



MEDIUM RARE OR RARE?

**THE HIDDEN SIDE OF THE ILLEGAL
WILD MEAT TRADE IN EUROPE**

ABOUT THE WWF

WWF is one of the world's largest and most experienced independent conservation organizations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

Since 1973, WWF France has worked on a constant stream of projects to provide future generations with a living planet. With the support of its volunteers and 220,000 donors, WWF France leads concrete actions to safeguard natural environments and their species, ensure promotion of sustainable ways of life, train decision-makers, engage with businesses to reduce their ecological footprint and educate young people. The only way to implement true change is to respect everyone in the process. That is why dialogue and action are keystones for the WWF philosophy.

Monique Barbut is the President of WWF France and Véronique Andrieux has been its Chief Executive Officer since August 2019.

To learn more about our projects and actions, go to: <http://projets.wwf.fr>

Together possible

ACKNOWLEDGEMENTS

The authors of this report would like to thank the research teams, which made a vital contribution to this WWF France study, by analysing seizures, undertaking research and literature reviews, conducting interviews, sampling, researching, importing and analysing samples, processing the data produced by these analyses, preparing for and conducting interviews with the Ivorian diaspora in France, gathering and processing data on the online sale of wild meat, as well as for their involvement in numerous discussions relating to the analysis and interpretation of findings. The authors would like to thank, in particular, Kathy Rock, Louisa Musing, Katalin Kecse-Nagy and Roland Melisch (TRAFFIC), Dr. Anne-Lise Chaber and Georgia Kate Moloney (University of Adelaide, Australia), Dr. Philippe Gaubert (French National Research Institute for Sustainable Development, Paul Sabatier University, Toulouse, France), Dr. Sophie Gryseels, Dr. Sophie Gombeer and Dr. Erik Verheyen (Royal Belgian Institute of Natural Sciences, Brussels, Belgium), Sandrella Morrison-Lanjouw (University of Utrecht, Netherlands) and Dr. Lucette Flandroy (Independent Consultant, Belgium).

The World Organisation for Animal Health (WOAH) and, in particular, François Diaz and Sophie Muset, are also thanked for its support for this study, along with Sofie Ruysschaert (WWF Belgium), Anne Ntongho (WWF Cameroon) and Jean-Paul Burget (association Sauvegarde Faune Sauvage), who provided assistance with framing and developing the methodology for this study.

Finally, WWF France would like to thank the authorities in European countries, which kindly took part in interviews organised as part of this study (Belgium, France, the Netherlands, the United Kingdom and Switzerland) and those that gave permission for the use of EU-TWIX data.

Publication date:

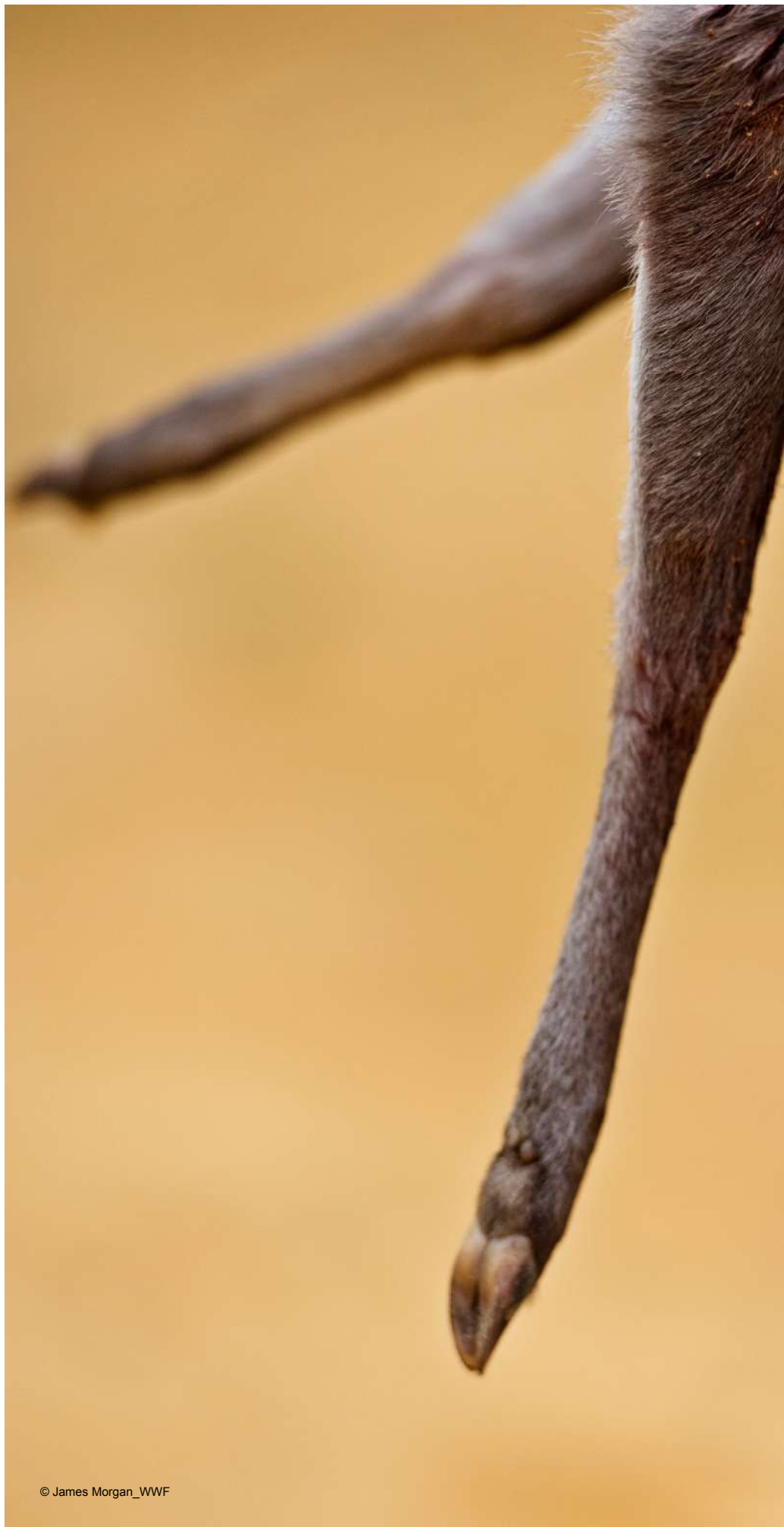
January 2023

Authors:

Lorélie Escot
and Stéphane Ringuet (WWF France)

Layout:

© Hélène Bouju



© James Morgan_WWF



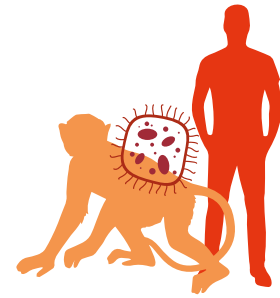
CONTENTS

EXECUTIVE SUMMARY	6
INTRODUCTION	8
METHODOLOGY	13
OVERVIEW OF THE ILLEGAL WILD MEAT TRADE INVOLVING EUROPE	16
Main characteristics of this trade	17
Targeted species and types of specimens	
Routes and direction of trade	
Modus operandi	
Prices	
The main obstacles to a better understanding of this trade	20
A multifaceted definition	
The rapid disposal of seized meat	
Identification issues	
A trade that raises species conservation issues	21
The relevant authorities in Europe: a need for strong cooperation in the face of a cross-cutting issue	21
Health risks	24
CASE STUDY - EUROPE	26
Belgium	27
Netherlands	27
Switzerland	28
United Kingdom	28
CASE STUDY - FRANCE	30
The illegal wild meat trade's characteristics and routes	31
Modus operandi	32
Consumer profile: example of the Ivorian diaspora in France	33
DISCUSSIONS	35
RECOMMENDATIONS	38



EXECUTIVE SUMMARY

Human consumption of wild meat is a pivotal issue which lies at the crossroads between food safety, development, public health and conservation. Hunting wild animals for food has been a historic practice on every continent. However, demand has increased tenfold over the course of the last century, due to the population boom, and the markets have become increasingly complex, as the result of the creation of densely populated urban areas and the increase in migration. In places, hunting wild animals for their meat is exerting major pressure on resources and environments, in particular in tropical and subtropical regions. The intensification of harvesting and these international supply chains are also escalating the type and frequency of interactions between people and wild animals, resulting in an increased risk of the transmission of zoonotic pathogens, which are already at the root of more than 75% of emerging infectious diseases detected in humans¹.



75% OF EMERGING INFECTIOUS DISEASES ORIGINATE IN ANIMALS

First and foremost, this study aims to better understand the supply chains and markets for wild meat illegally entering Europe, as well as the health and conservation issues associated with this international trade. Analysis of scientific publications and seizures provides an estimate of the quantity of wild meat illegally imported into Europe and identifies the countries acting as major entry points to Europe, such as France and Belgium, for example. It also reveals that around a third of wild meat seized in Europe comes from wildlife covered by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), with species that are already seriously endangered in their natural environment, such as pangolins, crocodilia and primates, being targeted by this illegal trade. Although it is hard to assess the extent of the pressure placed directly on the source regions for wildlife by this international market, it has become clear that the health risks associated with this trade have increased and are particularly concerning². This study looks at the type of pathologies that may have manifested themselves in humans due to contact with zoonotic pathogens and presents an overview of viruses, bacteria and parasites identified in wild meat, thanks to the analysis of samples and reviews of literature.

This study also highlights the various options available to buyers of wild meat for obtaining goods in Europe. Although a significant proportion of this meat is brought from the source country in airline passengers' baggage for their own personal consumption, it is also possible for consumers to collect goods from the destination airport (for example, Marseille Provence airport in France) by arranging to meet a traveller, who has acted as an intermediary, to buy the goods in Europe or to have parcels sent to them by a seller contacted via social media. On a more occasional basis, wild meat is also seized from air freight or even, in rare cases, from vessels.

Focus groups organised with the Ivorian diaspora based in Marseille, France, have revealed that the taste of imported wild meat and the perceived human health benefits are the main drivers of consumption. This study also concludes that demand is not dependent on the conservation status of the species, but rather on the price of wild meat in Europe.

Finally, this study examines the roles and responsibilities of the authorities in European countries in charge of regulating, monitoring, controlling and

1. World Health Organization, South-East Asia Region, Western Pacific Region. *Asia Pacific strategy for emerging diseases: 2010*. New Delhi: WHO-SEARO; Manila: WHO-WPRO, 2011.

2. WWF Global Science. (2020). *Beyond Boundaries: Insights into emerging zoonotic diseases, nature, and human well-being*. Internal science brief. Unpublished; Broad S. (2020). *Wildlife Trade, Covid-19 and zoonotic disease risks*. TRAFFIC Report.

investigating the legal and illegal wild meat trade. Although certain countries are organising themselves to improve the across-the-board approach and coordination between authorities on this matter, the majority of countries that responded to the WWF France questionnaire appear to be experiencing difficulties when it comes to the necessary resources, expertise and interdisciplinarity.

Based on the key findings of various analyses produced for this study and summarised in this document, a set of recommendations has been developed around the five following priorities:

1. Improve knowledge of the supply chains for wild meat illegally imported into Europe and of demand;
2. Improve knowledge of the health issues associated with the illegal wild meat trade;
3. Improve law enforcement in Europe;
4. Improve understanding of the conservation issues associated with the international illegal wild meat trade;
5. Enhance cooperation between countries, government authorities, economic players (in particular the transport sector), non-governmental organisations (NGOs) and academia.

These recommendations are aligned with a number of the objectives that the European Commission set itself for 2027 by means of its Action Plan against Wildlife Trafficking published in November 2022³, and in particular with its Objective 1 “Reduce consumer demand for illegally traded wildlife” and Objective 4 “Take a ‘One Health’ approach into account in the context of regulating wildlife trade in source, transit and destination countries”.

3. European Commission (2022). Revision of the EU action plan against wildlife trafficking. Doc. COM(2022) 581 final. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.581 final. Communication de la Commission européenne au Parlement européen, au Conseil, au Comité économique et social européen et au Comité des régions.

INTRODUCTION

Meat and other products derived from wild animal for human consumption, known as “wild meat” or “bushmeat” in parts of Africa⁴, are consumed in large quantities. Although there are many definitions of this term, it generally relates to products from non-domesticated species, whether specimens have been harvested from the wild, captive-bred or ranched. Wild meat is mainly consumed in the tropical regions of Africa, Latin America and Asia, where it represents a key dietary, nutritional and/or economic resource for certain populations. Hunting, processing and consumption of wild meat also plays an important socio-cultural role in certain areas, in particular rural ones, in particular in low- or middle-income countries.

