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ANALYSIS OF THE ANIMAL HEALTH SITUATION IN MEMBERS IN THE REGION DURING 2021 AND 2022

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22/09/2022

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This report provides a summary of the animal health situation in the Europe Region during the period 1 January 2021 to 14 July 2022. This animal health situation report is based on the information submitted to WOAH by 56 countries and territories[1] in the Europe Region through the World Animal Health Information System (WAHIS) and includes: i) reporting by WOAH Members in the Region; ii) a summary of the animal cases of infection with SARS-CoV-2 in the Region reported to WOAH; iii) a summary of the situation in the region regarding infection with high pathogenicity avian influenza (HPAI) viruses; iv) a summary of the situation in the region regarding infection with African swine fever (ASF) virus; and v) an update on WAHIS and interconnectivity with ADIS. The objective of this report is to describe the animal health situation in the region for the selected diseases based on data provided by Members. While these data may have some limitations, being sometimes incomplete and presenting variations in data granularity (depending on the country), they represent the reference official animal health information reported by Veterinary Services, using a standard template and a standard data format.

i. Reporting by Members in the Europe Region

In accordance with Chapter 1.1. of the *Terrestrial Animal Health Code* and *Aquatic Animal Health Code*, Members are required to submit six-monthly reports on the absence or presence and evolution of listed diseases and information of epidemiological significance to other Members. Figure 1 shows the number of countries and territories in the region that submitted their six-monthly reports to WOAH, by semester. For the period between 2005 and 2019, this number was 49 on average for terrestrial animal diseases and 47 for aquatic animal diseases. The numbers then dropped for 2020, 2021 and 2022 due to longer submission times. Indeed, as part of the transition from the previous version of WAHIS to the new version of WAHIS in 2021, WOAH asked its Members to temporarily suspend the submission of their six-monthly reports with effect from June 2020. Although submission of these reports was resumed in March 2021, the disruption caused by the COVID-19 pandemic understandably further increased the reporting delays for 2020 and 2021.

For the first semester of 2020, the time for WOAH to collect reports from half of the countries and territories in the region after the end of the semester was 1 year and 4 months for terrestrial animal diseases and 1.5 years for aquatic animal diseases. These figures then decreased to 11 months and 1 year respectively for the second semester of 2020 and 7 months and 8 months respectively for the first semester of 2021 (Table 1).

Table 1. Time (in months) from the end of a given semester before the six-monthly reports of half of the countries and territories in the Europe Region had been collected, by terrestrial report ("Terra") and aquatic report ("Aqua")

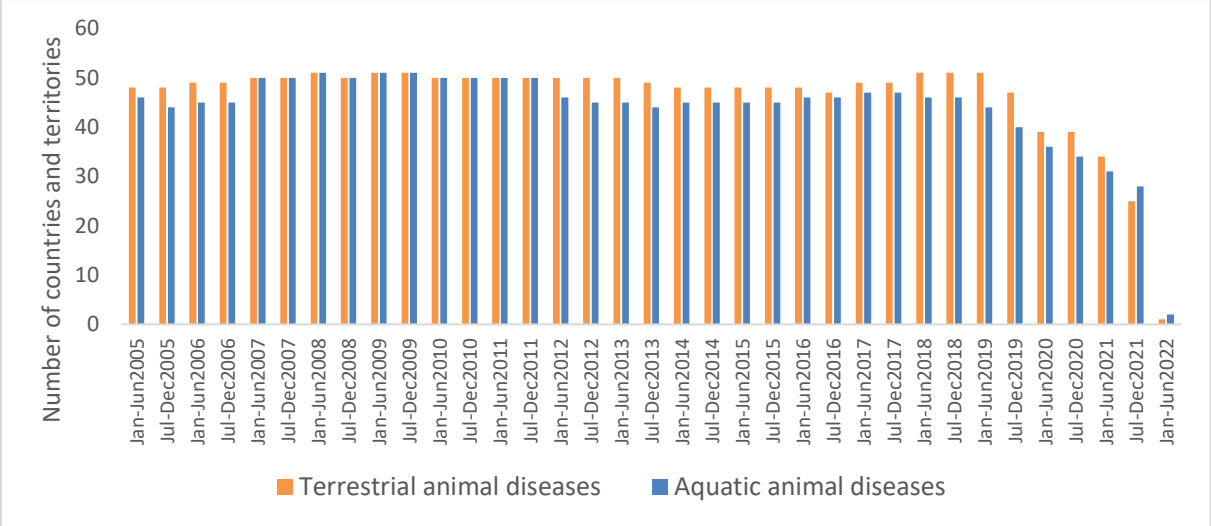
Year	Semester	Terra (months)	Aqua (months)
2020	1st	16	18
2020	2nd	11	12
2021	1st	7	8

As of 14 July 2022, almost 7 months since the end of the second semester of 2021, WOAH had received reports of terrestrial animal diseases from fewer than half of the countries and territories in Europe. This threshold was reached for aquatic animal diseases 6 months after the end of the semester. By comparison, the submission time for half of the Europe Region's reports for the first semester of 2018 was 4 months for terrestrial animal diseases and 3 months for aquatic animal diseases. As of 14 July

[1] This number includes the 53 Members of the WOAH Regional Commission for Europe, as well as Ceuta, the Faroe Islands and Melilla

2022, submission times had gradually improved since the launch of the new version of WAHIS in March 2021 but had not yet reached the same level as before the pandemic.

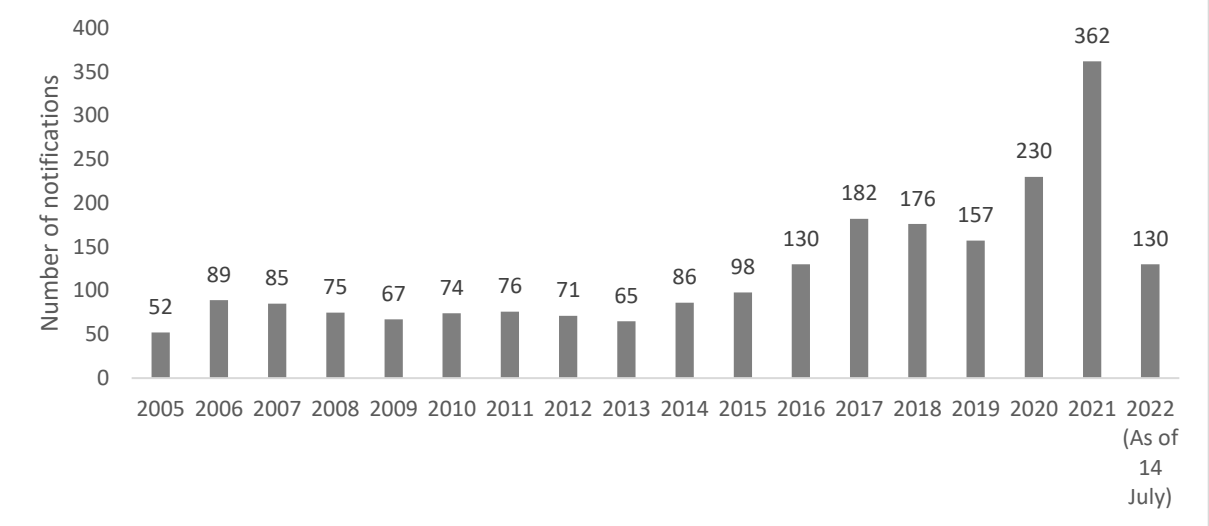
Figure 1. Evolution of the number of countries and territories in the Europe Region having submitted their six-monthly report, by type of animal and by semester, between 2005 and the first semester of 2022 *(reports received by WOAH as of 14 July 2022)*



Also in accordance with Chapter 1.1. of the *Terrestrial Animal Health Code* and *Aquatic Animal Health Code*, Members are required to send to the Headquarters notification within 24 hours of any of the events described in Article 1.1.3. for listed diseases. Figure 2 shows the number of immediate notifications for listed diseases, submitted by year, by countries and territories in the region. The number of notifications submitted in 2021 was higher than in any previous year, due to the HPAI and ASF outbreaks.

For notifications submitted in 2021 and 2022 (up to 14 July), the time between the confirmation of the event by the national authorities and its notification to WOAH has been calculated. The median time was 4 days. Submission time was not found to be significantly different between types of animals (i.e. aquatic vs terrestrial animals) and between reasons for notification (respectively Wilcoxon rank sum test [p value = 0.83] and Kruskal-Wallis test [p value = 0.21]).

Figure 2. Evolution of the number of immediate notifications submitted for listed diseases by countries and territories in Europe between 2005 and 2022 (as of 14 July)



Lastly, in accordance with Chapter 1.1. of the *Terrestrial Animal Health Code* and *Aquatic Animal Health Code*, and subsequent to any immediate notification, Members are required to send a weekly follow-up report to provide further information on the evolution of the event that justified the notification. These follow-up reports should continue until the disease has been eradicated or the situation has become sufficiently stable that six-monthly reporting will satisfy the Member's obligations in this respect. As of 14 July 2022, 165 ongoing events in European countries and territories for listed diseases were registered in WAHIS. For each event, the time since the last submitted report was calculated. The median time since the last report provided was 68 days, with several events for which the last report submitted was more than 3 years before the reference date.

