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Barriers to Combating the Illegal Trade of **WILDLIFE**

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English translation

Preface

The Covid 19 pandemic has been upended the world for the last two years, causing dramatic losses of human lives and social and economic disruption. Along with immeasurable losses, the pandemic has also entailed socio-economic changes and humanity's perception of the world we are dwelling in. The virus that causes the Covid-19 pandemic is likely to originate from wild animals. Although this is not a firm conclusion up to this point, it is a deeper warning than ever about the human way of life, which exploits nature indiscriminately, causes ecosystems to deteriorate, and leads to irreversible damages.

Right now, when the global crisis caused by the coronavirus has not been over and humanity is still incurring losses, various efforts have been put in place to prevent future outbreaks of pandemics. One of these endeavors is to prevent wildlife trade and consumption, based on scientific evidence that more than 70% of dangerous emerging infectious diseases in humans originate from animals, especially wild animals (wildlife)¹.

Asia has been identified as one of the five global "hot spots" with a very high risk of emerging infectious pathogens, including zoonotic diseases. Over the past time, the Government of Vietnam has made multiple moves to promote law enforcement to fight wildlife trade, preventing this risk. The promulgation of Directive 29/CT-TTg on July 23, 2020, on some urgent solutions for wildlife management and the signing of the One Health Partnership Framework to prevent zoonotic diseases between the Government of Vietnam and international organizations and domestic partners from 2021 to 2025. In addition to the Government's determination, domestic and international organizations also focus on supporting policy improvement, law enforcement, and public awareness in combating the illegal wildlife trade.

However, the wildlife trade situation in Vietnam continues to complicate. The cause of this situation comes from loopholes or inadequacies in policies, limitations, difficulties in implementation, and people's awareness and

consumption habits. This Policy Review includes articles on wildlife trade trends during the pandemic; challenges in wildlife protection when looking at bottlenecks in policy and enforcement; the management of rare and endangered species, especially close-up with the status of turtle species; infectious diseases from wildlife; and the use of medicinal plants to replace wildlife-based ingredients. The content of the articles reflects the current situation, analyzes the loopholes and challenges in management, and suggests actions to solve the problem.

Covid-19 will not be the last pandemic of its kind that humanity will face. To prevent future wildlife-borne pandemics, it is imperative that we learn how to live in harmony with nature, maintain the stability of the wilderness through biodiversity conservation, restoration of natural habitats or ecosystems, and minimization of human impacts on the environment.

1. OIE, WHO, UN. 2021. Reducing public health risks associated with the sale of live wild animals of mammalian species in traditional food markets. Source: <https://www.who.int/publications/item/WHO-2019-nCoV-Food-safety-traditional-markets-2021.1>

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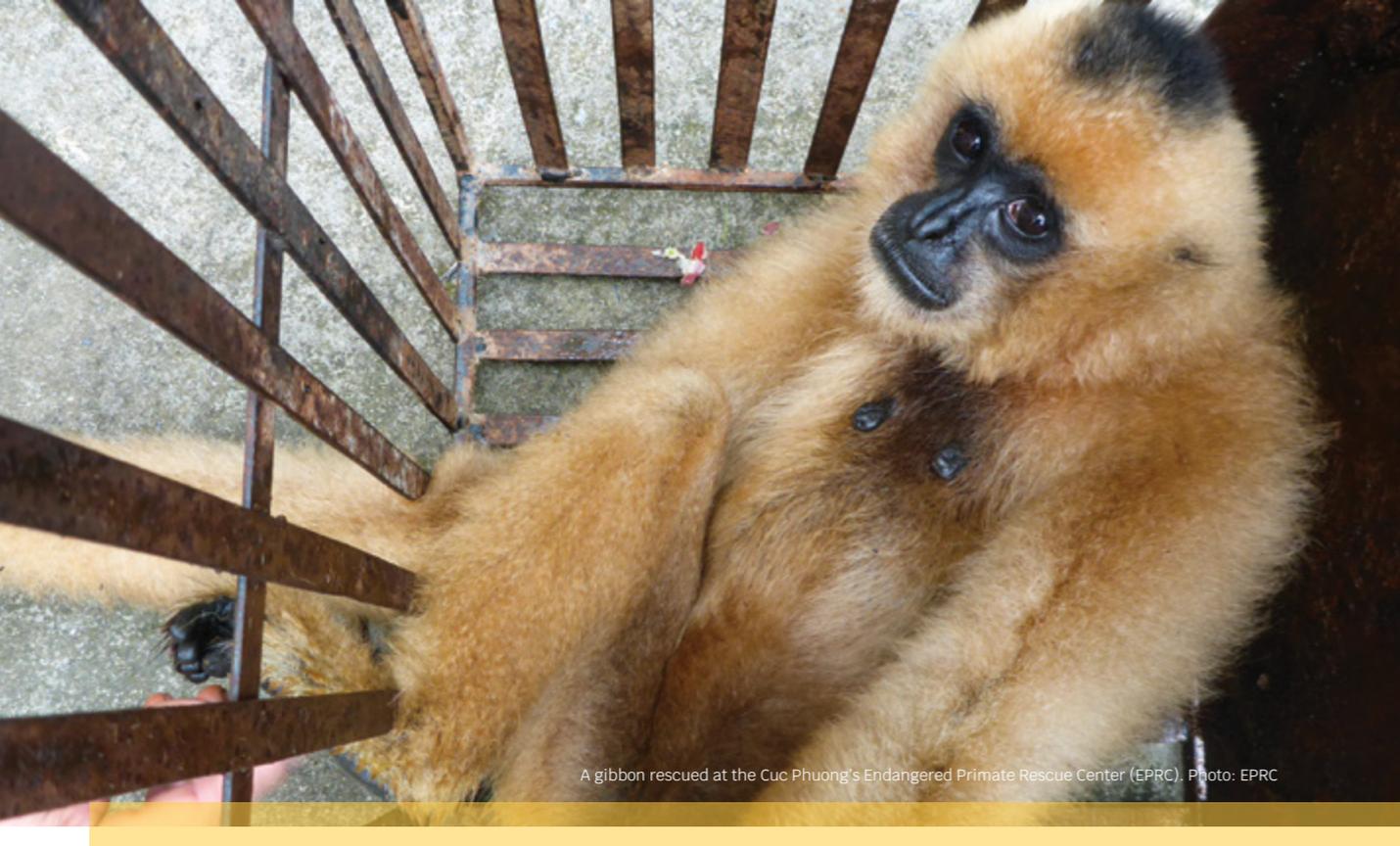
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A gibbon rescued at the Cuc Phuong's Endangered Primate Rescue Center (EPRC). Photo: EPRC

WILDLIFE TRAFFICKING TRENDS IN THE CONTEXT OF COVID 19 PANDEMIC

Đỗ Thanh Hà*

Wildlife trafficking often ranks just behind the world's three largest illegal markets - human trafficking, arms trafficking, and drug trafficking - based on metrics of profitability, cost, and severity (J. Sean Doody, Joan A. Reid, Klejdis Bilali, Jennifer Diaz, 2021). However, the emergence of Covid-19 has caused researchers to change this inherent viewpoint. Under the overwhelming impact of the pandemic on the entire political, economic, cultural, and social fields in most countries around the world, wildlife trafficking is being recognized as the most severe form of crime (J. Sean Doody, Joan A. Reid, Klejdis Bilali, Jennifer Diaz, 2021). It is a threat not only to the environment and biodiversity but also to human

health (UNODC, 2020). After two years of breaking out since its first appearance, by the end of November 2021, Covid-19 infected more than 262 million people worldwide, claiming the lives of more than 5 million people (Worldometer, 2021). Although the origin of the pandemic is still waiting for scientists to verify, with more than 70% of emerging infectious diseases in humans originating from animals, mainly wild animals (WHO, 2021) and many questions or hypotheses on wildlife species acting as vectors for the transmission of SAR-CoV-2 pathogens, wildlife trafficking is emerging as the most alarming threat that needs to be addressed, even becoming one of the main targets in the political agenda of many countries. Some argue that the emergence of another pandemic following Covid-19 will only be a matter of time (Outlook, 2020) (WUSF Public Media, 2021) un-

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less wildlife crime is under control. This conjecture is increasingly reinforced when more evidence shows that wildlife criminal networks are still operating secretly, even adapting fairly quickly in the context of the pandemic, and are highly likely to erupt again in the post-Covid era, despite epidemic restrictions and barriers.

Covid-19 has caused a worldwide emergency with tremendous pain and almost incalculable damage. Therefore, along with measures to reduce casualties and economic instability, it is also vital to have discussions focusing on putting wildlife trade under control. There have been various policy responses proposed, for example banning all activities related to the use and trade of wildlife or tightly controlling the supply chain of animals and endangered species at high risks of containing viruses that transmit diseases. Some governments have enacted urgent measures to temporarily control Covid-19, for instance, the Chinese legislature in early 2020 passed a decision to completely prohibit the illegal wildlife trade and consumption (CNN, 2020); Vietnam temporarily banned the import of wildlife and products or parts/organs from wildlife; resolutely eliminated illegal wildlife markets and hotspots (Government Portal, 2020); Bolivia adopted a resolution that reiterates bans on wildlife trade and consumption for public health reasons (Booth H, Arias M, Brittain S, Challender DWS, Khanyari M, Kuiper T, Li Y, Olmedo A, Oyanel R, 2021); Gabon banned the consumption of bats and pangolins (Booth H, Arias M, Brittain S, Challender DWS, Khanyari M, Kuiper T, Li Y, Olmedo A, Oyanel R, 2021).

