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The role of Germany in the illegal global pangolin trade

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ABSTRACT

The illegal pangolin trade is of global concern and is placing all pangolin species under high levels of threat. Following a preliminary analysis of global pangolin seizures from 2010 to 2015, Germany emerged as a transit country, especially for pangolins being shipped from Africa to Asia. We analysed seizure data involving Germany from 2010 to 2018 to characterise Germany's role in international pangolin trafficking and the trafficking dynamics.

The majority of shipments involving Germany came from West Africa, and predominantly from Nigeria. Scales were the most confiscated commodity and we found the postal services to be used as an important means of transport, with 90% of incidents being shipped via airmail packages.

We highlight the need for further monitoring of, and research into, the international trade in Traditional Medicines. Such shipments are often overlooked, as they are particularly hard to detect, if derivatives of endangered wildlife are not clearly identified on the ingredient list of such medicines. We further found a large discrepancy between seizures on administrative record and seizures as reported by the media. Recognising these country-specific biases in media reporting of wildlife seizures may improve analyses of wildlife seizures in the future.

1. Introduction

The illegal wildlife trade is among the fastest growing categories of transnational crime and is increasingly classed as a transnational security problem by law enforcement authorities internationally (Runhovde, 2015). The immense value of the international trade in wildlife, has resulted in the overexploitation of a growing list of species that are threatened with extinction (Wyatt, 2011; Duckworth et al., 2012; Eaton et al., 2015). Illegal wildlife trade is often not given the same law enforcement priority as similar crimes, such as narcotic trafficking (Runhovde, 2015). It is important that illegal wildlife trade is prioritised because of its criminal and structurally harmful elements for people, civil societies and development (Wyatt 2011, 2013) and to ensure species survival. Among the species currently most threatened by illegal wildlife trade are pangolins.

Pangolins (Manidae) have in recent years become the most heavily internationally trafficked wild mammals (Challender et al., 2014a). Despite being protected in most range states and being listed in Appendix I of the Convention on International

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Trade in Endangered Species of Wild Fauna and Flora (CITES), all eight species are threatened by the relentless demand for their body parts, largely from Asia (Pantel and Chin, 2009; Challender and Hywood, 2012; Nijman et al., 2016). While most international trade of pangolins (and their parts and derivatives) occurs within Asia, both in terms of number of incidents and quantity, over 70 countries have so far been identified to be involved in this trade (Heinrich et al., 2016; Heinrich et al., 2017).

As the four Asian species of pangolins have declined throughout most of their range (CITES, 2000; Baillie et al., 2014; Challender et al., 2014b; Challender et al., 2014c; Lagrada et al., 2014), poachers and traffickers have turned to the four African species (Challender and Hywood, 2012; Gomez et al., 2016; Heinrich et al., 2017; Krishnasamy and Shepherd, 2017). Poaching and legitimate hunting of African pangolins has existed for decades (see e.g. Bräutigam et al. (1994)), however, the intercontinental dynamic has added to the existing pressure on African pangolins, which are now being trafficked in previously unseen numbers (Challender and Hywood, 2012; Challender and Waterman, 2017; Heinrich et al., 2017). Trafficking of live pangolins from Asian range countries to China and Vietnam is common, but distance makes it difficult for traffickers to move live pangolins from Africa to Asia, and these shipments predominantly consist of scales (Challender and Hywood, 2012; Heinrich et al., 2017).

Wildlife traffickers moving pangolins from Africa to Asia use a variety of methods, hiding the scales in shipments with legitimate products, or falsely declaring them as other items, such as oyster shells (Krishnasamy and Shepherd, 2017), and using both air and sea routes (Gomez et al., 2016; Heinrich et al., 2017; Krishnasamy and Shepherd, 2017). Traffickers also vary routes to avoid detection, using routes that have low likelihood of detection, weak legislation and paltry penalties, and/or high levels of corruption, however, pangolin trafficking may also be conducted in locations, such as non-range states like the United States of America (US), and European countries (Heinrich et al., 2017).

Heinrich et al. (2017) reported that of the top ten countries and territories involved in the most pangolin trafficking incidents from 2010 to 2015, seven were in Asia (China, Viet Nam, Malaysia, Hong Kong SAR, Thailand, Lao PDR, and Indonesia) and the remaining three were the US, Nigeria, and Germany. While this was based on the number of incidents only, not the volumes trafficked; it does highlight an often-overlooked role many countries play in the trade. Further, Germany has previously also been identified as a hub for other trafficked wildlife, apart from pangolins, and has been reported to be a particularly prominent destination for exotic reptiles (Altherr, 2014; Auliya et al., 2016; Klaas et al., 2016; Janssen and de Silva, 2019).