Summary

For the period between 2005 and 2019, the number of countries and territories in the Europe Region submitting —six-monthly reports averaged 49 for terrestrial animal diseases and 47 for aquatic animal diseases (out of the 53 members of the WOAH Regional Commission for Europe, as well as Ceuta, the Faroe Islands and Melilla). Exceptionally long submission times were recorded for the 2020 and 2021 six-monthly reports, due both to the transition to the new WAHIS and the COVID-19 pandemic. By 14 July 2022, submission times had gradually improved since the launch of the new version of WAHIS in March 2021 and were about 7 months after the end of the semester on average; however, they had not yet reached the same level as before the pandemic.

Regarding early warning, the number of immediate notifications submitted in 2021 by European countries and territories was higher than in any previous year due to HPAI and ASF outbreaks. The median time from confirmation of an event to notification to WOAH was 4 days (whereas Members are required to submit these notifications within one day, in accordance with WOAH standards).

In terms of following up on early warning notifications of events in the region, the median time since the last report provided for events involving listed diseases unresolved as of 14 July 2022 was 68 days (whereas Members are required to send follow-up reports weekly, in accordance with WOAH standards).

ii. Infection with SARS-CoV-2 in the Europe Region reported to WOAH

Coronaviruses are a large family of viruses. Some of them can infect humans while others specifically affect animals, such as cattle, camels and bats, and are strictly species specific. On the other hand, some coronaviruses that infect animals can "jump" to humans and can spread between people. The latter case, though rare, is what happened with SARS-CoV-2, which was reported in humans in late 2019[2], presumably after animal-to-human transmission of an ancestral viral lineage of the subgenus Sarbecovirus that circulated in bats[3] (even if its proximal origin remains still unresolved). As of 14 February 2022, more than 560 million confirmed human cases had been reported worldwide, with more than 6.3 million human deaths.

SARS-CoV-2 can infect a wide range of mammals. Since its spread in humans, secondary host jumps of SARS-CoV-2 from humans to multiple domestic and wild populations of mammals have been documented. While the main driver of international spread is human-to-human transmission, the number of animal cases of infection with SARS-CoV-2 continues to rise, even if such cases can still be considered occasional occurrences. Most of the cases have been reported in pets and zoo animals, while some countries have experienced a high prevalence of outbreaks in mink farms, and variant strains have now been identified in mustelids. The virus has also been identified in free-ranging populations of white-tailed deer, raising concerns about the potential establishment of a wildlife reservoir. Understanding the extent of adaptation to these animal hosts is critical for assessing the threat posed by the spillback of animal-adapted SARS-CoV-2 into humans[4].

In line with the definition in the *Terrestrial Animal Health Code*, WOAH considers SARS-CoV-2 to be an emerging disease. On that basis, WOAH strongly encourages its Members to report through WAHIS the occurrence of any cases in animals that comply with the case definition provided in the relevant WOAH guidelines[5]. Thanks to official notifications, WOAH has been able to disseminate in a timely manner information of both public health (e.g. the occurrence of the virus in animals and the spillback to humans from mink and hamsters) and animal health relevance (e.g. the establishment of a large circulation of the virus in wildlife, as in the case of white-tailed deer, or the detection of the virus in new species).

This section provides an overview of the regional evolution of the occurrence of SARS-CoV-2 in animals officially reported to WOAH by its Members during the period January 2021 to 14 July 2022. WAHIS is currently one of the most comprehensive databases of SARS-CoV-2 cases in animals and is one of the reference sources for the general public and for the international scientific community[6]. On the other hand, the WAHIS system does not have a sensitivity of 100% as some cases reported in other source of data are not always officially reported to WAHIS. In addition, it is important to note that the cases reported in WAHIS are only those that meet the case definition criteria; consequently, findings such as serological evidence and screening are not included in the system.

Between January 2021 and 14 July 2022, 42 events relating to the occurrence of SARS-CoV-2 in animals were reported to WOAH by 15 Members, either through WAHIS or using the provision described in Article 1.1.5. of the *Terrestrial Animal Health Code*. The largest number of events was reported by Spain (16), followed by Poland (4) and the United Kingdom (4). The other Members reporting the

[2] van Dorp, L. et al. Emergence of genomic diversity and recurrent mutations in SARS-CoV-2. Infect. Genet. Evol. 83, 104351 (2020).

[3] Boni, M. F. et al. Evolutionary origins of the SARS-CoV-2 sarbecovirus lineage responsible for the COVID-19 pandemic. Nat. Microbiol. 5, 1408–1417 (2020).

[4] Tan, C., Lam, S.D., Richard, D., Owen, C.J., Berchtold, D., Orengo, C., Nair, M.S., Kuchipudi, S.V., Kapur, V., van Dorp, L. and Balloux, F., 2022. Transmission of SARS-CoV-2 from humans to animals and potential host adaptation. Nature Communications, 13(1), pp.1-13.

[5] https://www.woah.org/app/uploads/2022/08/en-sars-cov-2-surveillance.pdf

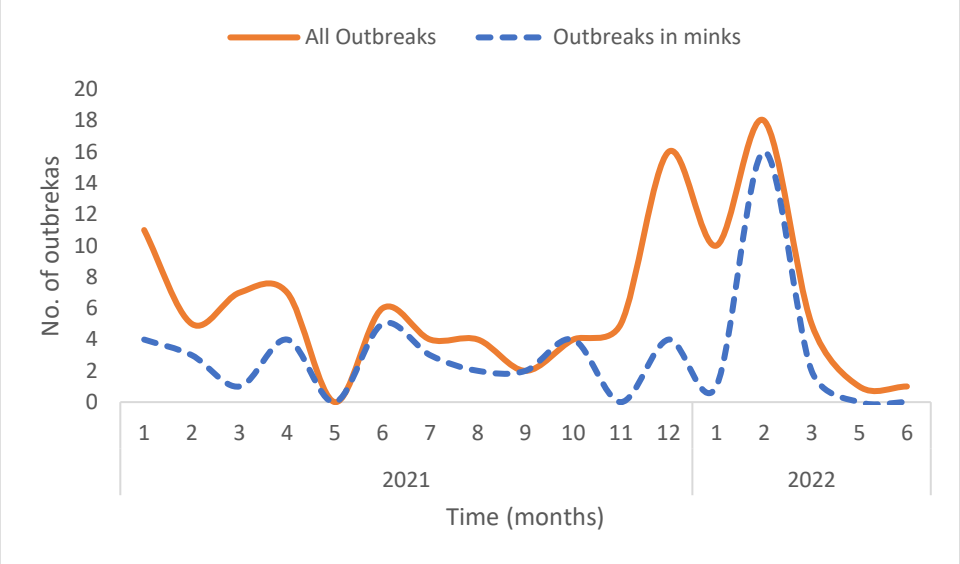
[6] https://www.nature.com/articles/s41597-022-01543-8

presence of SARS-CoV-2 declared one or two events each. The number of outbreaks reported within these events was highly variable, ranging from one to 28.

A total of 106 outbreaks were reported during this period, the majority in farmed American mink, which accounted for 49% of the reported outbreaks (52/106); 43% of outbreaks were reported in pets (46/106); the remaining 8% of outbreaks were reported in zoo animals, including gorilla, lion, European lynx, tiger and hippopotamus.

From a temporal perspective the majority of the outbreaks (51% [54/106]) were reported to WOAH between November 2021 and March 2022 (Figure 3). The main driver of outbreak dynamics has been the occurrence of the virus in mink farms.

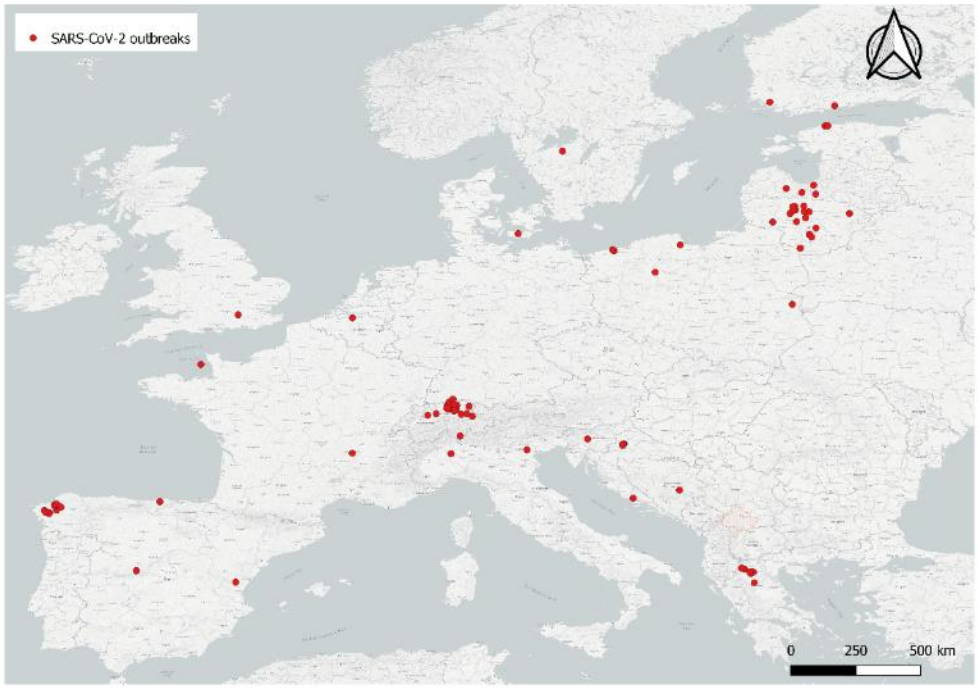
Figure 3. Monthly dynamics of all SARS-CoV-2 outbreaks (orange line), and dynamics in mink farms (blue dotted line) reported to WOAH by Members in the region through the early warning system between 1 January 2021 and 14 July 2022



The occurrence of SARS-CoV-2 in farmed American mink has probably been the most important animal health event linked to SARS-CoV-2 in Europe. The relevance of this event lies in the large extent of the events in several European countries, the observed evolution and viral mutation of SARS-CoV-2 in mink and its spillback to humans. While the acute phase of the occurrence of SARS-CoV-2 infection in American mink was observed in late 2020, during the period covered by this report European countries nevertheless declared more than 11 000 affected mink and more than 220 000 animals were either slaughtered or killed and disposed of.