With urgent measures to control wildlife trade in several nations, most countries worldwide have imposed blockade or social distancing to prevent the spread and outbreak of Covid-19. This also means that wildlife trade and poaching activities will be better curbed. However, restrictions on trade, revenue, employment, etc., due to the impact of the pandemic, may promote illegal hunting of wild animals near protected areas and national

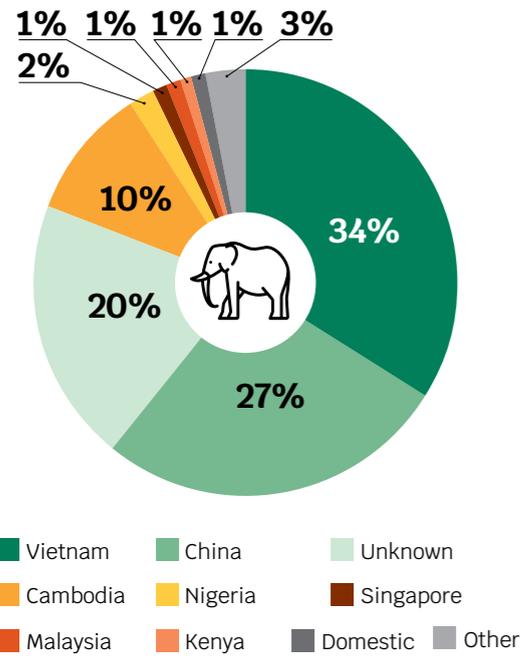
parks to meet local food needs or speculate on wildlife stocks until they can be traded again (Jacqueline Cochrane, 2020).

Given the complicated developments of Covid-19, it is unclear how the pandemic will shape and promote wildlife crimes in the medium and long terms. However, based on the data and statistics analysis provided by many studies, the article would like to review some fundamental trends related to this serious criminal group, thereby contributing to establishment and improvement of plans and strategies to prevent wildlife crimes more effectively.

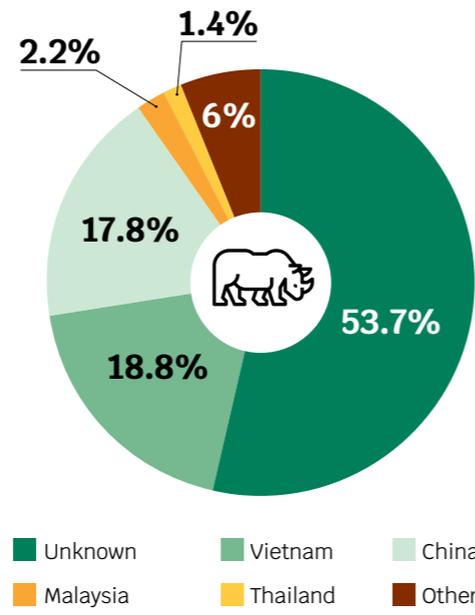
Illegal trade does not show any sign of going down

Published in July 2020, the United Nations Office on Drugs and Crime's (UNODC) Wildlife Crime Report 2020 outlines key wildlife crime trends globally, with a focus on illegal markets for ivory, rhino horn, pangolin scales, reptiles, big cats, European eels and rosewood. In particular, the demand for ivory and rhino horn from Africa is decreasing, and the size of these two markets is also more modest than before. The decline in poaching levels and prices suggests that ivory and rhino horn stocks are more likely to be exploited, and supply is outstripping demand. Contrary to the glooming picture of these two items, the number of seizures of pangolin scales increased tenfold between 2014 and 2018, mainly originating in Africa with targeting destinations in Asia and China. In addition, demand for tiger products has risen notably in recent years, prompting smugglers to turn to alternative sources of supply from other big cats... Despite the data and analysis in The report was completed before Covid-19, UNODC also raised some critical warnings about the unpredictable impact of the pandemic on human health and ecosystems through wildlife trade, both legally and illegally (UNODC, 2020). Global travel restrictions and other factors will undoubtedly influence the size, mode of transport, and overall operation of organized crime groups, but most likely wildlife trafficking will not decrease significantly. While there may be some short-term disruption, buyers and sellers will reshape and increase their focus on online commerce channels and other approaches. It is still too early to observe clear trends and changes related to wildlife trafficking, but containment measures already in place in many countries can force criminal groups to retreat to deep underground activities, higher risks of

Under the overwhelming impact of the pandemic on the entire political, economic, cultural, and social fields in most countries around the world, wildlife trafficking is being recognized as the most severe form of crime. It is a threat not only to the environment and biodiversity but also to human health.



Share of reported national destination of ivory tusk seizures, (total reported seizures 104 tons), 2015-2019.
(Source: UNODC World WISE)



Reported national destination of rhino horn seizures by weight, 2002-2019
(Source: UNODC World WISE)

corruption, and changes in markets and transport methods in the long term (UNODC, 2020).

Agreeing with UNODC, the Wildlife Justice Commission (WJC) (The Wildlife Justice Commission, 2020a), Environmental Investigation Agency (EIA, 2021) and United for Wildlife (United for Wildlife, 2020) all concluded that despite restrictions on international movement and transport due to the pandemic, wildlife crime groups have continued to operate, even taking advantage of the disruption caused by Covid-19 and quickly adapting to changes globally. The EIA investigation found that the ivory and pangolin trade continued its business despite the pandemic, as demonstrated by Nigerian customs' seizure of nearly 17 tonnes of ivory and pangolin scales between January and August 2021 (WCO news, 2021). According to United for Wildlife (United for Wildlife, 2020), while there is some local disruption, there will be no widespread shutdown of wildlife traffickers, and the pandemic will not significantly reduce illegal wildlife supplies and smuggling methods or demand patterns in the short and medium terms. Still worse, Covid-19 could open up new opportunities for smugglers and poachers in certain areas. However, wildlife criminals will face unprecedented losses due to macro-economic and macro-political uncertainties in the medium and long terms. Consequently, the level of

adaptation and development of wildlife crime groups in the new context will depend heavily on the global community's determination in preventing and combating wildlife trafficking.

Contrary to the statement mentioned above, some assessments suggest that the trend of wildlife smuggling is on a downward trend, as evidenced by the significant reduction in the number of cases and the volume of material confiscation compared to the pre-pandemic period. For example, statistics from C4ADS (Dina Fine Maron, 2020) showed that the average number of seizures of ivory, rhino horn, and pangolin scales globally between 2015 and 2019 was about 530 cases per year, but 2020 saw only 466 cases, down from a peak of 964 cases in 2019. The number of cases of transporting pangolins, rhino horns, and ivory by sea also decreased from nearly 4% of the total number of cases seized between 2015 and 2019 to below 2% by 2020; the number of pangolin scales confiscated in 2020 was about 20 tons, much lower than the figure of about 100 tons in 2019; the amount of rhino horn seized in 2020 was less than 1/10 of 2019; the average volume of seized ivory shipments decreased by 72% in 2020. In addition, data from the USAID Wildlife Asia Program released in May 2021 also shows the

number of wildlife seizures reported in 2020 was much less than in 2019 (tiger seizures decreased by 50% with 17 cases; ivory decreased by 68% with 121 cases; rhino horn decreased by 56% with 14 cases...) (USAID Wildlife Asia, 2019). However, according to EIA, the significant reduction in wildlife seizures in 2020 compared to pre-pandemic levels does not mean that wildlife crime is no longer a concern. On the contrary, intelligence from EIA shows that wildlife trafficking is still active. The decrease in the number of seizures can be attributed to many factors, for example, blockades, travel restrictions between countries, temporarily halting the transportation of contraband, law enforcement capacity and resources in countries are also reduced to focus on Covid-19 response or media focus on pandemic coverage rather than reporting seizures, or smugglers around the world prioritize hoarding contraband to prepare for new business activities in the post-pandemic future. EIA believes that there is a need to study further the impact of Covid-19 on global wildlife trafficking and the real reasons for the reported decrease in the number of seizures and prosecutions (EIA, 2021).

Another concern to EIA is that the pandemic may promote corruption in the wildlife smuggling sector because there is evidence that some actors take advantage of government officers at ports and border areas to ship illegal products overseas. In particular, seaport officials are more likely to accept bribes due to the general predicament caused by the pandemic (EIA, 2020).

Hoarding wildlife contraband until social distancing is relaxed

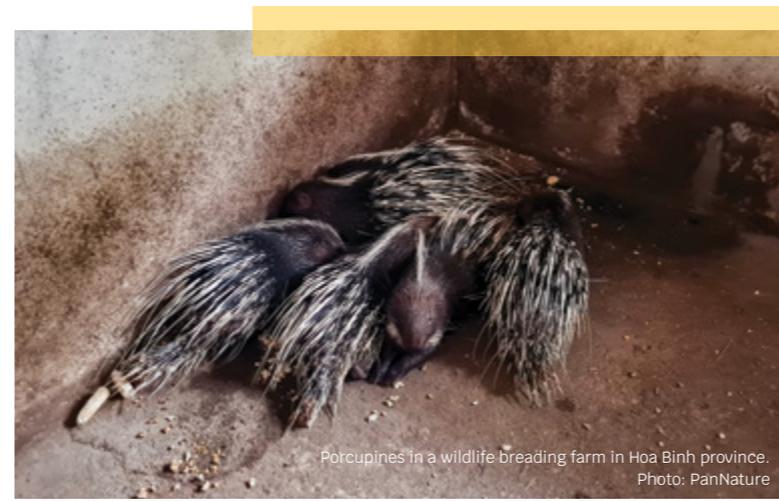
Many experts and conservationists fear that illegal wildlife hoarding will increase during the pandemic due to travel and transportation restrictions.

Steve Galster, the founder of the Freeland Foundation, asserted that such hoarding started long before the virus appeared. Many people think that poached wildlife will be sold directly to the market, but in reality, it is not true because rhinoceros, elephants, tigers, pangolins... are all stocked up. Smugglers consider this a future and endangered commodity; therefore, wildlife parts such as horns, tusks, bones, and scales are all stocked up with the intent of benefiting from future price increases. Especially in the context of Covid-19, the rhino horns, pangolin scales, ivory, tiger bones are on the rise as smugglers look beyond the pandemic to know exactly when to sell at the best prices (Abbianca Makoni, 2021).

