World Organisation for Animal Health
Founded as OIE

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

Data Integration Department & World Animal Health Information and Analysis Department
Lina Awada, Jenny Hutchison, Natalja Lambergeon, Peter Melens, Paolo Tizzani and Laure Weber-Vintzel

07/02/2023

12, rue de Prony
75017 Paris, France

T. +33 (0)1 44 15 18 88
F. +33 (0)1 42 67 09 87
woah@woah.org
www.woah.org

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

25th Conference of WOAH Regional Commission for Africa

Gaborone, Botswana, 21 to 24 February 2023

(Data updated until 25 November 2022)

This report provides a summary of the animal health situation in Africa during the period 1 January 2021 to 25 November 2022 and aggregated information for previous years since 2005. This animal health situation report is mainly based on the information submitted to WOAH by 57 countries and territories[1] in Africa through the World Animal Health Information System (WAHIS) and includes: A) an update on the WAHIS project; B) a summary of the situation in Africa regarding infection with high pathogenicity avian influenza viruses, three selected zoonotic vector-borne diseases (Crimean-Congo haemorrhagic fever, infection with Rift Valley fever virus, West Nile fever), infection with African swine fever virus, infection with peste des petits ruminants virus, and lastly a general overview of reporting for aquatic animal diseases. The main 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 reporting country), they represent the reference official animal health information reported by the relevant national services, using a standard template and a standard data format.

A. Update on WAHIS

General update

Since the launch of the new WAHIS platform, 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 went live in September 2022. This has vastly improved user experience and the performance of the platform. Outstanding functionalities will be developed in further releases.

- The development of the Annual report module is the next development objective and the aim is for the module to be delivered by the end of 2023.

    - The Six-monthly reporting module is expected to have been optimised by September or October 2023.

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

    - Integration of Codification principles within the platform to enable even more consistent reporting.

[1] This number includes the 54 Members of the OIE Regional Commission for Africa, as well as Mayotte (France), Reunion (France) and St. Helena (United Kingdom)

- A mechanism to enable users to view the information on alerts in an easy and automated manner.
- Developing and improving the dashboards (ongoing).
- Mapping feature evolutions (ongoing).

3. Linking up with the global health community by rolling out public interoperability during the first semester of 2023. This would enable users to extract WAHIS data and data from other WOAH databases via application programming interface (API) technology.

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 WOAH digital transformation strategy. During the COVID-19 pandemic, the role and the contribution of WOAH in providing a platform facilitating information exchange with other international organisations has 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 thus generated will support WOAH, its Members and other stakeholders in the decision-making process and inform efforts to improve system performance.

Support

Digital training seminars for African Focal Points for Disease Notification were held in November 2022 and were attended by 11countries. The training was focused on solving the needs of Focal Points, as communicated to the World Animal Health Information and Analysis Department (WAHIAD) via the Regional WAHIS "champions" network and via the Support Desk feedback. This event complemented individual training and support sessions for Focal Points by WAHIAD staff.

Details of further training sessions, either individual or Regional, will be communicated in 2023, when agreed with the Regional Representation.

For any support for WAHIS please contact https://wahis-support.woah.org/
The support desk not only enables Focal Points to raise any issues they may have while using the platform, but also contains a useful Frequently Asked Questions section and a video library on how to use the main reporting functionalities.

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

B. Animal health situation in Africa

B1. Update on infection with high pathogenicity avian influenza viruses

Background and importance of the disease

High pathogenicity avian influenza (HPAI) is caused by influenza A viruses in the family *Orthomyxoviridae*. Since its identification in China (People's Rep. of) in 1996, there have been multiple waves of intercontinental transmission of the H5Nx Gs/GD lineage virus. HPAI resulted in the death and mass slaughter of more than 316 million poultry worldwide between 2005 and 2021, with peaks in 2021, 2020 and 2016. During each of the years 2006, 2016, 2017 and 2021, more than 50 countries and territories in the world were affected with HPAI. In addition, up to now, humans have occasionally been infected with subtypes H5N1 (around 850 cases reported, half of whom died), H7N9 (around 1500 cases reported, about 600 of whom died), H5N6 (around 80 cases reported, about 30 of whom died), H9N2 (around 75 cases reported, 2

of whom died) and sporadic cases have been reported with subtypes H3N8, H7N4, H7N7 and H10N3[2,3,4,5,6]. A substantial number of the H5N1 human cases have been reported in Africa, with 359 human cases in Egypt, one case in Djibouti and one case in Nigeria being reported between 2003 and 2021[4]. A total of 27 African countries and territories have reported HPAI in animals at least once since 2005, with persistent circulation of the virus in Western and Southern Africa for many years.

The disease continues to pose a significant global and regional threat to animal health and public health. To raise awareness of the global HPAI situation and inform about recent changes in disease circulation, WOAH produces a periodic avian influenza situation report, available on WOAH website[7]; the report provides an overview of HPAI disease events (in poultry and in non-poultry including wild birds) reported to WOAH's early warning system (through immediate notifications and follow-up reports) by its Members, as well as by non-Members, and it is updated with the most recent data every three weeks. In view of the significant changes in the epidemiology of AI viruses in recent years, WOAH and the Food and Agriculture Organization of the United Nations (FAO), through the Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs), have established a task force for the revision of the global strategy for the prevention and control of HPAI, which was last updated in October 2008.

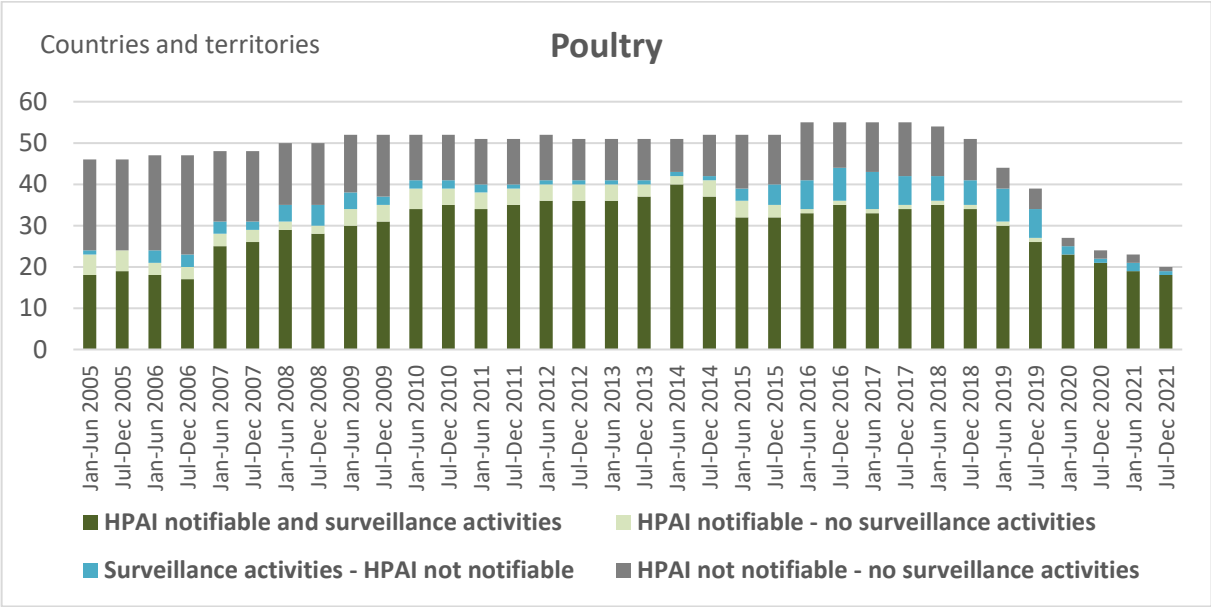
Trends of surveillance activities implemented in the Africa Region since 2005

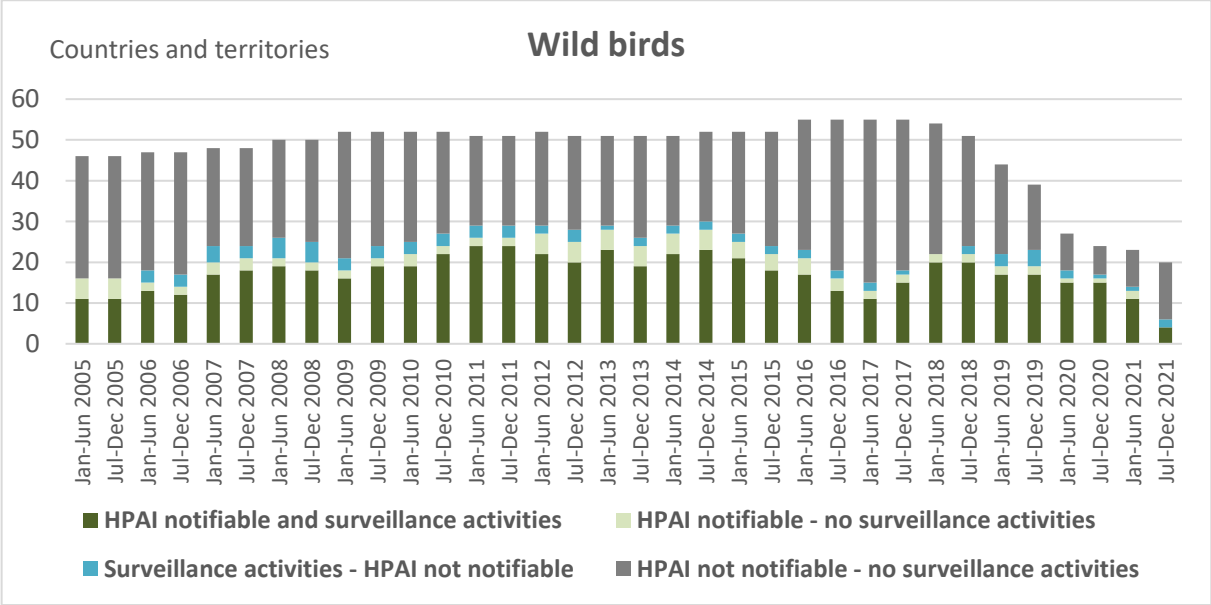
The most efficient way to control and prevent HPAI spread consists of rapid disease identification and response, with the application of effective preventive and control measures. In this context, the capacity of countries to detect the disease is crucial to minimise the risk of disease introduction and spread. With this in mind, we analysed the evolution of the percentage of countries and territories declaring in their six-monthly reports: (i) HPAI as a notifiable disease; and (ii) the implementation of HPAI surveillance activities[8], during the period 2005 – 2021 (Figure 1). The data for 2019, 2020 and 2021 are still only partial and should be treated with caution.

For both poultry and wild birds, the number of African countries and territories reporting HPAI notifiable with surveillance activities increased between 2005 and 2010 (from 18 to 35 countries and territories for poultry and from 11 to 24 countries and territories for wild birds). For poultry, the number then remained stable between 2011 and 2018 (35 on average, representing 61% of countries and territories in the region), while for wild birds the trend was irregular (20 on average, representing 35% of countries and territories in the region). For both poultry and wild birds, only a few countries declared HPAI notifiable without surveillance activities between 2005 and 2021. In 2018 (the most recent year with complete information), only one country reported this situation for poultry, and two countries for wild birds. Surprisingly, in 2018, more countries and territories reported surveillance activities without HPAI being notifiable (six for poultry and two for wild birds). In the same year, 12 countries and territories (21%) declared HPAI neither notifiable nor under surveillance for poultry, and 32 (56%) for wild birds.

[2] Chen H. 2019. H7N9 viruses. Cold Spring Harb Perspect Med doi: 10.1101/cshperspect.a038349
[3] WHO. Influenza (Avian and other zoonotic), 2018, available at https://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic)
[4] WHO. Cumulative number of confirmed human cases for avian influenza A(H5N1) reported to WHO, 2003-2021, 21 May 2021, available at https://www.who.int/publications/m/item/cumulative-number-of-confirmed-human-cases-for-avian-influenza-a(h5n1)-reported-to-who-2003-2021-21-may-2021
[5] Yang L, Zhu W, Li X, Chen M, Wu J, Yu P, Qi S, Huang Y, Shi W, Dong J, Zhao X, Huang W, Li Z, Zeng X, Bo H, Chen T, Chen W, Liu J, Zhang Y, Liang Z, Shi W, Shu Y, Wang D. 2017a. Genesis and spread of newly emerged highly pathogenic H7N9 avian viruses in mainland China. J Virol doi: https://doi.org/10 .1128/JVI.01277-17
[6] WHO, Avian Influenza Weekly Update Number 870, https://www.who.int/docs/default-source/wpro---documents/emergency/surveillance/avian-influenza/ai_20221111.pdf?sfvrsn=5bc7c406_14#:~:text=virus%20in%20China-,Between%2004%20November%202022%20and%2010%20November%202022%2C%20no%20new,has%20been%20reported%20to%20WHO.
[7] Situation reports, https://www.woah.org/en/disease/avian-influenza/#ui-id-2
[8] Surveillance is considered to be applied at country level if at least one of the following control measures is declared in a country's six-monthly reports: general surveillance, targeted surveillance, monitoring, screening

Figure 1. Number of countries and territories declaring HPAI as a notifiable disease and the number declaring surveillance activities for HPAI, by animal group and by semester, between 2005 and 2021 *(reports received by WOAH as of 25 November 2022)*





Summary of the situation reported during each seasonal wave in Africa between October 2005 and 25 November 2022

In a preliminary analysis, the data reported to WOAH for the period between 2017 and 2020 for Africa were broken down using STL (Seasonal-Trend decomposition using LOESS) method[9]. The year 2021 could not be included in this analysis due to missing information for that year. According to the data analysed, the spread is lowest in July, starts to increase in August and peaks in December (Figure 2). This trend is very much influenced by the situation in Northern Africa, and particularly Egypt, which reported 52% of the outbreaks in Africa during this period.

[9] High Pathogenicity Avian Influenza (HPAI)- Situation Report 35, https://www.woah.org/en/document/high-pathogenicity-avian-influenza-hpai-situation-report-35/

The numbers of outbreaks reported in some sub-regions of Africa were too small to conduct a seasonal-trend decomposition. However, based on raw data we suspect that sub-regional differences exist in the peak seasons. In Central Africa, most outbreaks in poultry were reported in the months of May and June. In Southern Africa, most outbreaks were reported in June and September. In Western Africa, most outbreaks were reported in January, February and March. In Eastern Africa, there was no clear pattern.

The HPAI season in Africa is slightly ahead of the global HPAI seasonality (globally, spread is lowest in September, begins to rise in October and peaks in February[9]).

Figure 2. Seasonal trend in HPAI incidence in poultry – in Africa *(based on data received by WOAH for the period between 2017 and 2020, and broken down using the STL method)*

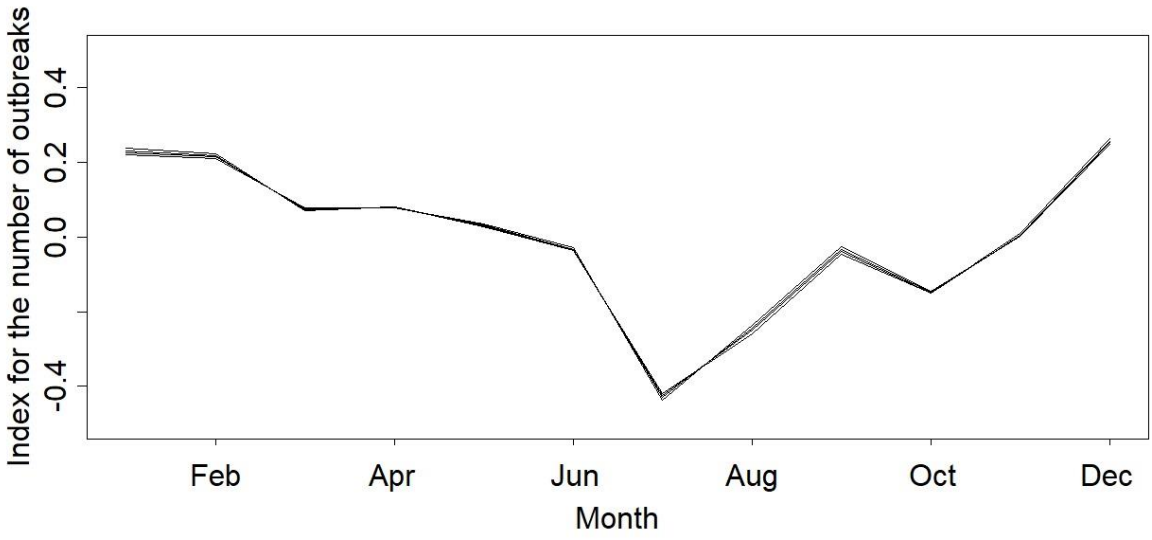
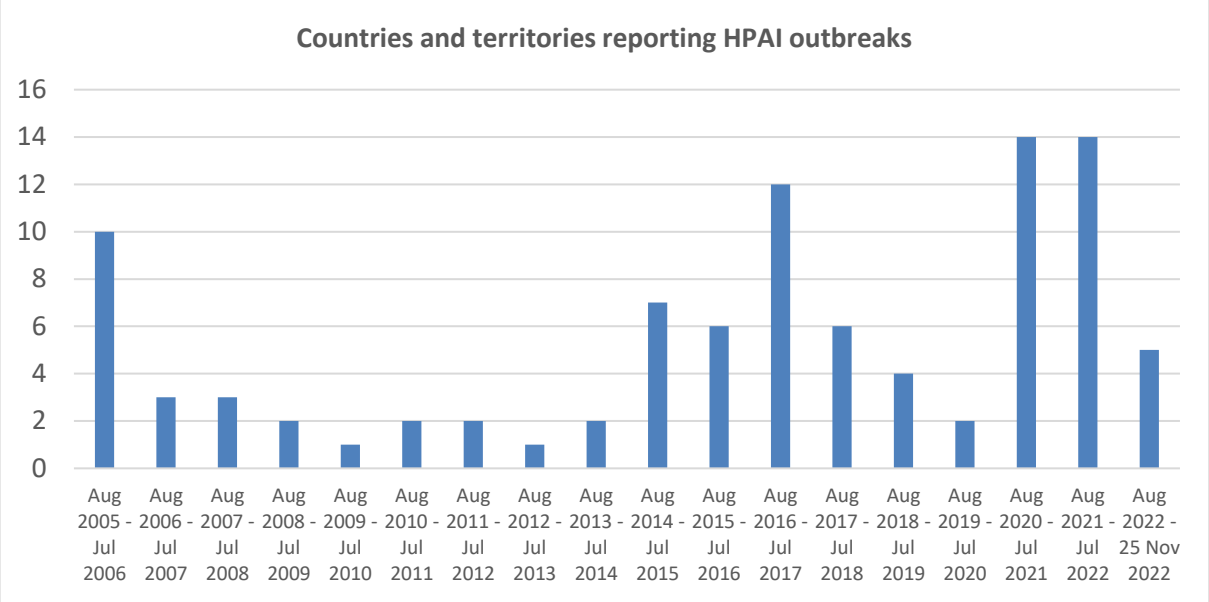