The outbreaks reported since January 2021 are shown on the map in Figure 4. The main clusters relate to the reporting of SARS-CoV-2 in farmed American mink. The cluster observed in Switzerland relates to the reporting of cases in pets, detected within the framework of a research project on the pet animals of owners who had been infected with SARS-CoV-2. The project is under the responsibility of the Clinical Laboratory of the Vetsuisse Faculty (VSF) of the University of Zurich (UZH). Switzerland alone reported 28 of the 46 outbreaks reported in pets in Europe. As stated in the note provided by the country and in line with WOAH guidelines "*The Swiss government does not recommend currently to test cats or dogs for SARS-CoV-2 but supports research to increase knowledge in the field. For the time being, COVID-19 continues to be treated as a human disease with the main route of transmission between human beings.*" For a better interpretation of the map, please bear in mind that some outbreaks may overlap due to their being reported in the same location or in very close proximity.

Figure 4. Distribution of SARS-CoV-2 outbreaks reported to WOAH by Members in the region through the early warning system between 1 January 2021 and 14 July 2022



In addition to the official reporting provided by countries, and in order to better monitor the occurrence of SARS-CoV-2 in animals and other relevant information, the WOAH Epidemic Intelligence Team created a specific search algorithm using the Epidemic Intelligence from Open Source (EIOS) system[7], to identify and monitor news published in the media and in scientific publications. During the period 1 January 2021 – 14 July 2022 more than 16 000 items of news were detected by the system for screening and analysis. This information is used to contact the country concerned whenever a discrepancy is detected with the official reports, but also to follow in real time recent developments in knowledge of the disease, as well as to track and monitor potential misinformation and disinformation circulating in the media.

In order to communicate to partners, external stakeholders and the general public important updates on the evolving situation of SARS-CoV-2 in animals, WOAH has, since May 2021, been publishing a monthly report that includes major updates on the disease situation at global level with a specific focus on the recent evolution during the previous month. All the situation reports are available on the COVID-19 portal[8]. Each report has been viewed by an average of around 50 people (minimum 1 – maximum 609), with an average visualisation time of 1 minute.

<u>WOAH actions on SARS-CoV-2, guidelines and advisory groups</u>

In addition to the actions undertaken in a reporting perspective, WOAH has been working intensively with its network of experts and liaising closely with its Members to better understand the virus and its emergence and to enhance the capacity of countries to respond to this multifaceted crisis. To this end, WOAH established an **Incident Management System** to coordinate its response to COVID-19 internally and with key external partners. In this framework, several expert Advisory Groups have been established. The outputs of advisory group meetings as well as the relevant WOAH guidance are

[7] https://www.who.int/initiatives/eios
[8] https://www.woah.org/en/what-we-offer/emergency-and-resilience/covid-19/#ui-id-3

published on the WOAH COVID-19 portal[9]. Among the most recent updates on the portal, it is worth mentioning the document "Considerations on monitoring SARS-CoV-2 in animals".

Summary

Official notifications of SARS-CoV-2 occurrence in animals have continued to be reported to WOAH involving several different species.

A significant number of new events (N=42) were reported during the period under study, through WAHIS or using the dispositions provided for in Article 1.1.5 of the *Terrestrial Animal Health Code*.

In terms of spatial distribution, the reported outbreaks are mainly scattered across the Europe Region, though clusters have occurred in several countries due either to the localisation of mink farms or to specific surveillance activities.

The majority of the outbreaks and cases reported since January 2021 have been linked to infected farmed American mink. In view of the susceptibility of mink to the virus and the demonstrated virus mutation in this species, this may represent an event of public health concern.

WOAH is continuing to actively follow the evolution of SARS-CoV-2 in animals, through its network of experts and several Advisory Groups but also through dedicated epidemic intelligence activities to track any potential signal of concern.

iii. Infection with high pathogenicity avian influenza viruses

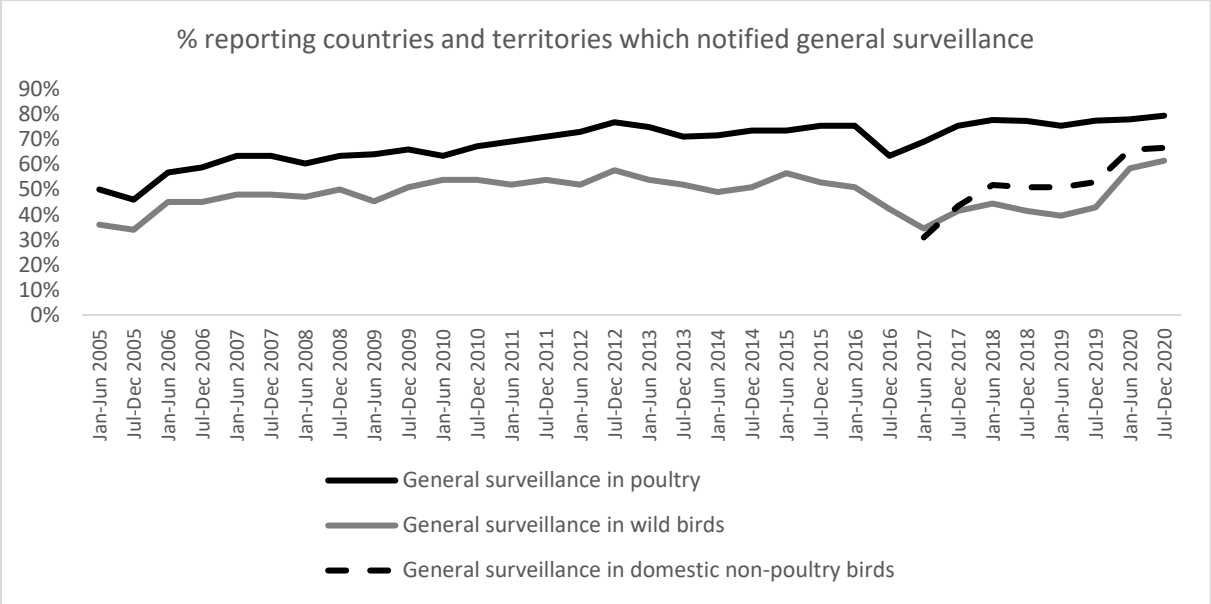
Infection with high pathogenicity avian influenza (HPAI) viruses is caused by influenza A virus in the family *Orthomyxoviridae*. Globally, based on the data reported to WOAH since 2005, HPAI spread in poultry is lowest in September, begins to rise in October and peaks in February[10]. According to WAHIS data, HPAI resulted in the death and culling of more than 109 million poultry within affected farms, backyards and villages in Europe between October 2005 and 14 July 2022. Moreover, preventive killing around outbreaks was also applied in several countries, drastically increasing the economic impact of the disease. In addition, avian influenza (AI) continues to be major public health concern.

Figure 5 presents a summary of reported surveillance activities in Europe between 2005 and 2020 (reports received by WOAH as of 14 July 2022). The figure shows that the percentage of countries and territories in Europe reporting poultry surveillance activities increased over the semesters (significantly positive trends with Spearman rank correlation test). In the second half of 2020, 79% reported general surveillance and 72% reported targeted surveillance. For wild birds, the trend between 2005 and 2020 was inconsistent. In the second half of 2020, 62% reported general surveillance and 44% reported targeted surveillance. Finally, for domestic non-poultry birds, the trend was upward (also significantly positive with the Spearman rank correlation test); in the second half of 2020, 67% reported general surveillance and 63% reported targeted surveillance. These figures show that not all countries and territories in Europe have reported HPAI surveillance. This should be taken into account when analysing reported data for HPAI detection, particularly for HPAI in wild birds, as only 44% of countries and territories in the region reported targeted surveillance activities for the second semester of 2020.

