and to tackle damages to agriculture and problems that wild boars cause in urban areas, the competent authorities of one region in Spain has externalised many years ago that task to a company specialised in environmental consulting. That initiative has proved to be very useful for the authorities responsible for animal health in that region in the current context of an increased risk of incursion of ASF. The intensive monitoring and the analysis of its results provide updated information on the evolution of the wild boar population in several geographical areas pre-defined according to ecological considerations. That helps to anticipate significant changes in the wild boar population, provides advice on the most suitable measures to control them (e.g. on intensifying hunting during a specific season – normally unusual – to compensate for the anticipated growth of the population) and contributes to optimise risk-based surveillance for ASF in the region.

5.4 Management of wild boar populations

The EU strategic approach emphasizes that Member States should tailor their national strategies to prevent and control ASF in wild boar to their specific needs. They should take account of the dynamics of their wild boar population and proximity to domestic pig herds. This demands expert knowledge of the national wild boar ecology, reliable wild boar population estimates and the identification of agricultural and environmental risk factors (such as the distribution of domestic pig holdings and the proximity of intensive arable production to natural reserves).

Most authorities agreed that it is necessary to achieve a sustainable reduction of the wild boar population, especially if the disease enters into their country. However, only one of the Member States visited has an agreed national strategy for the management of wild boar that includes a specific target for the percentage reduction in wild boar density. Due to the lack of reliable estimates of the size and density of the wild boar population, most authorities have not established any specific population reduction targets yet in their wildlife management strategies. Revision 12 of the EU Strategic approach, as published in April 2020, includes a new Annex IV related to the development of national action plans for the long-term wild boar management in all Member States, where relevant.

Countries like Germany and Spain had some localised ongoing projects to estimate wild boar density independently of the hunting bag and the trends of that density. Although the competent authority in both countries acknowledged the challenge that obtaining more accurate estimates represents, they extracted lessons from those local examples and had plans to widen the geographical coverage of those initiatives during 2019. Those examples of good practice can contribute to the development of more suitable options to estimate the size of the wild boar population in those MS, as those analysed in the context of the ENETwild project (see Annex VII). Germany indicated that in order to improve data collection taking advantage of driven hunts (as currently promoted by EFSA), they would require additional legislative changes at federal level.

The main measures most Member States adopted were administrative and legislative changes to allow increased hunting, e.g. longer seasons, bigger hunting quotas. In several Member States, the authorities at different levels had introduced economic incentives to encourage hunters to intensify hunting of wild boar and they had promoted good practices for wild boar hunting that have been endorsed by all relevant stakeholders. In Member States where that was not yet the case, such as Germany and Spain, the competent authorities had taken action to eliminate previous legal provisions that introduced general hunting protective periods for wild boar. As a result of that, the duration of the hunting season has been extended, aiming mainly at tackling the increasing level of agricultural and environmental damage caused by wild boars, but with the overall objective of gradually reducing their overpopulation.

New initiatives as recommended in the EU strategic approach have been adopted in the visited Member States. These include the payment of financial incentives to encourage the hunting of sows and young females, (a practice that had been forbidden in legislation until recently). Although that practice was not well received initially by certain hunting associations, communication efforts made by the competent authorities highlighting the importance of doing that to overturn the growing trend of the wild boar population had started to pay dividends.

In many Member States, with the support of wildlife management research institutions, they have developed and distributed to all relevant competent authorities, specific guidelines on how to use alternative methods to reduce the population of wild boar; e.g. trapping. In parallel, there have been legislative amendments that allow the use of those methods, provided animal welfare aspects are taking into consideration, when there is evidence of overpopulation of wild boar or of the damage they cause.

Forbidding the sustained feeding of wild boar in areas free from the disease has also been implemented in the visited Member States (as recommended in the EU strategic approach).

The Member States visited took administrative measures to forbid feeding (except for baiting). However, regarding the hunting of female animals, many authorities have not yet agreed to direct hunting efforts towards female animals, others have encouraged hunters but without success and most do not get sufficient information in the aggregated reports to know about the sex and age of the animals hunted. In most parts of Europe, there are two distinct hunting modes for wild boar:

- Individual or silent hunting (also known as ‘espera’), in which concealed hunters carefully select their prey. Typically, they prefer male animals with large horns, antlers or teeth (‘trophy’ males).
- Group or driven hunts (also known as ‘montaria’), in which beaters and dogs disturb groups of wild boar, which are then shot as they flee by static hunters who surround the hunted area. Hunting is indiscriminate, with piglets, yearlings and adults of both sexes being considered legitimate targets.