Through interviews with wildlife traffickers and smugglers in disadvantaged areas along the Mekong River in Myanmar, Thailand, Laos, and China, UNODC also found evidence that wildlife products are being hoarded until prices and demands fully recover from the pandemic (Reuters & nbsp, 2021).

From its sources, EIA confirmed that speculators in Africa are stocking large quantities of wildlife products in the hope that buyers, mainly in Asia, can resume business after the pandemic. The evidence shows that some actors have begun to ship ivory and pangolin scales via sea routes and send small quantities of ivory via express postal service to Asia (EIA, 2020). EIA intelligence indicates that the tiger trade in the Mekong region has continued throughout the pandemic, and Asia's demand for rhino horns has not decreased, with supplies mainly from Central and South Africa. The smugglers even spread the rumours that tiger bone glue and rhino horn treatments can cure Covid-19 and improve health with the ill intent of boosting user demand.

Based on findings and observations from January to April 2020, the Wildlife Justice Commission (WJC) specified the amount of wildlife hoarded by smugglers waiting to be exported to China. Difficulty in transporting ivory (mostly raw products) into China has resulted in speculating large quantities of raw ivory in Vietnam, Laos, and Cambodia. Specifically, the trend of hoarding has been observed by the WJC since 2019 and has increased significantly since January 2020 (The Wildlife Justice Commission, 2020a). Private information from the WJC said that at least 10 tons of ivory have been stored in Hanoi since June 2019 and scattered in batches between Vietnam and Cambodia. In addition, batches of raw ivory were also stored in Cambodia, although the market in early 2020 here was quite gloomy, for many shops were forced to



Porcupines in a wildlife breeding farm in Hoa Binh province. Photo: PanNature

close because of the pandemic. Particularly in Laos, the ivory trade turned more secretive and gradually moved to areas outside the capital. Regarding pangolin scales, in the first three months of 2020, traders in Vietnam offered to sell more than 22 tons to WJC investigators, and these stocks are ready to be transported when the epidemic prevention regulations are relaxed or lifted. Notably, seizure data from 2015 to 2019 shows an increasing proportion of mixed ivory and pangolin scales shipments from Africa to Asia (The Wildlife Justice Commission, 2020b). Even worse, with the current difficulties arising in the ivory trade, it is very likely that pangolin scales will replace ivory in the illegal market in China. Indeed, many speculators have collected and supplied large quantities of pangolin scales for sale in 2019 and early 2020.

A real concern is that once international flights begin to resume and land borders start to open, it is highly likely that illegal wildlife transport will be on the upward trend to clear inventories. In the situation that Covid-19 continues for a long time, this source of wildlife contraband may be pushed up for sale mainly on online platforms.

Boosting online transactions

Like many other criminal groups, under the impact of blockades and social distancing, wildlife traffickers are mainly dependent on online platforms and transportation supply chains for marketing, processing, and distributing illegal animals or wildlife products (Coalition to End Wildlife Trafficking Online, 2020). It is believed that the shift in operating methods from face-to-face to online platforms is how wildlife criminals adapt to the Covid-19 situation. However, in fact, this trading method has been applied for ages; and now, in the context of the pandemic, the online market will have more robust growth.

The surge in online transactions will allow demanders and suppliers to exchange more easily while helping to cut intermediaries and other operating costs. In particular, this approach helps the seller minimize unexpected contact with law enforcement agencies and specialized shipping services, so there is less risk in contacting, transporting, and trading. Smugglers will swiftly switch to other platforms when online sales channels are "raided" by the authorities. For example, in May 2019, when Facebook added a function that allows the public to report cases of illegal wildlife trade,

traffickers have switched to vk.com or mewe.com applications, even keeping the same group name as on Facebook. In addition, many groups have also used WhatsApp as an alternative to market and sell reptiles since Facebook was noticed while others turned to Telegram or Instagram, Weibo, Taobao, We Chat apps. To avoid detection, offenders often use encrypted private messaging applications (UNODC, 2020), making it difficult to thoroughly deal with online smuggling.

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Most conservation experts and organizations warn of an increase in the trend of conducting transactions on social platforms. Gretchen Peters, co-founder of the Coalition Against Online Crime (ACCO) asserted: "in 2020, we did not see any disruption in the size of the online market, where a lot of illegal wildlife transactions are brokered". Online ads for exotic pets such as cheetahs were also booming in 2020, with an estimated increase of 40% in the number of online supplies and seizures of these individuals in 2019 (Dina Fine Maron, 2020).

The Coalition to End Wildlife Trafficking Online is concerned that hoarding of animals and wildlife products and parts, especially mammals, birds, and bushmeat will be posted onto social media and e-commerce platforms. The evidence is that there have been a large number of commercials advertising "miracle" cures or the ability to treat Covid-19 using endangered wildlife products such as bear bile, rhino horn, tiger bone glue. As for bats and pangolins, both species are likely to become targets of retaliation when scientific speculations suggest that they are the source of the pandemic (Coalition to End Wildlife Trafficking Online, 2020).

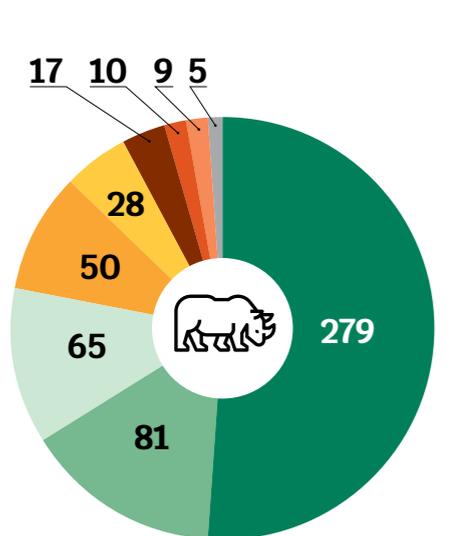
The representative of TRAFFIC affirmed that online wildlife smuggling is commonplace in many countries, including Southeast Asia, in which Facebook is the platform with the largest number of users and the top place for illegal wildlife trade. To tackle online wildlife trafficking, it is necessary to continuously raise public awareness, including in-depth investigation of the target users, strengthening the seizure of exhibits and trial of the leaders, and promoting collaboration between social media platforms (Imelda Abano; Leilani Chavez, 2021).

Sea transportation remains its dominance

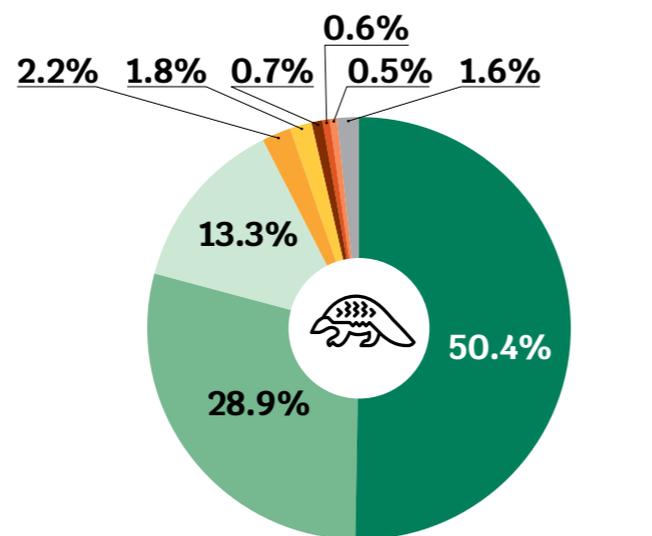
Before the appearance of Covid-19, marine transport was the main shipping channel for wildlife criminals. For living things, criminal groups often use air transport, express courier services, and sometimes even small fishing boats to transport. However, containers are still the first choice for smuggling large volumes of wildlife products such as ivory, pangolin scales, and timber due to their cost effectiveness, huge capacity, heavyweight loading, and low risk of detection (TRAFFIC, 2021). TRAFFIC statistics show that about 72-90% of wildlife products are traded by sea, and about 90% of international goods are transported by this method. Therefore, identifying illegal shipments in such a giant flow of goods transported each year is like a needle in a haystack (TRAFFIC, 2021).

According to the WJC, amid the pandemic, ocean freight is likely to be an alternative when shipping by air becomes impossible (The Wildlife Justice Commission, 2020b). As for United for Wildlife, wildlife criminals will adapt to current air travel conditions and significantly reduce smuggling by air due to far fewer routes and flights than before. There is also strengthened scrutiny of passengers and restrictions on entry and exit in most countries. However, smugglers continue to use verified smuggling routes and methods, including maritime, air, and express delivery, depending on the type of goods, without developing brand new routes or criminal links in short to medium terms (United for Wildlife, 2020).

In a report published in December 2020, EIA also recorded the "flexibility" of wildlife crime groups in transporting contraband goods, specifically the ivory and pangolin trade from East and South Africa to West and Central Africa, with the final destination being East and Southeast Asia. Among African countries, Nigeria is considered the export hub of pangolin scales, with a massive source of goods being smuggled every year. In 2020 alone, Nigerian Customs confiscated nearly 17 tons of ivory and pangolin scales in two seizures in January and July. Regarding shipping methods, shipping contact points in Nigeria often work closely with shipping agents in major hubs, including Apapa seaport and Lagos airport, to export illegal goods. Although there are direct flight options from Nigeria to seaports in Vietnam, such as Hai Phong, Da Nang, and Ho Chi Minh City, most criminal organizations choose transshipment and/or transit locations such as Malaysia and Singapore to avoid detection. Packing of goods and convert-



Number of people arrested for rhino horn trafficking by citizenship, 2010-2017
(Source: UNODC World WISE)



Destinations of seizures in whole pangolin equivalents*, 2007-2018
(Source: UNODC World WISE)
*Includes seizures of live pangolins, bodies, and scales.

ing invoices can be done by clearing agents during transit before forwarding to Vietnam and China by air, sea, or land. Upon arrival, the clearing agents at the destination are responsible for paying the costs related to the illegal shipment of ivory and pangolin scales before transferring them to the importers who will sell the illicit items to end-user groups (WCO news, 2021).