[9] https://www.woah.org/en/what-we-offer/emergency-and-resilience/covid-19/#ui-id-4
[10] WOAH High Pathogenicity Avian Influenza (HPAI) - Situation Report, https://www.woah.org/app/uploads/2022/07/hpai-situation-report-20220707.pdf

Figure 5. Evolution of the percentage of European countries and territories reporting HPAI surveillance activities, by animal group and by semester, between 2005 and 2020 *(reports received by WOAH as of 14 July 2022)*

**Data for 2021 and 2022 are excluded from the analysis because fewer than 70% of the Region's Members had submitted their six-monthly reports for these two years by 14 July 2022. As WOAH started to collect information on surveillance in domestic non-poultry birds in 2017, no information is available for the previous years.*



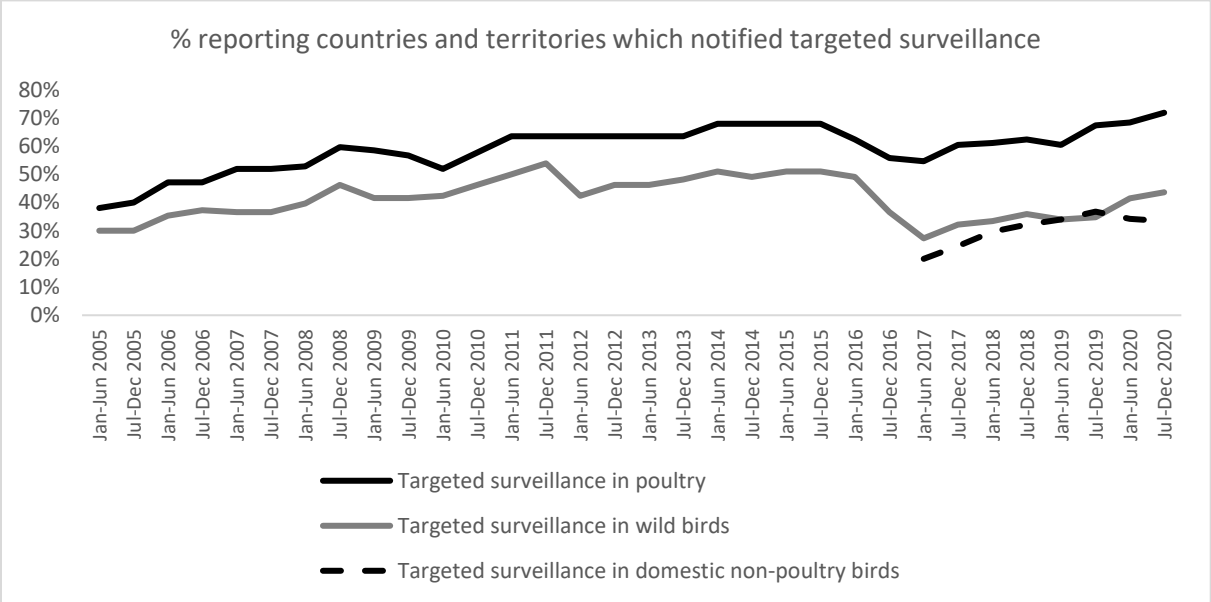
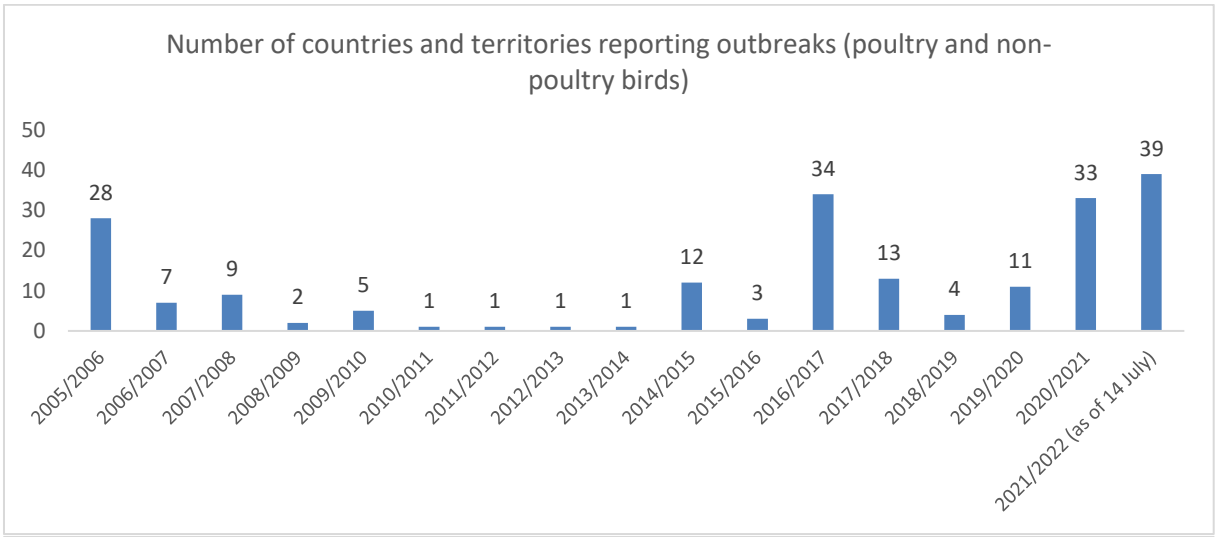


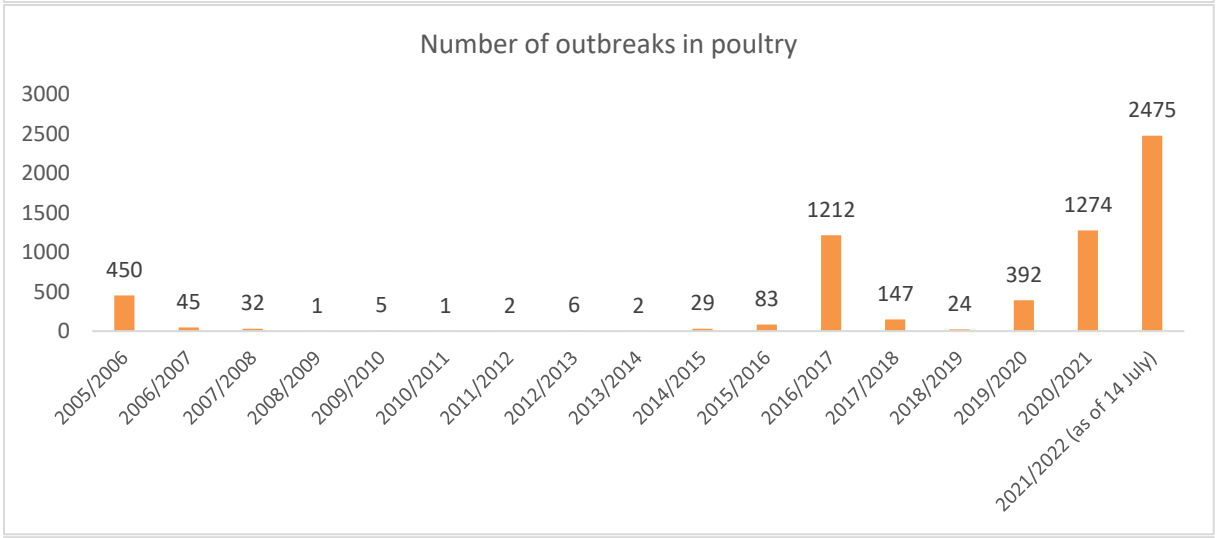
Figure 6 provides a summary of the situation reported through the early warning system during each seasonal wave in Europe, between October 2005 and July 2022, as of 14 July. The number of countries and territories reporting HPAI as well as the number of outbreaks in poultry in 2020/2021 were very high and were comparable to the previous peak observed in 2016/2017. The number of poultry losses[11] in 2020/2021 was higher than in all previous seasonal waves. Although the data for the 2021/2022

[11] Losses are defined as the sum of the number of poultry that died or were killed and disposed of within outbreaks. Preventive killing in surrounding areas is not included in the losses.

wave were still only partial as of 14 July 2022, the figures show that all the numbers were higher than in all previous waves.

Figure 6. Evolution in the number of countries and territories in Europe reporting HPAI outbreaks and evolution in the number of outbreaks in poultry and in the corresponding losses[11], by AI seasonal wave, between 1 October 2005 and 14 July 2022





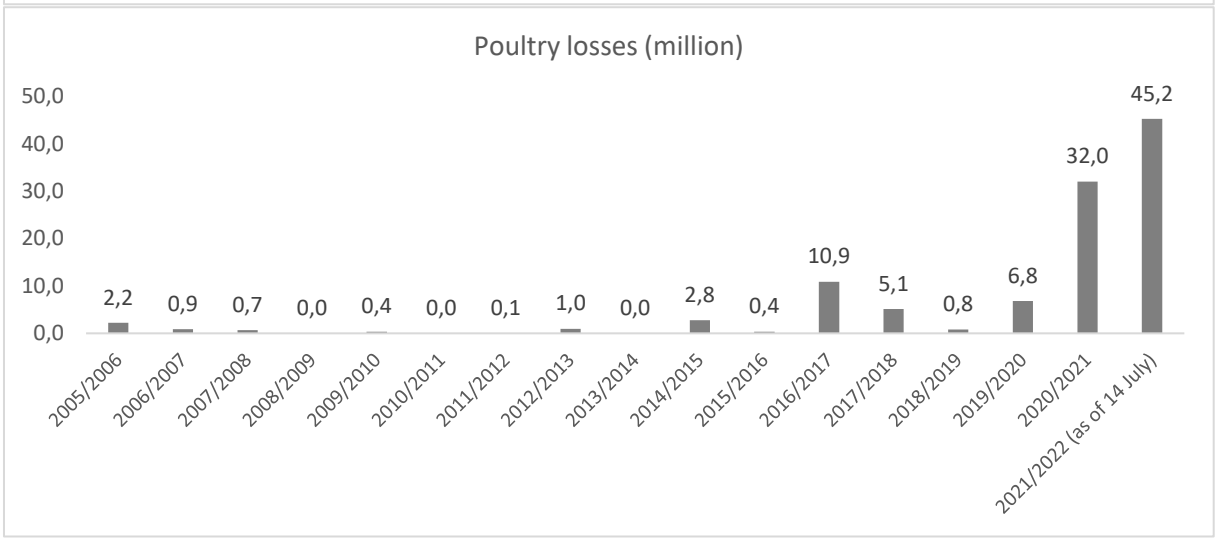


Figure 7 shows the distribution of HPAI outbreaks reported to WOAH by Members in the Europe Region through the early warning system between 1 October 2021 and 14 July 2022 and Table 2 indicates and the corresponding circulating subtypes detected.