As such, here we investigate the role of Germany in international pangolin trafficking and aim to not only raise awareness of illicit trade in pangolins through European nations, but to encourage the prioritisation of implementation and enforcement of regulations in place to counter the illegal trade in pangolins. The Africa-to-Asia trade in pangolins is a growing transnational crime, and is placing enormous pressure on Africa's pangolins. As such, improved international collaboration and communication between enforcement agencies is essential.

2. Methods

Illegal wildlife trade is frequently reported in the media and through research from academic and non-Government organisations, or via enforcement agencies and government reports (Heinrich et al., 2017). We requested pangolin seizure records from the Federal Agency for Nature Conservation (Bundesamt für Naturschutz; BfN), which is the German CITES Management Authority. We also interrogated existing databases and published literature for pangolin seizure records involving Germany as a transit, exporting, or destination country, and we searched Google^{Tm} alerts from the last three years (in English). An additional Google^{Tm} news search was conducted in March and April 2019, using the keywords “Schuppentier” or “Pangolin” together with “Beschlagnahmung”, “Aufgriff” or “Konfiszierung” and “Deutschland” to search German media.

All trafficking incidents were collated, and the seized quantities per incident converted into ‘whole estimated pangolins’. More accurately, these represent the number of pangolins that were likely poached to obtain the trafficked pangolin products, and we used these estimates to compare the seized quantities of the different commodities in a more meaningful way. To obtain these estimates we used a minimum and maximum number of pangolins and used the average (rounded up to a whole animal) to estimate the number of pangolins per incident. As the species was unknown in all incidents, we used the scale weight as described in Heinrich et al. (2017). For pangolin scales from Africa we thus used a maximum of 4.5 kg and minimum of 0.6 kg per pangolin as a conversion factor, and for scales coming from Asia a maximum of 3.51 kg and a minimum of 0.36 kg of scales per pangolin. For meat, we assumed that a piece of meat equals one pangolin. We grouped the commodities ‘medicine’ and ‘extract’ into a single category ‘medicine’. Medicine is usually reported as a count (number of pieces), and we assumed that a minimum of one pangolin was needed for each shipment and a maximum of the reported number of pieces of medicine.

The data curation and summary were conducted in the R software environment (version 3.4.3; R core Team, 2017).

3. Results

From 2010 to 2018 Germany was involved in 39 pangolin seizure incidents, involving an estimated 737 pangolins (Fig. 1). A peak was reached in the year 2013, when 79% of all seizure incidents occurred and 81% of all estimated pangolins for that period were intercepted. In the last two years, i.e., 2017 and 2018, no pangolin seizure incidents involving Germany were reported by the German authorities (Fig. 1).