The most problematic aspect of illegal wildlife transport before and after Covid-19 is corruption, especially in the sourcing, transit, and export stages. Wildlife trafficking networks often try to exploit relationships with employees at transport units to facilitate the smuggling of wildlife products with sophisticated tactics, such as concealment of ivory, pangolin scales in shipments of wood, plastic, charcoal, palm oil, ginger, peanuts, beans (WCO news, 2021)... EIA research shows that smugglers in Nigeria often build networks of corruptible individuals, including shipping line officers, customs officials, and port security officers involved in cargo inspection, and at the same time use multiple front companies to conceal their illicit business activities (WCO news, 2021).

Current problems in Viet Nam and recommendations

Although there have been many efforts and progress in dealing with wildlife crimes in recent years, especially when the Penal Code 2015 (amended and supplemented in 2017) took effect, Vietnam is still one of the epicentres of wildlife trafficking, drawing the attention of many conservation organizations and researchers, especially in the pandemic context with remarkable suspicions that Covid-19 originates from wildlife. Most of the research and analysis cited seizures related to Vietnam or emphasized the involvement of Vietnamese crime organizations and smugglers.

The latest study published in November 2021 by EIA indicates that since 2010, Vietnam has been involved in more than 700 wildlife seizures with a total of at least 123 tons of ivory, 111 tons of pangolin scales, and 2.7 tons of rhino horn, of which 75% of the volume is of African origin. Also, since 2010, based on only confirmed wildlife seizures globally, Vietnam has been involved in smuggling parts and products of at least 18,000 elephants, 111,000 pangolins, and 976 rhinos. Nonetheless, these figures only reflect the tip of the iceberg in the wildlife smuggling picture that Vietnam is involved in, as most of the smuggling went undetected. In the 2020–2021 period, despite the pandemic, criminal groups still secretly smuggled wildlife. For example,



in the first six months of 2021, at least 249 rhinos were poached in South Africa, an increase of 50% over the same period of 2020. From January 2021, Nigeria made three major seizures of approximately 19 tons of ivory and pangolin scales, with one-third of the cases confirmed to be transported to Vietnam. According to UNODC, Vietnam is a significant terminal for illegal trade in ivory, pangolin scales, rhino horn, and rosewood, and an illegal transshipment hub for wildlife to China (EIA, 2021).

The USAID Wildlife Asia (USAID Wildlife Asia, 2019) report also shows that the number of illegal wildlife seizures in 2020 announced in Vietnam was 22 cases. Viet Nam was also the source country of 14.58 kg of seized pangolin scales in mainland China and was the destination involved in the trade of 6,160 kilograms of pangolin scales from Nigeria confiscated in Malaysia. In particular, according to private information from WJC, in the first three months of 2020, Vietnam offered to sell more than 22 tons of pangolin scales that were in stock waiting to be exported to China.

Based on media sources, the Wildlife Conservation Society (WCS) has surveyed the illegal wildlife trade in Vietnam for many years. Accordingly, in the first three quarters of 2021, 86 wildlife violations were reported with 677 individuals and 3,675 quantities/weights of body parts and wildlife products confiscated and detected. In 2020 there were 129 violations with 2,112 individuals and 332 animal parts and products detected and confiscated, less than in 2019 with 153 violations and more than 107,000 individuals and about 80,000 quantities/weights of body parts and wildlife products detected and confiscated. Although the number of violations and the number of individuals, parts/products

seized tend to decrease, the number of illegal wildlife transport and storage cases has shown signs of increasing, indicating that smuggling groups are continuing transactions (WCS, 2021). In particular, according to statistics from the Education Center for Nature (ENV) through information reported to the hotline 1800-1522, in 2020, there were 2,907 wildlife violations in Vietnam, with a total of single violations up to 2,651, nearly doubling the number of cases recorded in 2019. This proves that the illegal wildlife trade and consumption continue to be complicated (ENV, 2020). With wildlife violations on social platforms, in 2019, ENV also recorded more than 2,400 cases of wildlife advertising on Facebook, YouTube, Zalo, Tiktok, and other online sites, with the figure in 2020 was 1,759 new cases and 5,642 specific violations involving live animals, wildlife parts or products (ENV, 2021c).

The only positive signal is that consumer demand in some countries, including Vietnam, tends to decrease under the impact of Covid-19. A WWF survey released on May 24, 2021, found that nearly 30% of respondents in China, Myanmar, Thailand, Vietnam, and the United States said they consumed less or stopped consuming wildlife altogether after the epidemic; nearly 90% of Vietnamese supported the idea of closing wildlife markets and banning deforestation to prevent future pandemics. However, 9% of respondents in all five countries said they intend to purchase wildlife products in the future (GlobeScan, 2021).

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In response to the complicated progression of wildlife crimes and urgent requirements in pandemic prevention, in the 2020 - 2021 period, the Government has issued Directive 29/CT-TTg on several urgent solutions to wildlife management, Decree 84/ 2021/ND-CP amending and supplementing some articles of Decree 06/2019/ND-CP and a number of related legal documents. However, in order to fight wildlife trafficking more fiercely, contributing to the prevention of similar infectious diseases in the future, Vietnam needs to attach special attention to taking some of the following measures:

- Review and complete the legal system to handle wildlife crimes and violations related to illegal wildlife trade, transportation, consumption,

and possession; strengthen investigation, prosecution, and trial of large-scale rings and cases and gang leaders to reinforce deterrence of the law.

- Strengthen coordination between ministries, sectors, and relevant agencies in preventing wildlife poaching and smuggling; promote international cooperation in information sharing and coordination in the investigation and prosecution of transnational wildlife crimes, especially with source countries (Africa), transit countries (such as Cambodia, Malaysia, Singapore...) and target markets (China); comply with international commitments against wildlife trade in Vietnam.
- Promote financial investigation and anti-corruption in wildlife smuggling, with special attention being paid to border points and large-scale transport of goods from other countries to Vietnam, especially from Africa.
- Strictly manage commercial wildlife farming establishments through completing the system of granting and managing farm codes; the system of electronic farm registration/management and wildlife traceability to enhance the transparency of wildlife farming activities, avoiding the situation that farms take advantage of their legal covers to "launder" illegal wildlife.
- Build a disease surveillance system, especially infectious diseases originating from wildlife, and at the same time promote communication/PR in this field to reduce wildlife demand and encourage consumers to use alternatives from medicinal plants instead of hunting for illegal wildlife products and parts/organs.
- Mobilize resources from national and international conservation organizations, socio-political organizations, the private sector, and the community in wildlife crime prevention and conservation of Vietnam's wildlife and biodiversity.

12 predictions about the impact of Covid-19 on global wildlife trafficking

Based on an assessment of open and confidential sources along with analyses of trends at the macro level with plausible future scenarios, on April 1, 2020, United for Wildlife published a short report forecasting tendencies of and changes to global wildlife trafficking under the impact of the pandemic:



1. Poaching will surge in some areas:

Poaching of elephants, rhinos, big cats, and other species is likely to see a rise in Africa and Asia, in which the hardest-hit countries are South Africa, Botswana, Kenya, Namibia, and Tanzania. Notably, the greatest severity will strike the areas within and in the vicinity of national parks and protected areas, which used to attract many tourists but recently have witnessed a severe drop in the number of visitors and the revenue from tourism. Livelihoods badly affected by Covid-19 may motivate individuals and local communities to engage in poaching or other illegal activities against wildlife.



2. Smugglers are highly susceptible to macroeconomic fluctuations:

In the short and medium terms, the macroeconomic shocks associated with the pandemic will cause (possibly temporary) a reduction in the purchasing power of many consumers for illegal wildlife, especially in cities in southern

China, Southeast Asia, Europe, and North America, while triggering a rise in the transaction costs of illegal wildlife trade. These impacts will likely lead to a further decline in the prices of many illegal wildlife products, including ivory and rhino horn, weakening the overall profitability of wildlife trafficking, especially among small-scale smuggling groups. Over the longer term, traffickers will be affected by measures that reduce social status and increase discrimination against the possession and sale of wildlife products; undermine the perception that the illegal wildlife trade is a stable and profitable business; raise public awareness of wildlife smuggling... If these measures are not sustained and well coordinated, it is likely that smuggling groups will swiftly adapt to the new conditions and be fully profitable within the next 2-3 years.



3. Boost online sales:

This activity can embrace both wholesale and retail levels and is likely to encourage some smuggling networks to establish direct relationships with major online traders. However, switching to online sales also makes smugglers more vulnerable to tracking and cyberattacks.



4. Multi-crime networks, including wildlife trafficking, will diversify:

Transnational organized crime groups and criminal networks, including wildlife trafficking, are likely to prioritize cybercrime and fraud over illegal wildlife trade, at least in the short and medium terms. These networks will seek to capitalize on the explosion of high-return and low-risk crime opportunities brought about by the pandemic and massive cash flows allocated for the pandemic response efforts.