While both modes of hunting exist in more northerly countries, group hunting is the norm in the Iberian Peninsula and Mediterranean.

Each mode of hunting has a very different impact on the hunted population. Traditional individual hunting tends to favour the survival of female animals and to remove mature animals before they

become elderly. However, it can equally be used to target female animals and young adults, thereby providing an effective tool for population structure regulation. It is worth noting that the use of feed as bait can significantly improve the success of individual hunting. This is particularly true when used to hunt young animals – older wild boar learn to be more cautious of baited areas.

Inevitably, the reduction in the number of hunters implies that the effectiveness of recreational hunting as a method to limit wild boar population is increasingly limited. Hunters' attitudes are also relevant in this context. A survey of more than 8,000 hunters in Lower Saxony ([7]) indicated that there was consensus on the need to reduce the wild boar population. However, hunters usually resisted the suggestion that they had a role to play. They typically rejected the preferential hunting of piglets and breeding females or any non-hunting methods of control (such as trapping or the use of chemicals). They were not in favour of incentives to increase significantly the number of licensed hunters.

Local veterinary authorities are generally involved in setting hunting quotas at district level, which is one of the levers that the hunting authorities use to manage hunted wild animal populations. In most countries, these quotas have been increased as a result. However, the increased hunting quotas have also created new challenges. Sometimes, the wild boar hunted do not reach the amount set for the hunting quota and some authorities do not see a future in keeping hunting as the mean to control increasing wild boar populations. In other cases, the increased hunting created problems related with oversupply of wild boar meat, with the consequent drop in prices and difficulties to place it on the market. This problem is bigger in countries where the meat is traditionally used only by hunters and rarely reach other consumers.

A wild boar mortality study ([8]) concluded that, in order to halt the growth in the wild boar population, it is necessary to kill 80% of each year's piglets before they reach breeding age. In addition, adult breeding females must be preferentially hunted. The study recommended the use of driven hunts for piglets and intensive individual hunting of adult female animals as a means to regulate wild boar populations.

5.5 Preventive measures

Member States visited have generally updated their preparedness and contingency plans for ASF including specific aspects for wild boar.

Training for officials and hunters: most Member States have trained hunters to be able to recognise the disease (should it appear in their territories) and organised courses to update the knowledge of their officials.

Biosecurity related to hunting of wild boar: some Member States already had minimum standards of biosecurity for hunting grounds (e.g. equipment and procedures for safe disposal of animal-by-products, refrigerated storage) and others have introduced them only in the high risk areas; they will wait until being affected by the disease to trigger compulsory measures (as otherwise they require legislative amendments). There is also variation in the frequency and quality of the controls to hunting grounds.

([7]) Keuling et al (2016)

([8]) Keuling et al (2013)

There is no specific written guidance or information for visiting (foreign) hunters, although some authorities indicated they cover the topic of hunting tourism during the training of hunters.

The EU Strategic approach to the management of ASF recommends that farmers who hunt should avoid contact with domestic pigs for at least 48 hours following hunting. In one Member State visited, the authorities recognised the difficulty that these farmers face to comply with this recommendation, and veterinary authorities instead focus on informing them about the increased risks and how to avoid them (e.g. by strictly following bio hygienic measures as changing of foot wear and clothing when entering the stable).

Organisation of tailored simulation exercises: two of the four countries visited had organised tailored simulation exercises to respond to the detection of ASF in wild boar, and the others were planning to organise them during 2019.

Examples of good practice:

Austria

Numerous well-organised ASF simulation exercises regularly test the robust animal health emergency response system. Lessons learnt from them significantly contribute to its further enhancement. Preparations have been made for the recovery and safe disposal of fallen wild boar and those hunted in the restriction zones. The material and equipment necessary for the safe disposal of dead wild pigs has already been procured and the activities have been trained during simulation exercises. Those efforts have been particularly intensive in the regions neighbouring affected Member States.

The competent authorities of regions at high risk because of the presence of the disease in a neighbouring Member State had made comprehensive arrangements for the storage, collection and disposal of hunting **animal by-products**. They included facilities to handle animal by-products in game processing establishments, which were inspected at least once per year, a dedicated collection service to transport the carcases of wild boar found dead to approved rendering facilities, storage containers located within hunting grounds and dedicated collecting systems to eliminate safely wastes produced while dressing carcases, and an increased frequency of collection of wastes from motorway service areas.