Twenty-six countries and territories reported HPAI outbreaks in poultry between 1 October 2021 and 14 July 2022. Moldova reported the first occurrence of the disease in the country in January 2022. In addition, Bulgaria, Russia and Spain each notified that HPAI in poultry had reached new areas of the country, while Norway notified the first occurrence of subtype H5N1, and Poland notified the first occurrence of subtype H5N2. Other events were recurrences.

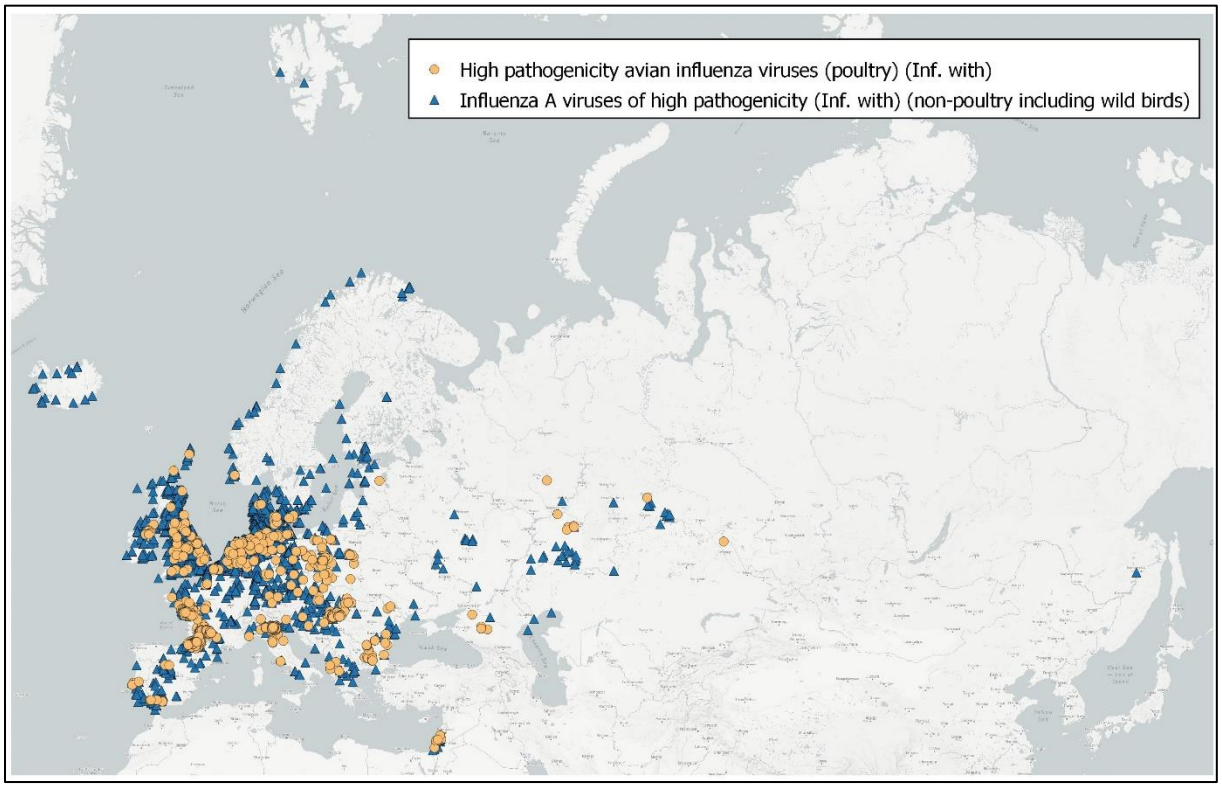
Thirty-eight countries and territories reported HPAI outbreaks in 'birds other than poultry (including wild birds)' between 1 October 2021 and 14 July 2022. Iceland reported the first occurrence of the disease in the country in October 2022. Bulgaria, France, Germany, North Macedonia, Portugal, Russia, Spain and the United Kingdom each notified that the disease had reached new areas of the country. In addition, Ireland, Lithuania, Luxembourg and Norway each notified the first occurrence of subtype H5N1 and Norway notified the first occurrence of subtype H5N5. Other events were for subtypes reaching new areas of countries, recurrences and the detection of HPAI in unusual hosts (red fox, *Vulpes vulpes*).

Concerning, HPAI in wild birds, an unprecedented number of outbreaks killed thousands of wild birds in Israel (more than 8000 common cranes [*Grus grus*], due to H5N1, between November 2021 and January 2022) and the United Kingdom (several hundred birds, due to H5N1, between October 2021 and January 2022). In response to these outbreaks, experts from the WOAH/FAO global network of expertise on animal influenza (OFFLU) exchanged epidemiological and experimental data and diagnostic protocols needed to inform surveillance and control policies and build technical partnerships among laboratories[12].

WOAH has a procedure that enables its Members to make a self-declaration of freedom from HPAI for their country or for a zone or compartment in their country, in accordance with the provisions of the *Terrestrial Animal Health Code*. These declarations provide the documented evidence of compliance with the relevant provisions of the aforementioned Code, as considered by the submitting country. As of 14 July 2022, 11 Members in the Europe Region[13] had published a self-declaration of freedom from HPAI in poultry[14].

[12] OFFLU Annual Report 2021, https://www.offlu.org/wp-content/uploads/2022/04/OFFLU_Annual_Report_2021_FINAL.pdf
[13] Austria, Belgium, Czech Republic, Denmark, Finland, Ireland, Portugal, Slovenia, Spain, Turkey and Ukraine
[14] https://www.woah.org/en/what-we-offer/self-declared-disease-status/

Figure 7. Distribution of HPAI outbreaks reported to WOAH by Members in the region through the early warning system, between 1 October 2021 and 14 July 2022



Details of the subtypes reported in HPAI outbreaks are presented in Table 2. As of 14 July 2022, the predominant subtype observed in the current epidemic season was subtype H5N1, with 98% of the outbreaks reported during this wave being associated with this subtype.

Table 2. Number of outbreaks of HPAI in the Europe Region in poultry, domestic non-poultry birds and wild birds, by subtype, between 1 October 2021 and 14 July 2022

Subtype	Poultry	Domestic non-poultry birds	Wild birds	Total
Not typed	24		2	26
H5	11	25	29	65
H5N1	2433	132	2464	5029
H5N2	1		1	2
H5N3			1	1
H5N5			16	16
H5N8	6		10	16
Total	**2475**	**157**	**2523**	**5155**

WOAH also has a procedure to disseminate via its website announcements received from Members on disease introduction simulation exercises taking place in their countries. In most cases, these simulation exercises are intended to test and practise an existing national contingency plan. Between 1 January 2021 and 14 July 2022, three Members in the Europe Region[15] informed WOAH of simulation exercises conducted on avian influenza. It is worth highlighting that, in a survey conducted in WOAH in 2018, 37 Members in the Europe Region reported having a contingency plan for avian influenza.

[15] Azerbaijan, Czech Republic and Turkey

In 2021, after an assessment of low pathogenicity avian influenza against WOAH criteria for listing, Chapter 1.3 of the *Terrestrial Animal Health Code* was amended, and "infection of domestic and captive wild birds with low pathogenicity avian influenza viruses having proven natural transmission to humans associated with severe consequences" was adopted for inclusion in the list of diseases. The requirement to notify the disease came into force in January 2022. As of 14 July, no such event had been detected and reported to WOAH.

As of 14 July 2022, the seasonal wave 2021/2022 had also been marked by an increase in the number of humans infected with AI. On 6 January 2022, the United Kingdom notified the World Health Organization (WHO) of the detection of a laboratory-confirmed human case of avian influenza A(H5) in South West England. This was later confirmed as H5N1. The most recently reported case in humans prior to that case was in October 2020 in Laos. The case in the United Kingdom was the first reported case of human infection with influenza A(H5) in the country. The case remained clinically asymptomatic, and the virus was not detected beyond this single case. Fortunately, as of 14 July 2022, no avian influenza virus had demonstrated sustained transmissibility in humans. Nevertheless, the OFFLU network continued to contribute genetic and antigenic data of zoonotic animal influenza viruses reported in 2021 to WHO for pandemic preparedness purposes.

Every three weeks, WOAH produces a situation report to provide Members with an update of the evolving avian influenza situation at global level. On average, each situation report has been viewed by more than 750 people (minimum 1 – maximum 2282), with an average visualisation time of 2 min 46 sec, indicating an overall high interest in the topic.

Conclusion

Not all countries and territories in Europe have reported conducting surveillance for HPAI. This should be taken into account when analysing reported data for HPAI detection, particularly for HPAI in wild birds, as only 44% of countries and territories in the region reported targeted surveillance activities in the second semester report for 2020 (the most recent data analysed).