5. Illegal wildlife wholesale market will re-consolidate:

Market conditions will change the behavior of illegal wildlife wholesalers and distributors. In Asia and Africa, illegal wildlife collectors are likely to attempt to sell off or export illegal wildlife in response to supply chain instability, falling prices, and adverse market conditions. In contrast, some illegal wildlife wholesalers in Southeast Asia and China are likely to take advantage of the pandemic to ex-



6. Bans on wildlife trade will create new illegal business opportunities:

New restrictions on the sale and consumption of wildlife in China, Vietnam, and elsewhere will create and/or expand opportunities for illegal profit through the sale and rental of licenses and permits as a cover for legal wildlife trade, and at the same time take advantage of legal wildlife supply and distribution chains to "launder" illegal wildlife.



7. The line between legal and illegal wildlife trade will become increasingly blurred, especially for traditional Chinese medicine (TCM) suppliers and wildlife farms in Asia:

In the short term, many legal wildlife traders will enter the illicit market or expand their involvement as a hedge against market volatility and take advantage of new profit opportunities. In the long run, wildlife smugglers will use TCM wholesalers and distributors, wildlife farms, and other legal wildlife businesses as a cover to transport and market their illegal wildlife products, in which trafficking networks will focus on less iconic species, such as frogs, birds, turtles, and snakes.



8. Civil aviation is no longer the primary mode of smuggling during the pandemic:

Wildlife traffickers will adapt to current air travel conditions and significantly reduce the use of passenger air vehicles for smuggling due to far fewer routes and flights available, tighter passenger surveillance as well as stricter restrictions on entry and exit in most countries. Instead, illicit wildlife products will be transported via air freight, ocean freight, or air express services.



9. Shift focus to transportation through proven smuggling routes and methods:

Wildlife traffickers will continue to use verified existing smuggling routes and will not focus on developing new routes or criminal connections in the short and medium terms.



10. The risk of corruption will increase significantly:

Due to the economic downturn in many hubs and transshipment countries, wildlife traffickers will have more opportunities to bribe government officials, especially customs, border, and forestry officers, as well as units and personnel working closely with or having access to ports, logistics companies or financial institutions.



11. Animal traffickers will be affected by the link between wildlife trafficking and pandemic consequences:

In the longer term, wildlife trade will increasingly be interpreted as the ultimate cause of COVID-19 and a future threat to other new zoonotic diseases pandemics. However, whether this has an impact on the illegal wildlife trade depends on the level of interest and enforcement efforts nationally, regionally, and internationally.



12. Wildlife traffickers are likely to incur more risks:

from coordination and intelligence sharing across sectors and/or jurisdictions; communication/PR efforts to raise public awareness; stronger law enforcement pressure on illegal wildlife wholesale and retail networks; investigating and prosecuting corrupt officials and entrepreneurs related to illegal wildlife trade.

Source: "Special Analysis: How Covid-19 Impacts Global Wildlife Trafficking?" report (United for Wildlife, 2020)

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CHALLENGES in preventing and combatting wildlife crimes

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Photo: PanNature

Once an emerging threat in recent decades, wildlife crime has morphed into one of the world's largest transnational organized crime activities, with an estimated 20 billion USD per year worth of illicit revenue, seriously threatening the security, politics, economy, culture, and natural resources of many countries and regions. In the period 1999–2018 alone, nearly 6,000 species of plants and animals were seized, with almost every country in the world playing a role in the illegal wildlife trade (UNODC, 2021). Even worse, this figure only reflects a small piece of the actual mosaic of wildlife smuggling. This is also the reason why more and more importance is attached to the goal of preventing wildlife crime on high-level international and regional agendas. However, the growth of these criminal groups is often accompanied by or closely linked to fraud, counterfeiting, money laundering, violence, and corruption. Therefore, law enforcement agencies in many countries have been facing tremendous challenges in the fight against wildlife crimes. In Vietnam, this activity also faces many difficulties and obstacles due to a number of legal limitations, coordination mechanisms, professional capacity and facilities.

The Doi Moi (Reform) and open-door policy enacted since the late 1980s in Viet Nam has spurred strong economic development, leading to the formation of small-scale wildlife crime groups. Later on, when people's living standards have increased along with blind faith in the miracle use of wild species, the need to find, hunt, transport, and trade wildlife is on the rise, especially towards critically endangered, precious and rare species. Vietnam has gradually become a hot spot for illegal wildlife consumption and transshipment with an increase in the number of large-scale smuggling cases and exhibits of violations in recent years.

Figures from the International Environmental Investigation Agency (EIA) showed that between 2004 and April 2019, Vietnam had more than 600 arrests related to the illegal wildlife trade, with a total number of prohibited goods including at least 105.72 tons of ivory, equivalent to about 15,779 elephants; 1.69 tonnes of rhino horn estimated to be taken from about 610 rhinos; skins, bones and other products extracted from at least 228 tigers; corpses and scales of 65,510 pangolins (EIA, 2019). Regarding the total number of violations, statistics from the Education Center for Nature (ENV) also showed that there were totally 18,316 wildlife violations in the period 2005–2020, of which there were 2,188 cases of large-scale wildlife trafficking/transportation/trade (ENV, 2021a).



Photo: Do Doan Hoang

Deadly pandemics such as SARS, MERS, Ebola ... all originated from wildlife, and it is likely that Covid-19 is no exception, although there is no official conclusion from scientists. This shows that wildlife crime is more or less related to contagious pathogens that are communicable to humans, even breaking out into a pandemic threatening the entire humanity.

Wildlife crimes not only wreak havoc on ecosystems and biodiversity, causing myriad species to be on the verge of extinction but also negatively affect the economy and livelihoods of each country and region. In particular, exposure to wildlife species through hunting, captive breeding, storing, transporting, and trading activities poses high risks of contracting fatal pathogens with a high chance of being transmitted to humans and spreading into an epidemic, seriously impacting the community's health and the global economy. Many scientific studies show that up to 60% of infectious diseases in humans are caused by pathogens originating from wildlife or domestic animals. Deadly pandemics such as SARS, MERS, Ebola ... all originated from wildlife, and it is likely that Covid-19 is no exception, although there is no official conclusion from scientists. This shows that wildlife crime is more or less related to contagious pathogens that are communicable to humans, even breaking out into a pandemic threatening the entire humanity.

Recognizing the severity of wildlife crime, from the 1990s up to now, Vietnam has invested resources in environmental protection, biodiversity conservation, and prevention of violations related to wildlife. In 1994, Vietnam signed and became a member of the Convention on International Trade in Endangered, Precious and Rare Wild Fauna and Flora (CITES). Many legal tools have also been continuously issued, amended, and supplemented to internalize CITES commitments and complete the legal framework for handling wildlife-related violations. Up to now, Vietnam has issued 37 documents related to the regime of management, protection, and handling of wildlife violations (ENV, 2021b), including important laws such as the Penal Law, the Law on Environmental protection, Fisheries Law, Forestry Law, Biodiversity Law, in which the Criminal Law is considered a legal basis and a solid foundation for handling and preventing wildlife crimes.

In 2015, the Penal Code was newly promulgated, and in 2017 was amended and supplemented with multiple important changes. In addition to increasing the law on violations of wildlife protection (Article 234) and violations of protecting endangered, precious and rare animals (Article 244), the Penal Code also expands many protected wildlife objects and species on the Red List of endangered, precious and rare species are prioritized for protection; species listed in Appendix IB; species listed in CITES Appendix I are protected at the highest level. In particular, the criminal sanctions for wildlife crimes are also stricter, with a prison term of up to 15 years or a maximum fine of 5 billion VND for individuals and a maximum penalty of 15 billion VND for legal entities. This is also the first time in the legislative history, the Penal Code provides criminal liability for commercial legal entities, in which criminal legal entities may be subject to significant penalties such as fines (up to 15 billion VND), operation suspension from 6 months to 3 years or permanent operation suspension and other additional penalties.

Along with amending, supplementing, and completing legal policies on handling wildlife crimes, in recent years, enforcement agencies have also made great efforts to prevent and combat this group of dangerous criminals. In November 2016, Vietnam destroyed 2 tons of ivory and 70 kg of rhino horn to show its determination to dismantle the crime rings and gangs and, at the same time, work closely with conservation organizations in the rescue of wildlife that are illegally trafficked and held in captivity. One of the most typical cases is detecting and confiscating 17 tigers illegally kept in captivity in Nghe An in August 2011. Simulta-



Although the legal framework has been gradually completed and the enforcement has achieved remarkable results, the situation of wildlife crimes is still complicated, making the prevention and control of this group of criminals continue to face enormous challenges.

neously, activities of arresting, prosecuting, and punishing wildlife crimes have also undergone remarkable changes, especially after the Penal Code took effect. According to statistics of ENV, in the period of 5 years (2015-2020), there were 552 cases of wildlife that were criminally handled; the rate of violators detected and arrested in wildlife cases in the period 2015-2019 was 86.7% and increased to 97% by 2020; 84% of criminal cases about wildlife were brought to trial in 2018... All of this proves the positive impact of the Penal Code on wildlife crime prevention and control.

Although the legal framework has been gradually completed and the enforcement has achieved remarkable results, the situation of wildlife crimes is still complicated, making the prevention and control of this group of criminals continue to face enormous challenges.

Firstly, wildlife's demand and consumption habits for food, medicine, and jewelry in Vietnam are still widespread, especially for illegal products such as rhino horn, tiger bone, ivory, bear bile, pangolin scales... Many people are still passionate about these products and believe they have magical effects without knowing that they are just intentional exaggerations spread by wildlife crime groups and the due fact that they can be replaced by healthy and effective herbs or other medicinal ingredients. The demand from domestic and foreign consumers has prompted the situation of hunting, slaughtering, storing, trading, transporting, and consuming wildlife everywhere, even leading to the establishment of many cross-border criminal organizations. In terms of ivory demand alone, Vietnam is considered one of the countries with the largest number of ivory handicraft products being publicly sold to retail customers in the world. The vast majority of ivory smuggled into Vietnam is of African origin, with only a small proportion being obtained from domestic and wild elephants in Laos and Vietnam. Most of the items are pendants and other small products, mainly jewelry (Save The Elephants, 2016). In particular, today, the pet-raising craze is also flourishing among young people, with many precious, rare, and exotic animals being hunted both at home and abroad, especially turtles, birds, and small animals, causing poaching and wildlife trafficking to escalate.