Every year, around 1.3 and 4.5 million tonnes of wild animals are harvested from the Amazon and Congo⁵ basins respectively⁵, with quantities broadly exceeding the sustainability thresholds⁶. Consumption in rural areas is exacerbated by increasing demand from urban populations. In this case, consumption is rather driven by a desire to maintain links with a traditional way of life or by a population with increased spending power looking for exceptional products, rather than by a need for food. These are the same drivers of consumption, which have led to the emergence of an international market for wild meat. Diaspora communities are sometimes prepared to pay high prices for access to the meat of animals harvested from tropical forests.

The growing human population’s current demand is broadly outstripping the recovery capability of targeted taxa in most regions, and is, therefore, exerting pressure on some species that are already endangered. Specifically, mammals are the main group of species targeted for the wild meat trade, both in terms of the number of individuals and biomass, and it has become a major concern for certain species. For example, hunting is the primary threat to around 85% of primates and ungulates already listed as endangered or critically endangered according to the International Union for the Conservation of Nature (IUCN) Red List. Yet mammals provide vital ecological and socio-economic services that, if they became unavailable, would increase food insecurity in certain countries and result in protein deficiencies.

However, researchers have explored the consequences of removing wild meat from global food systems in 82 countries, but conclude that there is an absence of viable alternatives to this food source⁷. Halting the supply of wild meat would result in a shortage of nutrients and protein for populations that are already vulnerable to food insecurity. The study also postulates that removing this food source would lead to a shift in demand to domesticated species, potentially resulting in agricultural expansion, which is likely to cause significant consequences for biodiversity (degradation and fragmentation of habitats, biodiversity loss, etc.).

Therefore, a range of solutions must be explored and combined to take these issues into account. The conservation and public health issues associated with the wild meat trade require improved monitoring and management.

4. IUCN, *World Conservation Congress (2000). Resolution 2.64*

5. Nasi R., Taber A. and van Vliet N. (2011). *Empty forests, empty stomachs? Bushmeat and livelihoods in Congo and Amazon basins, International Forestry Review, Vol. 13(3)*

6. Fa et al. 2002, Wilkie & Carpenter 1999

7. Booth H. et al. (2021). *Investigating the risks of removing wild meat from global food systems, Current Biology, Volume 31, Issue 8, 1788-1797.*

6 MILLION

TONNES OF WILD ANIMALS ARE HUNTED IN THE AMAZON AND CONGO BASINS ANNUALLY FOR THEIR MEAT



HUNTING IS THE PRIMARY THREAT TO PRIMATES AND UNGULATES LISTED AS ENDANGERED OR CRITICALLY ENDANGERED

In 2008, the ninth meeting of the Conference of the Parties (COP 9) to the Convention on Biological Diversity (CBD) recognised the importance of responding to the threat posed by hunting and the unsustainable trade in wild species for their meat and its effect on non-targeted species⁸. As a result, they initiated a series of actions, such as the development of national and international recommendations towards the sustainable use of bushmeat and the drafting of a recommendation paper for supporting the creation of sustainable bushmeat supply chains entitled “Voluntary guidance for a sustainable bushmeat sector”.

The wild meat trade also raises public health issues. On an international scale, the health risks associated with transporting and placing animal products on the market are known, and give rise to numerous regulations. In effect, 75% of emerging infectious diseases currently have a zoonotic origin. Therefore, harvesting, processing, trading and consuming wild meat represent a major challenge in terms of veterinary and sanitary checks. Between 1980 and 2010, humanity experienced more than 6,700 zoonotic disease outbreaks⁹, and between 2009 and 2019, across all continents but Antarctica, 104 countries were exposed to a high zoonotic risk associated with the clandestine export and import of wild meat by air¹⁰. In Africa, the number of zoonotic outbreaks increased by 63% between 2012 and 2022 compared to the previous decade, according to a new study by the World Health Organization (WHO)¹¹.

There is reliable scientific evidence that Ebola and Acquired Immunodeficiency Syndrome (AIDS) emerged in humans as the result of transmission of related viruses from animals through wild meat-related activities, just like monkeypox, Severe Acute Respiratory Syndrome coronavirus (SARS-CoV) and SARS-CoV-2¹². The causative agents of AIDS, for example, HIV-1 and HIV-2, originate from related simian immunodeficiency viruses in chimpanzees, gorillas and sooty mangabeys, for which genetic analyses have revealed twelve independent introductions of virus strains from primates to humans in the past 150 years¹³. Moreover, unhygienic butchering, storage and transport conditions for wild meat often result in superficial contamination with bacteria including, for example with *Salmonella* spp. (the cause of salmonellosis), *Listeria monocytogenes* (the cause of listeriosis) and *Staphylococcus aureus* (golden staphylococcus, responsible for food poisoning and infections).

Thus far, there has been little evaluation of the uncontrolled public health risks associated with the international wild meat trade. Yet scientific publications and growing evidence suggest that the quantity of wild meat illegally imported into Europe is substantial, and that this trade is likely driven by organised networks. According to an analysis of seizures reported in the EU-TWIX (European – Trade in Wildlife Information eXchange) database, France, the Netherlands and Belgium appear to be the major entry points for wild meat arriving illegally in Europe. To a lesser extent, the United Kingdom, Switzerland, Russia, Spain, Finland and Italy are also affected by the illegal wild meat trade.

A number of scientific studies have attempted to quantify illegal imports of wild meat from Africa to Europe. Chaber et al. (2010) estimated that 273 tonnes of wild meat originating from African countries enter the European Union (EU) every year via Paris-Charles de Gaulle airport¹⁴. Falk et al. (2013) found that, of an estimated annual flow of more than 1,000 tonnes of illegal meat imports, 8.6 tonnes of wild meat are thought to enter Europe each year via Zurich and Geneva airports¹⁵, quantities subsequently estimated to be at least 40 tonnes by Wood et al. (2014)¹⁶. According to these studies, around a third of wild meat seizures in Europe involve CITES-listed species.

6700
ZOOBOTIC
DISEASE
OUTBREAKS
HAVE OCCURRED
GLOBALLY
BETWEEN 1980
AND 2010

273
TONNES OF
WILD MEAT ARE
ESTIMATED TO
BE ILLEGALLY
IMPORTED
EVERY YEAR
FROM AFRICA
TO EUROPE VIA
PARIS-CHARLES
DE GAULLE
AIRPORT

8. Convention on Biological Diversity, COP 9 (2008). Decision IX/5 “Forest biodiversity”

9. Smith K.F. et al. (2014). Global Rise in Human Infectious Disease Outbreaks. *Journal of The Royal Society Interface*, vol. 11, no. 101, 2014, p.20140950

10. C4ADS (2020). Animal smuggling in air transport and preventing zoonotic spillover

11. WHO (2022). Source: <https://www.afro.who.int/news/africa-63-jump-diseases-spread-animals-people-seen-last-decade>, consulted on 21 November 2022

12. Gryseels S. et al. (2020). Risk of human-to-wildlife transmission of SARS-CoV-2. *Mammal Review* 51(2); Kurpiers L.A. et al. (2015). Bushmeat and emerging infectious diseases: lessons from Africa. FM Angelici (ed), *Problematic Wildlife*, Springer, Switzerland, pp. 507-551; Lytras S. et al. (2021). The animal origin of SARS-CoV-2. *Science*: e

13. Chen Z. et al. (1997). Human immunodeficiency virus type 2 (HIV-2) seroprevalence and characterization of a distinct HIV-2 genetic subtype from the natural range of simian immunodeficiency virus-infected sooty mangabeys. *Journal of Virology*, 71(5), 3953-3960; D’Arc M. et al. (2015). Origin of the HIV-1 group O epidemic in western lowland gorillas. *Proc Natl Acad Sci USA*, 112(11), E1343-1352; Keele B.F. et al. (2006). Chimpanzee reservoirs of pandemic and nonpandemic HIV-1. *Science*, 313(5786), 523-526;

14. Chaber et al. (2010). The scale of illegal meat importation from Africa to Europe via Paris. *Conservation Letters*

15. Falk et al. (2013). Illegal import of bushmeat and other meat products in Switzerland on commercial passenger flights. *Rev Sci Tech Off Int Epiz.* 32(3):727-39.

16. Wood et al. (2014). Report to CITES: CITES-listed species at risk from illegal trafficking in bushmeat: Results of a 2012 Study in Switzerland’s international airports, Tengwood Organization and Zürich Institute of Forensic Medicine, University of Zürich, Forensic Genetics

As with any other illegal trade, the clandestine or covert nature of the wild meat trade poses a major challenge for the authorities and for researchers when it comes to regulation, control and monitoring. These difficulties result in a lack of reliable information on the scale of the international wild meat trade and the associated health risks, whilst these high-risk commodities can be imported into European markets on flights lasting less than 7 hours.

The main offences associated with transporting wild meat are breaches of laws governing health security, customs rules or CITES regulations (a lack of appropriate documents for importing into the EU). However, the challenges with identifying wild species seized at European borders can make it difficult to apply the relevant legislation. Identifications based on morphological characteristics are particularly awkward, as they require the officials responsible for checks to be specially trained and because the specimens are often smoked or cut into small pieces. Once available in outlets, the species declared are frequently incorrect.

In terms of demand for wild meat in Europe, studies have examined certain European markets or certain diaspora communities based in European countries. They reveal various drivers of consumption, from a desire for delicacies or luxury products for one-off consumption or significant celebrations (such as weddings), beliefs relating to the quality of meat from domestic species available on the European market or a cultural attachment to the taste of wild meat.

In order to better pinpoint the issues associated with the illegal wild meat trade involving Europe, WWF France launched, in 2021, a study covering a number of complementary aspects. This study was initiated on the basis of the following findings:

- A small group of European countries, including France, represent entry points and critical final markets for wild meat illegally imported into Europe;
- There is insufficient awareness of the scale of the illegal exotic wild meat trade involving Europe;
- Organised criminal groups are involved in the illegal wild meat trade, but there is a lack of knowledge regarding the role of these organisations in flows into Europe and their possible involvement in the illegal trade in other types of goods;
- Sources of information on the illegal wild meat trade and seizures are disparate and inadequate;
- Recent outbreaks have reminded us of the major risks to public health of zoonotic pathogens, which are likely to pass from wild animals to humans as the result of hunting, processing, trading and consumption of wild meat;
- The challenges of monitoring, controlling, regulating and investigating the wild meat trade in Europe lie at the interface between the authorities in charge of public health, wildlife, conservation, food and law enforcement, raising questions of jurisdiction and cooperation;
- The illegal wild meat trade is an international and cross-border phenomenon, the European response to which requires a concerted and multi-party approach within Europe, as well as with third countries.

This study forms part of scoping work on the issues associated with the illegal wild meat trade in Europe. Its findings will guide the definition of WWF France's approach, with the longer-term aim of strengthening action taken on a national and regional level to guarantee a legal and sustainable international trade in wild meat, in such a way as to improve the use of wildlife, to increase the enforcement of related laws and mitigate the health and conservation risks associated with this trade.

Hence, the study was based around five complementary aspects:

- 1. Analysing wild meat seizures in Europe and conducting interviews with the authorities in five target countries, in order to better understand the characteristics of this illegal trade and the response from European countries to these flows;**
- 2. Improving understanding of the demand for wild meat in Europe and the modes of supply;**
- 3. Identifying the wild species targeted for their meat and the conservation issues associated with this trade;**
- 4. Identifying the health risks associated with the wild meat supply chain (harvesting, processing, trading and consumption);**
- 5. Improving understanding of the roles and responsibilities of the authorities in charge of monitoring, controlling, regulating and investigating the wild meat trade in European countries.**

The study focuses on European countries, and in particular on those in Western Europe, and specifically examines the flows between Sub-Saharan Africa and Europe. The term “wild meat” should also be regarded as only including wild animal products destined for human consumption originating from non-European countries, and will mainly be used in this summary to refer to wild meat obtained in Sub-Saharan Africa and illegally imported into Europe.

This report presents the key findings of this research, which has produced seven deliverables¹⁷.

17. TRAFFIC (2022). Wild meat trade in Europe. Unpublished; Morrison-Lanjouw S. (2022). Exploring the characteristics of European demand for African wild meat: A pilot focus group study of Ivorian residents in Marseille, France. Unpublished; Chaber A-L and Moloney G. K. (2022). Social media platforms facilitate the online sale of bushmeat. Unpublished; Gombeer S. et al. (2022). Identification of IUCN and CITES-listed species in the illegal wild meat trade. Unpublished; Gryseels et al. (2022). Screening of wild meat sourced in European or African markets (representative of the commodities available in Europe) for the presence of pathogens. Unpublished; Chaber A-L et al. (2022). Comprehensive literature review of health risks associated with hunting, trade and consumption of wild meat. Unpublished; WWF France (2022). Analysis of questionnaire on exotic wild meat trade involving European countries. Unpublished. saisies de viande de brousse réalisées à l'importation en Europe (à Bruxelles et Paris) sur des vols en provenance de Côte d'Ivoire.