Slovakia

A "National Control Plan for African swine fever in the feral pig population in Slovakia in 2018" was published in December 2017. This plan sets out biosecurity requirements related to hunting and the competent authority wrote to every hunting ground in Slovakia during 2018 explaining the measures that had to be complied with which included, e.g.

- Hunted wild boar carcases could only leave hunting grounds in the buffer zone once a negative ASF result had been obtained.
- Testing of all found dead wild boar throughout Slovakia for ASF.
- Biosecure handling of carcases.

5.6 Surveillance in wild boar

Although the EU strategic approach recommends enhancing testing for found carcasses, including road killed and sick wild boar, Member States free from ASF have only implemented this partially. Reporting, sampling and testing of dead wild boar has been so far quite limited. Two of the four Member States visited were offering financial incentives to increase the reporting of animals found dead. The competent authorities in the other two did not consider it necessary as, in their view, the increased level of awareness should have similar results.

The surveillance is better - i.e. higher number of samples taken - in high surveillance areas (areas bordering a country affected by the disease).

A Member State referred to the high population density of scavengers (e.g. vultures) as a challenge to find carcasses of wild boar and to the need for more intensive and purposeful surveillance networks with the help of hunters' associations and several categories of park and forest rangers, which they did not yet have. It also indicated the need to train potential samplers – whether official veterinarians, forest rangers or hunters – and to implement arrangements to facilitate the collection of samples (e.g. provision of sampling material, dedicated phone lines, setting up convenient collection points for the samples).

The countries that have established risk areas for ASF had already implemented serological surveillance in them.

6. OVERALL CONCLUSIONS

Member States have invested in systems to detect cases of ASF in wild boar, recognising the pivotal role that hunters play in notifying cases of suspicion. To a greater or lesser extent, the veterinary authorities engage with their hunting counterparts to explain the need to reduce the wild boar population.

One of the greatest challenges that Member States face is to develop and implement national wild boar management strategies that are acceptable to farmers, hunters and environmentalists alike. To succeed, future wild boar management strategies must recognise the changes that have occurred in wild boar population dynamics. However, Member States still rely on traditional hunting methods and natural processes (hard winters, starvation and enzootic diseases) to control the wild boar population. The veterinary authorities have made little headway in embedding additional measures, such as culling of breeding animals (using traps and targeted hunting of young female animals for example) and feed resource management (using feeding bans and fences, for example) to establish a new equilibrium.

All the non-affected Member States visited are taking measures to prevent and prepare for the possible incursion of African swine fever onto their territories. In many cases, the discussions with stakeholders and cooperation between authorities were ongoing with a view to improving the national plans, actions or division of responsibilities.

Authorities in charge of areas bordering affected regions have increased surveillance in wild boar. However, the passive surveillance levels remain quite low in others territories. This would easily

lead them to not detecting ASF at an early stage – especially if big jumps (as happened in Belgium) happen again.