Secondly, some regulations on wildlife protection still have shortcomings that need to be completed for higher efficiency. For instance, according to the provisions of Articles 234, 244 of the Penal Code, offenders may commit one or several objective acts such as illegally hunting, killing, raising, confining, possessing, transporting, or trading wildlife in groups IB, IIB, or Appendix I, II of CITES or illegally possess, transport or trade in body parts or wildlife products of the aforementioned groups. Thus, the objective behavior of these crimes does not include the act of "appropriation." Although Resolution No. 05/2018 of the Judges' Council of the Supreme People's Court of Vietnam stipulates that the actor who commits the act of appropriating wildlife, individuals, body parts, or products; endangered, precious, and rare animals if there are enough factors constituting crimes, depending on the specific cases, will be examined for penal liability for the corresponding crimes of appropriation specified in the Chapter on property infringing crimes of the Penal Code. However, this is not appropriate in practice because the offender here is a special subject that needs to be treated in accordance with the nature of the crime. In addition to the above limitation, the fact that Article 234 is based on the value of the affected subject to serve as a basic framing sign for criminal prosecution is also not satisfactory because there are very few cases where the exhibits are valued at more than 150,000,000 VND or more unless the quantity must be vast. This fact makes many detected cases of illegal wildlife transportation, trading, captive breeding... only be administratively sanctioned, without sufficient criminal elements to be criminally handled, leading to the ineffectiveness in preventing and controlling this crime. One more noticeable concern is that Point d Clause 2 Article 234 and Point h Clause 2 Article 244 both stipulate the offense of "hunting in a prohibited area or at a prohibited time", and under Resolution No. 05/2018, "prohibited areas" are conservation areas, national parks, nature reserves, species - habitat conservation areas, landscape protection areas or other protected areas as prescribed by competent agencies; "prohibited period" is the breeding or migration season of wildlife, as determined by the competent authorities. Nonetheless, these regulations may lead to a misunderstanding that it is legal to hunt wildlife, endangered, precious, and rare animals outside the prohibited areas or the prohibited period, not to mention that so far the competent authorities have not yet issued specific guidance on the breeding or migration seasons of wildlife species, causing huge difficulties for enforcement.

Thirdly, the examination of wildlife species discovered and seized in violations still faces many challenges. Most localities currently do not have qualified examiners, except for a few provinces that have judicial assessors according to cases. Therefore, when a case is discovered, the confiscation of exhibits wastes a lot of time on the case resolution process because it has to wait for the results of the examination. For DNA assessment, the specimen must be sent to the Institute of Ecology and Biological Resources, so the enforcement agency faces many difficulties in the preservation of exhibits, transportation, and care costs (for the alive wildlife individuals). In particular, there are currently no clear regulations on which agencies shall be in charge of taking care of or rescuing alive wildlife species as exhibits before the conclusion of the examination is made. According to Article 106 of the 2015 Criminal Procedure Code, wildlife exhibits must be handed over to a competent specialized management agency for handling immediately after the conclusion of the assessment is reached. Resolution No. 05/2018 of the Judicial Council of the Supreme People's Court of Vietnam also stipulates that evidence that are wild, endangered, precious, and rare animals that are still alive must be handed over to a specialized management agency for releasing back into the wild, or assigned to rescue centers, nature reserves, national parks or other agencies and organizations according to regulations. With exhibits being dead animals or perishable products from wildlife, endangered, precious, and rare animals which are difficult to preserve, they shall be destroyed or assigned to a competent specialized management agency for handling. Other exhibits shall be confiscated or destroyed according to regulations. However, which "competent specialized management agency" is not clearly defined, causing difficulties in handing over and preserving material evidence. This is also the reason why the handling of material evidence is inconsistent in different places. In some cases, the confiscation is declared to be added to the state budget, while in some others, it is declared to be transferred to a specialized management agency. Some courts declare the confiscation and destruction of ivory, rhino horn, and tiger carcasses, while in some other places, the investigating agency assigns wild animals to the forest ranger unit, which then re-releases them back into the wild according to regulations. However, in case the legal authority wants to value these animals to establish the grounds for prosecution, it is impossible because the wild animals that have been released cannot be recovered, making it difficult to solve the case. In particular, there are currently no documents detailing "other evidence" in cases of wildlife, en-

dangered, precious, and rare animals, so there are many different interpretations. For instance, on the one hand, it is argued that for material evidences being ivory and rhino horns, they must be confiscated and destroyed, while on the other hand, there is an opinion in favor of handing them over to competent agencies for preservation for the sake of scientific research.

Fourthly, legal proceedings and criminal prosecution for wildlife-related crimes are often complicated, costly, and time-consuming. Upon detecting violations, the authorities must be responsible for the conditions of captive wildlife, preservation of exhibits, transportation of animals for assessment, funding for rescue, care, and release of animals back to nature. In particular, the process of preserving exhibits encounters multiple difficulties because the exhibits are mainly alive animals that are often sick or ailing due to being caught in a trap or kept in captivity for a long time, requiring special care. Meanwhile, the conditions of detention by law enforcement agencies are not guaranteed, not to mention long-term storage may cause wildlife individuals to die before the case is brought to trial. Therefore, to save costs, the authorities often opt for administrative sanctions instead of criminal ones. This is also the reason why the number of wildlife violations in many localities brought to



Photo: Do Dean Hoang

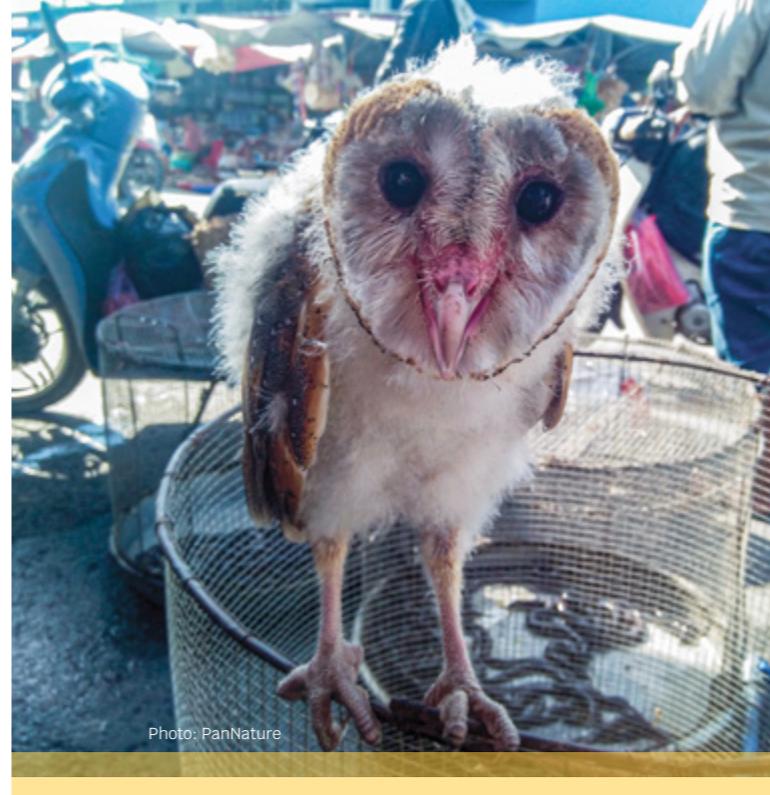


Photo: PanNature

trial accounts for only a small percentage, especially before the Penal Law was supplemented and amended. In addition, one of the reasons contributing to the trend of leniently punishing wildlife crimes is that the authorities are not fully aware of the severity of this group of criminals and often pay more attention to the cases related to humans, not to mention a number of cases show signs of corruption, bribery, or neglecting and omitting ring/gang leaders in the investigation and trial process.

Fifthly, the growth of wildlife crime gangs and rings with many sophisticated and complicated smuggling tricks also puts a lot of pressure on law enforcement agencies. The offenders often find ways to conceal smuggled goods, legalize papers proving the origin of animals, use fake number plates, etc., and are prepared to fight back in case of being detected and caught by the authorities.

In particular, more and more individuals and smuggling organizations use the internet as an effective means to sell and exchange wildlife in various forms, especially illegal items such as ivory, rhino horn, bear paws, tiger skin, pangolin scales..., causing huge challenges in tracing and handling for the authorities.