© James Morgan_WWF

METHODOLOGY

1. Analysing wild meat seizures in Europe and conducting interviews with the authorities in five target countries, in order to better understand the characteristics of this illegal trade and the response from European countries to these flows

The aim of analysing wild meat seizures was to improve the understanding of the targeted species, the types of specimens seized (by means of the description codes used), the routes and modes of transport used, the modus operandi and, possibly, specific characteristics, such as the seasonality of trade, for example. It was entrusted to TRAFFIC.

Following authorisation from the relevant authorities, the data available via the EU-TWIX database relating to seizures of wild meat and other products of CITES-listed animal species used for food or as medicinal products, made between 2010 and 2020, was extracted, sorted and then analysed by TRAFFIC (3,558 seizures). As the consumption of wildlife as food or medicinal products can be driven by different motivations, analysis then focused on seizures of meat and products of terrestrial species intended for consumption as food only (i.e. excluding medicinal products). The TRAFFIC database of wildlife seizures (the WITIS – Wildlife Trade Information System tool) was also analysed and a rapid review of the literature undertaken to provide additional background information and keys to interpreting the findings.

Based on the findings, semi-structured interviews were organised with the authorities in five target countries (Belgium, France, the Netherlands, the United Kingdom and Switzerland) between December 2021 and January 2022. Some of these interviews were bilateral and others took place in a group (for Belgium, France and the Netherlands).

2. Improving understanding of the demand for wild meat in Europe and the modes of supply

In order to better understand the drivers of consumption for wild meat in Europe, the profile of consumers, their sources of supply and their perception of the health risks associated with this trade, interviews were organised with members of diaspora communities based in France. This was the first study of its kind in France. It was undertaken by Sandrella Morrison-Lanjouw (PhD student at the University of Utrecht in the Netherlands).

Between February and May 2022, five focus groups with a total of 50 participants were organised with members of the Ivorian diaspora based in Marseille. Two video conference sessions were organised because of restrictions on travel and gathering imposed in response to the COVID-19 pandemic, and three in-person sessions were organised in Marseille. All the voluntary participants were adults (between the ages of 22 and 67). The participants were mainly male (70% of participants) and originating from urban or peri-urban areas of Côte d'Ivoire (49% and 37% of participants respectively). The answers provided within focus groups and in questionnaires were processed anonymously.

The sessions lasted for between 90 and 120 minutes, and began with a questionnaire to be completed by participants, followed by a group discussion. The questionnaire addressed four topics: (1) the characteristics of participants, (2) the acquisition of bushmeat, the species consumed and the price, (3) the frequency and drivers of consumption and (4) the hunting and meat preparation methods. A meeting with customs officers from



3,558 SEIZURES WERE ANALYSED

**50 MEMBERS OF THE IVORIAN
DIASPORA PARTICIPATED IN THE
FOCUS GROUPS IN MARSEILLE**

Marseille airport was also organised to provide some background to the responses obtained in the questionnaires and during group sessions.

In addition, a quick search for advertisements for the sale of wild meat was conducted on the surface web and the deep web by Dr. Anne-Lise Chaber (University of Adelaide, Australia) and a team of researchers, in order to determine the extent of the use of social media for the illegal wild meat trade. 563 posts dating from 2018 to 2022 were found on six West African Facebook pages. The advertisements (including sellers' photos, captions and comments) were analysed to identify the taxa available to buy, the methods used to prepare the meat, the prices and the delivery methods

3. Identifying the wild species targeted for their meat and the conservation issues associated with this trade

513 wild meat samples gathered in the source countries in Africa (representative samples of the wild meat that can be obtained in Europe) and on European markets¹⁸ were analysed by a team of researchers led by Dr. Sophie Gombeer (Royal Belgian Institute of Natural Sciences, Brussels, Belgium) and Dr. Philippe Gaubert (French National Research Institute for Sustainable Development, Paul Sabatier University, Toulouse, France). 510 of the 513 samples were correctly sequenced to obtain taxonomic order information: 477 of the samples were identified on a species level, 11 on a genus level, 21 were narrowed down to two or three related species, and one sample led to the identification of a sub-family. The three remaining samples were excluded from analysis, due to a lack of sufficient genetic markers for identification.



513 WILD MEAT SAMPLES WERE ANALYSED

The aim of obtaining DNA (deoxyribonucleic acid) sequences was to identify the taxonomic groups or species most heavily targeted by the wild meat trade, as well as the conservation issues that may be raised by this activity. The findings were compared with the IUCN Red List and the CITES Appendices.

4. Identifying the health risks associated with the wild meat supply chain (harvesting, processing, trading and consumption)

The 513 samples above were used by a team led by Dr. Philippe Gaubert and Dr. Sophie Gryseels (Royal Belgian Institute of Natural Sciences, Brussels, Belgium) to look for the presence of viruses and bacteria. DNA and RNA (ribonucleic acid) were extracted from the samples, with the molecules subsequently being analysed by high-throughput sequencing (Next-Generation-Sequencing). The presence of viruses and bacteria was then identified by means of PCR (polymerase chain reaction) amplification of several sets of samples.

In addition, of the current scientific knowledge of the health risks associated with the wild meat trade was examined by means of a literature review, undertaken by Dr. Anne-Lise Chaber and Georgia Kate Moloney (PhD student at the University of Adelaide, Australia). This review primarily focused on research conducted in tropical regions where the wildlife trade and the risk of emerging infectious diseases (EID) are higher, but did not exclude hunting or consumption practices encountered in other countries. Due to the methodology and aims of this review, the majority of publications examined related to Sub-Saharan Africa.

The analysis did not aim to quantify the level of risk, but to explore current

18. European market (15 samples): twelve pieces of wild meat purchased from three African grocery stores in the "Matonge" district of Brussels between November and December 2017, and three pieces purchased from two other African grocery stores in the "Matonge" district in May 2018; Source countries (498 samples): one sample purchased in 2018 from a market in Kisangani in the DRC, samples of 53 specimens gathered from local hunters in Inkanamongo (0. 71°S 20.53°E), near Boende in Tshuapa Province, in May 2021, 96 samples from the archived reference collection of hundreds of wild meat samples stored by the RBINS and the University of Antwerp, and 348 samples from 31 sites across Côte d'Ivoire (including restaurants and bushmeat markets) and bushmeat seized on import into Europe (in Brussels and Paris) on flights from Côte d'Ivoire.

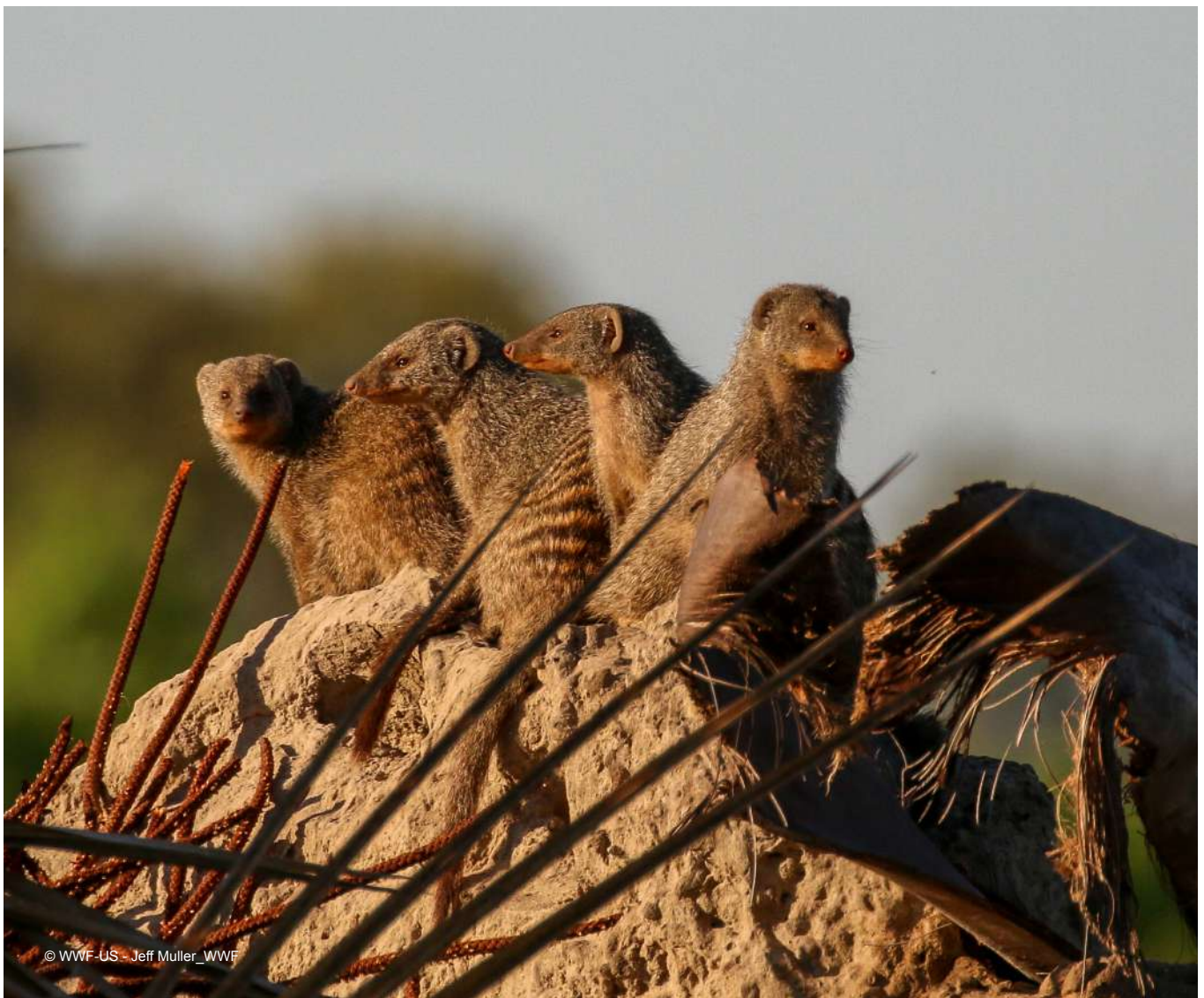
pathogen surveillance capabilities and identify research priorities. Analysis covered publications dating from 2000 to 2022. After sorting these publications, 104 articles relating to viral, bacterial and parasitic risks, to a combination of these risks or to other health risks (fungi, preservatives, etc.), were selected for review. The results for samples from 36 different countries were compiled.

104 SCIENTIFIC PUBLICATIONS PRESENTING RESULTS FROM 36 COUNTRIES WERE ANALYSED

5. Improving understanding of the roles and responsibilities of the authorities in charge of monitoring, controlling, regulating and investigating the wild meat trade in European countries

WWF France sent a questionnaire to the 27 EU Member States, the United Kingdom and Switzerland, in order to: (1) identify the authorities in charge of regulating and controlling the wild meat trade, monitoring the legal and illegal wild meat trade, as well as those in charge of investigating the illegal wild meat trade, (2) understand their roles and responsibilities in this respect, (3) determine the response capabilities and resources at their disposal and (4) identify authorities' difficulties and requirements in this area.

The questionnaire was circulated in April 2022 via the World Organisation for Animal Health (WOAH) to "Wildlife" Focal Points in 29 target countries, which had a month within which to respond. 12 responses were received from 11 countries, but only the responses from "Wildlife" focal points were used for this study (11 responses)¹⁹.



19. Belgium, Cyprus, Spain, France, Italy, Latvia, Lithuania, the Netherlands, Slovakia, Slovenia and Romania



OVERVIEW OF THE ILLEGAL WILD MEAT TRADE INVOLVING EUROPE



© Ola Jennersten / WWF

MAIN CHARACTERISTICS OF THIS TRADE

Targeted species and types of specimens

Genetic analysis of 510 samples of wild meat reveals that 98% were from mammalian species. Some taxa are over-represented: rodents, artiodactyls (including cattle and pigs) and primates make up 36%, 27% and 18% respectively of all samples. There is a lower proportion of other mammals, such as carnivores (7%), pangolins (4%) and elephant shrews (2.5%). The remaining 2% of samples are thought to relate to reptiles, birds and fish (see Figure 1).