In 2021/2022, the HPAI epidemic continued to threaten animal health in Europe, with 39 countries reporting the disease, and more than 5000 outbreaks and 45 million of poultry died or were killed and disposed of. Although the data for the 2021/2022 wave were still only partial as of 14 July 2022, the figures show that the impact of the disease in the region was higher than in all previous waves.

Terrestrial Animal Health Code Chapter 10.4. on high pathogenicity AI viruses, which was last updated in 2021, recognises vaccination against AI as an effective complementary control tool when a stamping out policy alone is not sufficient. WOAH Members are reminded that vaccination does not affect the AI status of a free country or zone if surveillance supports the absence of infection. Whether to vaccinate or not should be decided by the Veterinary Authority on the basis of the AI situation as well as the ability of the Veterinary Services to implement vaccination and the appropriate surveillance strategy.

To keep the international community updated with the latest information, WOAH produces regular syntheses of the information reported through WAHIS and publishes them on the WOAH website[10].

iv. *Infection with African swine fever virus*

African swine fever (ASF) was first described in Kenya in 1921, following the importation of European pigs that suffered high mortality rates. Following this first report, ASF was later observed in several Sub-Saharan countries. Since then, the disease spread and it has been reported in several regions of the world (the Americas, Asia, Oceania and Europe). ASF is probably one of the most complex and socio-economically devastating animal diseases, due to its huge impact on animal production and high mortality. In addition, the virus presents several characteristics that facilitate its rapid spread and complicate its eradication after introduction in a previously free area[16].

The very first occurrence of ASF outside its "traditional" range in Africa was reported in Portugal (in 1957 and again in 1960). After the second occurrence in Portugal the disease spread to Spain. Thereafter, ASF was reported in France (1964), Italy (1967), Cuba (1971), Brazil (1978), Dominican Republic (1978), Malta (1978), Haiti (1979), Belgium (1985) and the Netherlands (1986). All these outbreaks were finally eradicated after long, intensive and costly preventive and control activities, with the exception of the island of Sardinia (Italy), where the disease has remained endemic since 1978. In recent decades, the virus continued to circulate and spread in Africa where, since 2005, it has been reported in 32 countries. The most significant change in the disease epidemiology and dynamics took place in 2007, when ASF was confirmed in the Caucasus region, in Georgia. From there, limiting this description to Europe, the ASF virus spread to neighbouring countries (i.e., Armenia, Azerbaijan, Russia and Belarus), affecting domestic pigs and wild boar. The first occurrence of ASF in the European Union (EU) was reported in 2014 and, since then, numerous EU Member States have been affected.

Since its spread to Europe, two Members in the region have managed to eradicate the disease: Belgium (event resolved in March 2020) and Czech Republic (event resolved in April 2018), each of these countries subsequently submitting a self-declaration of freedom. Two additional countries have indicated the disease event as closed in WAHIS, without requesting the publication of a self-declaration of ASF freedom. Such a self-declaration would give more visibility to the surveillance they have implemented to substantiate freedom and to their system to prevent the re-introduction of the virus, especially considering the risk posed by the presence of ASF in their neighbouring countries.

During the period 1 January 2021 to 14 July 2022, 117 events were reported to WOAH by 11 Members in the region through the early warning system.

North Macedonia reported the first occurrence of the disease in the country in January 2022 (an event that started on 29 December 2021), in backyard swine. The Member reported that the first clinical signs were noticed on 29 December 2021 and the first dead cases were reported on 1 January 2022 in a small backyard farm located in the east of the country. On 5 January 2022, blood samples, swabs and organs were taken for laboratory examination and positive results were obtained on 6 January, According to the epidemiological investigation, possible patterns of entrance of the disease were contact with wild boar. As of 14 July, the event was still ongoing and a total of four outbreaks had been reported in swine and wild boar.

In January 2022, ASF genotype II was notified on the Italian mainland after around 40 years of absence. The disease was reported in Piedmont Region in wild boar. As of 14 July 2022, 167 outbreaks had been reported, all of them in wild boar. In May 2022, Italy submitted a new immediate notification to report the first occurrence of the disease in a new area (Lazio region), with a "jump" of the disease of around 400 kilometres from the closest outbreaks.

[16] Sánchez-Vizcaíno, J.M., Mur, L. and Martínez-López, B., 2012. African swine fever: an epidemiological update. Transboundary and emerging diseases, 59, pp.27-35.

As of 14 July 2022, an additional five Members had reported the first occurrence of the disease in a new zone since January 2021.

Germany reported the disease had spread to three new administrative divisions: Mecklenburg-Vorpommern (November 2021), Baden-Württemberg (May 2022), Niedersachsen (July 2022). The spread to the last two areas is of particular concern for the epidemiological situation of ASF in the Europe Region, as the new reported outbreaks are very close to the borders of France and The Netherlands, respectively. In all cases, the new outbreaks were reported in domestic swine.

Hungary reported the first occurrence in Fejér administrative division, in wild boar in August 2021, marking a further spread of the disease to the west.

Moldova reported the first occurrence in two new zones (Dubăsari and Străşeni) in domestic swine, in May and July 2022, respectively.

Poland submitted two immediate notifications, in September 2021 and April 2022, to report newly affected areas (Opolskie, Wielkopolskie and Łódzkie), with outbreaks occurring in both domestic swine and wild boar.

Finally, Russia reported the first occurrence in eight new administrative divisions involving both the European and Asian parts of the country (Bashkortostan, Chelyabinsk, Khanty-Mansiy, Kostroma, Maga Buryatdan, Mariy-El, Perm', Sverdlovsk) during the period March 2021 to January 2022.

This summary of the reporting situation highlights the extremely dynamic ASF situation in the Europe Region since January 2021, following the general trends observed since the reintroduction of ASF in Europe, as clearly shown in Figures 8, 9 and 10. All the trends highlight the progressive expansion of the disease to new countries and to new areas in already affected countries, as well as the increasing tendency for disease recurrence in areas where previous events had been declared resolved.

During the period 2005 to 14 July 2022, the Europe Region reported the first occurrence of the disease in 10 new countries (Figure 8), and 94 new administrative divisions (Figure 9). . During the same period, the recurrence of the disease in a country or in a zone has been reported by means of 233 reports (Figure 10).

Figure 8. Annual trend in the number of Members in the Europe Region, reporting the first occurrence of ASF in the country during the period 2005 to 14 July 2022. *Dotted lines represent the original data, while red lines represent the trend interpolated using the loess approach. Light green areas represent the standard error of the interpolation.*

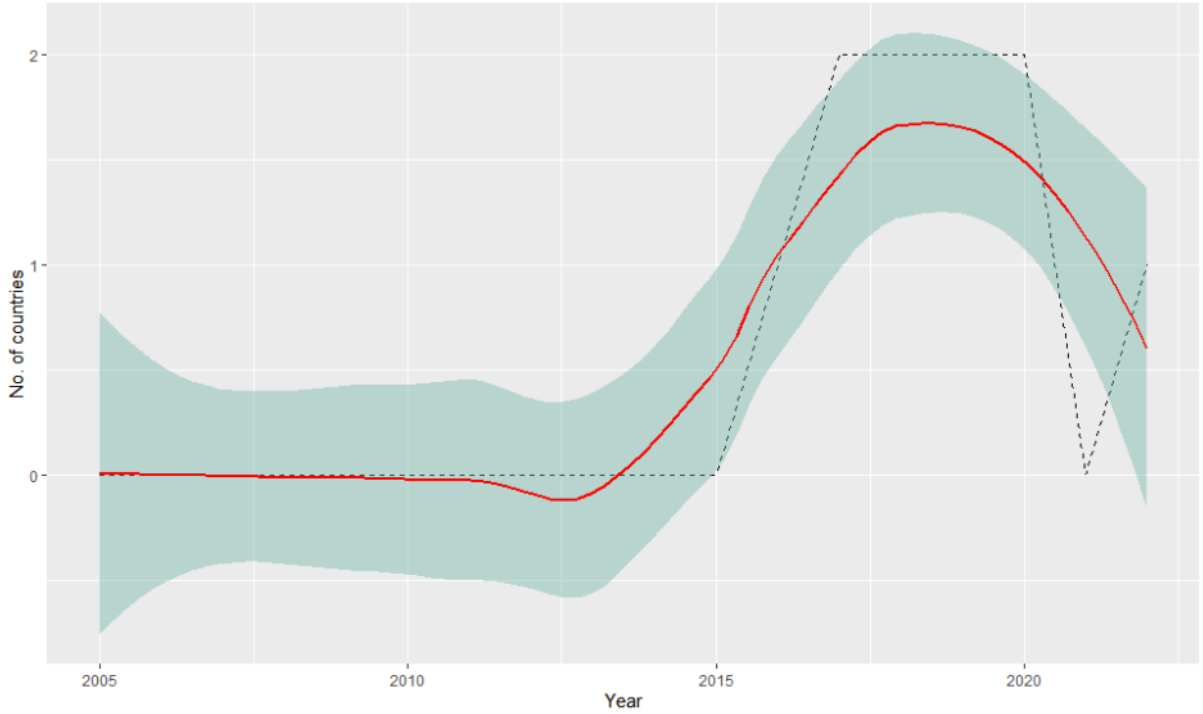


Figure 9. Annual trend in the number of new administrative divisions where the first occurrence of ASF was reported in the Europe Region, during the period 2005 to 14 July 2022. *Dotted lines represent the original data, while red lines represent the trend interpolated using the loess approach. Light green areas represent the standard error of the interpolation.*