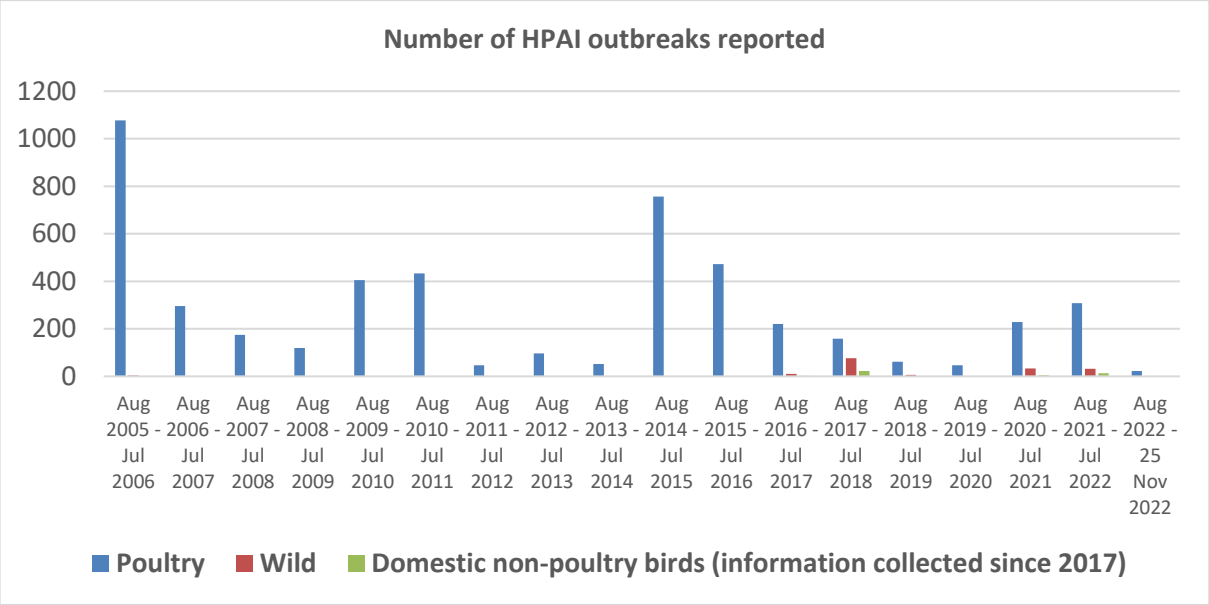
Figure 3 provides a summary of the situation reported through WAHIS during each of the African seasonal waves (from August of one year to July of the following year) between October 2005 and 25 November 2022. All countries reported through the early warning system consistently over the analysis period, with the exception of Egypt, where the HPAI situation has become sufficiently stable to be reported through six-monthly reports only, in compliance with WOAH standards. As of 25 November 2022, the six-monthly reports of Egypt for 2021 and early 2022 were still pending. Therefore, the information presented below for the number of outbreaks and losses is only partial for the last three waves (some figures from Egypt are not included).

The number of countries and territories in Africa reporting HPAI ranged between 1 and 14 per seasonal wave. The seasons with the highest number of countries and territories affected were August 2021/July 2022 and August 2020/July 2021 (14 countries and territories each), August 2016/July 2017 (12 countries and territories) and August 2005/July 2006 (10 countries and territories).

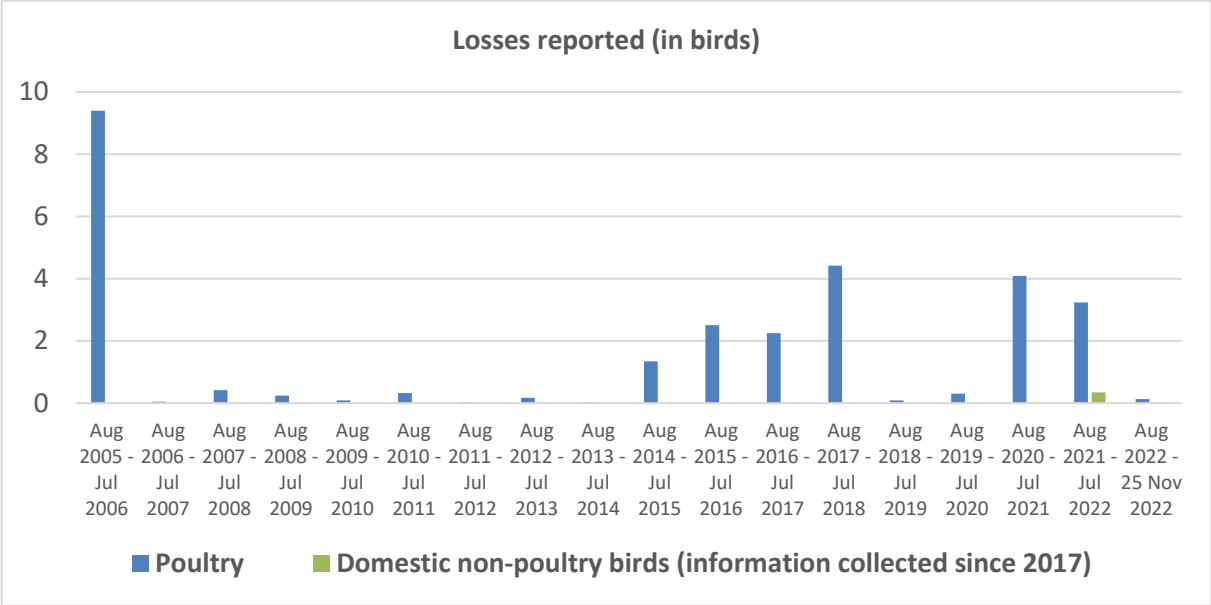
The highest numbers of outbreaks and losses reported have always been for poultry. The number of outbreaks reported for non-poultry domestic birds and wild birds has always been much lower. The most impactful seasonal wave in Africa was in August 2005/July 2006 (1080 outbreaks and 9.4 million losses). Although the losses in August 2017/July 2018 (4.4 million) and August 2020/July 2021 (4.1 million) were considerable, they were much lower than the losses reported at the start of the panzootic in 2005/2006.

Figure 3. Number of countries and territories in Africa reporting HPAI outbreaks, number of outbreaks reported in poultry, domestic non-poultry birds and wild birds and the corresponding losses in poultry and domestic non-poultry birds[10], by HPAI seasonal wave (August of one year to July of the following year), between 1 August 2005 and 25 November 2022 *(reports received by WOAH as of 25 November 2022)*





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



Recent HPAI situation: distribution of HPAI outbreaks reported to WOAH and circulating subtypes

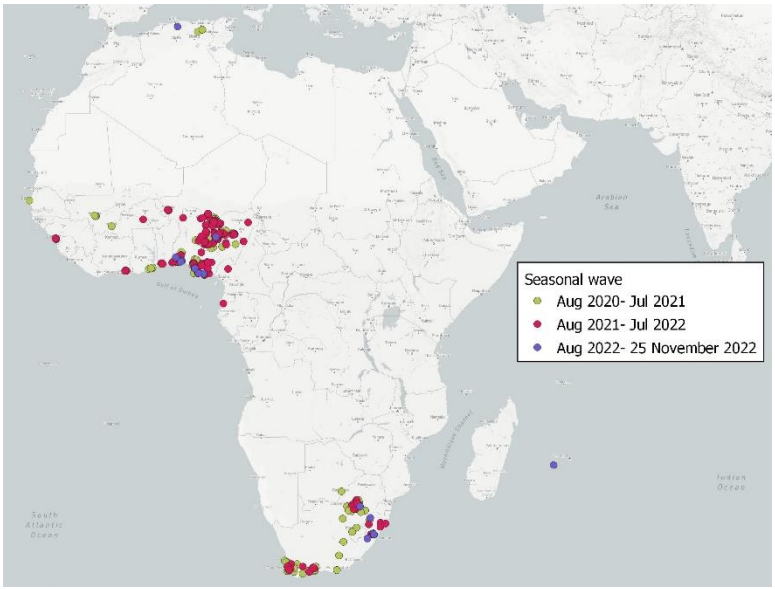
The recent distribution of HPAI outbreaks is shown in Figure 4. During the seasonal wave between August 2020 and July 2021, 19 events were reported to WOAH through the early warning system. Botswana, Lesotho, Mali, Mauritania and Senegal each reported the first occurrence of HPAI in the country. Algeria and South Africa each reported the occurrence of new strains in the country (H5N8 in Algeria and H5N1 in South Africa). Senegal reported the occurrence of the disease in new areas and nine countries reported recurrences. The dominant circulating subtype was H5N1 (97% of the reported outbreaks). Subtype H5N8 was also identified in Algeria.

During the seasonal wave between August 2021 and July 2022, 14 events were reported. Gabon and Guinea each reported the first occurrence of HPAI in the country. Namibia reported the occurrence of the disease in new areas and eight countries reported recurrences. H5N1 was the only subtype reported.

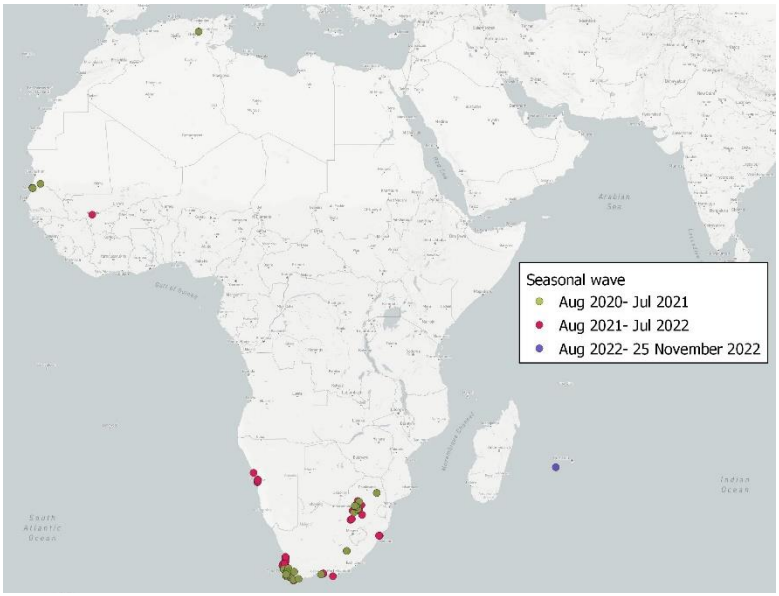
Lastly, between August 2022 and 25 November 2022, four events were reported. Reunion (France) reported the occurrence of the disease in new areas and Algeria and South Africa reported recurrences. Again, the dominant circulating subtype was H5N1. Subtype H5N2 was identified in one outbreak in South Africa.

Figure 4. Distribution of HPAI outbreaks reported to WOAH by Members in Africa through the early warning system, between 1 August 2020 and 25 November 2022. *All countries reported through the early warning system consistently over the analysis period, with the exception of Egypt, where the HPAI situation has become sufficiently stable to be reported through six-monthly reports only, in compliance with WOAH standards. As of 25 November 2022, the six-monthly reports of Egypt for 2021 and early 2022 were still pending. These maps therefore do not include outbreaks reported by Egypt through the six-monthly reports.*

Outbreaks in poultry



Outbreaks in non-poultry including wild birds



Compliance with standards for timely submission of immediate notifications for HPAI, in Africa

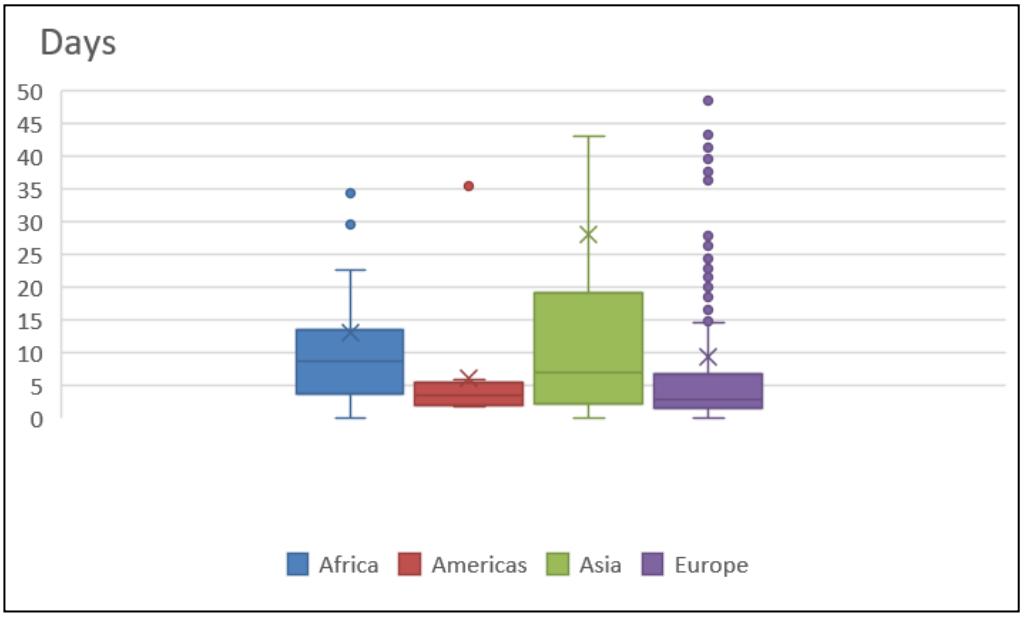
In accordance with Chapter 1.1. of WOAH *Terrestrial Animal Health Code* (*Terrestrial Code*) and *Aquatic Animal Health Code* (*Aquatic Code*), respectively, WOAH Members are required to submit an immediate notification for any of the

exceptional events of listed diseases described in the aforementioned *Codes* within 24 hours of confirmation of the event. However, this requirement is not always complied with, for reasons such as a lack of proper communication at country level between diagnostic laboratories and local and central Veterinary Services, technical delays in filing the information in WAHIS and a lack of country transparency.

Figure 5 shows the compliance of countries and territories in Africa in terms of timely reporting of HPAI events after confirmation (submission time), in comparison with other geographical regions, for events reported during the period August 2020 to 25 November 2022.

The median submission time of an immediate notification for HPAI in Africa was nine days after disease confirmation. This was higher than the corresponding median submission times measured for other world regions (seven days in Asia and three days in the Americas and Europe). Furthermore, it exceeded the required maximum delay of 24 hours after confirmation of the event.

Figure 5. Distribution of submission time after confirmation values (no. of days) for submission of an immediate notification report on HPAI during the period August 2020 to 25 November 2022, by region



Self-declaration of freedom

In December 2021, the Delegate of Egypt declared that 33 compartments together with four poultry slaughterhouses complied with the requirements for compartments free from HPAI in poultry as of 1 December 2021, in accordance with the provisions of Chapters 1.6., 4.4. and 4.5., and Article 10.4.4. of the *Terrestrial Code* (2021 edition). As of 25 November 2022, this declaration was still active[11].

Simulation exercises

WOAH also has a procedure to disseminate, via the web, announcements received from Members on disease simulation exercises taking place in their countries. In most cases, these simulation exercises are designed to test and to practise implementing an existing national contingency plan. Between 1 January 2021 and 25 November 2022, no Members in Africa informed WOAH of simulation exercises conducted on avian influenza.

[11] https://www.woah.org/app/uploads/2022/03/2021-12-egypt-hpai-compart-update.pdf

Epidemic intelligence activity on HPAI

In addition to the official reporting provided by countries, and to better monitor the occurrence of several diseases including HPAI, WOAH Epidemic Intelligence Team created a specific search algorithm, using the Epidemic Intelligence from Open Source (EIOS) system, to identify and monitor news published in the media and in scientific publications. During the period 1 January 2021 – 25 November 2022, the system detected around 7000 items of news relating to HPAI in Africa for screening and analysis. Among these items, eight disease events were followed up with the countries concerned, and in each case resulted in the submission of the relevant reports.

Reporting on low pathogenicity avian influenza (LPAI) transmissible to humans

In 2021, after an assessment of LPAI's compliance with WOAH criteria for listing, Chapter 1.3. of the *Terrestrial 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 25 November 2022, no such event had been detected and reported to WOAH.

Activities of WOAH/FAO global network of expertise on animal influenza (OFFLU)

In response to the recent extensive upsurge and impact of HPAI outbreaks, OFFLU network experts, including experts from the Africa Region, participated in teleconferences[12] and meetings to share epidemiological and experimental data and diagnostic protocols needed to inform surveillance and control policies and build technical partnerships with network members. OFFLU and the World Health Organization (WHO) were in regular communication to share public health and animal health data so that risk assessments could be continually updated and to establish a consensus on issues related to the animal-human interface, including pandemic preparedness[13]. In 2022, data for 1676 H5, H7 and H9 sequences were contributed to OFFLU by animal health laboratories in countries in Africa, the Americas, Asia and Europe for contribution to WHO vaccine composition meetings. Of these, Africa (Benin, Botswana, Burkina Faso, Egypt, Lesotho, Mali, Niger, Nigeria, Senegal, Ghana and Egypt) contributed over 48 sequences. OFFLU has initiated an Avian Influenza Matching (AIM) project to provide up-to-date information on the antigenic characteristics of circulating avian influenza viruses to facilitate the selection of appropriate vaccines for poultry and the update of poultry vaccine antigens in places where vaccines are being used[14].