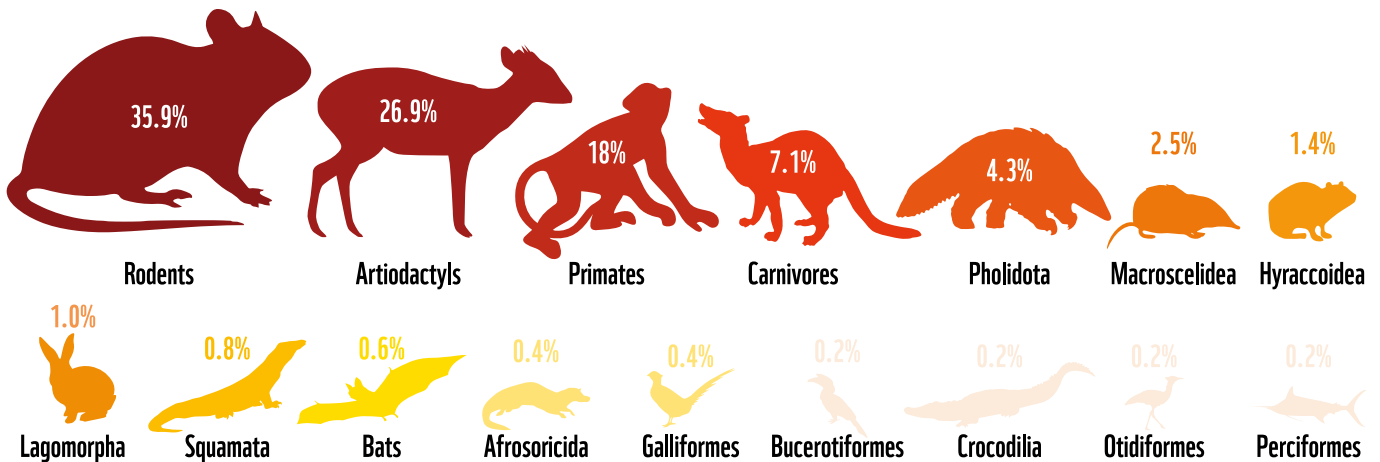


Figure 1: Taxonomic groups identified by genetic analysis of samples collected in Africa and Europe (n = 510)

In total, 81 different species were identified among the samples²⁰, demonstrating the broad diversity of animals affected by the wild meat trade. With 20 different species respectively, the artiodactyls (including the okapi *Okapia johnstoni*, the yellow-backed duiker *Cephalophus silvicultor* or the blue duiker *Philantomba monticola*, for example) and the primates (mainly monkeys *Cercopithecus* spp. and chimpanzees *Pan troglodytes*) are the taxa with the greatest specific diversity, while 15 rodent species (mainly porcupines *Hystriidae* spp. and cane rats *Thryonomys* spp.) and eight carnivore species (civets, for example) were also identified.

This over-representation of mammals may be the result of the method used to collect certain samples, but, nevertheless, corroborates the findings of other publications examining African wild meat markets, with the exception of the significant proportion of primates identified.

Analysis of seizures reported in the EU-TWIX database between 2010 and 2020 provides more information on the European wild meat market. Of the 3,558 seizures of meat, medicinal products of animal origin destined for human consumption and other derivatives from CITES-listed animal, almost a fifth (18%, 646 seizures) were reported by the Netherlands. The majority of these seizures relate to medicinal products of animal origin, as is also observed in Poland, the United Kingdom and the Czech Republic. These seizures cover a variety of taxa, including cetaceans, seahorses, reptiles (snakes, crocodylia, lizards, etc.), carnivores as well as pangolins. Excluding seizures of medicinal products of animal origin, France appears to be the country reporting the greatest number of seizures of meat and other wild animal products (mainly carcasses and meat).

Between 2010 and 2020, 279 seizures explicitly involving wild meat from terrestrial species were reported in the EU-TWIX database. France mainly reported seizures of primates, ungulates, pangolins and rodents, Belgium also reported a large proportion of seizures of meat from primates, while the Netherlands, Germany, Austria and the United Kingdom mainly reported seizures of meat from reptiles (see Figure 2).

81
DIFFERENT SPECIES WERE IDENTIFIED AMONGST THE SAMPLES

²⁰. Assuming that each taxon identified represents a distinct species.

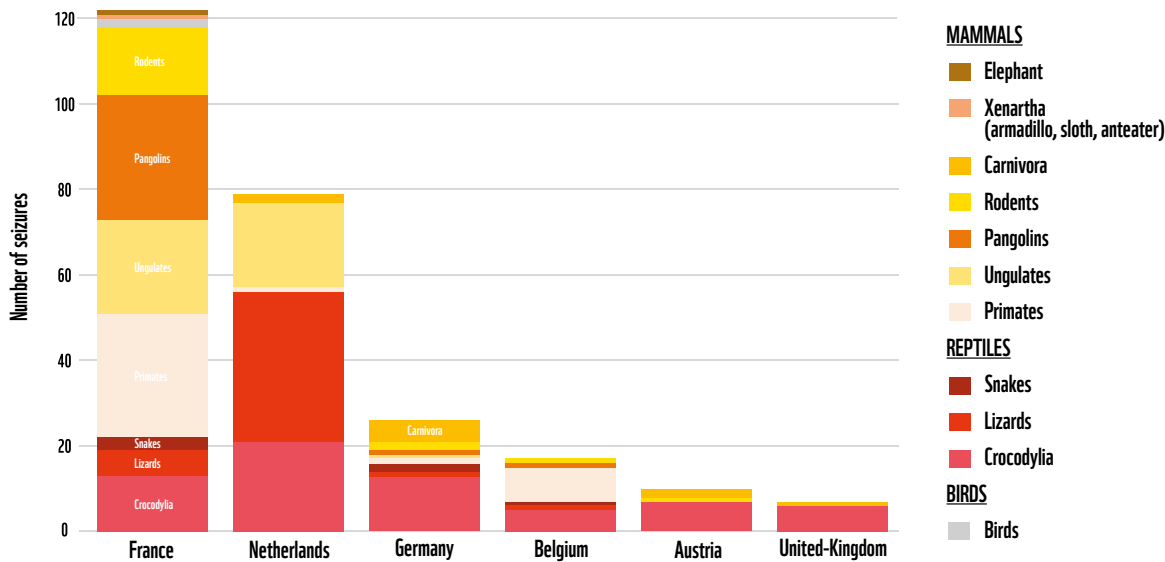


Figure 2: Distribution of terrestrial wild meat seizures across the key taxonomic groups reported by the top six reporting European countries between 2010 and 2020 (n = 261)

Routes and direction of trade

Three quarters (74%) of the 279 seizures of wild meat reported in the EU-TWIX database were made on import into Europe. There is a variety of exporting countries, including countries in South America (such as Suriname), Asia (such as Hong Kong or Russia), the Pacific (Australia) and Africa (such as Tanzania, Congo or the Democratic Republic of Congo – DRC, for example).

Cameroon, the Central African Republic, Congo, the DRC and Côte d’Ivoire are the main exporters of wild meat from Africa to Europe, in particular to France and Belgium. These countries are specifically identified as part of the illegal trade in meat from primates, pangolins and crocodiles.

Data on the illegal wild meat trade and consultations with the authorities also highlighted a number of countries used as intermediate stopovers on routes to Europe, such as Addis Ababa in Ethiopia and Casablanca in Morocco. Istanbul, in Turkey, is also regarded as an increasingly significant transit zone for exports to the United Kingdom.

According to information shared by TRAFFIC staff based in Africa, all Central African countries, with the exception of Chad, are reportedly exporting illegal wild meat to Europe, although this is only partially reflected by the EU-TWIX seizure data.

Modus operandi

The vast majority (86%) of wild meat seizures reported in the EU-TWIX database were made at airports, in particular in personal checked hold or cabin baggage. However, interviews with certain European authorities have identified the use of other modes of transport. The Dutch, English and French authorities, for example, report the use of cargo, express and postal services for the illegal import of wild meat. By contrast, Belgium only reports the use of express services, in addition to seizures made from air passenger transport.

Where wild meat is illegally imported in passengers’ baggage, the products are barely concealed or even not concealed at all. The authorities report that meat is generally placed in bags transported in addition to suitcases or directly inside the latter, in bags or aluminium foil. Unlike the Belgian

86%
OF WILD MEAT SEIZURES TOOK
PLACE AT AIRPORTS

authorities, the French and Dutch authorities state that, in the majority of cases, passengers are aware of the EU ban on wild meat imports. The French authorities also highlight the fact that the majority of passengers, from whom goods are seized, are European citizens or residents.

The French authorities stated that certain travellers take advantage of the 20 kg per-person legal allowance for importing fish into the EU by concealing wild meat inside fish. They also state that wild meat has been seized with other illegal products, such as drugs, contraband cigarettes and skin lightening creams.

Regarding the maritime sector, the English authorities stated that they have seized wild meat in containers legally transporting peanuts, meat from domesticated species, bones, fruit and vegetables, as well as in containers used to import drugs, contraband cigarettes and counterfeit goods. In certain cases, the smell of rotting meat has reportedly been used as a cover for drugs. The other authorities questioned for this study have not reported seizures from this mode of transport.

Studies have revealed numerous errors in the identification of species offered for sale, both as regards those consumed locally²¹ and those consumed on European markets²². It is not easy to determine whether these identification errors are intentional, i.e. designed to avoid sanctions (for example, if the actual species is regulated or protected), or whether they are unintentional and result from a loss of information further along the supply chain. However, they are problematic in a number of respects, as without reliable identification, the authorities are unable to enforce the legislation relating to regulated or protected species, they also do not have the data that would enable the status of trade in certain species to be monitored and, finally, identification errors prevent buyers from making an informed decision about what they handle or eat.

Examples of wild meat seizures in Europe can be found in the below “Case studies” sections (see tables 2 and 3).

Prices

The prices paid for wild meat vary significantly depending on the species and the buyer’s locality²³. For example, they appear to vary from a few euros per kilogramme on local markets to a price of 21 to 100 euros per kilogramme on European markets²⁴.

Meat from primates and big cats is particularly expensive on local markets. Yet in France, meat from primates is less expensive than meat from cane rats, which can cost up to 50 euros per kilogramme, i.e. a higher price than for highly protected species.

In terms of public health, the low price of meat from primates in Europe may be of concern as this is one of the taxa for which the risk of transmission of pathogens to humans is highest.

The prices of wild meat sold via social media are broadly lower and more aligned to the prices charged on markets in Africa. However, buyers are obliged to cover the shipping costs for the goods and run the risk of the parcel being intercepted at the European border.

21. Ahuka-Mundeke S. et al. (2017). High prevalences and a wide genetic diversity of simian retroviruses in non-human primate bushmeat in rural areas of the Democratic Republic of Congo. *EcoHealth*, 14(1): 100-114

22. Gombeer S. et al. (2021). Exploring the bushmeat market in Brussels, Belgium: a clandestine luxury business. *Biodiversity and Conservation*, 30(1), 55-66

23. Other factors may have an influence on the price of wild meat but the scientific knowledge is still limited on these aspects.

24. Morrison-Lanjouw S. (2021). Exploring the characteristics of a local demand for African wild meat: A focus group study of long-term Ghanaian residents in the Netherlands; Elton S. (2013) Monkeys on the menu. *Macleans.ca*. Macleans; 2013; Chaber et al. (2010). The scale of illegal meat importation from Africa to Europe via Paris, *Conservation Letters* 21 Cantlay J. C. et al. (2017). «A review of zoonotic infection risks associated with the wild meat trade in Malaysia.» *Ecohealth*, 14(2): 361-388.

THE MAIN OBSTACLES TO A BETTER UNDERSTANDING OF THIS TRADE

A multifaceted definition

The definition of wild meat (provided by the IUCN and reiterated in the introduction) does not appear to be interpreted uniformly within European countries and authorities. Although this generally appears to apply equally to CITES-listed or non-listed species and to non-domesticated species, the way marine species (for example, sharks or cetaceans) and semi-aquatic species (for example, crocodiles) used for their skin are treated differs from one country to another. Specimens destined for medicinal use are also treated differently by European countries. In addition, certain countries regard wild meat as only being meat from countries outside Europe.

The rapid disposal of seized meat

When it comes to law enforcement, the health risks associated with the illegal meat trade mainly prompt authorities not to try and distinguish between wild-sourced or farmed specimens. Priority is given to the rapid disposal of seized meat, resulting in a lack of information and data on the extent and characteristics of the illegal wild meat trade.

Identification issues

When it comes to identifying meat, the authorities are faced with numerous challenges. In addition to health issues associated with handling meat, authorities have to deal with issues relating to the visual appearance of specimens requiring inspection. Some specimens are prepared (cooked, smoked, etc.) or cut into small pieces, some have degraded due to the transport time or the temperatures to which they have been exposed, and several species may be combined. According to the interviews conducted, officials in charge of inspecting baggage at European borders receive training on the identification of species, in particular on those that are most frequently encountered in the trade. However, the authorities are often forced to choose not to proceed with the precise identification of meat, in order to maximise the number of individuals they are able to inspect.

A number of authorities in charge of inspections at European airports stated that, without significant visual evidence (for example, where the animal's head is still on the carcass), the individuals in possession of meat are generally questioned about the species they have transported. It is habitually these steps that allow the authorities to decide on the sanction imposed, generally consisting of seizing the meat and, sometimes, an administrative fine. Legal proceedings are only initiated in certain specific cases, which differ from one country to another, according to the authorities questioned.