In the face of the above challenges, the authorities need to review and amend relevant legal provisions to remedy shortcomings and at the same time, develop an interdisciplinary coordination mechanism to improve the effectiveness of wildlife crime prevention. There should be clear coordina-

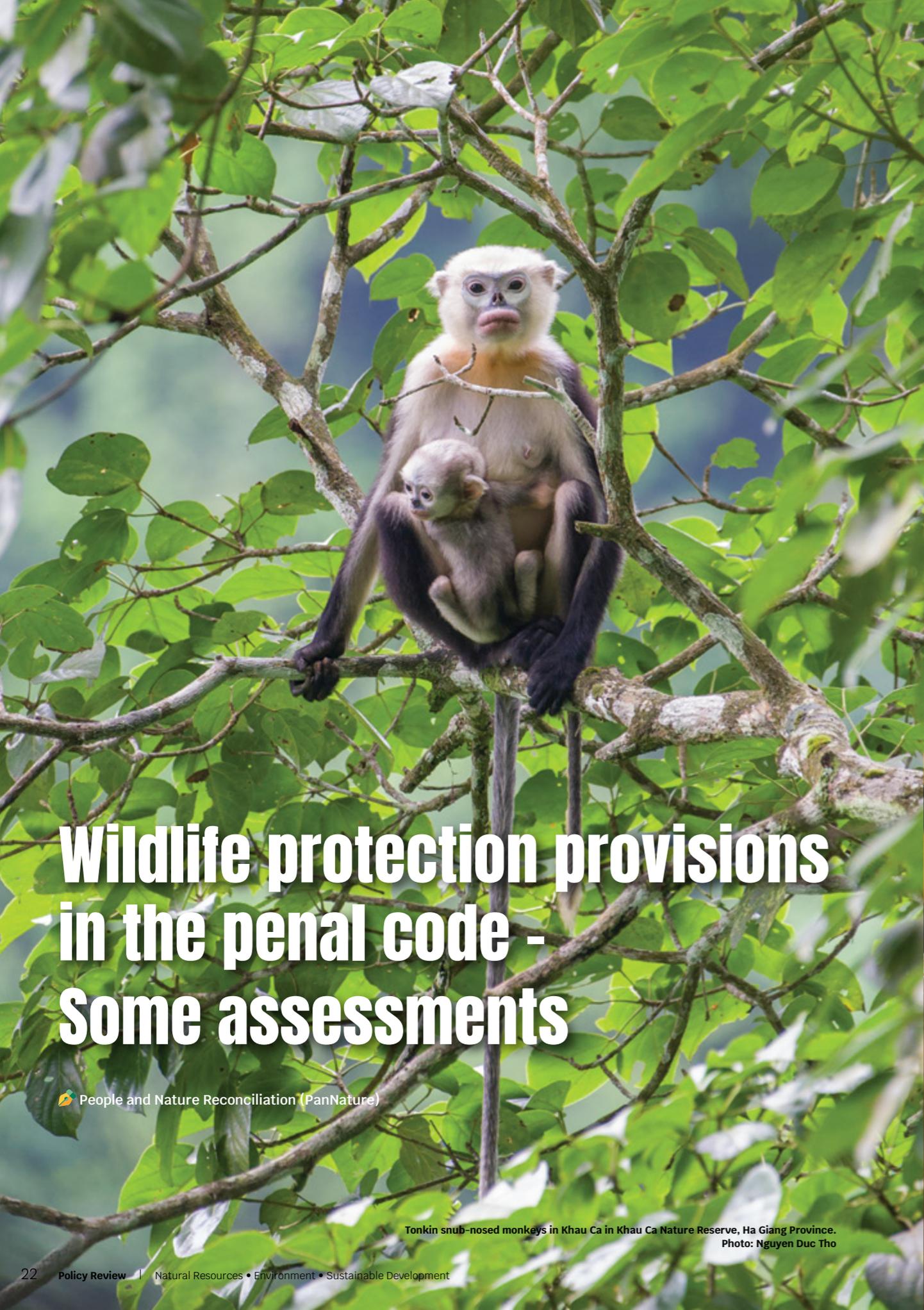
tion regulations and specific investigation procedures between investigating agencies, customs, border guards, forest rangers, experts, procuracies, and courts.

Additionally, there is an urgent need to amend and supplement a strict legal framework to promote investigation, prosecution, and trial of individuals and organizations involving the illegal wildlife trade. In order to achieve this, it is necessary to pay more attention to closing any loopholes in wildlife protection in the Penal Code. As for the assessment, it is essential to study the establishment of wildlife assessment centers in localities/clusters of localities to ensure convenience for sending samples and returning examination results and, at the same time, provide funding and equipment for agencies in charge of managing evidence...

Regarding illegal wildlife trade online and professional training for specialized task forces, activities to raise awareness and capacity of cyber security forces to promptly detect violations and crimes should be attached great importance. At the same time, Vietnam needs to strengthen international cooperation in law enforcement and legal support in handling acts of illegal wildlife transport and trade across borders. On the other hand, it is vital to promote propaganda, dissemination, and education of the law on wildlife protection through various forms in order to change the habits and behavior of wildlife consumption in the community; and encourage the community to conserve wildlife species, especially the communities residing within the vicinity of protected areas and national parks whose livelihoods depend on forests.

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Wildlife protection provisions in the penal code - Some assessments

People and Nature Reconciliation (PanNature)

Tonkin snub-nosed monkeys in Khu Ca in Khu Ca Nature Reserve, Ha Giang Province. Photo: Nguyen Duc Tho

Since becoming an official member of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1994, Vietnam has taken various critical measures to prevent and handle violations of wildlife protection, especially for endangered, precious, and rare species. Among them, the measures of criminal handling against illegal hunting, transporting, and trading of wild animals best testify the strictness of the law in protecting endangered, precious, and rare species, specified in the Penal Code from time to time. However, are these regulations solid enough to ensure effective enforcement in practice? The following article would like to mention some difficulties and problems with the application of the provisions on wildlife protection in the current Penal Code.

Regulations on wildlife protection in the Penal Code

Before Vietnam's first Penal Code was introduced in 1985, Vietnam had issued a number of decrees, ordinances, regulations, and documents on forest protection, including the prohibition of hunting birds and mammals. However, all these documents only encompassed simple stipulations and were limited to merely hunting behaviors, and only acts of considerable damage or recidivism would be sanctioned.

In 1985, the first Penal Code was approved by the National Assembly, in which violations of wildlife protection, specifically poaching of birds and mammals, continued to be integrated with violations of forest management and protection with a maximum imprisonment of 3 years or from 2 to 10 years in some serious cases. Specifically: Article 181 (Crime of violating regulations on forest management and protection) stipulates: "1 - Those who illegally exploit forest trees, illegally hunt birds and animals or commit other acts in violation of the State's regulations on forest management and protection, causing serious consequences or re-offend even after administrative violations, shall be subject to non-custodial reform for up to one year or a prison term of between three months and three years; 2. Committing serious crimes, the offenders shall be sentenced to between two and ten years of imprisonment."

However, the new law also encompassed principal stipulations, and offenders were only handled in case of serious consequences or reoffending even after administrative punishment. In particular, the new Article 181 referred to the illegal exploitation of forest trees and poaching of birds and animals, based on the Ordinance No. 147/LCT dated September 11, 1972, providing for forest protection but not specifically for rare and precious wildlife. Later, the 1985 Penal Code continued to be revised and supplemented four times in 1989, 1991, 1992, and 1997 with more than 100 provisions being amended or supplemented (Pham Viet Hung, 2015), but basically, the regulations on wildlife protection remained the same.

Fourteen years later, the 1999 Penal Code was promulgated, and this was the first Penal Code dedicated to a single law (Article 190) stipulating the crime of violating regulations on the protection of rare and precious wildlife, in which violators can be fined a maximum of VND 50 million or imprisonment for three years or a sentence of 2 - 7 years in some specific cases. Compared with the old regulations, the offenses in Article 190 were expanded to include: *illegally hunting, killing, transporting, and trading in prohibited rare and precious wildlife or illegally transporting and trading in products of these wild animals. In addition, the law also stipulated aggravating circumstances such as organized crimes; abusing official positions and powers; using prohibited hunting tools or means; hunting in prohibited areas or at prohibited times...*



Bear paw wine. Photo: Do Doan Hoang



Spotted deer farm in Son La Province. Photo: PanNature



Photo: PanNature

It can be seen that following many amendments and supplements, the regulations on protection of endangered, precious, and rare animals in the Penal Code have become more and more complete. Specifically, the signs of crime have been more clearly quantified. The punishments have increased, demonstrating Vietnam's determination to handle wildlife crimes and enact international commitments to protect endangered, precious, and rare animals in particular and conserve wildlife in general.

In 2009, the Penal Code continued to be revised and supplemented, in which Article 190 of the 1999 Penal Code (Crime of violating regulations on protection of rare and precious wildlife) was amended to constitute the count of "violating regulations on protection of wildlife on the list of endangered precious and rare species under prioritized protection" to ensure compliance with the 2008 Law on Biodiversity. Moreover, the Amended Law also added the act of "illegally breeding and keeping" wildlife on the list of endangered precious and rare species under prioritized protection and expanded to include "every single body part" instead of just "entire individual animals" and "their products," such as rhino horns, tiger bones, bear paws, turtle shells...

In 2015, the Penal Code was newly promulgated and was amended and supplemented once more in 2017 (current Penal Code), which stipulates two articles (Articles 234 and Article 244) related to wildlife crimes with imprisonment up to 15 years or a maximum fine of 5 billion VND for individuals and 15 billion VND for legal entities. With this strict regulation,

the Penal Code is said to be a solid legal tool for handling wildlife crimes. Notably, not only increasing the imprisonment and fine levels against violations, but the 2015 Penal Code also stipulates detailed signs of crime, quantification of the number of animals/individuals, or the weight of inseparable animal parts required for life or products of animals for criminal prosecution. In addition, Article 244 also added the act of "stocking" endangered, precious and rare animals or body parts and products of endangered, precious, and rare animals. This is a very remarkable point because in the past, the act of storing wildlife, including endangered, precious, and rare species, was only administratively sanctioned. Moreover, the 2015 Penal Code protects not only species on the list of endangered precious and rare species under prioritized protection, species in group IB and CITES Appendix I, but also other wildlife species (including species of common wild animals as prescribed by law and endangered wildlife listed in CITES Appendix III) in case the violation exhibits are of great value. In particular, for the first time, the Penal Code regulated criminal liability for commercial legal entities, in which

criminal legal entities may be subject to major penalties such as fines (up to 15 billion VND), suspension of operations (temporarily or permanently) and additional penalties (fines, business ban, operation ban in certain fields or a ban on capital mobilization from 01 to 03 years).