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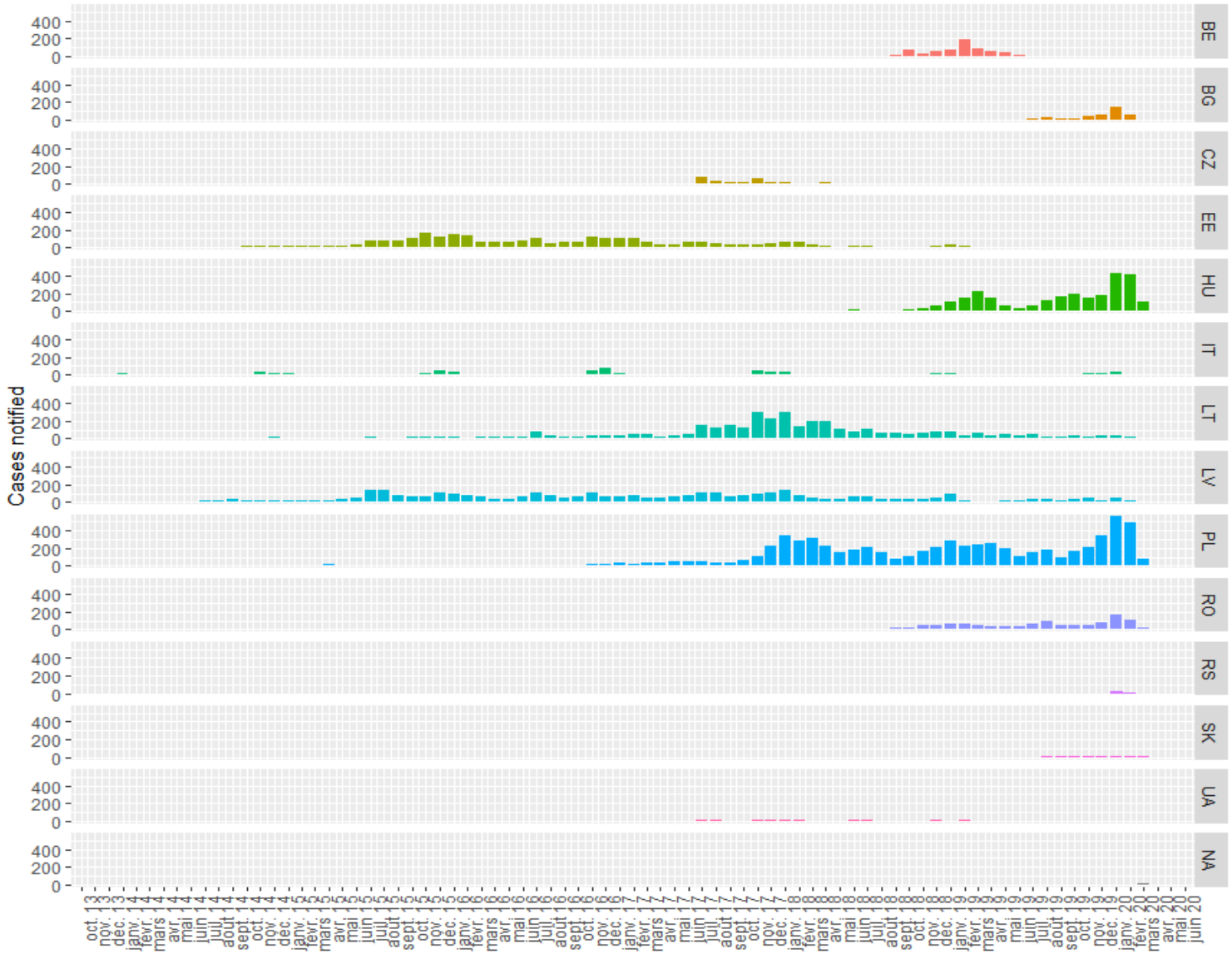
ANNEX 1 - FACT-FINDING MISSIONS

The European Commission carried out fact-finding missions in the following Member States. In accordance with the agreed reporting arrangements, separate country reports were not published. Instead, the mission teams prepared a record of the findings following each fact-finding mission and shared it with the national authorities for comments before being finalised. The findings presented in this overview report are based on these records.

Country	Date of Fact finding mission	SANTE ref. no.
Slovakia	3 – 7 December 2018	2018-6767
Spain	10 – 14 December 2018	2018-6766
Germany	23 January – 1 February 2019	2019-6612
Austria	25 February – 1 March 2019	2019-6611

ANNEX II - WILD BOAR ASF IN THE EU – A TIMELINE (2014 – 2020)



The chart summarizes ASF cases notified to ADNS since the start of 2014, presented by country.

Country	Total number of cases
BE	647
BG	397
CZ	230
EE	2,781
HU	2,686
IT	584
LT	3,755
LV	3,837
PL	6,956
RO	1,190
RS	30
SK	52
UA	92

ANNEX III - EFSA SCIENTIFIC OPINIONS AND REPORTS

The following table summarises the scientific opinions and reports on ASF that were prepared by EFSA in response to requests submitted by the European Commission:

Epidemiological analyses of African swine fever in the European Union (November 2018 to October 2019)

Scientific Report - 30 January 2020

Risk assessment of African swine fever in the south-eastern countries of Europe

Scientific Opinion - 05 November 2019

Research gap analysis on African swine fever

Scientific Report - 27 August 2019

Epidemiological analyses of African swine fever in the European Union (November 2017 until November 2018)

Scientific Report - 29 November 2018

African swine fever in wild boar

Scientific Opinion - 11 July 2018

Epidemiological analyses of African swine fever in the Baltic States and Poland (Update September 2016–September 2017)

Scientific Report - 08 November 2017

Epidemiological analyses on African swine fever in the Baltic countries and Poland

Scientific Report - 23 March 2017

African swine fever

Scientific Opinion - 14 July 2015

African swine fever

Scientific Opinion - 07 April 2014

Mitigation measures for African swine fever virus in wild boar

Scientific Report - 17 March 2014

ANNEX IV - ASF-STOP – UNDERSTANDING AND COMBATTING AFRICAN SWINE FEVER IN EUROPE - COST ACTION CA15116

Promoted by the European Cooperation in Science and Technology (COST) and funded through the European Commission's Horizon 2020 programme, the ASF-STOP action aims to prevent the further spread of ASF in Europe and to protect the European pig industry. For this purpose, it brings together research teams and practitioners from across Europe to develop:

- Plans for the management and control of wild boar populations,
- Surveillance methods for the early detection of ASF,
- Better understanding of the epidemiology of the disease.