The issues associated with the identification of wild meat species were highlighted as having an impact on the ability of courts to levy appropriate and proportionate fines on people involved in the illegal wild meat trade. In certain cases, this meat is seized and then sampled for genetic analysis, enabling the species traded to be determined, but these DNA analyses are expensive and require the technical involvement of people trained in sampling methods.

A TRADE THAT RAISES SPECIES CONSERVATION ISSUES

The wild meat trade covers a wide range of species. In terms of both the number of species identified and the number of samples, a little over a quarter of the samples collected in Africa and Europe, and analysed in this study, belong to species listed as near threatened, vulnerable or endangered according to the IUCN Red List.

Through genetic analyses, species listed in the three CITES Appendices were also identified, including:

- Appendix I: the chimpanzee *Pan troglodytes*, the dwarf crocodile *Osteolaemus tetraspis*, the white-bellied pangolin *Phataginus tricuspis* or the long-tailed pangolin *Phataginus tetradactyla*,
- Appendix II: the lesser spot-nosed monkey *Cercopithecus petaurista*, the red-tailed monkey *Cercopithecus ascanius* and the bay duiker *Cephalophus dorsalis*,
- Appendix III: the African civet *Civettictis civetta*.

Scientific literature regularly reiterates that around a third of seizures of wild meat illegally imported into Europe belong to CITES-listed species²⁵.

In certain regions and for certain populations, the wild meat trade may pose an additional threat to species whose conservation status is already concerning. The demand for wild meat on the international market is insufficiently analysed, and there is a lack of data relating to the pressure exerted on wildlife in source countries by these new markets.

1/3
OF WILD MEAT SEIZURES INVOLVE CITES-LISTED SPECIES

THE RELEVANT AUTHORITIES IN EUROPE: A NEED FOR STRONG COOPERATION IN THE FACE OF A CROSS-CUTTING ISSUE

The authorities that responded to the questionnaire are mainly tasked with controlling and monitoring the wild meat trade (100% and 73% of respondents respectively). Some also have jurisdiction for investigating the illegal wild meat trade (55% of respondents) and/or in regulating the trade (36% of respondents).

Although only around half the countries (55%, i.e. 6 of 11) responding to the questionnaire stated that they believed the roles and responsibilities of different authorities in charge of regulating, monitoring, controlling and investigating the wild meat trade are clearly defined, the vast majority believe that the authorities have adequate powers but insufficient capacities to fulfil their duties (8 of 11 and 7 of 11 countries respectively). As a result, only one country in three (36%) believes that they have adequate powers and capacities in terms of the roles and responsibilities incumbent on the different authorities with jurisdiction for the wild meat trade.

According to the respondents, there is a national mechanism for coordination between the relevant authorities when it comes to controlling, monitoring, investigating and regulating the wild meat trade in 6 of 11 countries responding to the questionnaire: France, Lithuania, the Netherlands, Romania, Slovakia and Slovenia. These coordination mechanisms may take different forms and are more or less cross-cutting and formalised depending on the country (see Table 1). For example, in France, there is not, as such, a body meeting on a regular basis to deal with issues relating to the wild meat trade. However, the veterinary authorities, responsible for enforcing the law and CITES, are required to meet or cooperate on issues associated with the illegal wild meat trade. On a regional or local level (for example, at Paris-Charles de Gaulle

²⁵ Chaber et al. (2010). The scale of illegal meat importation from Africa to Europe via Paris, *Conservation Letters*; Falk et al. (2013). Illegal import of bushmeat and other meat products in Switzerland on commercial passenger flights. *Rev. sci. tech. Off. int. Epiz.* 32(3):727-39; Wood et al. (2014). Report to CITES: CITES-listed species at risk from illegal trafficking in bushmeat: Results of a 2012 Study in Switzerland's international airports, Tengwood Organization and Zürich Institute of Forensic Medicine, University of Zürich, Forensic Genetics; Chaber et al. (2018). Report on the illegal importation of meat, including bushmeat, seized at Zaventem airport – 2017-2018

airport), meetings are regularly organised to encourage cooperation between these different stakeholders with complementary expertise.

However, these countries do not necessarily have a planning instrument dedicated to preventing and combating the illegal wild meat trade, as only Belgium (in the process of being adopted), France, the Netherlands and Romania mentioned such a tool. Once again, there are a range of instruments, which are not necessarily accompanied by detailed actions, a timetable or indicators.

	Food safety	Public health	Veterinary	CITES Management Authority	Law enforcement	Transport safety	Protected areas/ Wildlife parks
France							
Lithuania							
Netherlands							
Romania							
Slovakia							
Slovenia							

Table 1: Authorities involved in coordination mechanisms for wild meat, in the six European countries stating that they exist

The authorities with jurisdiction for the wild meat trade appear to be facing numerous and disparate difficulties. In effect, although more than half of countries highlighted the lack of funding as one of their three main challenges, there appear to be a number of other issues, such as, for example, the lack of data and information on the wild meat trade, the low political priority given to this subject or a lack of the authorities’ capacities (see Figure 3). In France, the capacities are regarded as sufficient to perform the tasks entrusted to the authorities (see above). However, it must be stressed that this response was selected among the country’s main challenges, as new detection and investigation techniques, and greater awareness on the part of officials of the issues associated with the illegal wildlife trade, were regarded as necessary to improve the French response to this issue.

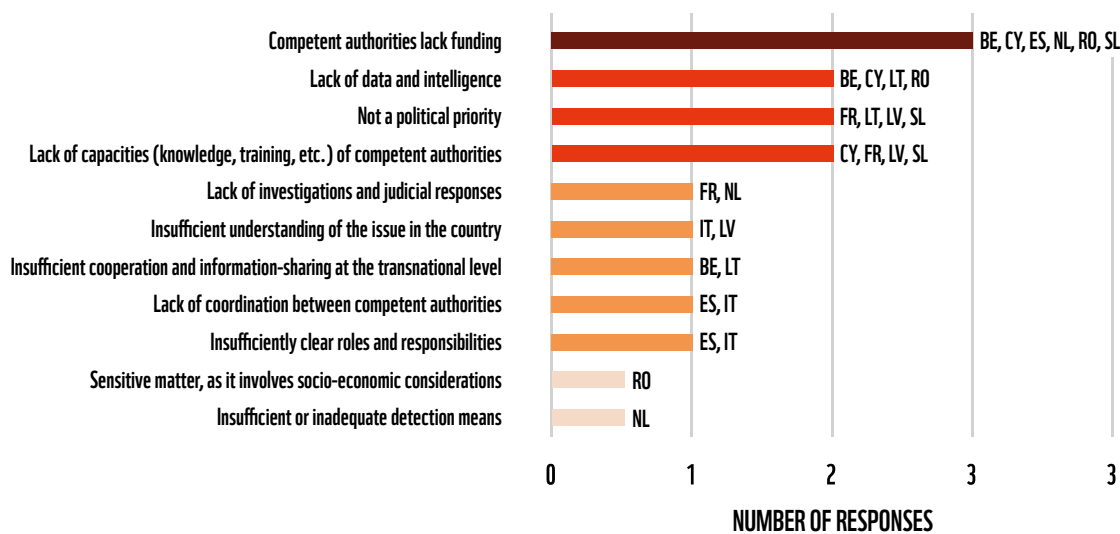


Figure 3: The main challenges in regulating, controlling, monitoring and investigating the wild meat trade
Note: up to three answers were allowed.

Abbreviations: BE: Belgium, CY: Cyprus, ES: Spain, FR: France, IT: Italy, LV: Latvia, LT: Lithuania, NL: Netherlands, RO: Romania, SK: Slovakia, SI: Slovenia

There also appears to be a lack of unanimity among European countries regarding the priority areas for improvement in order to strengthen regulation, monitoring, control and investigation of the wild meat trade. Only the need to make this issue a European priority was selected by a majority of countries. The responses “improve reporting of seizures”, “increase cooperation between European countries” and “improve understanding of the links between the wild meat trade and CITES” were not prioritised by any countries (see Figure 4).

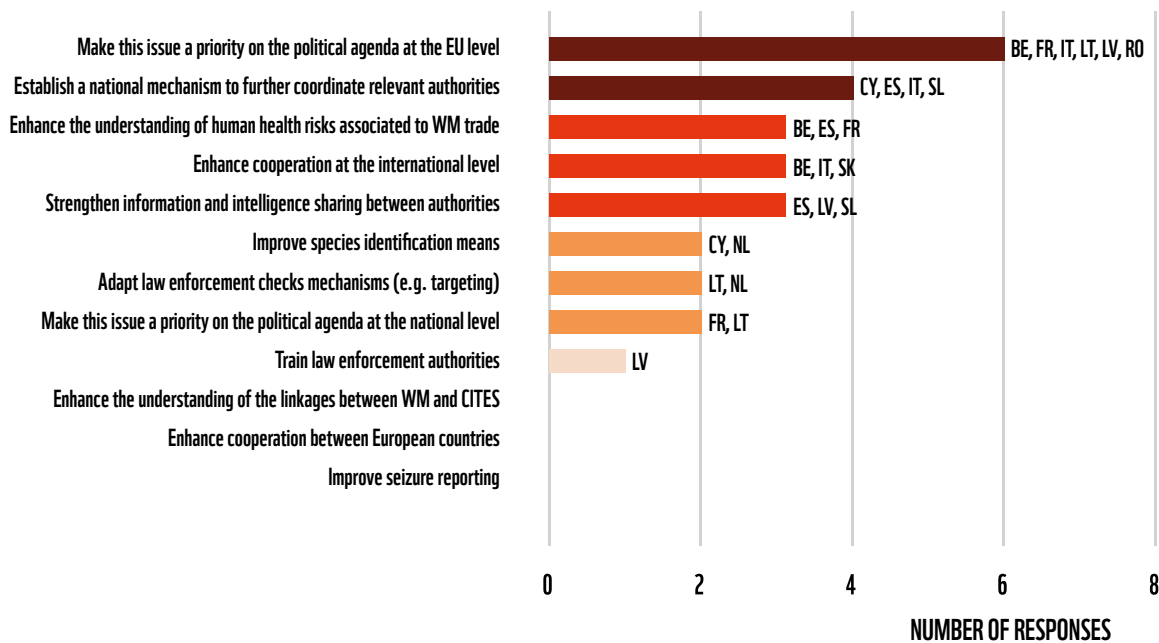


Figure 4: Areas for improvement identified as a priority for regulating, controlling, monitoring and investigating the wild meat trade

Note: up to three answers were allowed.

Abbreviations: BE: Belgium, CY: Cyprus, ES: Spain, FR: France, IT: Italy, LV: Latvia, LT: Lithuania, NL: Netherlands, RO: Romania, SK: Slovakia, SI: Slovenia, WM: wild meat

The COVID-19 pandemic only appears to have marginally altered the political perception of issues associated with the wild meat trade, as only three of the 11 countries (Belgium, the Netherlands, Romania) observed a change in the attention paid to this issue.



HEALTH RISKS

The pathogens originating from wild meat can be transmitted directly to humans (i.e. via transcutaneous or oral routes) or indirectly (i.e. via injuries occurring while hunting – bites or scratches, for example – or the preparing meat, or via faecal or fomite contamination) at each stage of the supply chain²⁶.

Analysis of scientific literature identified 179 animal species with samples producing positive results for viral, bacterial and parasitic risks and/or other health risks. Mammals are the taxonomic class returning the most positive samples, in particular for species of bats, primates, ungulates (artiodactyls), carnivores and rodents. They are also the most widely studied²⁷. To a lesser extent, other species of mammals, as well as species of reptiles and birds, have produced positive results.

The types of pathogens detected differ depending on the taxonomic group. The greatest number of viral pathogens was reported in primates, while the greatest variety of bacteria was identified in artiodactyls, for example. By contrast, although the number of species of carnivores producing positive results is relatively high, the variety of pathogens reported was significantly lower. Parasites were mainly detected in rodents, as well as a significant occurrence of fungi, compared to their prevalence in other taxa.

Coronaviruses were reported in 10% (244/2553) and 34% (239/702) of positive samples from seven studies relating to bats and rodents respectively. As these studies were largely undertaken prior to the COVID-19 pandemic, they should have alerted public health experts and guided the research.

Among the samples analysed specifically for this study, sequencing detected viruses in more than half of the samples. These belong to 16 different virus strains from seven virus families²⁸. For certain samples from primates, up to four different virus strains were detected (on fresh carcasses dating from 2021).