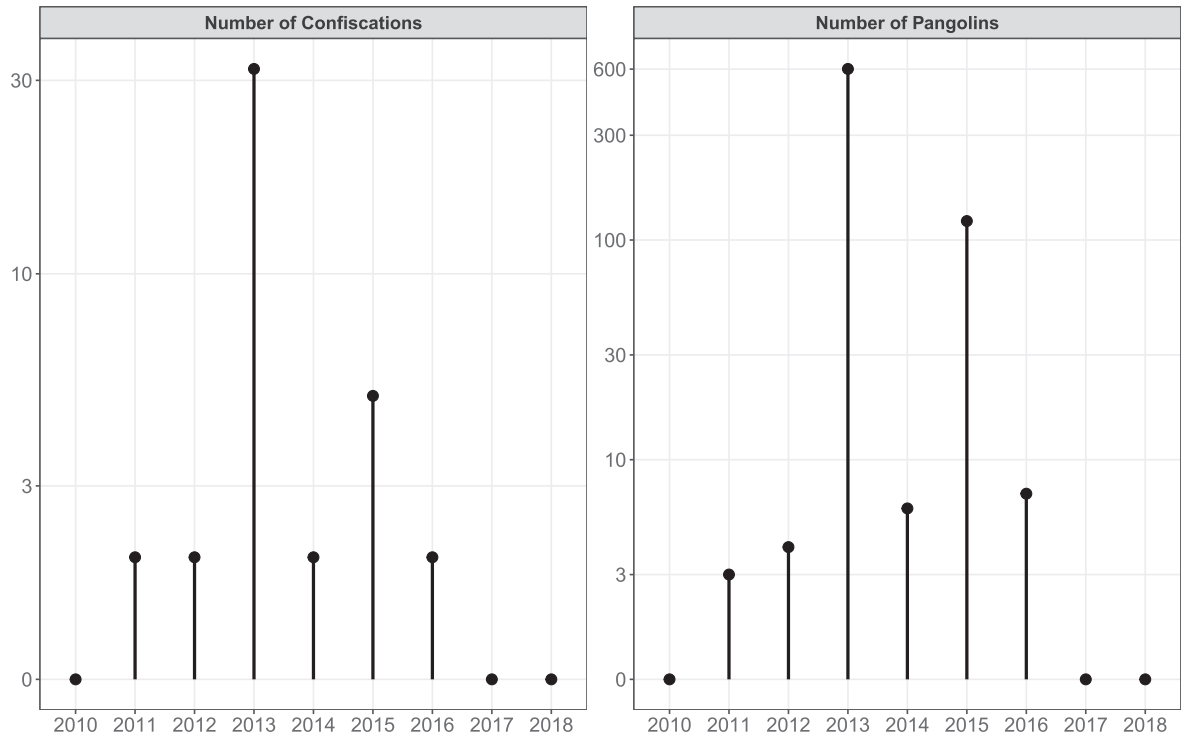

Fig. 1. Pangolin seizure incidents involving Germany through time from 2010 to 2018, based on a) the total number of seizures, and b) the total number of estimated pangolins. Note that the y-axes are on a logarithmic scale.

Additionally, we found one seizure incident that was made outside of Germany, involving Germany as a prior transit country. In 85% of all incidents (and 98% of estimated pangolins trafficked) Germany was a transit country. In the remaining incidents, it was the reported destination for the intercepted shipments. Notably, 90% of the shipments were sent to Germany via postal services, where they were subsequently seized. The remaining 10% consisted of two shipments that arrived as air-freight, one hidden in the personal luggage of a passenger, and another shipment of unknown transport mode.

Scales were by far the most seized commodity, accounting for 87% of incidents, or 98% of estimated pangolins (Fig. 2). The majority of incidents involving scales (97% of incidents) came from Africa and were supposed to be sent to China/Hong Kong. Medicinals (10% of incidents and 2% of estimated pangolins) were exclusively trafficked out of China, using Germany as a destination country in three incidents, or as a transit country in one incident with the US as the intended destination (Fig. 2). There was only one incident, where meat of a single pangolin had been seized, which was en route from Togo via Ghana to Germany (Fig. 2).

Media reporting on pangolin seizures made in Germany was extremely low. Of all seizures from the postal service, we did not find a single incident reported in the German or English media. The sole seizure reported in the media was the seizure of pangolin meat from Togo via Ghana from a passenger at Munich Airport, which was featured by two local media outlets (Anon, 2015a,b).

4. Discussion

Wildlife trade in Germany and the other European Union (EU) Member States is regulated through the European Commission (EC) Wildlife Trade Regulations (Council Regulation (EC) No. 338/97, and Commission Regulation (EC) No. 865/2006). There are four Annexes (Annex A – D) in the EU Wildlife Trade Regulations, with Annex A offering the highest degree of regulation and protection. Annex A contains those species listed in CITES Appendix I, as well as additional species, which are deemed to be in demand internationally, and whose survival is or may be threatened by continuing trade activities. The import of a species into the EU listed in Annex A is only possible if an import permit has been issued by a management authority of the Member State of destination, and if the applicant provides an export or re-export permit issued in accordance with CITES by a relevant authority of the country of export or re-export (for additional details see EU Reg. No. 338/97). Specimens of species in the Annexes that are in transit between two non-EU countries – as are most of the cases analysed here – need neither an import permit or notification to enter nor a re-export certificate to leave the EU (EU Reg. No. 338/97,