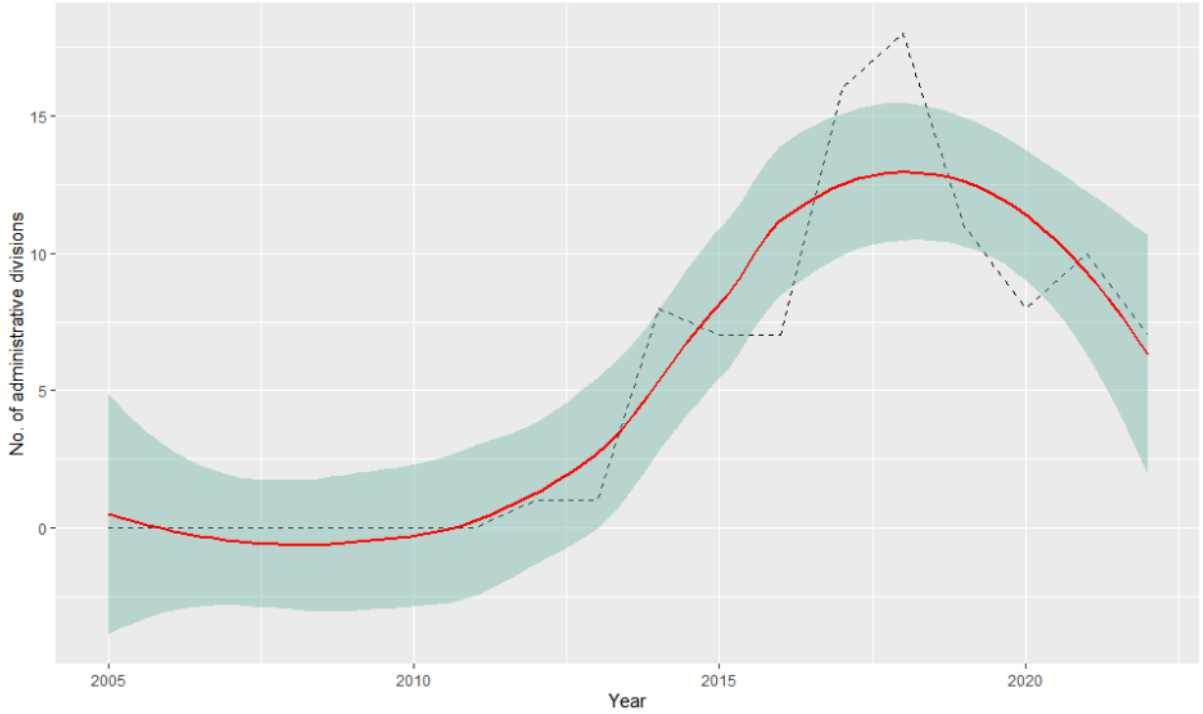
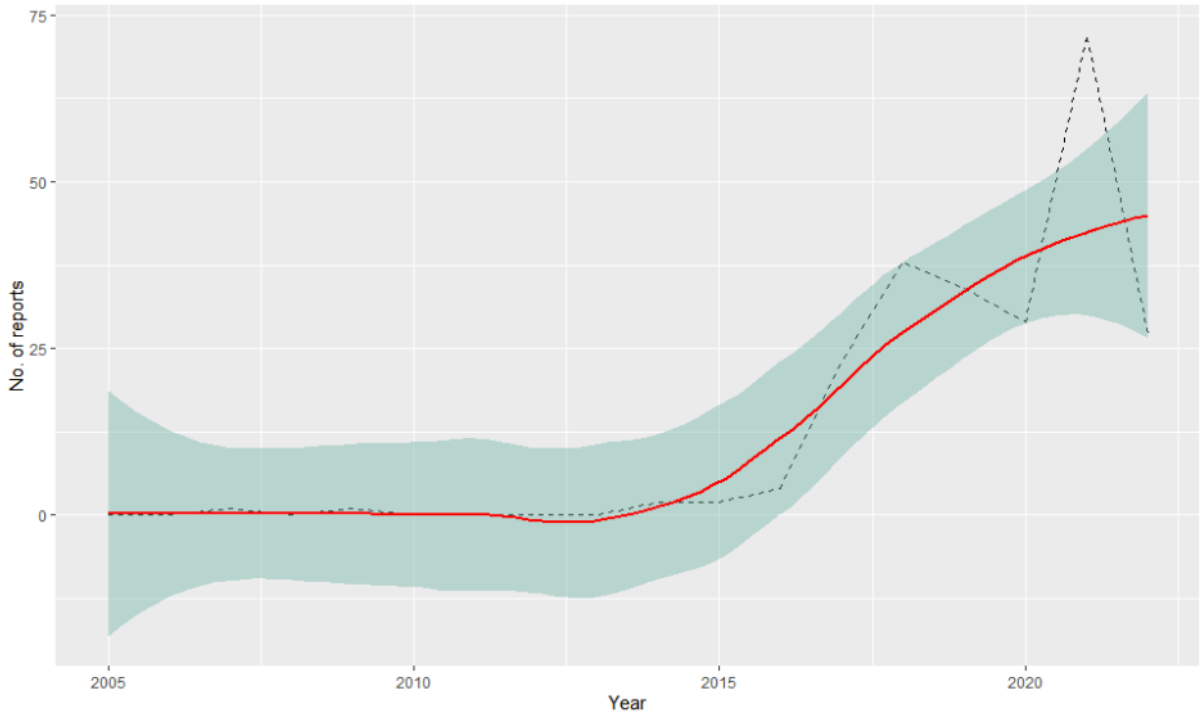
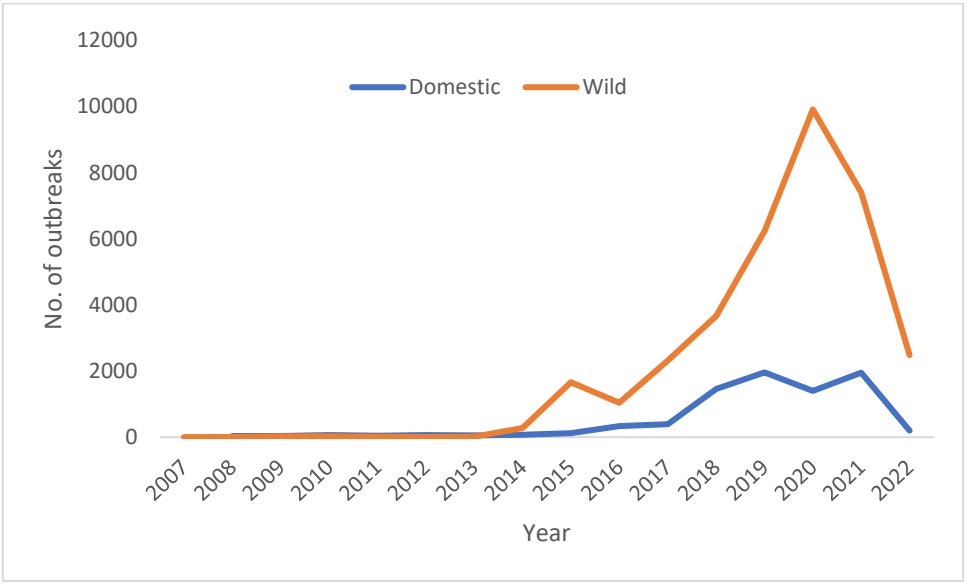


Figure 10. Annual trend in the number of reports submitted for the recurrence of ASF in a country or a zone in the Europe Region during the period 2005 to 14 July 2022. *Dotted lines represent the original data, while red lines represent the trend interpolated using the loess approach. Light green areas represent the standard error of the interpolation.*



The dynamics of the reports received are clearly reflected by the number of outbreaks reported since 2005 in domestic swine and wild boar.