For the majority of these virus strains²⁹, there is no history of transmission to humans or there is no knowledge regarding the potential for transmission. By contrast, cases of Reoviridae and Retroviridae infections are known in humans, causing intestinal infections or immunodeficiencies (simian immunodeficiency virus and simian foamy virus). Some of their strains lie at the root of the HIV pandemic. Using PCRs, no specimens tested positive for coronaviruses, paramyxoviruses, filoviruses, hepaciviruses or orthopoxviruses. By contrast, one of the 165 specimens tested positive for simian immunodeficiency virus.

Certain specimens sampled were cooked or smoked but, nevertheless, revealed traces of the genomes of certain viruses. However, it is important to note that detection of the genetic material of these viruses does not necessarily mean that they are still live and contagious.

In terms of bacteria, analysis detected 28 pathogenic bacteria genera over the 38 strains, belonging to 1,421 genera, which were identified. Nine of these genera are regarded as particularly high-risk for human, animal and plant health or for animal or plant products³⁰.

According to scientific literature, viruses appear to pose the greatest problem for public health. One of the virus families detected most frequently in samples of wild meat is Retroviridae,

26. Cantlay J. C. et al. (2017). «A review of zoonotic infection risks associated with the wild meat trade in Malaysia.» *Ecohealth*, 14(2): 361-388.

27. Except for carnivores.

28. Arteriviridae, Flaviviridae, Hepadnaviridae, Picornaviridae, Picobirnaviridae, Reoviridae, Retroviridae

29. Arteriviridae, Flaviviridae, Hepadnaviridae, Picornaviridae and Picobirnaviridae

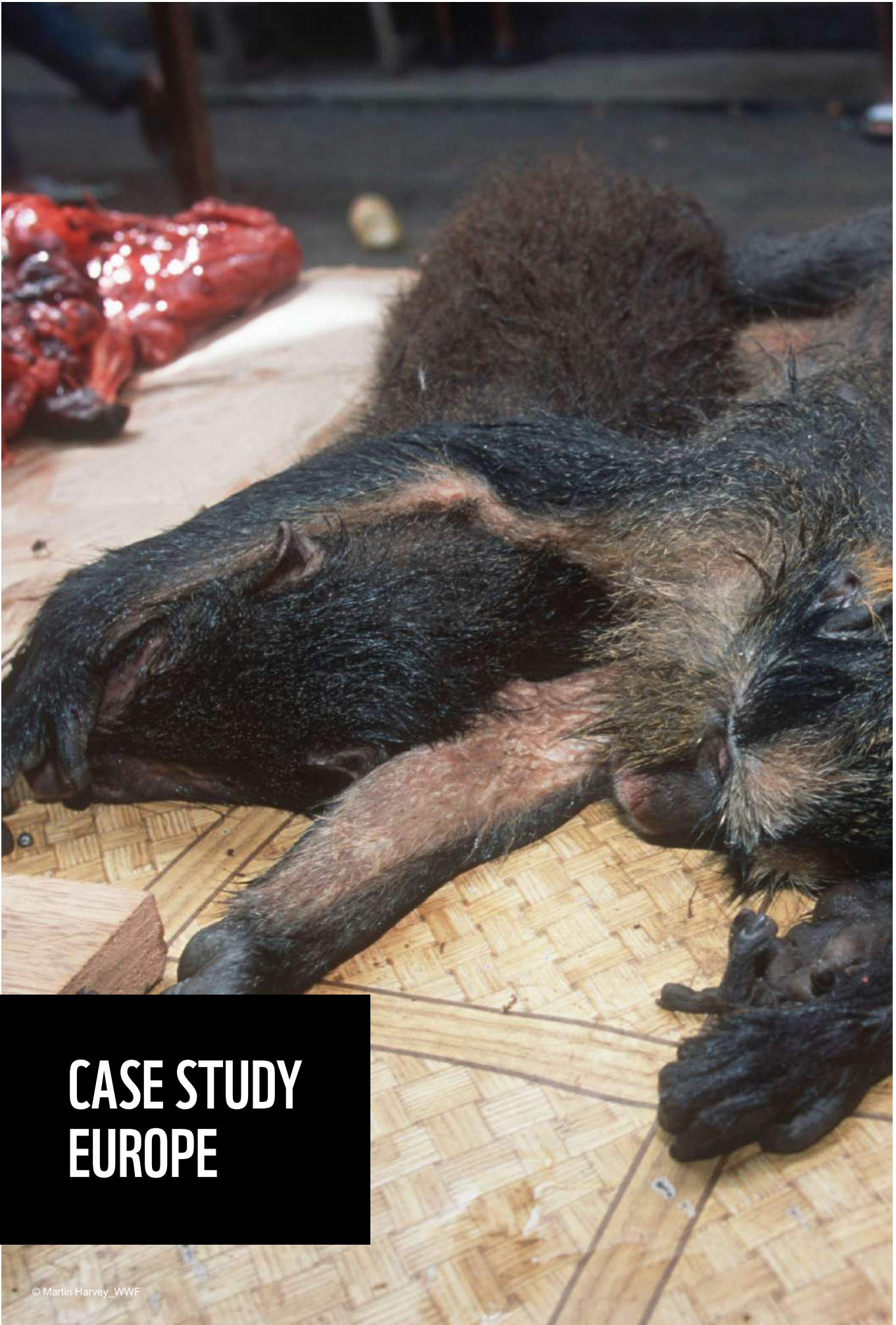
30. According to the list of "Select Agents" produced by the United States Government, to which the Centers for Disease Control refers for the international monitoring of diseases.

which can infect a wide range of species, including humans. Retroviruses were the most frequently reported viruses in rural areas of Africa. Bacterial and parasitic pathogens have also been shown to pose a significant risk, which has been more recently identified by scientific literature.

Events involving zoonotic transmission or the spread of pathogens from wild animals to humans have been associated with high-risk behaviour at the wildlife-human interface. These include hunting, butchering, preparation and consumption of wild meat. Although the disease transmission risk falls along this supply chain, the impact of the potential consequences of transmission is amplified in trading areas, such as urban environments. In addition, it has been shown that animals subject to chronic stress caused by ongoing hunting or acute stress resulting from capture or transport to the final market are more likely to transmit pathogens.

Scientific publications are revealing an increased risk of EID events in tropical regions, where the presence of a broad diversity of mammals is documented and where there are land-use changes. These areas are more prone to wildlife trading activities, including those associated with hunting for bushmeat, and EIDs are therefore more likely to be manifested there.

The impact of importing wild meat on agriculture and indigenous species, which may have a serious secondary effect on public health, has not been explored and represents a significant gap in the literature.



CASE STUDY EUROPE

© Martin Harvey_WWF

BELGIUM

According to the Belgian authorities, two types of wild meat are frequently seized in the country: primates, generally dried or smoked parts or whole carcasses, and sea turtles. Seizures of pangolin and crocodile meat were also observed in 2021 and this is emerging as a potential new trend.

The authorities also highlight the fact that up to 90% of the wild meat entering Belgium is intercepted on flights from the DRC, with around two thirds being direct imports into Belgium. In addition, a proportion of the passengers arriving from the DRC have stopped over in Ethiopia. According to the authorities, more non-European passengers in transit from Africa to France or Germany have been recorded in Belgian airports in recent years. These passengers are more difficult to control.

Wild meat is mainly imported on passenger flights and is transported in cool boxes or personal baggage. Offenders generally claim that the meat is intended for personal consumption, or is being brought in for events such as weddings, for example. The authorities have noticed that the packages found in personal baggage regularly bear the name of the passenger's mother as the recipient.

The authorities have also observed that organised activity to courier wild meat by air from Africa to Belgium appears to be becoming established. A criminal investigation is ongoing concerning individuals suspected of having transported several types of wildlife specimens as contraband.

Although there have been no seizures of specimens transported by post, the Belgian authorities have nevertheless recorded seizures on the rail network and say that they conduct random checks on air and sea freight (in Antwerp). To date, these have not resulted in any seizures of wild meat.

According to the authorities, more attention is being paid to issues associated with the wildlife trade since the COVID-19 pandemic. In 2020, Belgium established a national working group on the sustainable wildlife trade, which was tasked with producing recommendations to halt this traffic. The country also has a number of mechanisms for coordination between the relevant authorities, and is currently developing an action plan designed to support the sustainable trade in exotic animals in Belgium. It comprises several measures relating to wild meat including, specifically, improving border controls, improving knowledge of the involvement of shops and restaurants in the wild meat trade, increasing prosecutions of individuals involved in the illegal wild meat trade, implementing an epidemiological surveillance system, etc.

NETHERLANDS

According to the Dutch authorities, illegal imports of wild meat into the Netherlands mainly come from Dutch overseas territories³¹, and are generally intended for personal use.

As regards flows coming from Africa, Morrison-Lanjouw et al. (2021) observed greater availability of wild meat in the Netherlands during the period from April to October, corresponding to the rainy season in Africa³².

Dutch customs officers conduct targeted checks on CITES-listed specimens, based on a set of risk indicators. However, controlling wild meat is not currently regarded as a priority, as the authorities say that there are insufficient risk indicators for these kinds of illegal imports into the Netherlands, in particular from Africa.

Nevertheless, the Dutch authorities underlined their interest in better understanding the dynamics of the wild meat trade involving the Netherlands. A plan covering the issues of the wild meat trade exists on a national level and there is significant coordination between the different relevant administrations, according to the Dutch authorities.

In addition, more attention has been paid to issues associated with the wildlife trade since the COVID-19 pandemic.

90%
**OF ILLEGAL
WILD MEAT IS
INTERCEPTED
ON FLIGHTS
FROM THE DRC**

31. *Mainly Curaçao, but also Aruba, Bonaire, Saba and Saint Eustatius.*

32. *Morrison-Lanjouw S. (2021). Exploring the characteristics of a local demand for African wild meat: A focus group study of long-term Ghanaian residents in the Netherlands*

SWITZERLAND

Few seizures are reported for Switzerland in the EU-TWIX database, but there are, nevertheless, seizures of pangolin meat, in particular originating from Cameroon. Other taxa, such as crocodiles, snakes, primates and tortoises are also occasionally seized. West African and Central African countries are the main exporters of meat to Switzerland, and seizures primarily take place at airports.

The authorities state that seizures generally relate to raw (unprocessed), smoked, dried or frozen meat. This appears to be primarily imported for personal consumption or for special occasions, but the authorities also reported a number of seizures of meat destined for commercial use. This wild meat is generally not concealed and, as a result, is easy to detect during customs inspections.

The two main airports for illegal imports of wild meat from countries outside the EU are Zurich and Geneva airports. However, the Swiss authorities highlighted the fact that, because of the smaller presence of diaspora communities in Switzerland, a large proportion of the wild meat seized was intended for consumption in other European countries, such as France, for example.

In addition to random checks, the authorities conduct semi-random checks, based on risk analysis on the most high-risk routes and also use sniffer dogs to detect CITES-listed species. The illegal wild meat trade is a major concern and is one of the country's law enforcement priorities.

UNITED KINGDOM

The English authorities seize a wide variety of wild meat, including meat from crocodiles, primates, pythons, turtles and antelopes, for example. In the United Kingdom, seizures of wild meat are recorded among seizures of products of animal origin (POAO).

Seizures of POAO mainly relate to imported specimens, in particular from Nigeria, identified as the highest-risk country by the authorities. Other countries, such as Cameroon, Côte d'Ivoire, Liberia and Mauritania, are exporters of wild meat to the United Kingdom, but this meat has generally already entered Europe via other transport hubs situated in Germany (Frankfurt), France (Paris), the Netherlands (Amsterdam), Belgium (Brussels) and Turkey (Istanbul).

The English authorities have seized wild meat in freight, as well as in parcels. This is corroborated by the findings of searches on social media (Facebook) as part of this study, revealing that it is easy to find wild meat shipped worldwide, by express courier or in the post.

For example, there have been seizures involving sea freight from China and Mongolia, as well as parcels arriving from China, which could be an emerging trend when it comes to smuggling wild meat.

The authorities highlight the fact that, in certain cases, the illegal wild meat trade involving the country stems from organised crime, as large quantities destined for commercial use are sometimes seized. However, they state that work undertaken with the support of embassies in source countries has reduced the illegal trade in POAO, citing, for example, a lower prevalence of courier services delivering suitcases to end consumers in Europe following awareness-raising operations in Ghana and Nigeria, in particular within airports.