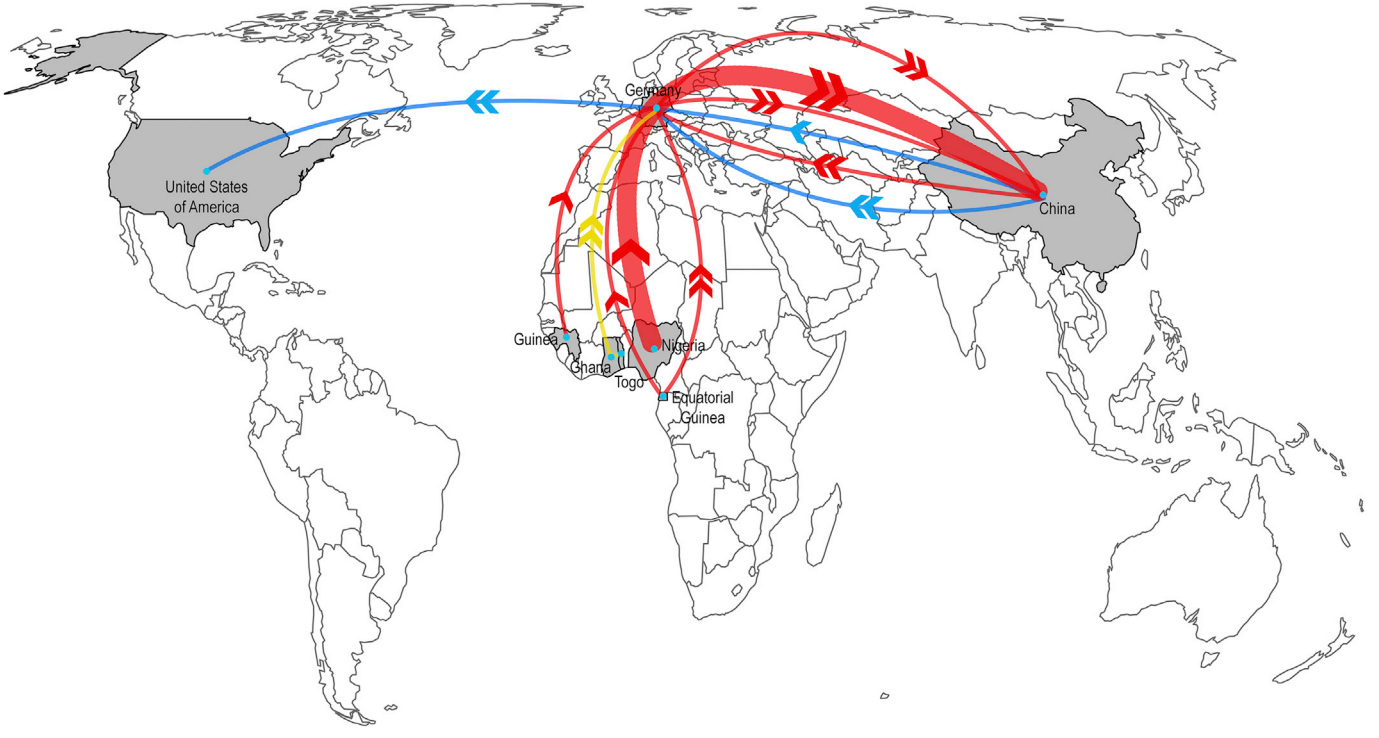

Fig. 2. Pangolin trafficking routes involving Germany, from 2010 to 2018. The trafficking routes are on a country-by-country basis and are coloured by commodity, with seizure incidents involving scales (red), medicine (blue), and meat (yellow). The thickness of the lines represent the normalised number of seizure incidents multiplied by the seized quantities measured in estimated pangolins, per trafficking route. Single arrow heads (>) indicate a subsequent transit country in a trafficking route, while double arrow heads (≫) indicate the reported final destination in the trafficking route. Note: The start and end points of a trafficking route have been approximately centralised per country and do not indicate a specific location within a country. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

Article 7). However, if a specimen is also listed on CITES Appendices I or II, such transit shipments must be accompanied by valid export permits or re-export certificates indicating the shipment's final destination, and must be seized if such documents are found to be absent (EU Reg. No. 338/97, Article 7). This legislation forms the basis of most pangolin seizures analysed here. After the inclusion of all eight pangolin species in CITES Appendix I, all pangolins were transferred from Annex B to Annex A of the EU Wildlife Trade Regulations as of February 2017 (Commission Regulation (EU) 2017/160 of 20 January 2017), and appear to be adequately protected in Germany and Europe.