Vaccination for AI – current vaccination strategies

In many avian influenza-endemic countries, H5 and other subtype vaccines are employed as one element of overall control efforts to limit disease. Recent H5 HPAI epidemic events have resulted in additional countries considering vaccination as a complementary tool to control the disease.

Chapter 10.4. of the *Terrestrial Code* provides a set of provisions for mitigating animal and public health risks posed by avian influenza viruses. It provides possibilities to prevent and control outbreaks through biosecurity measures, culling and stamping-out procedures. The *Terrestrial Code* also recognises that vaccination can be used as an effective complementary control tool when a stamping-out policy alone is not sufficient and that it could be part of a disease control programme. WOAH *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals* (*Terrestrial Manual*) provides

[12] OFFLU call for avian influenza and wild bird situation update, 5 December 2022, https://www.offlu.org/wp-content/uploads/2022/12/OFFLU-AI-situation_final_Dec2022.pdf

[13] One Health actions to support pandemic preparedness: OFFLU contributes invaluable support to the WHO biannual vaccine composition meeting, September 2022, https://www.offlu.org/wp-content/uploads/2022/10/VCM-roundup-Sept22-Final.pdf

[14] OFFLU, April 2022, Characterisation of avian influenza viruses to support poultry vaccination (avian influenza vaccine antigen updates), https://www.offlu.org/wp-content/uploads/2022/11/Concept-note-OFFLU-AIM.pdf

standards on the requirements for vaccines against avian influenza and on the surveillance methods for detecting infection in vaccinated flocks and vaccinated birds.

In Africa, three countries have reported the use of official preventive vaccination against HPAI through WAHIS: Niger (in 2007 only), Sudan (in 2006 only) and Egypt, which has reported the use of official vaccination every year since 2006. According to OFFLU reports[15], vaccination has been in place in Egypt for the commercial sector since 2006 and for the backyard sector since 2007. In July 2009, vaccination of household poultry was suspended and was not re-implemented. According to the most recent information provided by the country through WAHIS, approximately 18 million poultry were vaccinated in 2020.

Summary

HPAI has severely affected the region over the past 15 years, through several waves of continental spread. African countries and territories have different animal health situations for this disease: Egypt has reported to WOAH a stable situation for the last 14 years, and has recently implemented a compartmentalisation approach for compartments free of this disease, 26 countries and territories have reported one or more occurrences of epizootic disease since 2005 and the other countries and territories have not reported the presence of the virus during this period.

The disease remains a serious concern for the region. Indeed, the seasonal waves of 2020/2021 and 2021/2022 were the ones with the highest number of countries and territories reporting HPAI in Africa (14 in each of these two waves).

During these recent waves, several countries in in Western and Southern Africa reported their first occurrence of HPAI.

While most countries and territories in the region have declared HPAI notifiable in poultry and have surveillance activities in place in poultry (approximately 80% reported the disease as notifiable and/or the implementation of surveillance in the most recent six-month periods), the level of surveillance activities in wild birds remains highly variable, with approximately 55% of countries reporting no such surveillance in place. This is reflected in the relatively low number of outbreaks reported in wild birds through WAHIS.

This analysis also highlighted that the median submission time after confirmation of an exceptional event (nine days) was significantly higher than the maximum delay indicated in the *Terrestrial Code* (24 hours).

Based on the HPAI global seasonal pattern, the number of outbreaks is expected to rise in the coming months in several world regions. In this context, surveillance accompanied by high quality information is key to support early detection and rapid response to potential threats to both animal and public health.

B2. Update on three selected zoonotic vector-borne diseases: Crimean-Congo haemorrhagic fever, infection with Rift Valley fever virus, West Nile fever virus

Background and importance of the selected vector-borne diseases in the Africa Region

This chapter provides an update on three selected vector-borne diseases in the Africa Region: Crimean-Congo haemorrhagic fever, infection with Rift Valley fever virus and West Nile fever.

West Nile Fever virus (WNFV) is a mosquito-borne virus belonging to the genus *Flavivirus* in the family *Flaviviridae* and is a member of the Japanese encephalitis virus serocomplex (this serocomplex includes, among others, the St Louis encephalitis, Usutu, Kunjin, Kookaburra, Stratford, Alfuy and Murray Valley encephalitis viruses). WNFV was described for the first time in 1937, in Omogo in the West Nile district (from which it took its name) in the Northern Province of Uganda.

[15] OFFLU AVIAN INFLUENZA VCM REPORT February 2022 to September 2022, https://www.offlu.org/wp-content/uploads/2022/09/Avian-OFFLU-September2022-Final.pdf

WNFV is currently posing challenges to animal and public health due to the identification of new lineages and clades, which are spreading to new areas. Its current distribution, genetic variability, ecology and epidemiological pattern in the Africa Region are only partially known, despite a general consensus on the urgency of obtaining such information to quantify the disease burden in the region. A recent review has highlighted some key findings on the disease in Africa: (i) the co-circulation of WNFV-lineages 1, 2 and 8; (ii) the presence of diverse WNFV competent vectors; (iii) evidence of circulation of WNFV among humans, animals and vectors in at least 28 countries; (iv) the lack of knowledge on the epidemiological situation of WNFV for 19 countries[16].

Crimean-Congo haemorrhagic fever (CCHF) is a tick-borne zoonotic viral disease with severe symptoms in humans, such as high fever, muscle pain, dizziness, abnormal sensitivity to light, abdominal pain and vomiting. CCHF is endemic in Africa and has a case fatality rate in humans of around 40%. In contrast, the disease is mostly asymptomatic in animals. The virus is primarily transmitted to humans from ticks and livestock. No vaccine is available for either humans or animals. The CCHF virus is transmitted either by tick bites or through contact with infected animal blood or tissues. The majority of human cases occur in people involved in the livestock industry, such as agricultural workers, slaughterhouse workers and veterinarians. Human-to-human transmission can occur as the result of close contact with the blood, secretions, organs or other bodily fluids of infected persons[17].

Rift Valley fever (RVF) is an acute viral disease that affects domestic animals (such as cattle, buffalo, sheep, goats and camels). The disease is caused by the RVF virus, generally found in regions of Eastern and Southern Africa, but also in most countries of sub-Saharan Africa and in Madagascar, Saudi Arabia and Yemen[18]. Rift Valley fever is transmitted to humans through contact with the blood or organs of infected animals, for example through handling of animal tissue during slaughtering or butchering, assisting with animal births, conducting veterinary procedures or the disposal of carcasses or foetuses. Humans can also be infected through consumption of unpasteurised or uncooked milk from infected animals, or through bites of infected mosquitoes and hematophagous flies[19].

Impact on public health

WNFV has been identified in several vertebrate species, especially birds belonging to the order Passeriformes. Humans, horses and other vertebrate hosts are considered WNV dead-end hosts, since they are susceptible to the infection but unable to transmit the virus to mosquitoes. WNV infection is mostly asymptomatic but a range of clinical forms and symptoms have been reported for humans, horses and birds. In humans, around 20% of cases develop influenza-like symptoms (WNF), while less than 1% develop West Nile neuroinvasive disease (WNND), with encephalitis, meningitis and acute flaccid paralysis, occasionally resulting in death[16].

CCHF is mostly asymptomatic in animals, whereas it can have a severe impact in humans, with a fatality rate of up to 40%. According to information published by the African Union, 62 human cases have been reported in the Africa Region since 2003, with a combined total of 17 deaths in Mauritania, South Africa, Uganda and Senegal17.

With reference to RVF, according to information published by the African Union, 1452 human cases have been reported in the Africa Region since 2008, with a combined total of 127 deaths in Madagascar, Mauritania, South Africa, Niger, Uganda and Kenya[20]. All the countries concerned have also reported, through WAHIS, the occurrence of RVF in animals, highlighting once more the importance of a one-health integrated surveillance approach to this disease.

[16] Mencattelli, G., Ndione, M.H.D., Rosà, R., Marini, G., Diagne, C.T., Diagne, M.M., Fall, G., Faye, O., Diallo, M., Faye, O. and Savini, G., 2022. Epidemiology of West Nile virus in Africa: An underestimated threat. PLoS neglected tropical diseases, 16(1), p.e0010075.
[17] https://africacdc.org/disease/crimean-congo-haemorrhagic-fever/
[18] https://www.ecdc.europa.eu/en/rift-valley-fever/facts
[19] https://africacdc.org/disease/rift-valley-fever/
[20] https://africacdc.org/disease/rift-valley-fever/

Trends of surveillance activities implemented in the Africa Region since 2005

Considering the importance of the implementation of disease surveillance to collect robust evidence on disease status, we evaluated the capacities for disease detection of countries in the region. The analysis focused on two main indicators, obtained from the data reported through six-monthly reports for the period 2005 – 2021 (or 2006 depending on when the disease was listed): (i) the percentage of reporting countries and territories having declared that the disease is notifiable; (ii) the percentage of reporting countries having reported the implementation of surveillance activities.

Table 1 details the percentage of reporting countries and territories declaring the three vector-borne diseases notifiable in domestic animals and/or in wildlife during 2018 (considered as the year with most complete information). The disease declared as notifiable by the highest number of countries and territories was RVF, followed by WNF and CCHF. In all three cases, there was a marked difference between the number of countries and territories declaring the disease notifiable in domestic animals and the number declaring the disease notifiable in wildlife. In addition, since 2005, on average, CCHF was reported as notifiable by 26% of the reporting countries and territories in domestic animals and by 14% in wildlife; RVF was reported as notifiable by 63% of the reporting countries and territories in domestic animals and by 24% in wildlife; WNF was reported as notifiable by 25% of the reporting countries and territories in domestic animals and by 12% in wildlife. For both animal groups (domestic and wildlife) and all three diseases, an increasing trend in the number of countries and territories reporting the disease as notifiable has been observed since 2005.

Table 1. Percentage of reporting countries and territories declaring CCHF, RVF and WNF as notifiable in domestic animals and as notifiable in wildlife, in 2018

Notifi_2018	CCHF	RVF	WNF
Domestic	34%	71%	36%
Wildlife	19%	27%	17%

Table 2 shows the situation with regard to surveillance activities[21] in the Africa Region for the three vector-borne diseases in 2018 (considered as the year with most complete information). Also in this case, the situation is very variable depending on the disease. It seems clear that surveillance for RVF is prioritised by a large number of countries and territories in the region. The results are quite worrying in terms of the real capacity of countries and territories in the region to quickly and effectively detect any occurrence of the disease and monitor its evolution in time. Interestingly, according to the data provided, 79%, 90% and 80% of the countries and territories reporting, respectively, CCHF, RVF and WNF as a notifiable disease have also declared having surveillance activities in place. In addition, on average, during the whole period of the analysis, surveillance activities on CCHF were reported by 26% of countries and territories in domestic animals and by only 13% in wildlife; surveillance activities on RVF were reported by 58% of countries and territories in domestic animals and by only 18% in wildlife; finally, surveillance activities on WNF were reported by 29% of countries and territories in domestic animals and by only 10% in wildlife. The data since 2005 show a positive and improving trend in surveillance activities in domestic animals, which appear to have been more widely implemented in recent years. However, the implementation of surveillance activities in wildlife remained at a very low level during the whole period of the analysis for all three diseases. The declared diagnostic capacity of the region follows a similar pattern, with no countries reporting the presence of national reference laboratories for CCHF diagnosis, two reporting laboratories for WNF and 19 reporting laboratories for RVF.

[21] Surveillance is considered to be applied at country level if at least one of the following control measures is declared in a country's six-monthly reports: general surveillance, targeted surveillance, monitoring, screening.

Table 2. Percentage of reporting countries and territories declaring CCHF, RVF and WNF surveillance activities in domestic animals and surveillance activities in wildlife, in 2018

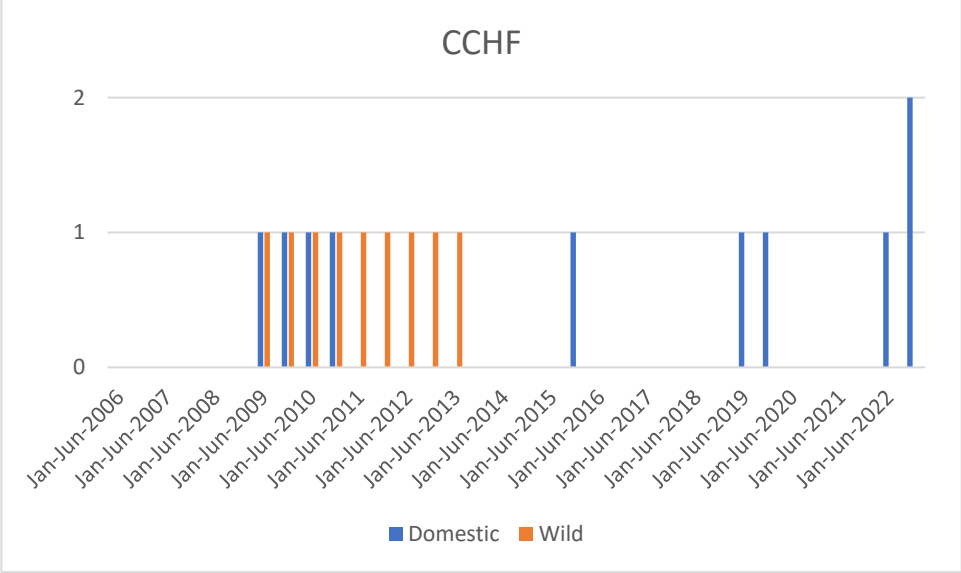
Surveillance_2018	CCHF	RVF	WNF
Domestic	37%	71%	38%
Wildlife	17%	36%	12%

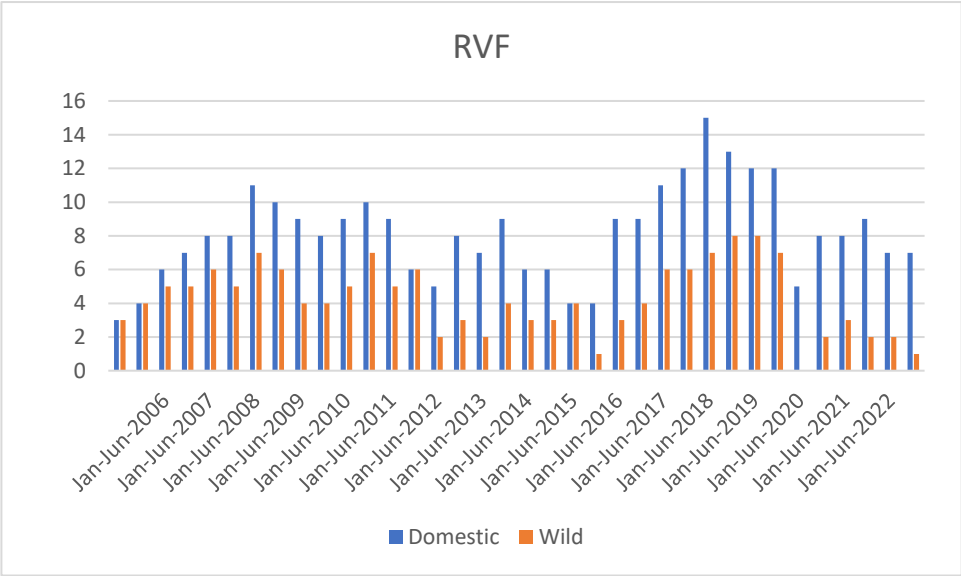
Summary of the situation reported each year in Africa between October 2005 and 25 November 2022

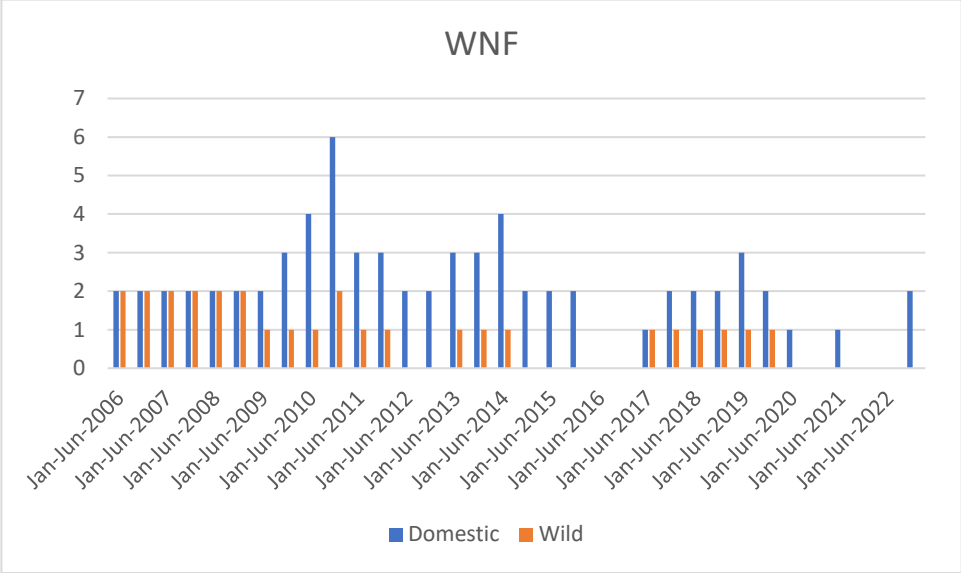
The epidemiological situation of the three vector-borne diseases in the countries and territories of the region is presented in Figure 6.

During the period, RVF was, by far, the disease reported present or suspected by the highest number of countries and territories (average of 8.2 countries/territories in domestic animals and 4.2 in wildlife), followed by WNF (average of 2 countries/territories in domestic animals and 0.8 in wildlife) and CCHF (average of 0.3 countries/territories in both domestic animals and wildlife). No specific trend in disease occurrence was observed for CCHF, while a cyclicity of disease presence was observed for both RVF and WNF.