ANIMAL PRODUCTS ILLEGALLY IMPORTED TO THE UK HAS GENERALLY ENTERED EUROPE VIA OTHER EUROPEAN AIRPORTS

TRADE ROUTE			SPECIES AND QUANTITIES SEIZED	DETAILS
COUNTRY OF EXPORT	TRANSIT COUNTRY	DESTINATION		
Cameroon		Belgium	 <p>20 KG OF MEAT</p> <p>from eight pangolins in a shipment declared as “foodstuff/vegetables”.</p>	Detected at Brussels airport. The meat was wrapped in newspaper. (April 2012)
Cameroon	Belgium (Brussels)	Switzerland	 <p>6 KG OF DRIED MEAT</p> <p>crocodile, porcupine and pangolin meat.</p>	Detected in personal baggage at Zurich airport. (September 2018)
Nigeria (Lagos)	Benin (Cotonou) / Ethiopia (Addis Ababa)	Italy	 <p>1000 KG OF MEAT</p> <p>A total quantity of 1000 kg of meat and products of animal origin, including primates, smoked hyena, dried caterpillars, barbecued rodents, roasted chickens, ungutted fish, catfish, giant snails and food in an advanced state of decomposition.</p>	Detected in the personal baggage of 25 passengers at Rome-Fiumicino airport. (August 2020)
Congo	Ethiopia (Addis Ababa)	Switzerland	 <p>4 KG OF WILD MEAT</p> <p>including 4 dried bats, unidentified meat and 1.8 kg of dried caterpillars.</p>	Detected in personal baggage at Geneva airport. An Angolan national in possession of forged documents for a third person. (December 2020)
Nigeria		United Kingdom	 <p>25 KG OF MEAT</p> <p>of chopped crocodile tail meat.</p>	No information (January 2021)

Table 2: Examples of wild meat seizures involving European countries

CASE STUDY FRANCE



© Daniël Nelson_WWF

THE ILLEGAL WILD MEAT TRADE'S CHARACTERISTICS AND ROUTES

Between 2010 and 2020, France reported 122 seizures of wild meat in the EU-TWIX database. The number of seizures and the quantity varied significantly from year to year, with a peak in 2017 when 662 kg of meat belonging to CITES-listed species were seized, i.e. quantities that are broadly below the estimates in scientific publications³³ (see Figure 5).

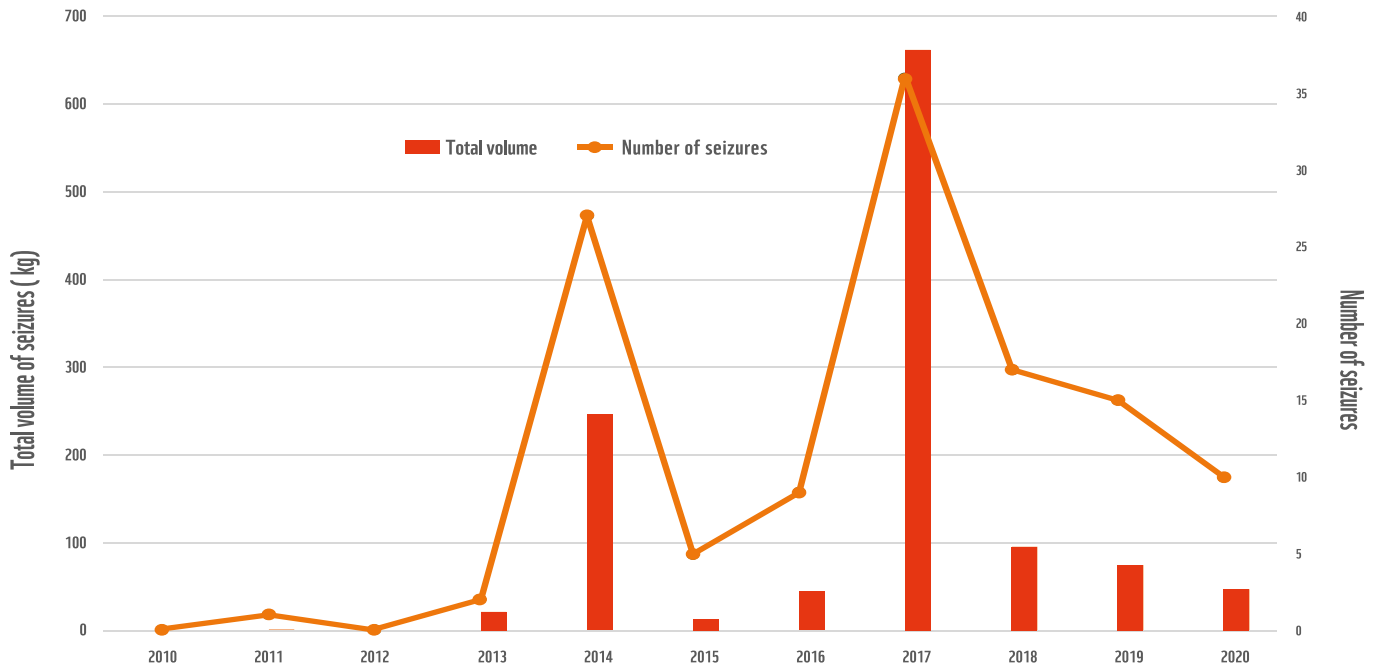


Figure 5: Number of seizures and quantities of wild meat from terrestrial species seized in France between 2010 and 2020. No seizures reported in 2010 and 2012. Data source: EU-TWIX.

Seizures cover a wide range of wild species. According to the EU-TWIX database, they mainly involve meat from pangolins, primates, ungulates, rodents and crocodiles, primarily transported by air passengers, in particular via Paris-Charles de Gaulle and Orly airports. French customs stated that they mainly seize pangolins, as well as bats and primates. The wild meat is generally smoked or raw, and may be whole carcasses, parts or pieces of meat.

Checks conducted in France within the air transport sector primarily consist of random checks, but a combination of pre-selection (semi-random checks) and risk assessment is also undertaken to target certain planes or passengers. In France, the authorities have also engaged in tracked deliveries to intercept wild meat entering the country.

According to the authorities, Paris-Charles de Gaulle and Orly airports are the primary entry points for wild meat arriving in the EU, in particular since Brexit. Seizures specifically relate to wild meat transported on flights from Sub-Saharan Africa including, in particular, Cameroon, Congo and Togo. The authorities estimate that 80% of passengers from this geographic region are carrying animal or plant products that cannot be imported into the EU.

These two airports are also major hubs for freight transport and for postal and express parcel services. Wild meat coming from African countries has been seized from these two channels.

The authorities say that seizures can vary depending on the time of year with, for example, seizures of meat from primates being more frequent in the run up to religious celebrations, such as Christmas or the New Year, as it is regarded as a popular cultural delicacy on such occasions.

**AIRPORTS
LOCATED IN THE
PARIS REGION
ARE THE MAIN
EU ENTRY
POINTS FOR
ILLEGAL WILD
MEAT**

³³ For instance, according to the estimate from Chaber et. al. based on wild meat seizures made in 2008, 273 tonnes of bushmeat are imported annually from West and Central Africa via the Paris-Charles de Gaulle airport. 39% of the seizures involve CITES-listed species. Although the authors do not provide the total weight of these CITES-related seizures, it can be assumed that it exceeds the total quantities reported in EU-TWIX.

MODUS OPERANDI

In the majority of cases, wild meat is regarded by the authorities as intended for personal consumption. However, carrying wild meat is sometimes used as a means of financing the trip to countries from which the passengers or their parents/grandparents hail, by selling some or all of the goods brought into France. Goods destined for food shops or restaurants are also seized. This is corroborated by seizures made in the source countries, in particular in Sub-Saharan Africa, for example in Cameroon, the DRC, the Central African Republic and Congo, which involved meat destined for professional operators in France.

In the study undertaken by Chaber et al. (2010) on wild meat confiscations at Paris-Charles de Gaulle airport, around half the passengers searched were in possession of health certificates for their foodstuffs³⁴. These were supposedly issued by the veterinary authorities in the countries of origin. They listed the foodstuffs transported, such as bushmeat, and certified that they were suitable for human consumption. These certificates are not legally valid because of their failure to comply with European regulations governing the certification of animal products. The study highlights the fact that some of these certificates may have been issued fraudulently, as wild meat destined for international trade is also illegal in many African countries.

The detection of wild meat does not pose a specific issue for the authorities. However, it appears that passengers are more likely to conceal wild meat when travelling with an airline that is more vigilant as regards this kind of traffic, such as Air France, for example, which sometimes conducts checks on baggage.

Identification of the species seized is not a priority for the French authorities. Thus, only specimens that can be rapidly identified thanks to their specific characteristics, or where the species is disclosed by the passenger carrying it, will be identified. Where a CITES-listed species is identified, its illegal importation is regarded as a criminal offence and, in this case, precise identification of the species is required for legal proceedings.

The customs authorities have informally defined three different degrees of offence, based on the quantity and type of specimen seized, resulting in three different types of sanctions. This prioritisation of offenders enables customs officers to conduct more checks.

However, interviews with people from Cameroon and Côte d'Ivoire supplying wild meat to sellers in Paris revealed that small quantities of meat were not necessarily a sign of personal use, but were part of a strategy designed to avoid fines and sanctions³⁵.

In France, a number of cases of illegally importing wild meat have resulted in prosecutions in court, specifically because of evidence that this was linked to criminal networks or because the individuals were already known for the same offence.

The French authorities highlighted the benefits of working with airlines to combat the illegal trade in wild meat entering Europe by means of various initiatives. Proposed actions include raising the awareness of airlines of the need to improve due diligence efforts, such as exercising their right to refuse to carry goods regarded as a threat (a health risk in the case of wild meat) as stipulated by the International Air Transport Association (IATA), setting quotas for the addition of excess baggage per passenger, as well as introducing continuous awareness-raising operations designed to inform

34. Chaber et al. (2010). *The scale of illegal meat importation from Africa to Europe via Paris*, *Conservation Letters*

35. Reix J. (2020). *VICE*. <https://www.vice.com/fr/article/7kze34/du-crocodile-et-du-singe-au-menu-darrieres-boutiques-parisiennes>.

passengers of the zero tolerance approach to illegal imports of wild meat adopted by European countries. These operations may be based on existing initiatives and tools, such as the online course on the issues associated with the illegal wildlife trade developed by Etihad Airways, the tool for assessing measures to combat the illegal wildlife trade developed by the IATA and the work undertaken as part of the United for Wildlife Transport Taskforce, for example.

CONSUMER PROFILE: EXAMPLE OF THE IVORIAN DIASPORA IN FRANCE

According to information gathered by means of focus groups with members of the Ivorian diaspora based in Marseille, it is easy to buy bushmeat brought into France by plane. It was also said that it was possible to order bushmeat and to collect it later from Marseille airport. By contrast, participants did not mention transport by sea or in parcels.

Numerous taxa were cited as being consumed for their meat, including pythons, rodents, squirrels, porcupines, primates, pangolins and elephants. However, participants mentioned that only meat from aulacodes *Thryonomys swinderianus* (small rodents incorrectly known as “Agouti”) and primates could easily be bought in France. They also highlighted the fact that their family members in Africa eat very little elephant and porcupine meat nowadays.

When questioned about the drivers of bushmeat consumption, participants were able to choose several answers from a list. Taste (95%), health benefits (70%), cultural attachment (38%) and religion (13%) were selected by participants. Food consumed locally in Africa, including bushmeat, is presented as being healthier and tastier by the Ivorian community, which would like to have access to this food in France. Participants specifically stated that the meat available on the French market does not taste good and contains chemical additives, which makes it less healthy than the meat available in Côte d’Ivoire.

The findings of the study involving the Ivorian community in Marseille also demonstrate that the perception of health risks associated with the consumption of bushmeat is low compared to the perceived benefits. Only five people mentioned issues associated with the bushmeat trade: sanitary conditions, conservation issues and price.

In terms of the frequency of consumption, the answers given by participants reveal consumption ranging from never to two or three times a week, but the majority of participants (53%) said they only rarely eat bushmeat. Although the majority (70%) of people responding to the questionnaire were male, all the participants saying that they consumed bushmeat once a week or more are men, aged between 22 and 37, and all originating from urban areas such as Abidjan, San Pedro and Grand Lahou, for example.



36. Morrison-Lanjouw S. (2021). Exploring the characteristics of a local demand for African wild meat: A focus group study of long-term Ghanaian residents in the Netherlands

37. EFSA (2014). An update on the risk of transmission of Ebola virus (EBOV) via the food chain. Scientific Report of EFSA. EFSA Journal 2014;12(11):3884

Participants stated that they did not perceive any change in the frequency of bushmeat consumption between the older and younger generations, which is markedly different from the answers given by the Ghanaian community living in Amsterdam, which highlighted a decrease in consumption among younger generations³⁶.

Participants stated that the meat was generally smoked or boiled, or that preparation could combine these methods with drying or salting. A 2014 report by the European Food Safety Authority (EFSA) into the transmission of Ebola via bushmeat highlighted the fact that the probability of a viable virus being present is lower in dried or smoked meat than in frozen or fresh meat, and that the virus is believed to be destroyed at 100 degrees³⁷.