EU Wildlife Trade Regulations are directly applicable in all EU Member States. The main national legislation relevant to the implementation of the Wildlife Trade Regulations in Germany is the Federal Nature Conservation Act (Bundesnaturschutzgesetz (BNatSchG) of July 29th 2009, last amended on September 15th, 2017). Thereby, all pangolin species are regarded as "strictly protected", the highest category of protection in this legislation. As a result, BNatSchG puts into place for these species prohibitions on possession – including all handling and processing, as well as prohibitions on marketing – including sale and offer for sale, purchase, and shipping for purposes of sale (BNatSchG §44). Ignoring these prohibitions is considered a criminal offence and carries a prison term of up to five years or a fine (BNatSchG §71). EU regulations also prohibit specifically commercial activities – with some derogations - around species, such as all pangolins, that are listed in Annex A of the regulation, specifically mentioning also the transporting for sale of specimens (EU Reg. No. 338/97, Article 8).

It is an encouraging sign that German Customs have initiated controlled deliveries in several cases, concerning the parcels sent from Nigeria, in collaboration with Hong Kong Customs (BfN, 2014). In 2013 at least four people were arrested and imprisoned in Hong Kong following such controlled deliveries (although from the report it is unclear whether the arrests were only in relation to the pangolin scale shipments, or whether this also included investigations involving one ivory shipment and several parcels with dried seahorses from Latin America). Following one of these controlled deliveries in 2013, a further 125 kg of pangolin scales were seized on the premises of one of the consignees in Hong Kong (BfN, 2014). It was reported, however, that in two cases in 2015, Hong Kong Customs were not able to conduct controlled deliveries as had been offered by German Customs (BfN, 2017). In the bushmeat seizure at Munich airport, a media report suggested that the suspect would be fined by the BfN (this being in 2015, before up-listing pangolin species to CITES Appendix I/EU Annex A). Investigations and prosecutions, if necessary with international collaboration, are key to reducing wildlife crime. Seizures alone will not stop the continued illegal killing and trafficking of endangered animals and plants, and investigations and prosecutions, as part of multifaceted interventions, must follow in order for the applicable laws to be effective, and to deter any offenders.

The majority of incidents involving scales came from African countries, and here predominantly from countries of the Gulf of Guinea. Countries from the Gulf of Guinea have previously been identified to be heavily involved in pangolin trafficking, as highlighted by Ingram et al. (2019). In the present study, we found Nigeria to be the principle exporter of the pangolin shipments seized in Germany. All these shipments consisted exclusively of scales and were meant to be shipped to China/Hong Kong.

In recent years, Nigeria has repeatedly been identified as a major exporter of pangolin products, with predominately Asian countries as the intended final destination (Gomez et al., 2016). Some of the biggest seizures of pangolin scales from Nigeria were made only recently. In January 2019, 8.3 tonnes of scales were seized in a single incident in Hong Kong (Anon, 2019b). In the first two weeks of April 2019 another two incidents occurred in Singapore, one shipment containing 12.9 tonnes of pangolin scales, the other containing 12.7 tonnes of scales, and both intercepted on their way to Vietnam (Anon, 2019a). It should be emphasized that Nigeria is reported as the exporting country in most of these cases, but that it is not necessarily the origin country. It is possible that pangolins are being collected from neighbouring countries, to be exported from Nigeria.

In an analysis of open-source media reports of pangolin trafficking from Nigeria from 2011 to 2015, Gomez et al. (2016) found a total of nine seizures of pangolin parts (predominantly scales) that had been exported from Nigeria. Eight of these were made in Asia and one in France. Since 2015, there were at least another 23 pangolin seizures involving Nigeria, at least 14 of which again had Asian countries as a destination (S. Heinrich, unpubl. data.). Gomez et al. (2016) reported zero seizures in 2011, two in 2012, zero in 2013, one in 2014 and six in 2015. Interestingly, 26 of the 28 seizures in Germany that came from Nigeria, were made in 2013, but none of these could be found in open source media by Gomez et al. (2016). France was the only European country that was found in open-source media having made a seizure of pangolin scales (250 kg) coming from Nigeria in that study. Gomez et al. (2016) searched English media only and therefore seizures reported in German would have been missed. However, a search made in German media for the present study also only found a single seizure incident.

These findings illustrate the dynamic trafficking routes that characterise the illegal wildlife trade. At the same time, the discrepancy between seizures on administrative record and seizures as reported by the media highlight country-specific biases in media reporting of wildlife seizure incidents (see also Nijman (2015) for language-specific biases in seizure data collated from media sources). Certainly, for the case of pangolins, and in contrast to the situation in range states and main consumer countries, there exists very little reporting in German media of pangolin seizure incidents involving Germany. Better media reporting of wildlife seizures, especially of pangolins, would be expected, given the general rise of attention for pangolins (Harrington et al., 2018). On the other hand, media reporting of seizures could be detrimental to ongoing investigations, such as the aforementioned controlled deliveries. The discrepancies of media reporting highlight that any analysis of wildlife seizures should not rely only on open source media for wildlife seizures, but also include government records to obtain a more holistic picture of trade dynamics.