Figure 6. Number of countries and territories in Africa reporting the presence or suspicion of CCHF, RVF and WNF, by semester, between October 2005 and 25 November 2022







Recent situation (2021/2022): exceptional events reported through WAHIS

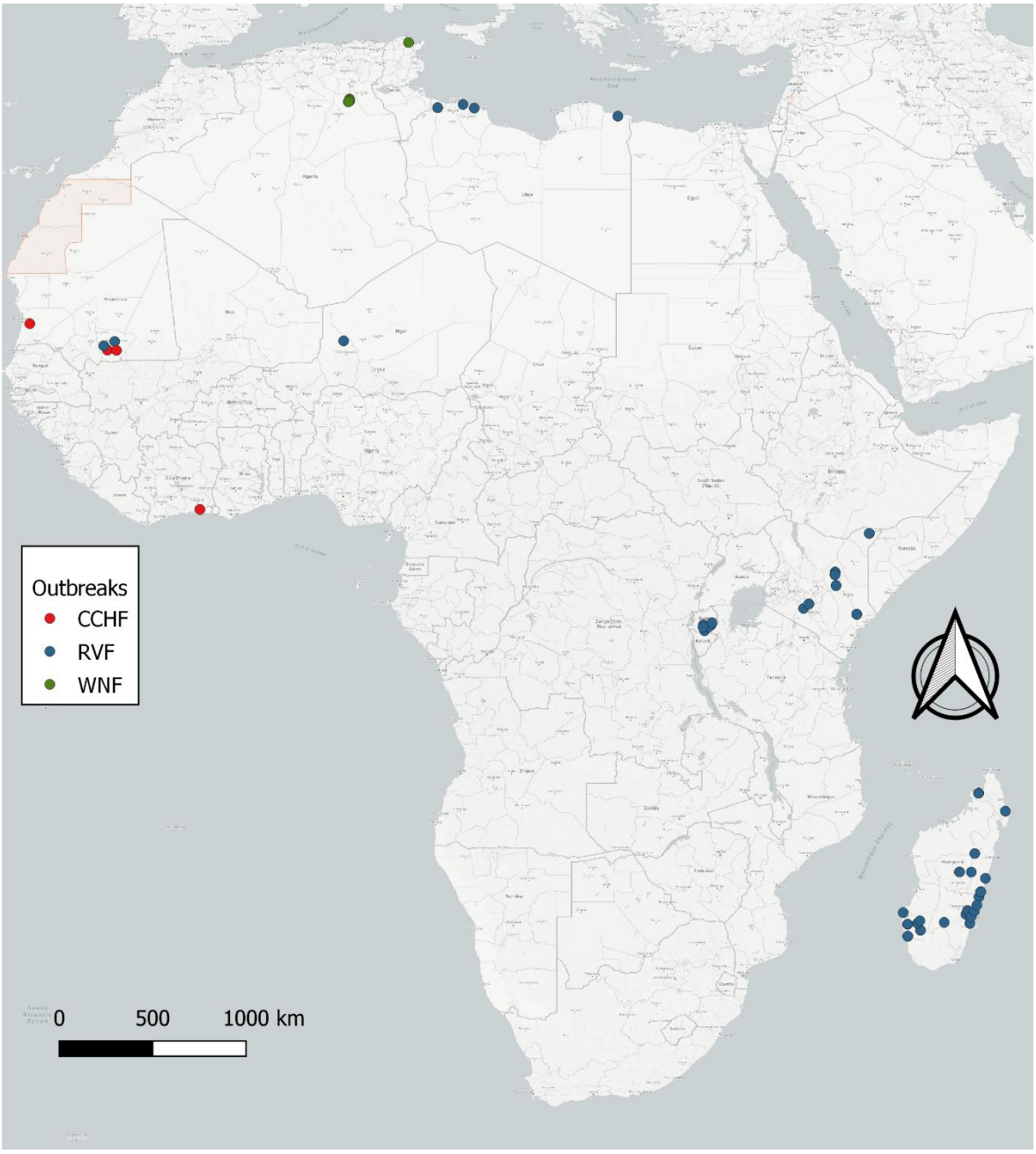
The recent distribution of outbreaks of the three vector-borne diseases is shown in Figure 7. During the period, 11 events were reported to WOAH through the early warning system: two for CCHF, seven for RVF and two for WNF.

In February 2022, Mauritania reported the recurrence of CCHF in the country (date of previous occurrence January 2019). Three outbreaks were reported, and the event was still ongoing as of 25 November 2022. In October 2022, Côte d'Ivoire reported the first occurrence of CCHF in the country. The country indicated that the disease was detected in the framework of a routine screening in August 2022 in three livestock enclosures where two oxen from a neighbouring country stayed before showing signs of depression and anorexia. Serological investigation detected the presence of IgM immunoglobulins against Crimean-Congo virus. Control measures were applied, and no mortality was reported.

Four countries reported the recurrence of RVF: Kenya (January and again in July 2021), Madagascar (April 2021), Mauritania (October 2021) and Niger (December 2021). The events in Mauritania and Madagascar were still ongoing as of 25 November 2022. One country (Rwanda) reported the first occurrence of the disease in a zone (Amajyepfo and Iburasirazuba administrative divisions), and the event was still ongoing as of 25 November 2022. Finally, in June 2022, Burundi reported the first occurrence of the disease in the country, and the event was still ongoing as of 25 November 2022. Burundi indicated that no human involvement was reported.

In September 2022, Algeria reported the first occurrence of WNF in the country. Seven outbreaks were reported in this event. In October 2022, Tunisia reported the recurrence of the disease. These two events were still ongoing as of 25 November 2022.

Figure 7. Distribution of outbreaks of CCHF, RVF and WNF reported to WOAH by Members in Africa through the early warning system, between 1 January 2021 and 25 November 2022



Compliance with standards for timely submission of immediate notifications for CCHF, RVF and WNF, in Africa

In accordance with Chapter 1.1. of the *Terrestrial Code* and the *Aquatic Code*, respectively, WOAH Members are required to submit an immediate notification for any of the exceptional events of listed diseases described in the aforementioned *Codes* within 24 hours of confirmation of the event. However, this requirement is not always complied with, for reasons such as a lack of proper communication at country level between diagnostic laboratories and local and central Veterinary Services, technical delays in filing the information in WAHIS and a lack of country transparency.

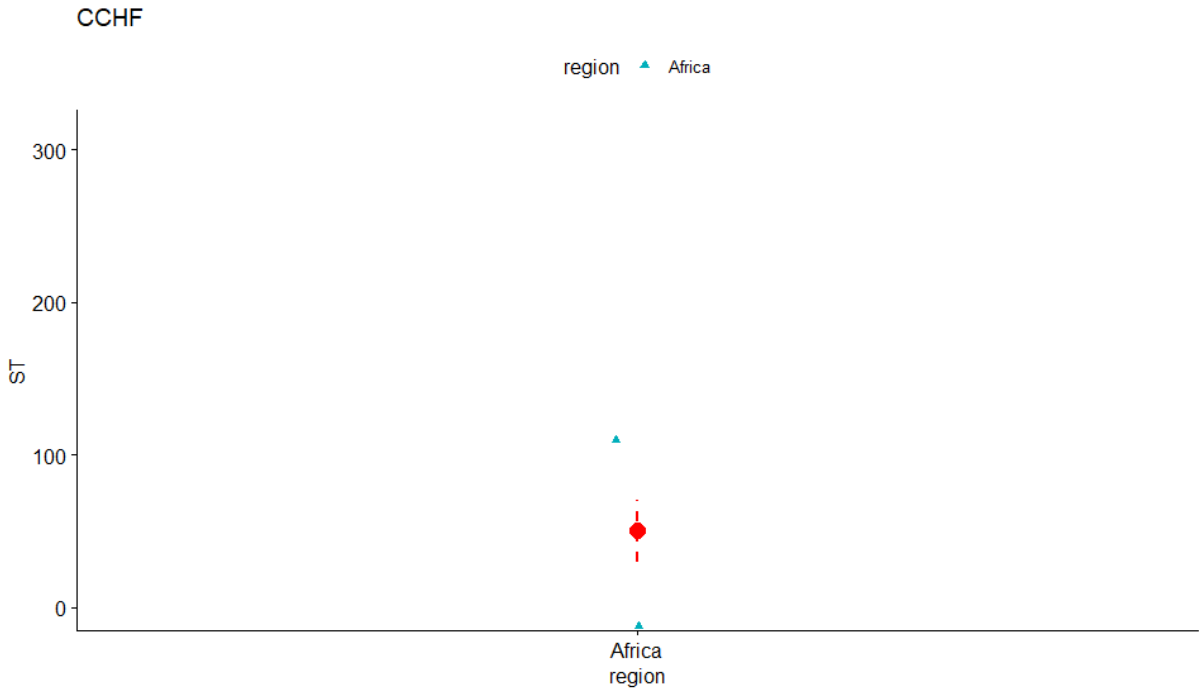
Figure 8 shows the level of compliance of countries and territories in Africa in terms of timely reporting of CCHF, RVF and WNF events after confirmation (submission time [ST]), in comparison with other regions, for events reported during the period January 2005 to 25 November 2022.

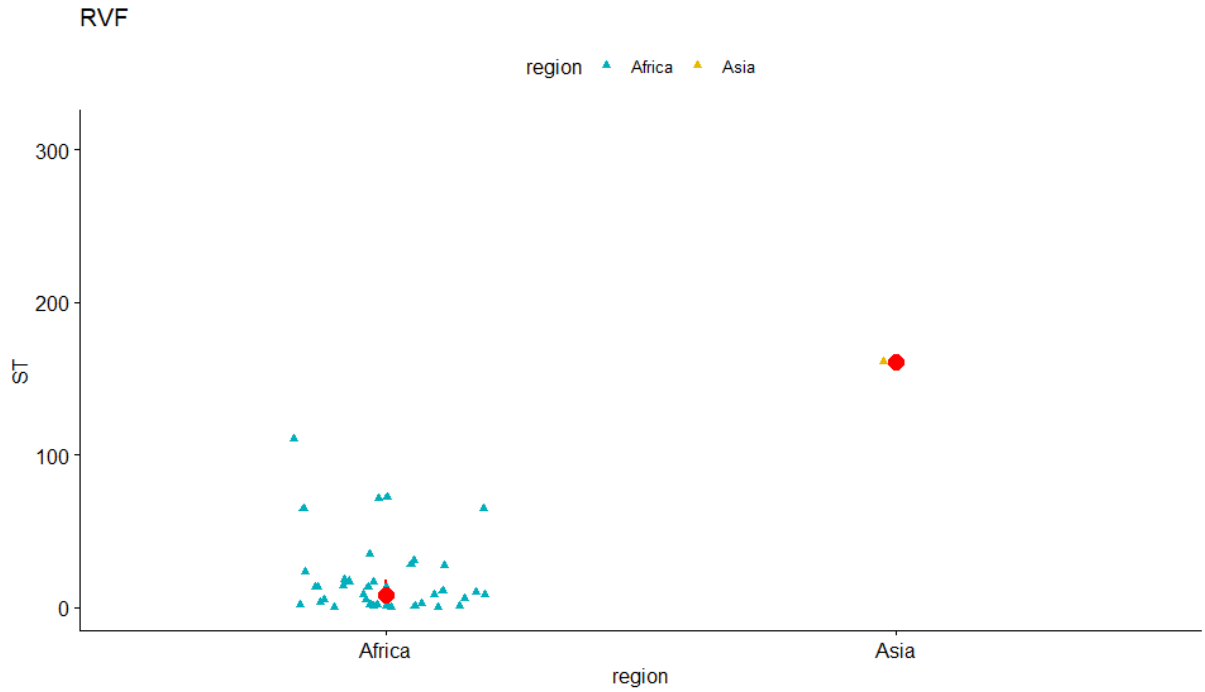
The median submission time of an immediate notification for CCHF, RVF and WNF in Africa was respectively 50.1 days, 8 days and 16.9 days after disease confirmation. For WNF, this median was higher than those measured for other world regions (4 days in the Americas and Europe, 2 days in Asia). For RVF, the ST value was lower than that recorded for Asia (161 days). Finally, no comparison with other regions was possible for CCHF as the disease was not reported through the early warning system outside Africa.

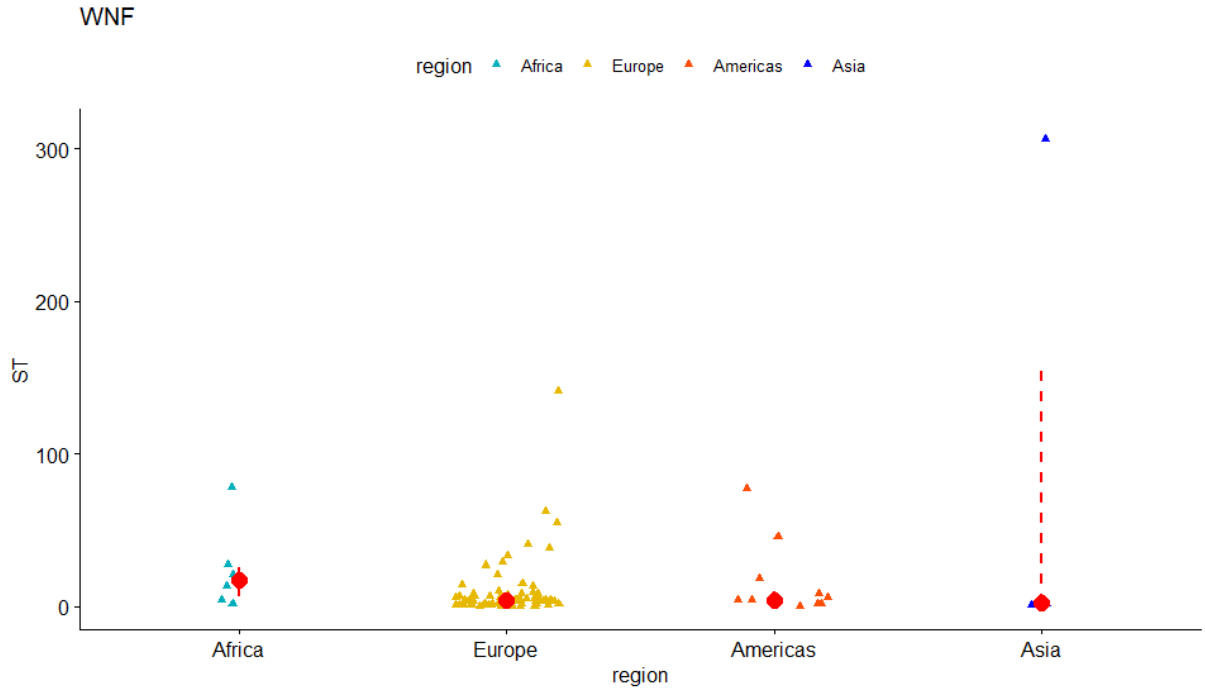
In general, these median values exceeded the required maximum delay of 24 hours after confirmation of the event.

In addition to the long submission time, the region also showed some degree of delay in terms of confirmation time (CT - time from event start to event confirmation), with a median CT of 7.5 days for CCHF, 18.5 days for RVF and 16.5 days for WNF. This is likely due to poor access to reference laboratories (see above).

Figure 8. Distribution of ST (submission time after confirmation) values (no. of days) for submission of an immediate notification report on CCHF, RVF and WNF during the period 2005 to 25 November 2022, by region (red dots represent the median ST, dashed lines represent the interquartile range Q1 to Q3)







Self-declaration of freedom

No self-declarations of freedom have ever been submitted by countries in the region for the selected diseases.

Simulation exercises

WOAH also has a procedure to disseminate, via the web, announcements received from Members on disease simulation exercises taking place in their countries. In most cases, these simulation exercises are designed to test and to practise implementing an existing national contingency plan. Between 1 January 2021 and 25 November 2022, no Members in Africa informed WOAH of simulation exercises conducted on any of these diseases.

EBO-SURSY: Capacity building and surveillance for viral haemorrhagic fevers

In December 2019, five countries (Republic of the Congo, Cameroon, Gabon, Democratic Republic of the Congo and Central African Republic) participated in a 5-day workshop organised by WOAH, through the EBO-SURSY Project, to develop draft protocols of surveillance for viral haemorrhagic fevers (VHF). Following this workshop, the EBO-SURSY Project supported the National Veterinary Services of the Central African Republic to finalise their national protocol of surveillance for RVF using a multisectoral technical working group over a three-day workshop. The protocol was then validated by national authorities during a two-day workshop in April 2022.

A similar five-day regional workshop was organised in June 2022 for national Focal Points for Wildlife, Communication, Laboratories and Disease Notification and their national Delegates to develop drafts of protocol of surveillance for VHF. Out of the five countries that participated, four (Sierra Leone, Uganda, Nigeria and Ghana) decided to work on the development of a protocol of surveillance for RVF, and one (Liberia) on the development of a protocol of surveillance for Lassa fever.

In the coming months, the EBO-SURSY Project will support Sierra Leone to finalise and validate its draft national protocol of surveillance for RVF, with the involvement of national stakeholders and other relevant sectors.

Summary

The analysis on the surveillance capacity of the Africa Region for the three vector-borne diseases showed a low percentage of countries reporting the implementation of surveillance activities, with slightly better performance for RVF, most likely due to its higher impact on animals and humans, better awareness of the importance of the disease in the region and also the existence of capacity-building activities. This low level of surveillance might lead to (i) an increase in the risk of undetected circulation of the viruses; (ii) delayed identification of the disease after its introduction in a country; and (iii) an underestimation of the real disease burden for animal and humans.

The level of surveillance for each of the three vector-borne diseases is reflected in the average number of countries and territories reporting the presence of the disease. RVF appears as the disease with the highest prevalence in the region, followed by WNF and CCHF. The fact that disease prevalence is strictly correlated with the declared level of surveillance may indicate gaps between the reported and actual distribution of the three diseases. For instance, while WNF is considered to be present in 28 African countries (based on a literature review[16]) only 10 countries have reported the presence of the disease to WAHIS since 2005.

Surveillance capacity is even poorer in wildlife than in domestic animals; indeed, the number of countries and territories reporting any surveillance activity in wildlife is two to four times lower. Under these conditions and considering that some diseases (e.g. CCHF and WNF) are pauci-symptomatic or almost asymptomatic, the probability of undetected circulation of these viruses is becoming quite large.

In addition to the inadequate level of surveillance in place, countries and territories in the region have a low level of compliance with the requirement to inform WOAH of the occurrence of exceptional epidemiological events in a timely manner. STs for all three vector-borne diseases, with the partial exception of RVF, are in fact very long.