Organised into five working groups, each responsible for a different aspect of the work programme, the funded action runs from 3 May 2016 to 2 May 2020. To date, the project has been responsible for the publication of 13 Open Access publications ([9]) on the subjects of ASF and wild boar:

Publication Name	Date
Disease dynamics in experimentally infected wild boar	08 October 2019
An update on ASF virology	01 October 2019
New laboratory procedure for the simultaneous detection of ASF and CSF viruses	16 September 2019
Lack of evidence for long term carriers for ASF	29 August 2019
Role of scavengers in ASF spread	22 August 2019
Analysis of Estonian surveillance in wild boar suggests a decline in the incidence of African swine fever	27 June 2019
First Oral Vaccination of Eurasian Wild Boar Against African Swine Fever Virus Genotype II	09 May 2019

([9]) Links to all of the research papers and other publications are available at https://asf-stop.com/dissemination/

Epidemiological considerations on African swine fever in Europe 2014–2018	11 January 2019
Stable flies as ASFV vector	10 January 2019
ASF outbreak investigation	19 November 2018
The intracellular proteome of African swine fever virus	04 October 2018
Relevant Measures to Prevent the Spread of African Swine Fever in the European Union Domestic Pig Sector	31 May 2018
Identification of Wild Boar–Habitat Epidemiologic Cycle in African Swine Fever Epizootic	11 April 2018

ANNEX V - EU STRATEGIC APPROACH – WILD BOAR MEASURES

The EU strategic approach provides recommendations for the prevention, control and eradication of ASF in wild boar. These include general measures, which should be applied in all Member States (whether affected or not), and specific measures, which vary according to the level of disease risk.

General measures:

1. Segregation between domestic pigs and wild boar – pig keepers should prevent direct or indirect contact between pigs and wild boar. This includes a ban on the introduction of wild boar meat onto pig holdings and restrictions on the use of potentially contaminated straw.

2. No sustained feeding of wild boar– the practice of routinely feeding wild boar during the winter months should stop. Hunters may provide feed for baiting purposes but no more than 10kg/km^2/month.

3. Reduction in the wild boar population density - the veterinary authorities should seek agreement with forestry management bodies and environmental authorities on wild boar management strategies and targets, consulting with hunters as key stakeholders.

4. Reduction in the reproductive rate - hunting and culling should target adult and sub-adult female animals to ensure that they account for at least 50% of the annual hunting bag.

5. Use of more effective hunting methods – the authorities should allow hunters use additional technical equipment (such as night sights) in order to reduce the hunting effort required to reduce the wild boar population.

6. Hunting biosecurity - Hunters should have the training, equipment and facilities necessary to prevent the spread of disease to or from forests and hunting grounds.

7. Enhanced passive surveillance – the authorities should improve the detection of wild boar carcases (especially in newly infected areas).

Specific measures

The following measures vary according to the risks and challenges that each area faces:

i. Free areas: areas free of ASF of unaffected Member States.

ii. Border areas: areas free of ASF bordering infected areas.

iii. Eradication areas: recently infected areas, where eradication may be possible.

iv. Control areas: areas of established infection, where controlling the disease is important.

	Free areas	Border areas	Eradication areas	Control areas
ASF testing	All found dead wild boar carcases (PCR*)	All found dead wild boar carcases (PCR*)	All found dead wild boar carcases (PCR* & Ab**)	All found dead wild boar carcases (PCR* & Ab**)
	Hunted wild boar (testing is encouraged) (PCR)	All hunted/trapped wild boar (PCR)	All trapped/culled wild boar (PCR & Ab)	All hunted, trapped/culled wild boar (PCR & Ab)
Hunting and culling (e.g. using traps)	As necessary to reduce the wild boar density to agreed levels	Intensive hunting to reduce the wild boar density as much as possible	Hunting prohibited but trapping and culling permitted	Hunting, trapping and culling permitted
Hunting methods	Driven & solo hunting permitted	Driven & solo hunting permitted	Solo hunting only (for culling purposes)	
Removal of wild boar carcases	Not essential	Safe disposal according to authorised procedures	Active searching for wild boar carcases & secure disposal	Active searching for wild boar carcases & secure disposal
Fencing	Decide with other relevant authorities	Decide with other relevant authorities	Encouraged in defined areas to slow disease spread	Not required
Other forestry activities	Permitted	Restricted	Prohibited (including hunting other species)	Restricted