However, even if all seizure incidents per country are included, every analysis using seizure data comes with inherent biases. These may include different reporting practices among countries and responsible law enforcement agencies, available

funding for wildlife related offenses and varying levels of priority of wildlife crime in different countries. These biases will ultimately influence the results and interpretation of every seizure analysis and it must be emphasized that seizures only represent a fraction of the true levels of trafficking (see also Utermohlen and Baine (2017) and Underwood et al. (2013)).

The increasing pangolin trade connection from Africa to Asia has previously been identified (Challender and Hywood, 2012; Krishnasamy and Shepherd, 2017), and European countries play a role as a transit hub for these shipments (Heinrich et al., 2017). While there appears to be demand for pangolin meat, scales, and medicine in other European countries, such as the Netherlands, France, and Belgium (Chaber et al., 2010; Heinrich et al., 2017; Chaber, A.L. (2019), pers. comm.), Germany's role in pangolin trafficking appears to be as a transit country.

All incidents involving medicinal products came from China. In fact, of the five shipments that originated in China, four were medicinal products. The trafficking of pre-prepared medicinal products requires further research efforts. Apart from European countries, the US is another destination of pre-prepared Traditional Chinese Medicine (TCM) products containing pangolin (Heinrich et al., 2017; Heinrich et al., 2019). Ground up pangolin scales, extracts prepared from pangolin products or even incense sticks containing pangolin (or other endangered wildlife) are very hard to detect, if the ingredient list does not identify all products. These medicinal products are also shipped to non-range countries, which have historically not received much attention. Coghlan et al. (2015) for example revealed that 50% of TCM products, which had been purchased in Adelaide, Australia, contained DNA of undeclared taxa, including endangered species, such as Snow Leopard (*Panthera uncia*). There is likely more (illegal) trade occurring in pre-prepared medicines, which requires research attention and further investigation into this trade and possible solutions for better detecting these products.

Criminal networks often use new routes and methods to move contraband to avoid detection. When losses due to enforcement efforts outweigh profits from successful trafficking efforts, these routes are often changed. This was potentially the case for the highlighted trafficking route from Nigeria via Germany to China/Hong Kong, and notably there were no more seizures involving Germany in the last two years. Pangolins were up-listed to CITES Appendix I in January 2017 and EU Annex A in February 2017. However, given that illegal pangolin trade appears to be increasing in other countries in recent years, the lack of seizures in 2017 and 2018 in Germany is unlikely to be a result of better and stricter protection of pangolins. It is more likely that because these shipments were intercepted so often in Germany, the traffickers moved on to new routes, which would also explain the sudden drop in seizures after 2013. However, we acknowledge that there may be other unknown reasons why the trade routes may have been changed, or why there were no more seizures in 2017 and 2018.

Another interesting finding of this study was the use of postal services to transport illicit pangolin products. The use of parcels and postal services to transport illegal wildlife globally has been reported previously (Carrillo-Páez, 2018; Haysom, 2019) and especially with the rise of internet facilitated wildlife trade (Krishnasamy and Stoner, 2016; Wingard and Pascual, 2018), postal services may become increasingly important in the future. There is very little information provided on postal packages to follow up on these shipments and to initiate an (international) investigation. Increased vigilance by postal offices and collaboration with law enforcement, especially in source countries where the parcels are being sent from, would therefore be crucial to prevent wildlife from being trafficked out of the country, and to have a higher chance of arresting the responsible traffickers.

5. Conclusion

The majority of shipments involving Germany came from West Africa, and here predominately from Nigeria, which has previously been identified as one of the most important countries involved in international pangolin trafficking. We found the post to be used as an important means of transport, with 90% of incidents being shipped via postal services.

We also highlight the need for further research into the international trade in Traditional Medicines. These shipments are often overlooked, as they are particularly hard to detect, and the ingredients are sometimes misdeclared.

We further found a large discrepancy between seizures on administrative record and seizures as reported by the media. Recognising these country-specific biases in media reporting of wildlife seizure incidents may improve analyses of wildlife seizures in the future.

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