B3. Update on infection with African swine fever virus

Background and importance of the disease in the Africa Region

African swine fever (ASF) is an infectious disease caused by a virus in the family *Asfarviridae*. ASF has traditionally been found on the African continent (first diagnosed in Kenya in 1910). In the years since 2005, only one African country has reported its first occurrence of the disease: Mali, in 2016. This shows that the virus has not spread significantly to new areas in the region during the past 15 years. However, since 2007, it has been spreading worldwide: from 2007 in Europe, from 2018 in Asia, from 2019 in Oceania and from 2021 in the Americas, after an absence in all these regions of almost 40 years since the previous report of this disease

ASF is a devastating viral haemorrhagic fever that can kill up to 100% of affected domestic pigs, and for which there is still no vaccine or treatment. The ability to survive for long periods in uncooked pork endows the virus with a very high capacity for transboundary spread over great distances. WOAH and FAO have developed a joint initiative for the Global Control of ASF[22]. This initiative, launched under the umbrella of GF-TADs, brings together governments, industry and specialists to support WOAH Members in their efforts to control this devastating pig disease. In Africa, ASF is identified as a priority disease in the Priority Transboundary Animal Disease (TAD) 2021 – 2025 Regional Strategy.

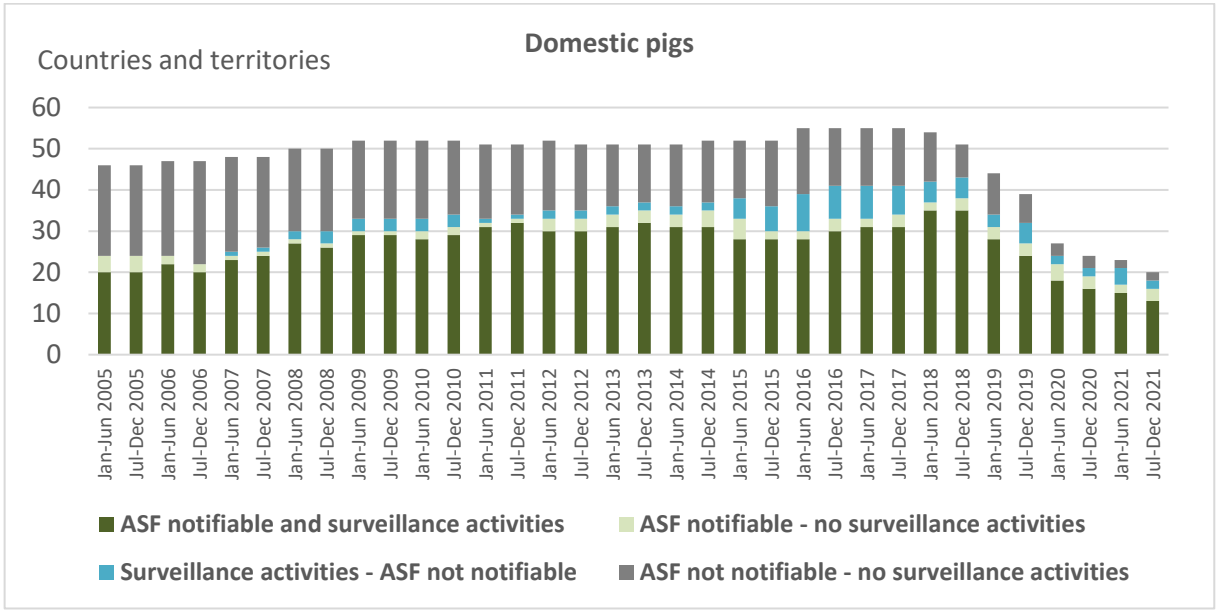
Trends of surveillance activities implemented in the Africa Region since 2005

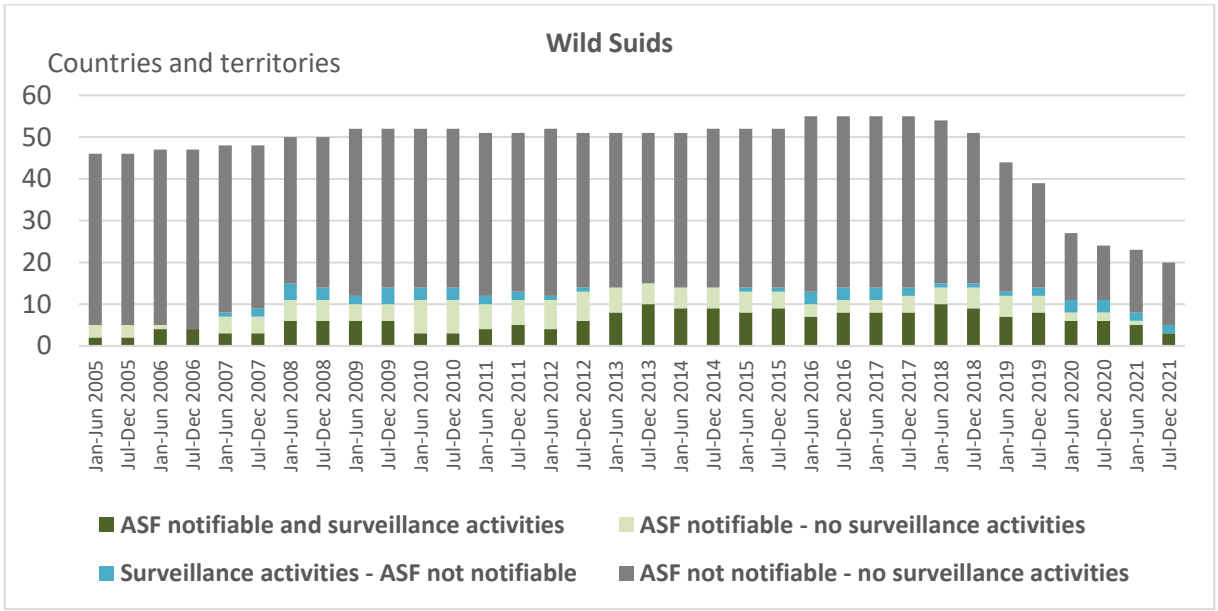
As mentioned in previous chapters, surveillance is a key element for disease prevention and control. Therefore, we analysed the evolution of the percentage of countries and territories declaring in their six-monthly reports: (i) ASF as a notifiable disease; and (ii) the implementation of ASF surveillance activities, during the period 2005 – 2021 (Figure 9). The data for 2019, 2020 and 2021 are still only partial and should be treated with caution.

For domestic pigs, most African countries and territories reported ASF as notifiable and/or the implementation of ASF surveillance activities. In 2018 (the most recent year with complete information), this was the case for 43 countries and territories, while eight did not report ASF as notifiable nor did they implement surveillance activities. The situation is very different for wild suids. In 2018 (the most recent year for which complete information is available), only 15 countries and territories reported ASF as notifiable and/or implementation of ASF surveillance activities in wild suids, while 41 countries and territories did not report ASF as notifiable nor did they implement ASF surveillance activities in wild suids. For both domestic pigs and wild suids, the number of African countries and territories reporting ASF as notifiable with surveillance activities increased between 2005 and 2018 (from 20 to 35 for domestic pigs and from 2 to 10 for wild suids). Also, for both domestic pigs and wild suids, only a few countries declared ASF notifiable without surveillance activities. In 2018, they were three for domestic pigs, and five for wild suids.

[22] https://www.woah.org/app/uploads/2021/06/global-control-of-african-swine-fever-a-gf-tads-initiative-2020-2025.pdf

Figure 9. Number of countries and territories declaring ASF as a notifiable disease and or the implementation of surveillance activities for ASF, by animal group and by semester, between 2005 and 2021 *(reports received by WOAH as of 25 November 2022)*





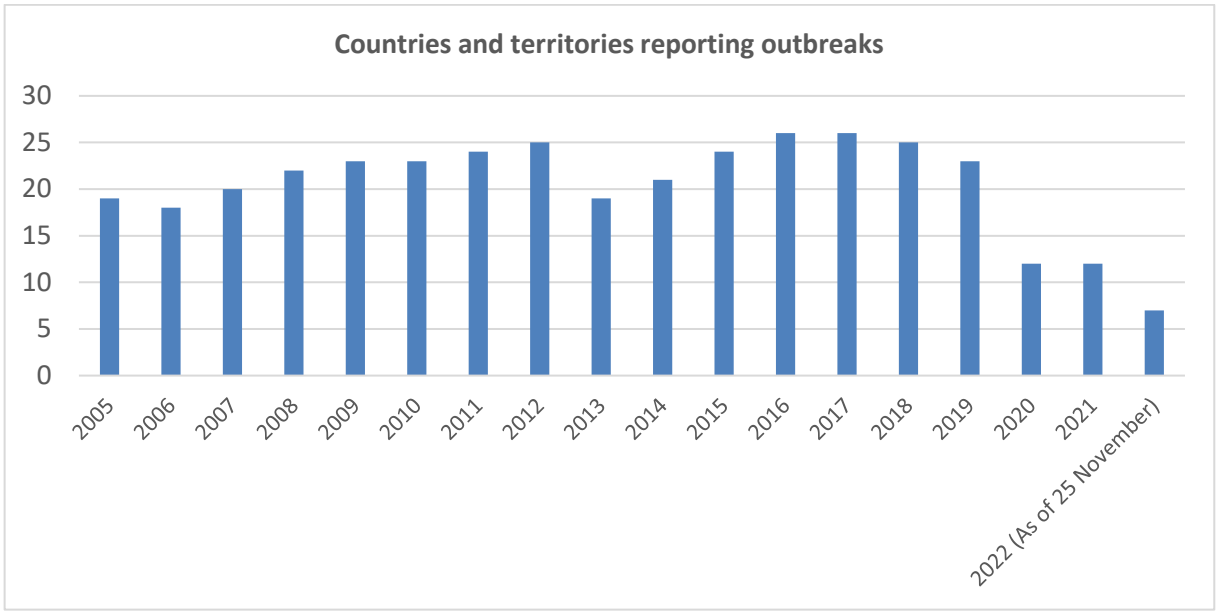
Summary of the situation reported during each year in Africa between October 2005 and 25 November 2022

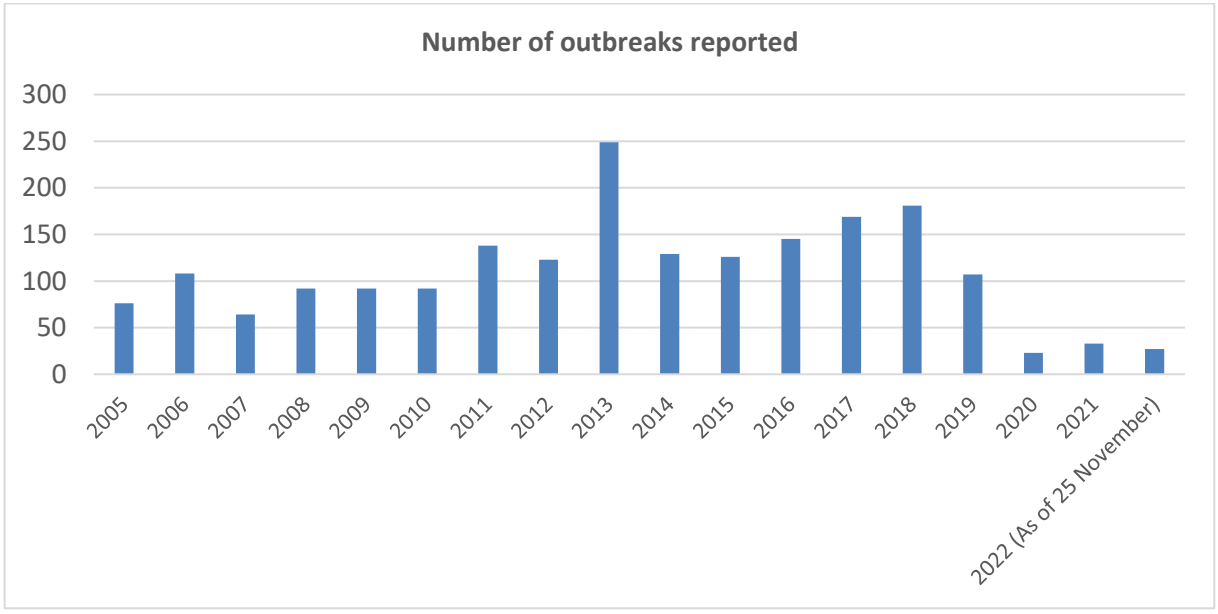
Figure 10 provides a summary of the situation reported through WAHIS during each year in Africa between October 2005 and 25 November 2022. Most countries reported through six-monthly reports over the analysis period, in accordance with WOAH standards. Due to delays in six-monthly report submission, the data for 2019, 2020, 2021 and 2022 are still only partial and should be treated with caution.

For the period before these last four years, reporting can be considered to have been completed. During this period, the yearly number of countries and territories in Africa reporting ASF ranged between 18 and 26 and the yearly number of ASF outbreaks in Africa ranged between 64 and 249 with peaks in 2013 (249 outbreaks) and 2018 (181 outbreaks). More

than 99% of cases reported were in domestic pigs – only a few countries identified and reported cases in wild suids. This may be explained to a large extent by the very small number of countries and territories reporting wild suid surveillance activities, as indicated above.

Figure 10. Number of countries and territories in Africa reporting ASF outbreaks and number of outbreaks reported, by year, between 2005 and 2022 *(reports received by WOAH as of 25 November 2022)*





Recent ASF situation (2021/2022): distribution of ASF outbreaks reported to WOAH through the early warning system

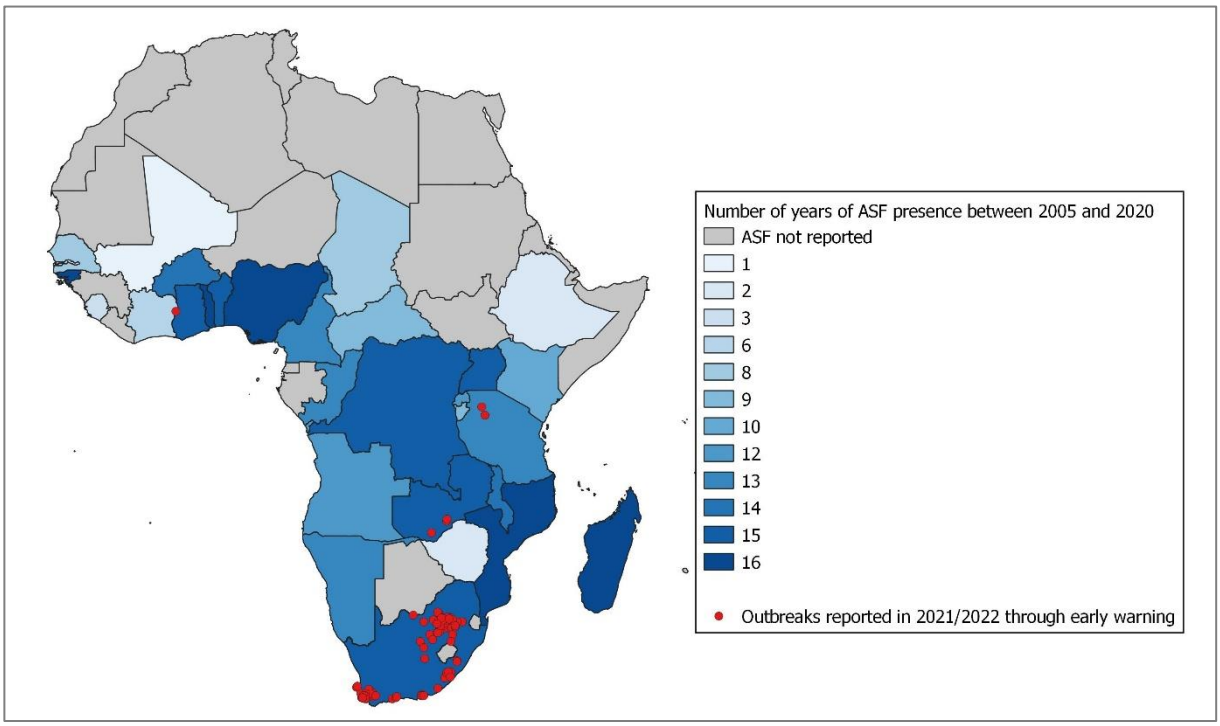
ASF has been mostly prevalent in countries of sub-Saharan Africa wherever pigs are kept. Figure 11 shows, in blue, the 32 African countries and territories which reported ASF presence at least once between 2005 and 2020. Based on FAOSTAT[23]

[23] https://www.fao.org/faostat/fr/#home

information, 13 African countries had a pig production or more than 1 million heads in 2020. All these countries reported to WOAH at least 9 years of ASF presence between 2005 and 2020.

The recent distribution of ASF outbreaks reported through early warning in 2021 and 2022 is also shown in Figure 11. Between 1 January 2021 and 25 November 2022, seven events were reported to WOAH through the early warning system. South Africa and Tanzania reported the first occurrence of ASF in new areas and Côte d'Ivoire, South Africa and Zambia reported recurrences. The map also shows outbreaks in South Africa that were reported for recurrence of on- going events since 2019 and 2020. All these outbreaks were reported in domestic pigs.

Figure 11. Distribution of countries reporting ASF presence to WOAH between 2005 and 2020 and distribution of outbreaks reported through the early warning system between 1 January 2021 and 25 November 2022, in Africa



Self-declaration of freedom

In 2012, the Delegate of Mauritius declared that his country had regained its status of freedom from ASF as of 23 April 2012, in accordance with the provisions of the *Terrestrial Code*. As of 25 November 2022, this declaration was still active[24].

WOAH activities related to vaccine development

Under an agreement between the Agricultural Research Service of the United States Department of Agriculture (USDA-ARS) and WOAH, a consultant was commissioned to conduct a review of ASF modified live vaccine candidates and propose internationally acceptable guidelines for the manufacture and development of safe and effective ASF vaccines. The review paper[25] was published in November 2022. Preparation of the guidelines is currently in progress, and the aim is for the guidelines to serve as a precursor to the development of ASF vaccine standards for inclusion in the *Terrestrial Manual*. Consultations on the draft guidelines with vaccine group producers and key regulators in different regions are underway to consolidate the recommendations and seek consensus on analytical and clinical parameters expected of ASF vaccines.