*PCR – polymerase chain reaction – test for the presence of ASF virus (active infection)

**Ab – test for the presence of ASF antibodies (previous exposure)

ANNEX VI - CO-FUNDED PROGRAMMES

In accordance with Regulation (EU) No 652/2014 of the European Parliament and of the Council, Member States may obtain Commission grants to co-fund annual or multi-annual national programmes for the eradication, control and surveillance for certain diseases, including ASF.

The following table summarises the activities covered within the approved programmes for three of the four Member States visited (Spain did not submit a national programme for approval covering either of the years 2018 or 2019):

Activity	Austria	Germany	Slovakia
Period covered	2019	2018-2021	2018; 2019-2022
Area covered	Entire territory	13 federal states	Entire territory
Wild boar surveillance samples	Yes Sampling and testing of 1,200 wild boar in 2019	Yes Sampling and PCR testing of 2,045 animals per year from an estimated wild boar population of 4,090	Yes Sampling and testing of 9,942 wild boar in 2018 (PCR) and 31,094 wild boar in 2019 (PCR & ELISA)
Equipment (refrigerated carcase storage)	No	Yes 250 units to be procured (50% EC-funded)	Yes 10 units in 2018 and 691 units in 2019 (75% EC-funded)
Awareness campaign	Yes Total value €50,000 in 2019	Yes Total value €3,000 throughout the programme	Yes Total value €25,000 in 2019
Wild boar carcase finding and/or collection and delivery to CA	Yes Estimate of 500 during 2019	Yes Estimate of 6,300 carcases throughout the programme	Yes Estimate of 1,000 each year (2018 and 2019)
Selective hunting of female wild boars	Yes Estimate of 700 female wild boar during 2019	Yes Estimate of 217,300 female wild boar throughout the programme	Yes Estimate of 27,000 female wild boar each year (2018 and 2019)

ANNEX VII - ENETWILD

ENETwild is the consortium that was awarded the contract to implement EFSA's 'Wildlife: collecting and sharing data on wildlife populations, transmitting animal disease agents' project. The contract, which is valued at €3,000,000, runs from 26 January 2017 to 25 January 2023.

The objective of the contract is to develop tools for the collection of population data for various wildlife species, including wild boar and to make these data available in usable formats.

Some key achievements of the project relevant to ASF in wild boar include:

September 2017	Workshop on passive surveillance for ASF virus
February 2018	Survey questionnaire on population density and abundance estimation methods used in Europe
July 2018	Release of a normalized Wild Boar Data Model, which will be used by approved data providers for the consistent collection of information on wild boar hunting, population density and occurrence/absence
August 2018	Publication of practical guidance on the estimation of population density and relative abundance of wild boar using direct and indirect methods
October 2018	Wild boar ecosystem suitability maps for Europe (10km^2 resolution) Wild boar abundance maps (based on hunting data) for Europe (100km^2 resolution)
June 2019	Training school for researchers on the use of camera traps for wild boar

In order to manage the wild boar population at national or regional level, reliable estimates of the species' abundance are needed. However, the dynamics of the wild boar population are difficult to quantify. By establishing agreed and harmonized estimation methods, the project hopes to obtain a more complete picture of the wild boar population, which will take account of migration between hunting areas.

The consortium reviewed available models, which are based on occurrence data and hunting data (hunting bag, census and/or density data) in order to develop a composite abundance model. The model takes account of multiple factors that can be correlated with wild boar distribution, including:

- climate (positive relationship between both temperature and precipitation),
- availability of forage (positive relationship),
- snow depth and the number of predators (both negatively impacting suitability),
- amount of forest (determinant of presence but not strongly correlated with density).

Currently, the lack of data (concerning the likely presence or absence of wild boar) from particular biotopes limits the extent to which reliable, high-resolution extrapolations on wild boar population density can be made. The focus of the project's efforts is on:

- mobilizing citizens to collect data on the presence (or absence) of wild boar and other ungulates (such as cervids);
- improve the quality and coverage of hunting data, with a specific focus on measuring hunting effort;
- further developing and refining the population abundance and density models.

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