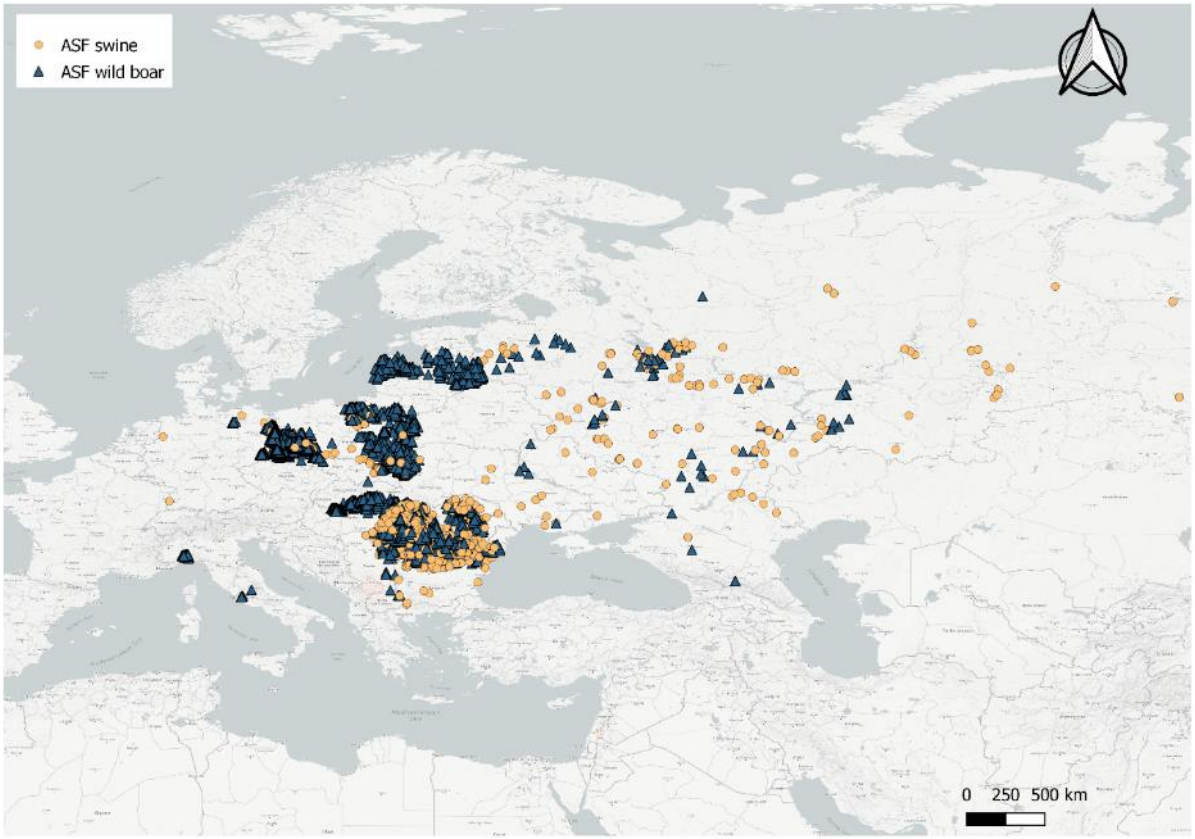
Figure 11. Dynamics of ASF outbreaks reported to WOAH by Members in the Europe Region through the early warning system, in domestic swine and wild boar, between 1 January 2005 and 14 July 2022[17]



[17] For a better interpretation of the graph, please note that outbreaks in wildlife refer to a single positive wild boar, while an outbreak in domestic swine may refer to several cases belonging to the same epidemiological unit (e.g. backyard, farm, etc.)

ASF distribution in Europe during the period 1 January 2021 – 14 July 2022 is presented in Figure 12. A total of 15 333 outbreaks were reported during the period through the early warning system, with 2 249 reported in domestic swine and 13 084 in wild boar. Poland reported the highest number of outbreaks (N=6953, of which 138 were in domestic swine and 6815 in wild boar), followed by Romania (N=3256 of which 1873 were in domestic swine and 1383 in wild boar) and Hungary (N=3162, all of which were in wild boar).

Figure 12. Distribution of ASF outbreaks reported to WOAH by Members in the region through the early warning system between 1 January 2021 and 14 July 2022



During the period 1 January 2021 – 14 July 2022, no new self-declarations of freedom from ASF were submitted to WOAH by Members in the Europe Region. Self-declarations of freedom are still active for Belgium (*Self-declaration of Belgium's African swine fever-free status in all swine species* – published in October 2020), Czech Republic (*Self-declaration of the recovery of freedom from African swine fever in all suids* – published in April 2019) and Estonia (*Self-declaration by Estonia as a country free from African swine fever in domestic and captive wild pigs* – published in September 2018).

Disease simulation exercises may be conducted by countries with the aim of testing and practising an existing national contingency plan. Since January 2021, several countries in the region have conducted simulation exercises for ASF: Czech Republic (August to September 2021, and May 2022), Italy (September 2021), Switzerland (September and November 2021) and United Kingdom (July to September 2021). Details of all the simulation exercises are published and available on the WOAH website[18].

[18] https://www.woah.org/en/what-we-do/animal-health-and-welfare/disease-data-collection/simulation-exercises/#ui-id-1

As mentioned for SARS-CoV-2, epidemic intelligence activities are conducted on several diseases of interest to WOAH. A specific search algorithm has been implemented in the EIOS[19] system to detect relevant information related to ASF. During the period 1 January 2021 – 14 July 2022, more than 9000 items of news were detected by the system for screening and analysis. For 41 of these items it was considered relevant to contact the Members concerned for information/clarification. The purpose of epidemic intelligence activities on ASF is not only to obtain confirmation of news on disease events circulating in the media, but also to track any other relevant information and combat misinformation and disinformation.

Scientific knowledge / other activities

WOAH collects and analyses the latest scientific information on animal disease control, and works closely with its network of scientific expertise, including WOAH Collaborating Centres and Reference Laboratories, to provide its Members with information and guidelines to help them improve the methods they use to control and eradicate animal diseases. Recently, the WOAH Reference Network for ASF published an overview of point-of-care tests available commercially to allow the rapid detection of ASF. WOAH also collaborates with FAO under the FAO/WOAH Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs) to assist countries in the prevention and control of ASF, and to minimise the adverse impacts of the disease on the health and welfare of pigs and on international trade.

In line with this central role, WOAH has prepared, and made available in a dedicated repository on its website, a wide range of resources, such as communication material and training tools. These resources may be found on the WOAH ASF portal[20].

To ensure that Members, non-Members, other stakeholders and the international community are kept as fully informed as possible on the global ASF situation, a bi-weekly update is produced by WOAH and made available on its website. These reports provide an update on the recent reporting situation (i.e., the previous 2 weeks), followed by a summary of the main data relating to the period 2020–2022. The disease situation and dynamics are commented on, with a brief epidemiological interpretation and recommendations. On average each report has been viewed by more than 600 people (minimum 63 – maximum 1846), with an average visualisation time of 2 min 46 sec, indicating an overall high interest in the topic. It is worth highlighting that the African swine fever page, including the ASF situation report, is one of the most visited pages on the WOAH website, with more than 2000 visits/week.

[19] EIOS: Epidemic Intelligence from Open Sources
[20] https://www.woah.org/en/disease/african-swine-fever/#ui-id-5

Summary

All the data presented in this section point to a clear, steady and progressive deterioration of the ASF epidemiological situation at regional level. The trend observed in Europe is comparable to and mainly coincides with the deteriorating epidemiological situation of the disease at global level.

The spread of the virus to new countries as well as its progression to new areas in countries already affected should stimulate reflections on the human/animal/environmental behaviours that are currently enabling the virus to disseminate in new populations.

The data indicate the capacity of the virus to make "jumps" and suddenly appear in areas far away from its known range, as demonstrated by the appearance of the disease in Italy and North Macedonia, or the appearance of the virus in unaffected areas far from any other outbreaks (e.g., in Germany). Improved investigation of the origin of the outbreaks is needed to better understand the current dynamics and reduce the probability of further expansion.

These data demonstrate the importance of human activities in the regional spread of the disease and highlight the importance of early detection and notification, raising awareness among the general public and enforcing strict biosecurity measures along the pig supply chain.

v. Update on WAHIS and interconnectivity with ADIS

Since the launch of the new version of WAHIS, WOAH has continued to work with the IT provider to put in place a solid maintenance plan for the live platform and to fix important bugs of the existing functionalities. The focus of the project remains on:

(1) Stabilising and optimising the existing modules and improving the platform's performance:

- ✓ as a first priority, the optimised immediate notification/follow-up report module is foreseen to go live in September 2022. This will vastly improve user experience and the performance of the platform.
- ✓ As a second priority this module will interconnect with the EU's Animal Disease Information System (ADIS) by the end of 2022. The goal is to simplify the animal disease notification process to allow EU Member States to fulfil their legal obligations in terms of EU and WOAH notifications via one-time entry. Prior to interconnection, joint WAHIS/ADIS training will be organised focusing on interconnectivity. The link with ADIS is already in place as the reference tables from WAHIS are already transferred to ADIS via an automated webservice; however, this needs to be reinforced to optimise the two-way communication between WAHIS and ADIS. To ensure the solidity of the framework of this exchange, a standard operating procedure (SOP) between WOAH and the European Commission (EC) is being currently being developed.
- ✓ Next, the focus will move to optimising the Six-monthly reporting module by the beginning of 2023.

(2) Developing future evolutions, taking into account feedback from users, and developing remaining functionalities:

- ✓ annual report by 2023

- ✓ alert app by mid-2023
- ✓ developing and improving the dashboards (ongoing)
- ✓ mapping feature evolutions (ongoing)

(3) Linking up with the global health community by rolling out public interoperability by mid-2023

A quality data platform is essential to enable WOAH to enhance its role of data steward and is inextricably linked to the rolling out of the WOAH digital transformation strategy. During the COVID-19 pandemic, the role and contribution of WOAH in providing a platform interconnecting with other international organisations have become increasingly relevant. WOAH must continue to provide its Members with the ability to report easily on animal diseases to facilitate transparency, access and analysis. The knowledge generated should support WOAH, its Members and other stakeholders in the decision-making process and inform efforts to improve system performance.

For any support for WAHIS please contact https://wahis-support.woah.org/

We are grateful for the continuing support and collaboration from the European Commission in the development of WAHIS. To maintain the relevance of WAHIS over time, continuous investment is needed to enable WAHIS to evolve and align with the needs of its Members and public users.