[24] https://www.woah.org/fileadmin/Home/eng/Publications_%26_Documentation/docs/pdf/bulletin/Bull_2012-3-ENG.pdf
[25] Brake, D.A. African Swine Fever Modified Live Vaccine Candidates: Transitioning from Discovery to Product Development through Harmonized Standards and Guidelines. Viruses 2022, 14, 2619. https://doi.org/10.3390/v14122619

Although this work is being undertaken in partnership with the USDA, WOAH does not favour any vaccine group producer and the guidelines are intended to be applicable globally. When ready, the draft guidelines will be presented to WOAH Biological Standards Commission for its consideration.

ASF-related activities in the Africa Region

The most recent documentation of the regional strategy for the control of ASF in Africa was developed in 2017[26] and is available on WOAH website. To support countries and territories in the region with ASF prevention and control, the second meeting of the Standing Group of Experts (SGE) for ASF for Africa was organised in September 2022 by WOAH Regional Representation for Africa, in its capacity as the Secretariat of the GF-TADs for Africa Regional Steering Committee (RSC), with the support of FAO, the African Union – Interafrican Bureau for Animal Resources (AU-IBAR) and the GF-TADs ASF Working Group. In addition, a series of workshops on import risk analysis for ASF in Africa were conducted in 2021 and 2022.

Summary

ASF has been widespread in Africa for several decades. Over the past decade it has spread widely to other parts of the world. In the absence of an effective vaccine, controlling and eradicating ASF is becoming increasingly challenging. Despite this daunting context, global control of the disease is nevertheless possible but will require a sustained effort and collaboration at national, regional and international levels.

This chapter shows that, in Africa, most ASF surveillance efforts are targeted at domestic pigs (in 80% of reporting countries and territories in the region), while little surveillance and only a very small number of cases are reported for wild suids.

Furthermore, little information is available for the years 2020, 2021 and 2022 due to delays in the submission of six-monthly reports by countries and territories in the region.

Activities are organised in the region to support countries and territories with ASF prevention and control, with a view to achieving the main objectives of WOAH/FAO joint initiative for the Global Control of ASF: 1) improve the capability of countries to control (i.e. prevent, respond, eradicate) ASF using WOAH standards and best practices that are based on the latest science; 2) establish an effective coordination and cooperation framework for the global control of ASF; and 3) facilitate business continuity.

B4. Update on infection with peste des petits ruminants virus

Background and importance of the disease in the Africa Region

Infection with peste des petits ruminants (PPR) virus is a contagious fatal viral disease of small ruminants. Therefore, it has a severe socio-economic impact on the livestock industry in countries whose economy relies on small ruminants, particularly in poor countries where the disease is endemic. Since it was first reported in 1942 in Côte-d'Ivoire, PPR has spread far beyond its origin in Western Africa. After the successful global eradication of rinderpest in 2011, FAO and WOAH have targeted PPR as the next animal disease aimed for global eradication.

[26] https://rr-africa.woah.org/wp-content/uploads/2020/01/au_strategy_asf_en.pdf

Global Strategy for the Control and Eradication of PPR

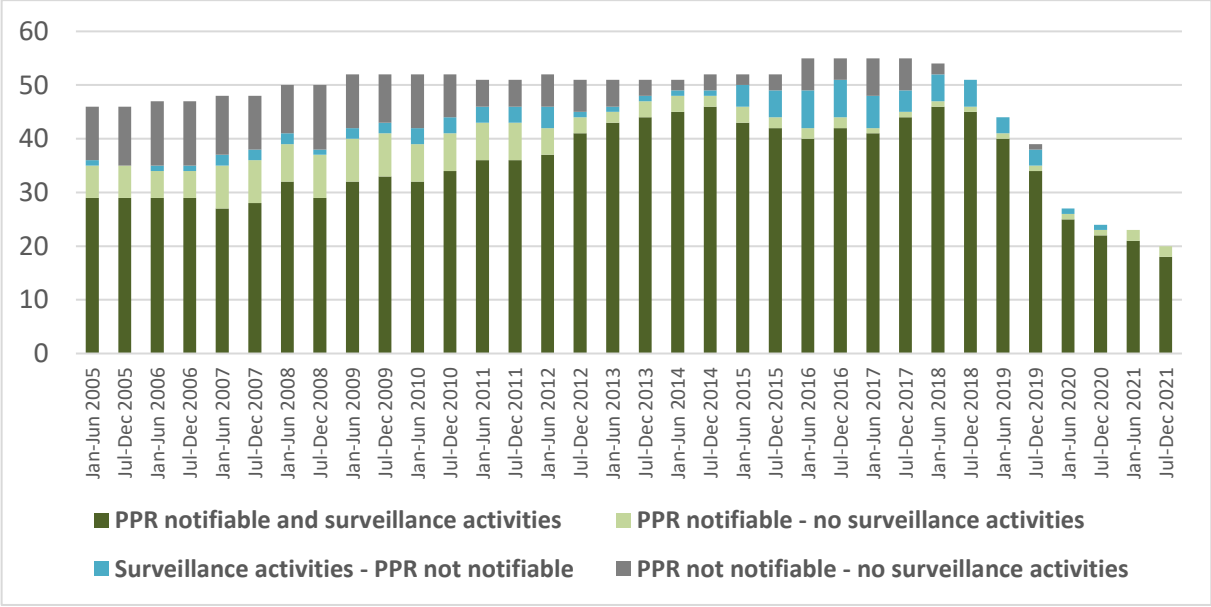
WOAH and FAO developed jointly the PPR Global Control and Eradication Strategy (PPR GCES) under GF-TADs. The strategy covers three components: (1) a technical stepwise approach (stage 1 to stage 4) to control and eradicate the disease; (2) the strengthening of Veterinary Services in order to be able to carry out the technical component; (3) the control of other priority small ruminant diseases together with PPR, with a view to increasing the impact of the control efforts.

Trends of surveillance activities implemented in the Africa Region since 2005

As in previous chapters and in order to interpret notifications in the context of surveillance capacities in the region, we analysed the evolution of the percentage of countries and territories declaring in their six-monthly reports: (i) PPR as a notifiable disease; and (ii) the implementation of PPR surveillance activities, during the period 2005 – 2021 (Figure 12). The data for 2019, 2020 and 2021 are still only partial and should be treated with caution.

The trend among African countries and territories to report PPR as notifiable and to report the implementation of surveillance activities for the disease steadily increased, from 29 in 2005 to 46 in 2018. In 2018 (the most recent year with complete information), two countries did not report PPR as notifiable or the implementation of any PPR surveillance activities. Only one country reported PPR notifiable but with no surveillance activities and five countries reported implementation of surveillance activities but PPR as not notifiable. The fact that PPR is still not notifiable in some countries and that some countries have no surveillance in place is of concern in terms of the PPR GCES.

Figure 12. Number of countries and territories declaring PPR as a notifiable disease and/or implementation of PPR surveillance activities, by semester, between 2005 and 2021 *(reports received by WOAH as of 25 November 2022)*



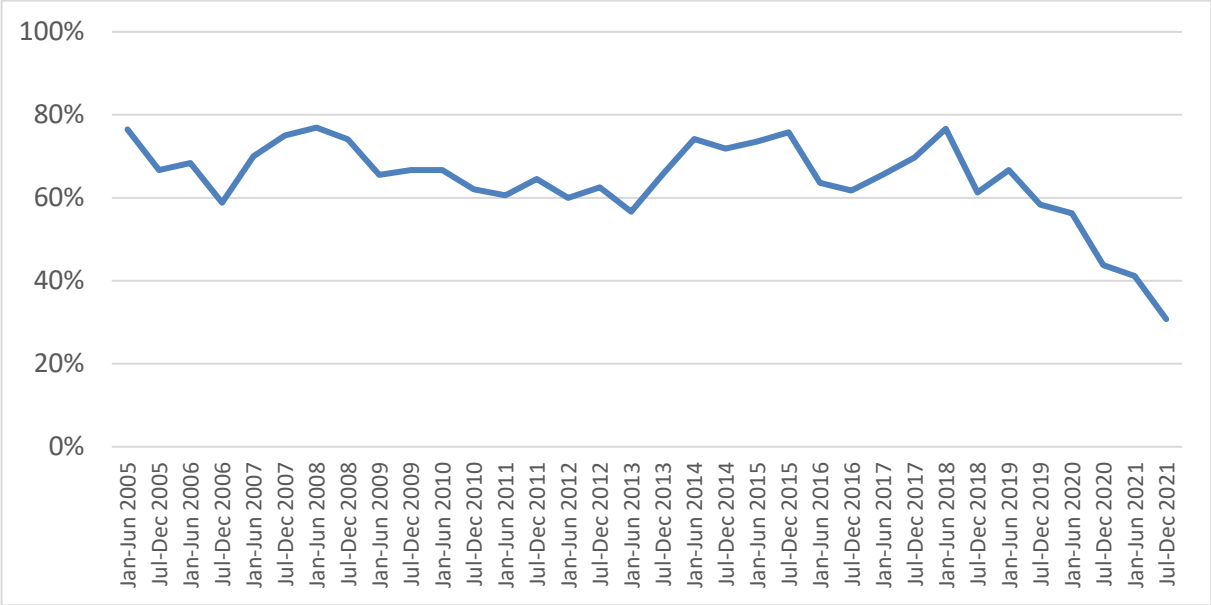
Trends of official vaccination activities implemented in the Africa Region since 2005

Lessons learned from the Global Rinderpest Eradication Programme demonstrate that the use of a highly efficacious rinderpest vaccine capable of immunising animals against all rinderpest virus strains was a vital contributor to the campaign's success. Similarly, effective PPR vaccines are available and can induce life-long protective immunity in

vaccinated animals. Vaccination is thus one of the key tools to controlling PPR and has been identified as the main option in Stage 2 'Control' and Stage 3 'Eradication', of the PPR GCES.

Figure 13 shows the evolution of the percentage of countries and territories declaring in their six-monthly reports the use of official vaccination to control the presence of disease. For the period between 2005 and 2018, reporting can be considered to have been completed. During this period, an average of 68% of the countries and territories of Africa that reported PPR present also reported official vaccination, with a trend that remained stable. For 2019, 2020 and 2021, the trend would appear to show a decline (down to about 35% in 2021); however, the data for these three years (and particularly 2020 and 2021) are still only partial and should be treated with caution. If this downward trend is confirmed, it will be of concern for the PPR GCES.

Figure 13. Percentage of reporting countries and territories declaring PPR present and official vaccination in domestic animals, by semester, between 2005 and 2021 *(reports received by WOAH as of 25 November 2022)*

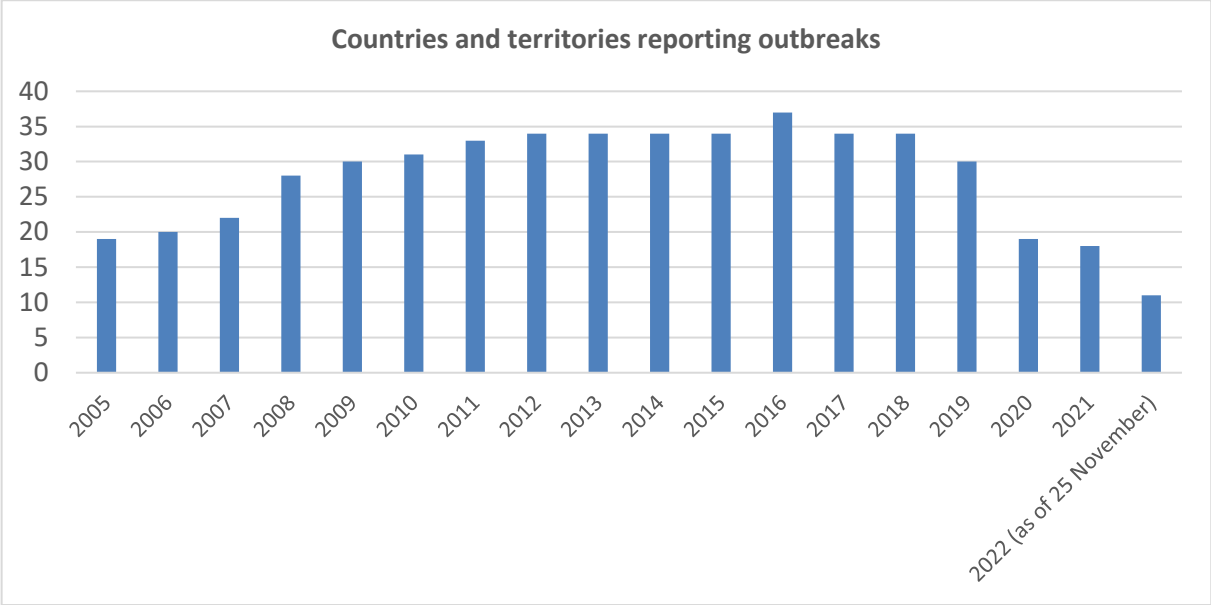


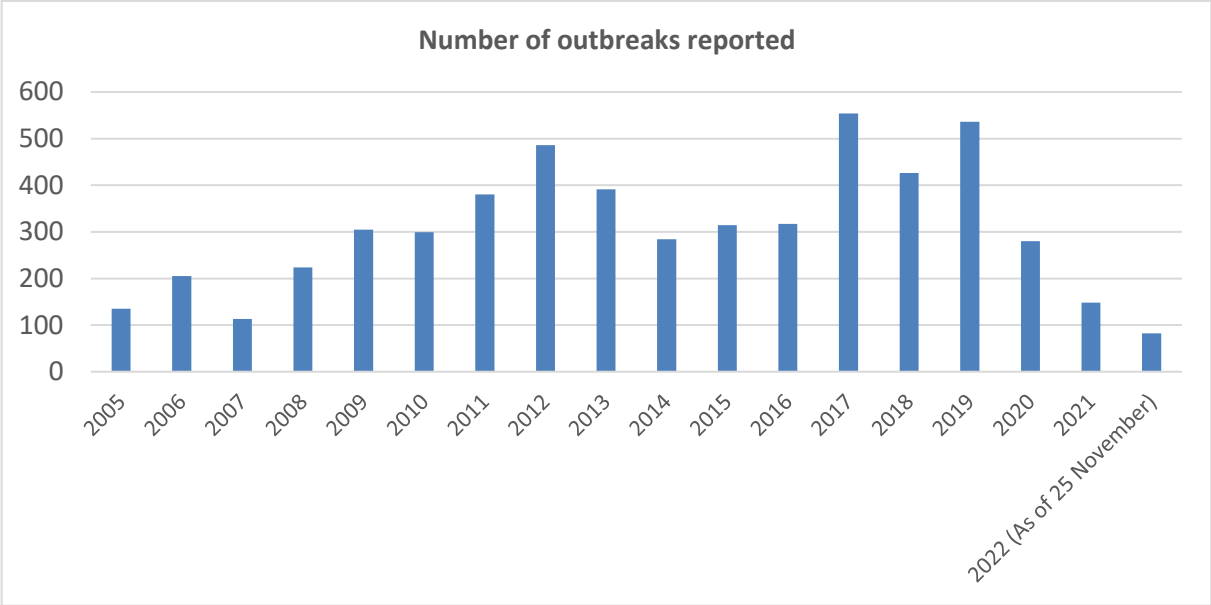
Summary of the situation reported during each year in Africa between October 2005 and 25 November 2022

Figure 14 provides a summary of the situation reported through WAHIS during each year in Africa between 2005 and 2022 (as of 25 November). As indicated above, most countries reported through six-monthly reports over the analysis period, in accordance with WOAH standards. Due to delays in six-monthly report submission, the data for 2019, 2020, 2021 and 2022 are still only partial and should be treated with caution.

For the period before these last four years, reporting can be considered to have been completed. During this period, the yearly number of countries and territories reporting PPR in Africa ranged from 19 to 37 and the yearly number of PPR outbreaks in Africa ranged from 113 to 554, with peaks in recent years, namely 2017 (554 outbreaks) and 2019 (536 outbreaks).

Figure 14. Number of countries and territories in Africa reporting PPR outbreaks and number of outbreaks reported, between 2005 and 2022 *(reports received by WOAH as of 25 November 2022)*

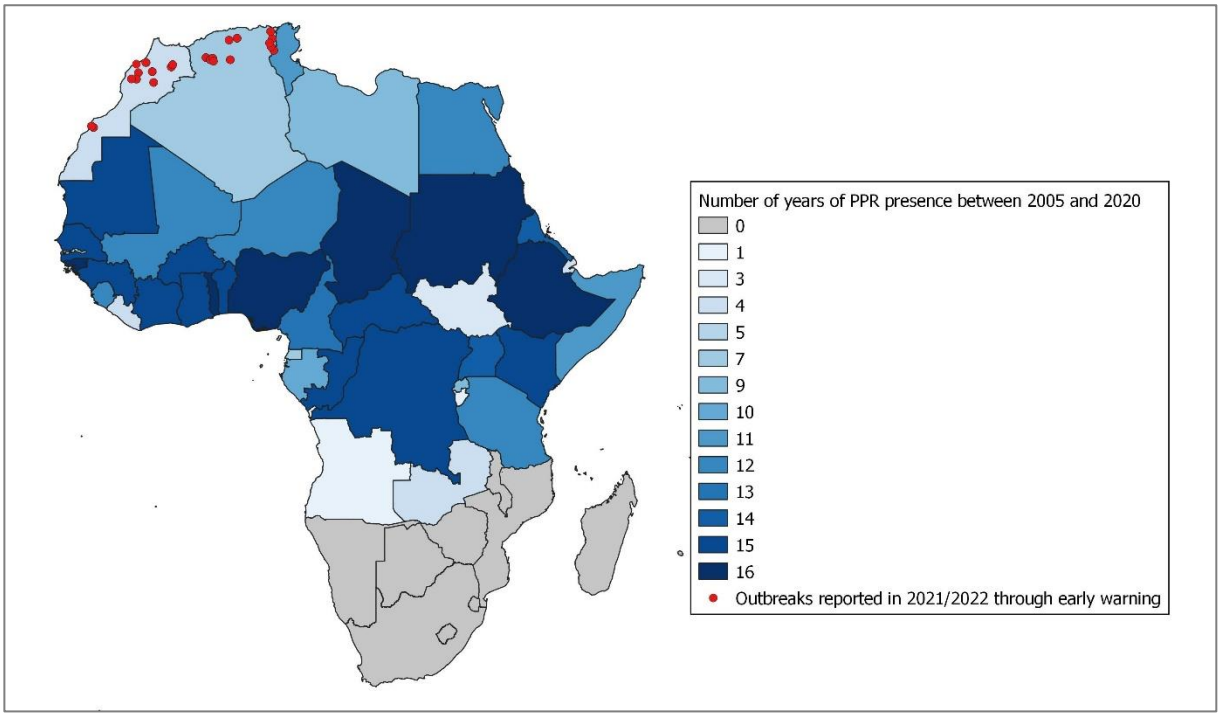




Recent PPR situation (2021/2022): distribution of PPR outbreaks reported to WOAH through the early warning system

Figure 15 shows, in blue, the 42 African countries and territories that reported PPR presence at least once between 2005 and 2020. The distribution of PPR outbreaks reported through the early warning system in 2021 and 2022 is also shown. Between 1 January 2021 and 25 November 2022, three events were reported to WOAH through the early warning system. Algeria and Morocco reported recurrences.