Participants regard the bushmeat available in France as expensive. Its price, which is higher than on the Ivorian market, seems more to be determined by the risk taken to import this meat when travelling by plane (in hold or cabin baggage), which appears to be accepted by the Ivorian community (the concept of “willingness to pay”). The price does not appear to be determined by the conservation status of the species in question. For example, aulacodes (or cane rat) can cost up to €50 per kilogramme (between €30 and €50), which is a higher price than for meat from primates available on the market in Marseille (at prices ranging from €25 to €30 per kilogramme). It would not be unusual to pay between €100 and €150 for a whole cane rat.



83% of participants said they would consume bushmeat more often if the price was more accessible. This could explain why participants said that they brought back bushmeat themselves when flying from Côte d’Ivoire.




TRADE ROUTE			SPECIES AND QUANTITIES SEIZED	DETAILS
COUNTRY OF EXPORT	TRANSIT COUNTRY	DESTINATION		
Sub-Saharan Africa	Morocco (Casablanca)	France	 <p>14 KG OF MEAT from pangolins, primates and agoutis (Dasyproctidae)</p>	Detected at Paris-Orly airport. (June 2013)
Morocco		France	 <p>21 KG OF MEAT of antelope (Caprinae) and primate meat (Barbary Macaque) as well as 500 jars of skin lightening cream.</p>	Detected in personal baggage at Lyon Saint-Exupéry airport. (April 2014)
Unknown	United Kingdom	France	 <p>9 CARCASSES primate and duiker carcasses, and python meat.</p>	Detected in a postal parcel transiting via the United Kingdom. (Early 2021)

Table 3: Examples of wild meat seizures involving France

DISCUSSIONS



© Christiaan van der Hoeven_WWF

There are strict restrictions on the international wild meat trade, and uncertified goods of animal origin cannot be imported into Europe, for health reasons. Yet there is increasing and robust evidence that significant quantities of wild meat are illegally entering Europe every year.

This international trade exerts pressure on local food systems and the general functioning of ecosystems, and poses a risk to human health. For example, 70% of terrestrial mammalian species listed in the Appendices to the Convention on Migratory Species (CMS) are hunted for their meat and 60% are traded (nationally or internationally, legally or illegally)³⁸. A wide range of wild species are imported into Europe for consumption, of which around a third are thought to be CITES-listed. Some of these species identified in the illegal wild meat trade, such as *Cercopithecidae* primates and pangolins, are endangered (or even critically endangered) in the wild and, therefore, hunting for human consumption is harming populations that are already threatened. Some species traded for their meat have also been identified as carrying high-risk infectious diseases, in particular *Cercopithecidae* (baboons, macaques, vervet monkeys and related species) and reptiles, such as the Siamese crocodile *Crocodylus siamensis* and the saltwater crocodile *C. porosus*. Over the course of recent years, there has been a significant increase in warnings relating to the reappearance in Europe of zoonoses that had previously been eradicated and suspicions of a causal link with the wildlife trade. For example, in Belgium, traces of African swine fever virus were identified in wild meat seized at Brussels-Zaventem airport and traces of monkeypox virus were discovered in three samples of wild meat (unspecified species) intended for sale, with known cases of human-to-human transmission of monkeypox. On 23 July 2022, the WHO also declared the monkeypox outbreak a “public health emergency of international concern”, the highest international public health alert level³⁹. According to the WHO, it is actually “*the first time that many monkeypox cases and clusters have been reported concurrently in non-endemic and endemic countries in widely disparate geographical areas*”.

Although existing data reveals massive illegal importing by air passengers, statements from the authorities and a number of researchers on the illegal flows of wild meat indicate that courier (express or postal) and freight services are being used for the illegal wildlife trade. These flows are currently insufficiently understood and quantified, and there is too little research into the involvement of organised networks. Yet, discussions with the Ivorian diaspora highlight the fact that the consumption of wild meat is continuing through the generations and that this foodstuff remains particularly sought after by certain communities, which have not found a satisfactory substitute in Europe. Individuals are willing to take the risk of transporting wild meat when travelling from source countries to Europe and/or to pay sometimes high prices to obtain products in their European countries of residence.

Analysis of the role of Europe in the illegal trade in exotic wild meat, by means of seizures reported by the authorities, is difficult. In effect, European countries reported 279 seizures explicitly involving CITES-listed wild meat from terrestrial species in the EU-TWIX database between 2010 and 2020, and there is no central European database for seizures of meat at borders. These aspects make it hard to adequately quantify the volumes of meat illegally entering Europe and to qualify the threat that this international market poses for the conservation of certain species. Data is lacking for three main reasons:

- (1) The health risks associated with the illegal wild meat trade and (2) the large proportion of passengers likely to enter the EU with wild meat in their baggage on certain routes is forcing the authorities to conduct checks, seize, or even apply sanctions, and to dispose of the seized specimens in a rapid manner, leaving aside possible identification of the species in question when this is not visually evident;

38. Convention on Migratory Species (2021). *Impacts of Taking, Trade and Consumption of Terrestrial Migratory Species for Wild Meat*.

39. According to the International Health Regulations adopted by 196 countries

- (3) Illegally importing wild meat is treated, by many authorities, as a breach of health legislation and, therefore, is subject to specific reporting, which is distinct from that relating to illegal imports of wild species (and in particular CITES-listed species).

Additional factors, such as the cost of DNA analysis and strict health protocols for extracting, handling and analysing samples, pose financial and logistical obstacles to the identification of species. These constraints must also be viewed in a wider context: controlling and detecting animal and plant products forms part of a wide range of tasks to be performed by customs authorities in relation to flows of passengers and goods. As a result, less than 20 tonnes of perishable goods (meat from domestic or wild species and fish) are seized annually at Paris-Charles de Gaulle airport⁴⁰, while almost 14 times this quantity is actually assumed to be entering the EU via this platform from African countries, for bushmeat alone⁴¹.

Data is also lacking regarding intra-European flows of wild meat. In effect, a limited number of European airports (in particular in Belgium, France, Switzerland as well as in the Netherlands) represent entry points to Europe for travellers arriving from the source countries for wild meat. As a result, goods are then transported by land within or between European countries.

These gaps in knowledge relating to the illegal wild meat trade pose problems when it comes to conservation and public health, which, in October 2020 in its conclusions on the European Commission's "Biodiversity" Strategy for 2030⁴², prompted the EU Council to "[call on] *Member States and the Commission to rapidly take appropriate measures aimed at monitoring, prosecuting and stopping the illegal importation of wildlife and wild meat at the EU's external borders*"⁴³.

A number of European countries, such as Belgium and Romania, have identified the lack of data relating to the wild meat trade as a major challenge. In addition, the wild meat trade represents a coordination challenge, as it lies at the interface between the jurisdictions of numerous national authorities (government departments responsible for food safety, public health, conservation, border control, etc.). One European country in two appears to believe that the roles and responsibilities of different authorities are clearly defined. However, only one country in three believes that they have adequate powers and capabilities in terms of the roles and responsibilities incumbent on the different authorities with jurisdiction for the wild meat trade. Faced with this challenge, certain countries have established consultation mechanisms, in the form of a body and/or by adopting an action plan, like Belgium, for example.

40. French customs, pers. com. with WWF France, 2022

41. More than 3,286 tonnes in total, including meat from domestic animals and fish. Data source: Chaber et al. (2010).

42. European Commission (2020). *EU Biodiversity Strategy for 2030 – Bringing nature back into our lives. European Green Deal.*

43. General Secretariat of the EU Council (2020). *Conclusions on Biodiversity – the need for urgent action. Doc. 11829/20.*



RECOMMENDATIONS

© James Morgan_WWF

Knowledge of the supply chains for wild meat illegally imported into Europe

1

Improve understanding of European markets for wild meat and of demand, by:

- **Conducting socio-economic studies** with the main African diaspora communities present in Europe (in particular in France, Belgium, the United Kingdom and the Netherlands),
- **Conducting market surveys** in European capitals and key cities where these diaspora communities live (targeting the main outlets: restaurants and food shops),
- **Collecting and analysing samples** of wild meat for the purpose of genetic and health analyses.

- European institutions and agencies
- National authorities
- NGOs
- Academia

2

Improve the systems for monitoring the illegal trade in perishable goods and, in particular, meat from non-domestic terrestrial species, for example, by means of annual organised operations designed to quantify the extent of wild meat trafficking and to identify the species targeted, at the main entry points to Europe.

- European institutions and agencies
- National authorities
- NGOs
- Academia

3

Improve the understanding of the trafficking in wild meat illegally imported into the EU and of intra-European flows (quantities, routes, modus operandi, involvement of organised criminal groups, etc.), in particular regarding the use of social media for the online sale of wild meat and the use of freight or courier services (air, sea, express or postal) for transport.

- European institutions and agencies
- National authorities
- NGOs
- Academia

Knowledge of the health issues associated with the illegal wild meat trade

4

Improve understanding of the health risks associated with the illegal wild meat trade **by developing methods and protocols** allowing precise seizure sampling, **by producing a list of laboratories** with the necessary equipment and expertise for analysing samples and **by conducting virological and bacteriological analyses** of these samples (by making these analyses systematic for specimens seized during joint operations, for example).

- European institutions and agencies
- National authorities
- NGOs
- Academia

5

Raise the awareness of end consumers, intermediaries (such as shopkeepers and restaurant owners) **and inspection officers** stationed at borders, of the health risks associated with the illegal wild meat trade.

- European institutions and agencies
- National authorities
- NGOs
- Academia

RECOMMENDATIONS

RELEVANT STAKEHOLDERS

Law enforcement

6

Take part in joint law enforcement operations targeting the illegal wildlife trade, including wild meat (for example, THUNDER operations led by INTERPOL and the World Customs Organization and operations organised as part of European cooperation mechanisms), and **propose the organisation of joint operations** as part of the annual operational action plans under the European Multidisciplinary Platform Against Criminal Threats (EMPACT).

- European agencies (EUROPOL)
- National authorities

7

Make the detection of wild meat one of the priorities for law enforcement within European countries and **use the risk information forms (RIFs)**, on a European level, as a tool to prompt increased attention to this illegal trade by the highest-risk countries.

- European institutions and agencies (EUROPOL)
- National authorities

8

Improve reporting of seizures relating to the illegal wild meat trade by European countries (in the EU-TWIX database, in particular) and **develop a standard for using CITES trade terms and recording the quantities seized**.

- European institutions and agencies
- National authorities
- NGOs

9

Improve airport infrastructures to ensure compliance with the biosecurity protocols for baggage inspections, as well as the storage

- National authorities
- Airport operators

Assessment of conservation issues

10

Continue to train law enforcement officers responsible for border controls, in order to facilitate identification of the species targeted by the international wild meat trade.

- European institutions and agencies
- National authorities
- NGOs
- Academia

11

Develop methods and protocols allowing samples to be precisely taken from seizures, in order to conduct biological analyses and/or to satisfy the requirements for the admissibility of evidence in the event of legal proceedings, and **develop specific and technically available tools** for the genetic identification of specimens seized.

- European institutions and agencies
- National authorities
- NGOs
- Academia

RECOMMENDATIONS

RELEVANT STAKEHOLDERS

Collaboration

12

Improve understanding of the roles and responsibilities of the authorities in charge of regulating, monitoring and controlling the legal and illegal wild meat trade and those in charge of investigating the illegal trade in European countries, and **encourage them to cooperate** by establishing working groups and/or adopting an action plan.

- European institutions and agencies
- National authorities
- NGOs
- Academia

13

Increase collaboration between the authorities, NGOs and transport companies to raise their awareness of the risks, and their roles and responsibilities, as regards the illegal wild meat trade, and to help them strengthen their due diligence procedures.

- European institutions and agencies
- National authorities
- NGOs
- Transport sector companies

14

Extend cooperation between European countries and source countries for wild meat illegally imported into Europe, in order to improve sharing of information and knowledge, organise joint operations, raise the awareness of passengers of goods that cannot be imported into the EU, involve airlines, facilitate investigations of criminal networks involved in this activity, and support mechanisms for monitoring the wild meat supply chain, as well as early warning systems to prevent the wide scale spread of zoonoses. To this end, the recommendation is to **make use of existing tools and fora**, such as embassies, the Central Africa Bushmeat Action Group (CABAG), EU-TWIX, AFRICA-TWIX and SADC-TWIX, and the Central African Bushmeat Monitoring System (SYVBAC).

- European institutions and agencies
- Member States (and their embassies)
- NGOs
- Academia

**OUR MISSION IS TO STOP
DEGRADATION OF THE PLANET'S
NATURAL ENVIRONMENT AND TO
BUILD A FUTURE IN WHICH HUMANS
LIVE IN HARMONY WITH NATURE.**



Working to sustain the natural world for the benefit of people and wildlife.

together possible™

panda.org

© 2022

© 1986 Panda symbol WWF – World Wide Fund for Nature (Formerly World Wildlife Fund)

® "WWF" est une marque déposée.

WWF – France, 35-37 rue Baudin - 93310 Le Pré-Saint-Gervais.