Figure 15. Distribution of PPR presence reported to WOAH between 2005 and 2020 and distribution of PPR outbreaks reported through the early warning system between 1 January 2021 and 25 November 2022, in Africa



PPR official status and PPR GCES stages

WOAH Members have the possibility to apply for official recognition by WOAH of their freedom from PPR for the whole of the country or for a zone, and for the endorsement of their national official control programme for PPR. As of 25 November 2022, Botswana, Eswatini, Lesotho, Madagascar, Mauritius, Réunion (France), Saint Helena (United Kingdom) and South Africa were recognised as free from PPR according to the provisions of Chapter 14.7. of the *Terrestrial Code*; Namibia was recognised as having a zone free from PPR.

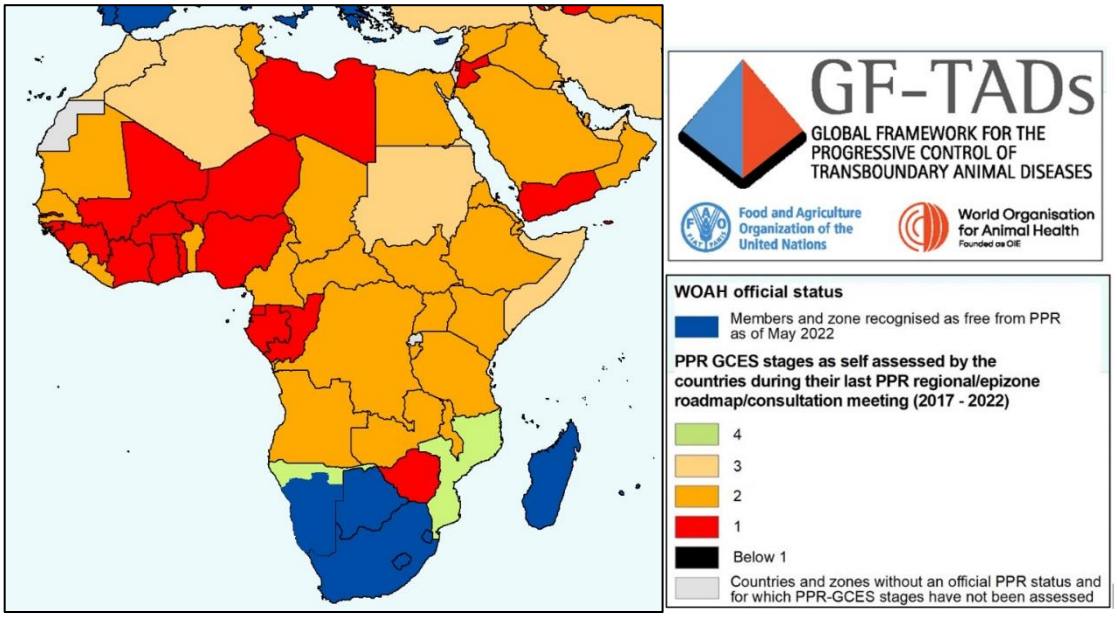
The PPR GCES was endorsed in 2015. Eradication of the disease by 2030 is its goal. The strengthening of Veterinary Services envisaged in support of stamping out PPR will also help to control other small ruminant diseases prioritised by stakeholders. The push for PPR global eradication is framed as a 15-year process running to 2030. The GCES was operationalized through the implementation of the PPR Global Eradication Programme (PPR GEP). The first five-year phase of the programme (PPR GEP I) was implemented from 2017 to 2021 and FAO and WOAH launched the revision of the first five-year implementation of the PPR GCES (PPR GEP I) in 2021, in order to formulate the second phase of the PPR GEP (PPR GEP II) and the Blueprint of recommended activities for countries and regions towards PPR freedom by 2030. The PPR GEP aims to work with partners to strengthen implementation models, and to reactivate and build on the partnerships forged by the Global Rinderpest Eradication Programme (GREP). The PPR GEP, as part of the PPR GCES more widely, is a multi-country, multi-stage process that will decrease epidemiological risk levels and increase prevention and control. The four stages it sets out involve assessment, control, eradication and the maintenance of PPR-free status.

In Africa, one country has been assessed as being below stage 1 (no data available). Seventeen countries are in stage 1 (assessment stage), 22 countries are in stage 2 (control stage), four countries are in stage 3 (eradication stage) and Mozambique and one zone in Namibia are in stage 4 (post-eradication stage). For Comoros and Rwanda, the stage has not been assessed.

For eight countries in the region, stage information was not available in 2021 and was assessed in 2022, which is a step forward in understanding the PPR situation in the region. Similarly, Gambia moved from below stage 1 (no data available) in 2021 to stage 1 (assessment stage) in June 2022. In contrast, the situation in three countries deteriorated from stage 2 in 2021 to stage 1 in June 2022.

Figure 16 shows the regional situation regarding Members' progression along the four-stage process towards PPR eradication, as of June 2022[27].

Figure 16. PPR situation with respect to the GCES stepwise approach, June 2022



Summary

PPR has been historically present in Africa, with between 19 and 37 countries reporting outbreaks each year in the past 15 years. In the context of the PPR Global Control and Eradication Strategy (PPR GCES) endorsed in 2015, its control and eradication are now a priority for the region.

This chapter shows that in recent semesters, more than 80% of countries and territories in the Africa Region reported PPR as notifiable and the implementation of surveillance activities, which demonstrates the engagement of Members of the region in the PPR GCES.

Although vaccination is key to achieving control and eradication, this chapter shows that, on average, only 64% of the countries and territories of Africa that reported PPR present also reported official vaccination. If the downward trend measured on the basis of incomplete data for 2019, 2020 and 2021 is subsequently confirmed, it will be of concern for the PPR GCES.

Some progress has been reported in the region for better control of PPR. Notably, for eight countries in the region, stage information was not available in 2021 and was assessed in 2022, which is a step forward. However, in the meantime, the situation in a few countries has deteriorated. The African countries are encouraged by WOAH to make stronger efforts in surveillance and control.

[27] The stages as presented here are based on self-assessment by Members which have made used of the PMAT and shared the results with WOAH during their last PPR regional/epizone/consultation meetings. Since then, Members may have self-assessed again but may not have informed WOAH of the latest update.

B5. Update on reporting of aquatic animal diseases by countries and territories of the Africa Region

Background and importance of aquatic diseases in the region

Although the Egyptians started rearing the tilapia *Oreochromis niloticus* around 4000 years ago, there is no historical aquaculture production tradition in Africa. In fact, at the beginning of the twentieth century, aquaculture was still virtually unknown, and the first attempts to develop it date back to the 1940s. Despite massive aid to promote fish farming in Africa, results were below expectations. In 2013, for example, estimated aquaculture production was only 1.4 million tonnes for sub-Saharan Africa whereas global production stood at 66.6 million tonnes[28].

Both freshwater and marine aquaculture have a significant growth potential all across Africa and, according to several estimates, they could contribute to feeding the region's population. As is well known, Africa has globally the most rapidly increasing population and consequently a substantial need of access to proteins. Natural freshwater and marine resources are currently over-exploited. Consequently, the Africa Region should as soon as possible increase its aquaculture production capacity. The extent of this situation can be highlighted by a few statistics. The Africa Region currently accounts for less than 3% of total world aquaculture production. Regarding world capture fisheries (around 90 million tonnes per year), in 2010 Africa contributed around 7 million tonnes, or 9% of global caught supply[29]. More recent statistics (2017) put the estimated contribution of aquaculture production in Africa at an even lower level (1.98% of global aquaculture production)[30].

The limited importance given to aquatic animal production in the region is reflected in the international reporting behaviour of countries and territories on aquatic animal diseases. On average, only around 50% of countries and territories regularly send information on aquatic animal diseases through six-monthly reports, and the percentage of countries reporting has decreased significantly since 2010. In addition, since 2005, only 25 immediate notifications have been submitted by countries in the region to inform WOAH about exceptional disease events in aquatic animals (around 1.4 immediate notifications/year).

Recent aquatic animal disease situation (2021/2022), notified through immediate notifications and follow-up reports

The recent distribution of aquatic animal disease outbreaks in the region, as notified through immediate notifications and follow-up reports, is shown in Figure 17. During the period, five events were reported to WOAH through the early warning system.

In April 2021, Cameroon reported the first occurrence of epizootic ulcerative syndrome in the country. Two outbreaks were reported in this event which, as of 25 November 2022, was still ongoing.

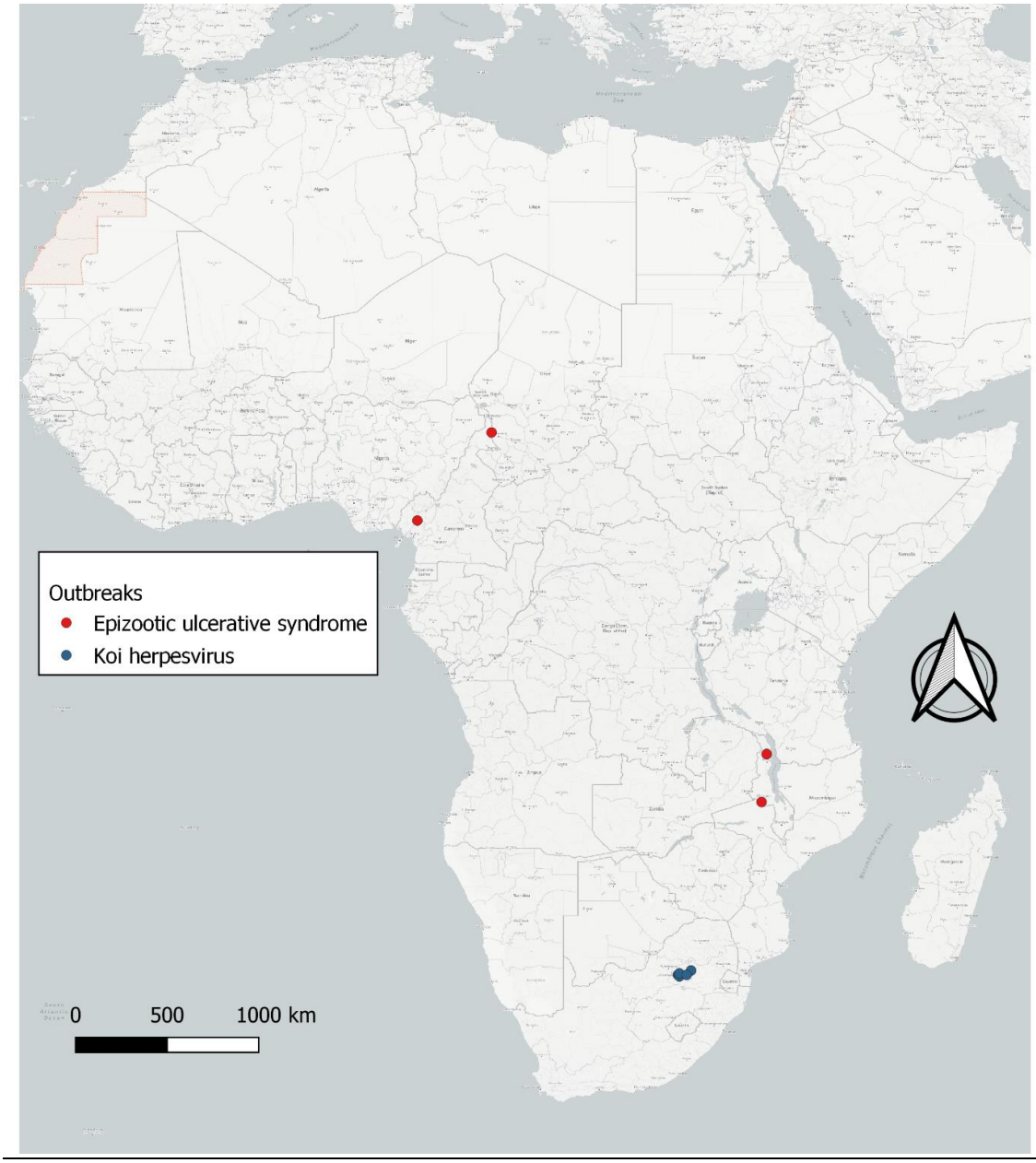
In June 2021, Malawi reported the first occurrence of epizootic ulcerative syndrome in a zone, in Rhumpi administrative division. A total of four outbreaks were reported in this event, which was officially declared resolved in August 2022.

Later, in August 2022, Malawi submitted a second immediate notification to report the first occurrence of epizootic ulcerative syndrome in Lilongwe. One outbreak was reported in this event which, as of 25 November 2022, was still ongoing.

Finally, two recurrences of Koi herpesvirus were reported by South Africa, one in August 2021 and the other in March 2022. These two events were declared resolved in September 2021 and September 2022, respectively.

[28] https://books.openedition.org/irdeditions/25268?lang=en
[29] https://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/338418/
[30] https://www.fao.org/3/ca8179en/ca8179en.pdf

Figure 17. Distribution of aquatic animal disease outbreaks reported to WOAH by Members in Africa through the early warning system, between 1 January 2021 and 25 November 2022

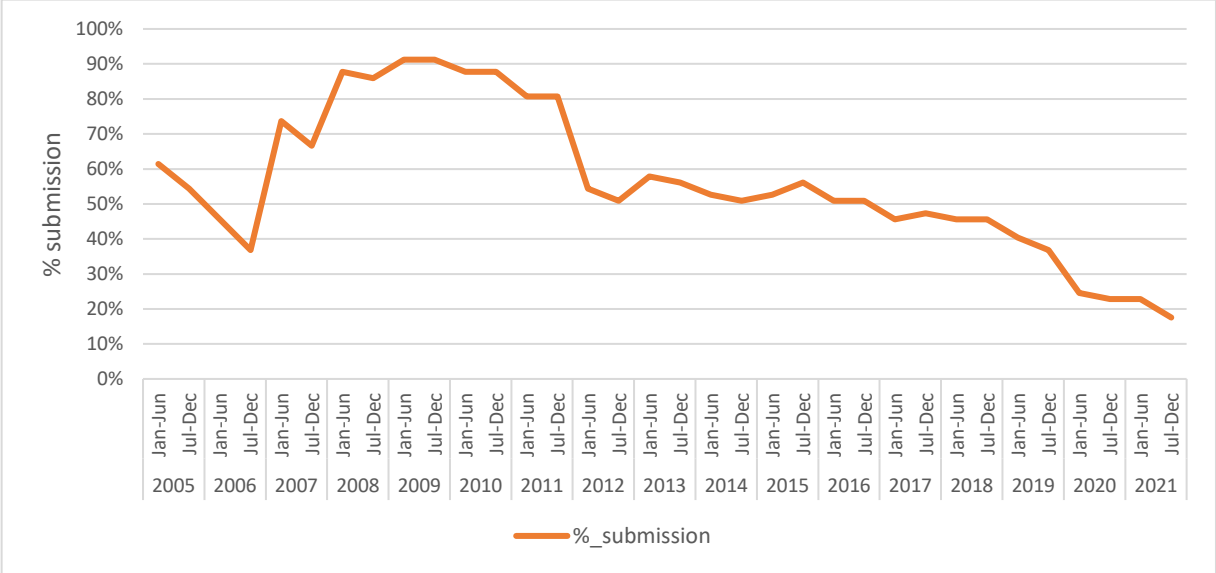


Compliance with standards for submission of six-monthly reports

To evaluate compliance with WOAH requirements for the reporting of aquatic animal diseases, we evaluated the evolution of the percentage of countries and territories in the region that submitted their six-monthly reports during the period 2005 – 2021 (as of 25 November 2022) (Figure 18). For each semester during this period, an average of 56.3% of the countries and territories in the Africa Region submitted their six-monthly report for aquatic animal diseases. The overall trend was for a decline in the percentage, especially after 2011, mainly due to a change in the reporting system (until 2011 aquatic and terrestrial diseases were reported in a single six-monthly report, after which they were reported separately). The marked reduction in report submissions for 2020 and 2021 is most likely due to the impact of the launch

of the new WAHIS, with Members experiencing some difficulties in submitting their reports; consequently the data relating to these two years have to be considered as still incomplete.

Figure 18. Percentage of countries and territories in the Africa Region that submitted their six-monthly report for aquatic animal diseases, by semester, between 2005 and 2021



Compliance with standards for timely submission of immediate notifications and follow-up reports for listed aquatic animal diseases

In accordance with Chapter 1.1. of the *Terrestrial Code* and the *Aquatic Code*, respectively, WOAH Members are required to submit an immediate notification for any of the exceptional events of listed diseases described in the aforementioned *Codes* within 24 hours of confirmation of the event. However, this requirement is not always complied with, for reasons such as a lack of proper communication at country level between diagnostic laboratories and local and central Veterinary Services or Aquatic Animal Health Services, technical delays in filing the information in WAHIS and a lack of country transparency.

Figure 19 shows the evolution in the number of immediate notifications submitted by countries and territories in the Africa region for aquatic animal diseases during the period 2005 to 25 November 2022. During this period, countries and territories in the region submitted 25 immediate notifications, corresponding to around 9% of immediate notifications submitted globally during the same period (n=276), and with a quite stable trend through the years.

Figure 19. Number of immediate notifications submitted each year for aquatic animal diseases by countries and territories in Africa, in comparison with other regions, during the period 2005 to 25 November 2022

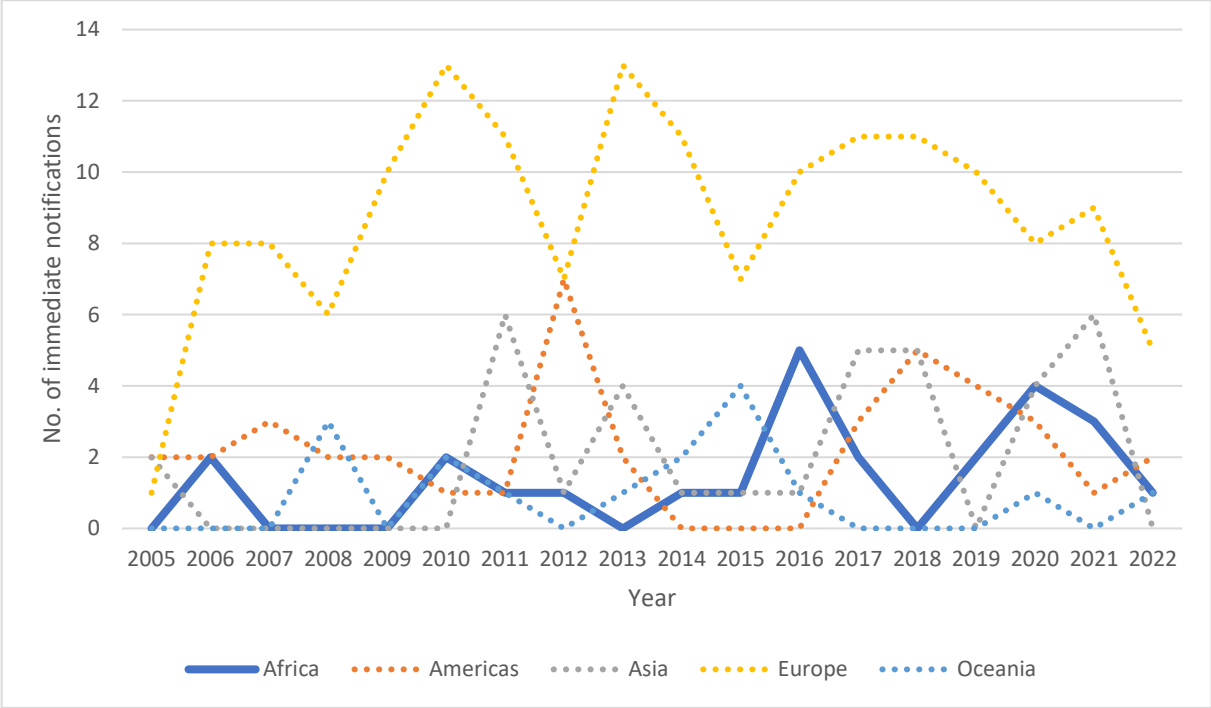
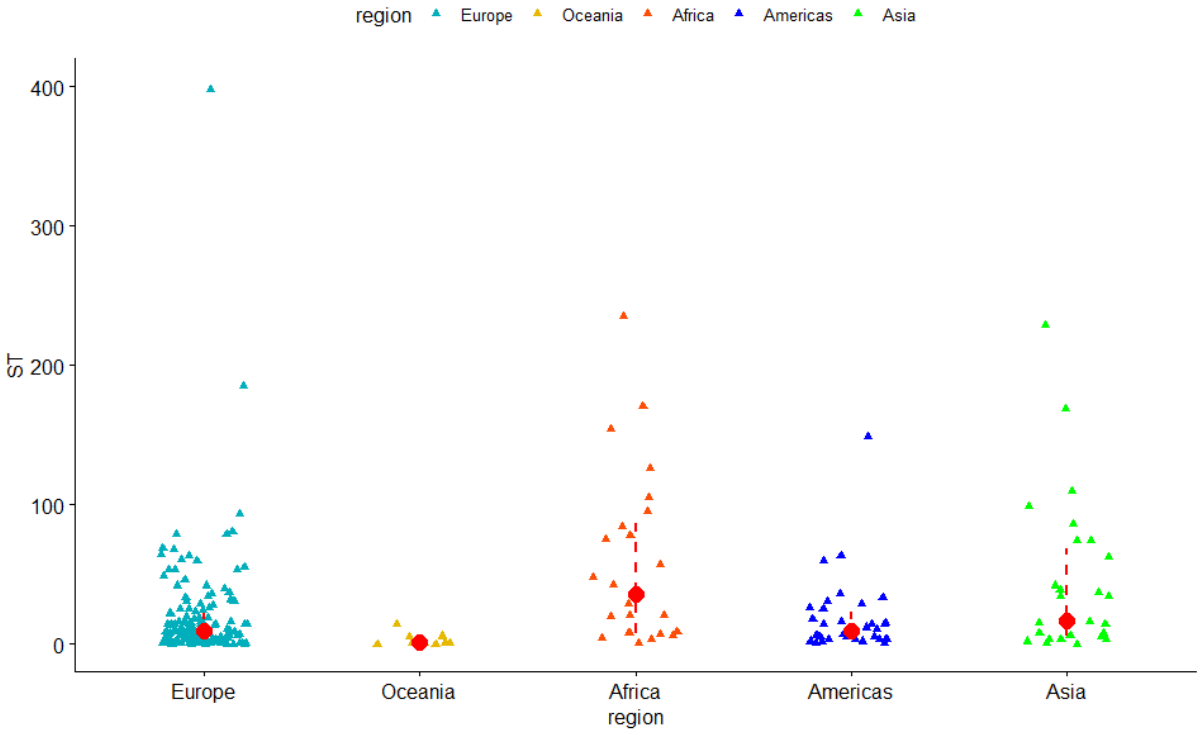


Figure 20 shows the compliance of countries and territories in the Africa region in terms of timely reporting of aquatic animal disease events after confirmation (submission time [ST]), in comparison with other regions, for events reported during the period January 2005 to 25 November 2022.

The median ST of immediate notifications for aquatic animal diseases in Africa was 35.6 days after disease confirmation, and significantly higher than the ST values in all the other regions (respectively 9.6 days for the Americas, 17 days for Asia, 9 days for Europe, and 1 day for Oceania) (Figure 20). In the majority of cases, these median values significantly exceeded the required maximum delay of 24 hours after confirmation of the event.

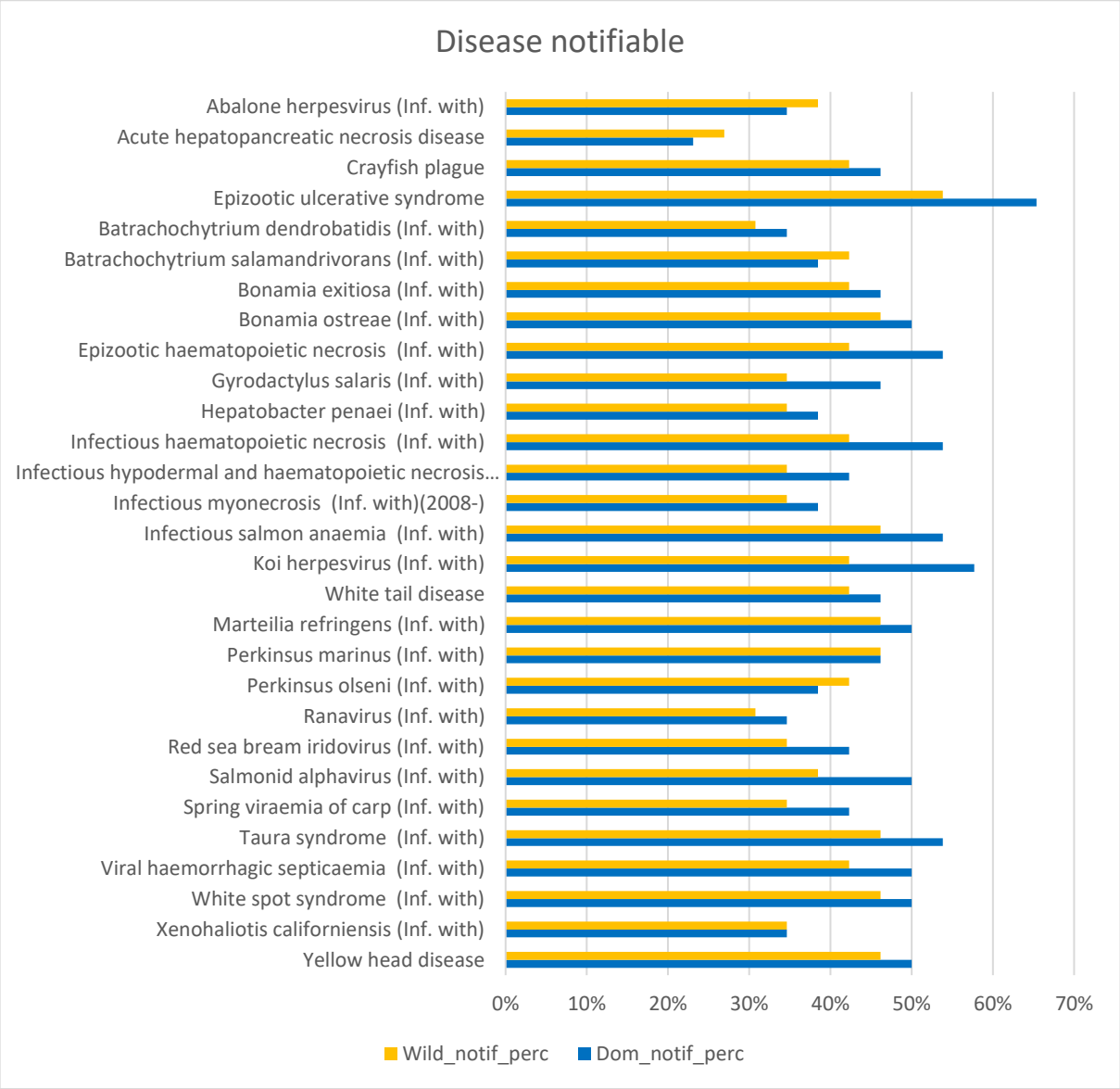
Figure 20. Submission times (STs, in no. of days) for the immediate notifications of aquatic animal diseases submitted each year by countries and territories in Africa, in comparison with other regions, during the period 2005 to 25 November 2022



Surveillance on aquatic animal diseases: diseases notifiable at national level and surveillance activities

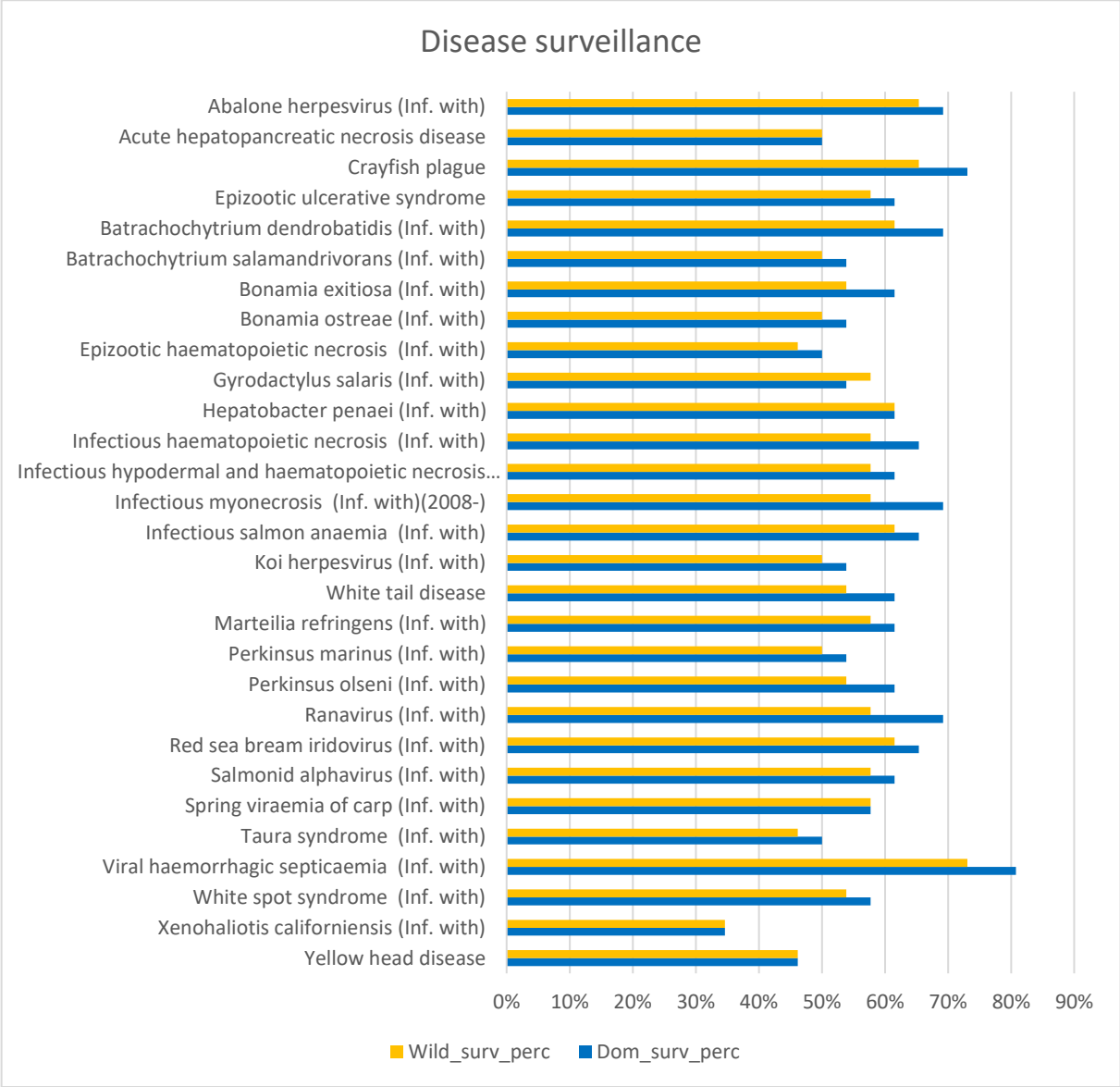
To evaluate the surveillance in place for aquatic animal diseases we calculated the percentage of countries that declared (i) each listed disease as notifiable and (ii) any surveillance activity in place for the disease. The percentage of reporting countries and territories declaring aquatic animal diseases as notifiable in 2018 (recent year with the most updated information) is shown in Figure 21. On average, globally for all the aquatic animal diseases, 45% of countries and territories reported them as notifiable in farmed aquatic animals and 40% in wild aquatic animals. The disease reported as notifiable by the highest percentage of countries and territories in the Africa Region was epizootic ulcerative syndrome (65% in domestic animals and 54% in wildlife), while the disease with lowest percentage of countries and territories declaring the disease notifiable was acute hepatopancreatic necrosis disease (23% in domestic animals and 27% in wildlife).

Figure 21. Percentage of reporting countries and territories in Africa that declared each aquatic animal disease as notifiable in farmed aquatic animals and in wild aquatic animals in their six-monthly reports for 2018



In addition, 60% of countries and territories declared having implemented surveillance in farmed aquatic animals and 55% in wild aquatic animals. The disease with the highest percentage of countries and territories implementing surveillance in the region was viral haemorrhagic septicaemia (81% of countries and territories in domestic animals and 73% in wildlife), while Xenohaliotis californiensis was the disease with the lowest percentage of countries and territories implementing surveillance (50% of countries and territories in both domestic animals and wildlife) (Figure 22).

Figure 22. Percentage of reporting countries and territories in Africa that declared implementing surveillance activities in farmed aquatic animals and in wild aquatic animals in their six-monthly reports for 2018, by aquatic animal disease



<u>WOAH Aquatic Animal Health Strategy</u>

WOAH Aquatic Animal Health Strategy was launched in 2021 with the aim of improving aquatic animal health and welfare worldwide. One of the key activities of the strategy is to identify and understand both the barriers to timely and accurate disease reporting and the circumstances in which timely reporting actually occurs. Timely and accurate information on disease status is fundamentally important to enable Members to implement standards and prevent the transboundary spread of diseases. Prompt and accurate reporting builds trust and underpins the effectiveness of international arrangements for safe trade. Reporting of aquatic animal diseases appears to have deteriorated throughout the years, and WOAH urges its Member to invest greater efforts to build a culture of conscientious reporting.

Summary

The findings of this report highlight that in the Africa Region, there is room to improve the reporting of aquatic animal diseases. Currently the region scores very low in all of the main indicators on compliance with aquatic animal disease reporting when compared to other regions.

Very few events were reported through the early warning system during the reporting period (n=5), by three countries in the region for only two diseases of fish. Indeed, since 2005, of all the immediate notifications of aquatic animal diseases submitted globally, only a limited proportion (9%) have been provided by African countries.

The limited compliance of the region in reporting on aquatic animal diseases is additionally confirmed by other reporting indicators.

On average, only around 50% of the countries and territories of the region have submitted their six-monthly reports since 2005.

The median submission time after confirmation of an event is higher than in all the other regions (around 4 times higher) and 35 times higher than the delay of 24 hours indicated in the *Aquatic Animal Health Code*.

This reduced reporting capacity is also reflected in, and might well be explained by, the very low percentage of countries and territories reporting that aquatic animal diseases are notifiable in the country or that any active or passive surveillance activity is being implemented.

Understanding the barriers to transparency in disease reporting will help Members see the benefits of sharing information to improve their aquatic animal production and to inform the development of approaches to address the identified barriers to reporting. This will be done through the implementation of WOAH Aquatic Animal Health Strategy. Preliminary results from the survey sent to National Focal Points indicate that Africa is the region declaring the highest number of blocking or highly impacting barriers to the application of aquatic animal health standards.