While Article 234 stipulates "Crime of violating regulations on wildlife management and protection" focuses on the group of animals, body parts, or animal products on the List of endangered forest plants and animals in Class IIB or Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Article 244 stipulating "Crime of violating regulations on management and protection of endangered, precious and rare wildlife" concentrates on individual animals, inseparable animal parts required for life or products of animals on the list of endangered, precious and rare species under prioritized protection or the list of endangered, precious and rare forest plants and animals Group IB or Appendix I of CITES. In 2017, both articles were revised into "Crime of violating regulations on wildlife protection" (Article 234) and "Crime

of violating regulations on protection of endangered, precious and rare animals" (Article 244). In addition to omitting the word "management" to adjust the crime, the content of the two articles was also revised with many clauses and points related to the quantification of criminal acts and the unification of the object/actor of the crime's impact (including animals/individuals, inseparable animal parts required for life or animal products).

It can be seen that following many amendments and supplements, the regulations on protection of endangered, precious, and rare animals in the Penal Code have become more and more complete. Specifically, the signs of crime have been more clearly quantified. The punishments have increased, demonstrating Vietnam's determination to handle wildlife crimes and enact international commitments to protect endangered, precious, and rare animals in particular and conserve wildlife in general.

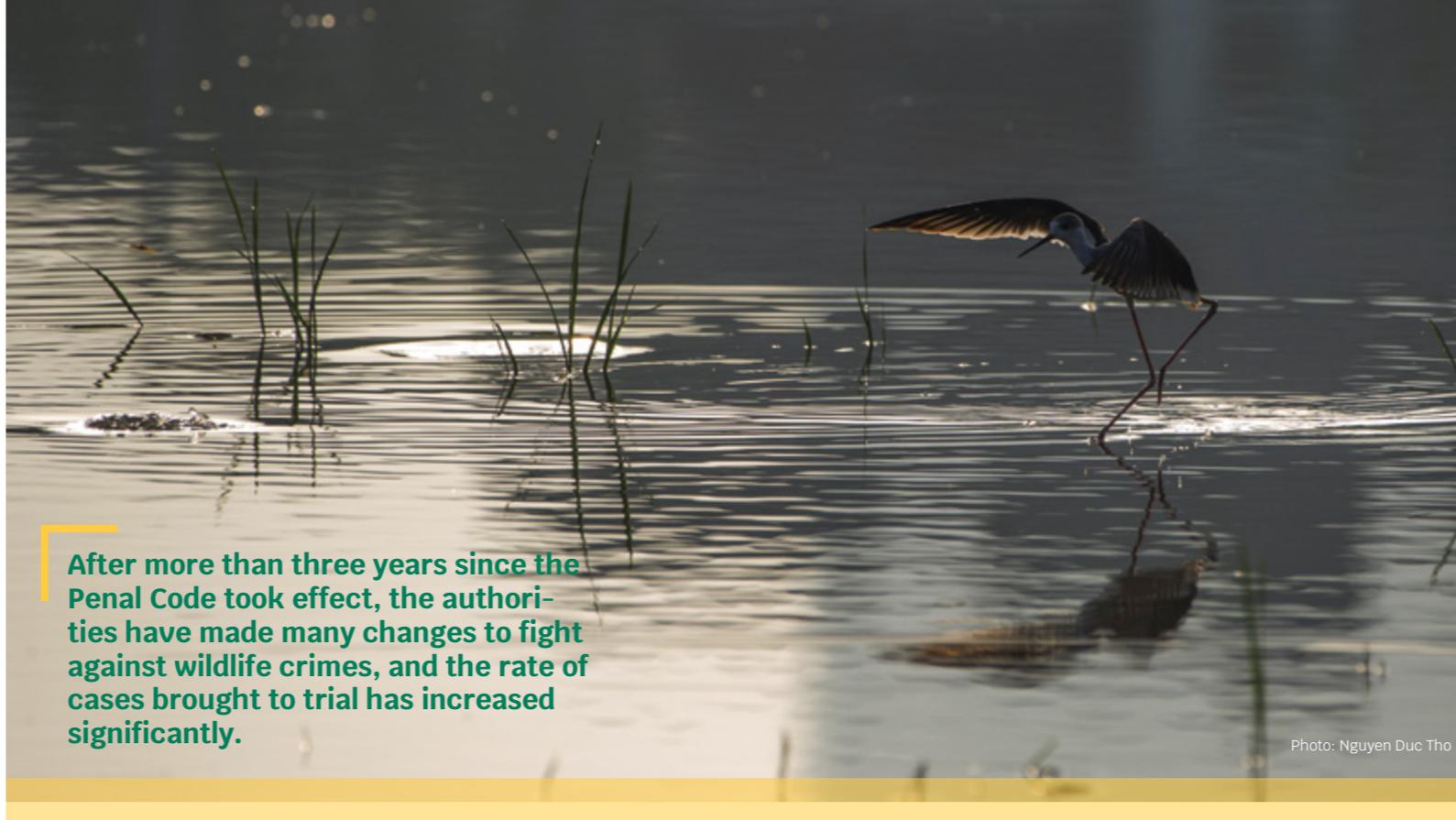
Some assessments on wildlife protection regulations in the Penal Code

After more than three years since the Penal Code took effect, the authorities have made many changes to fight against wildlife crimes, and the rate of cases brought to trial has increased significantly. According to statistics from the Center for Education for Nature (ENV), the number of criminal cases against wildlife increased by 44% from the moment the Penal Code took effect in early 2018 to the end of 2019; the rate of criminal cases and offenders arrested in the first half of 2020 reached 97.2%; the rate of wildlife criminal cases brought to trial in 2018 also reached nearly 84% (ENV, 2020).

Despite encouraging results achieved in the criminalization of wildlife violation cases, the practical application shows that the provisions of the Penal Code on the crime of violating regulations on wildlife protection still expose some shortcomings. Certain limitations and problems are as follows:

Firstly, the object of the criminal act specified in Article 234 of the Penal Code is endangered, precious and rare wildlife, therefore, these objects are often not exchanged, traded publicly on the market, and their prices are not listed. However, the value of material evidence is considered a mandatory sign of a crime of violating the regulations on wildlife protection in Article 234. For example, only the act of illegal hunting, killing, raising, confining, possessing, transporting, or trading animals of group IIB or Appendix II of CITES valued from VND 150,000,000 to under VND 500,000,000 or other wild animals valued from VND 300,000,000 to under VND 700,000,000... shall constitute a crime. In addition, the determination of the value of animals, body parts, or products of wildlife is also an indicator for determining the aggravating penalties framework against this crime in Clauses 2 and 3, Article 234. Therefore, upon investigating, prosecuting, and adjudicating crimes specified in Article 234 of the Penal Code, law enforcement agencies must request competent agencies to establish a valuation council to determine the value of wildlife and products of wildlife to serve as a basis for the prosecution and trial procedures. This requires that in each district, town, city, or province, there must be an Asset Valuation Council that operates on a regular basis for timely and prompt support in handling criminal cases as well as rescuing and releasing back into nature wild animals which are evidence of criminal cases or live animals seized from illegal hunting and transportation... but not to the extent of being criminalized. One more noticeable concern is that the framing of penalties based on the value of goods may cause obstacles in the investigation, trial, and prosecution because, in fact, it is very difficult to have any case of violation in which material evidence belonging to the group CITES IIB or Appendix II has a value of 150,000,000 VND or above so as to constitute a criminal charge as prescribed in Article 234 of the Penal Code.

Secondly, the points and clauses in Article 244 have not yet provided for violations towards "animal products" on the List of endangered, precious, and rare forest plants and animals of



After more than three years since the Penal Code took effect, the authorities have made many changes to fight against wildlife crimes, and the rate of cases brought to trial has increased significantly.

Photo: Nguyen Duc Tho

Group IB or Appendix I of the Convention CITES. Although point e, Clause 1, Article 244 of the Penal Code stipulates that the offense is "to illegally hunt, kill, raise, confine, transport, trade animals or illegally store, transport or trade wildlife individuals, inseparable body parts required for life or animal products in quantities below the levels specified at points c, d and đ of this clause" but accompanied by the condition "has been sanctioned for an administrative violation in one of the acts specified in this Article (244) or has been convicted for this crime, has not yet had his criminal record cleared but still commits it". Therefore, it is highly likely to evade the offenders of illegally storing, transporting, and trading animal products (belonging to Group IB or CITES Appendix I) if these subjects have never been administratively sanctioned or convicted for this crime.

At point đ, Clause 1, Article 244, the offense is also determined based on the number of wildlife individuals, vital body parts of species in Group IB or Appendix I of CITES without mentioning animal products, specifically: "illegally storing, transporting, trading in individuals and vital body parts of from 03 individuals to 07 individuals of mammals, from 07 individuals to 10 individuals of birds, reptiles or from 10 individuals to 15 individuals of animals of other classes

specified at point d of this clause". Therefore, when the subject commits crimes such as illegally possessing, transporting, and trading in animal products from 03 to 07 mammals, from 07 to 10 birds, reptiles or from 10 individuals to 15 individuals of animals of other classes specified at point d of this clause shall not be criminally penalized.

Accordingly, in addition to tusks, horns, and vital body parts, other products from elephants, rhinoceros, or other wildlife species in Africa, such as elephant tail hair; teeth, claws of lions, leopards; pangolin scales... are not the subject of crimes in Article 244 of the Penal Code, although these products are being traded illegally frequently in the domestic and foreign markets.

Thirdly, point đ, clause 2, Article 234, and point h, clause 2, Article 244 both provide that the act of "hunting at a prohibited time" shall be punished with a prison term of 3-5 years (Article 234) and 5-10 years (Article 244). Although Resolution 05/2018/NQ-HDTP of the Judicial Council of the Supreme People's Court promulgated guidance on this content, according to which "hunting at the prohibited time" is hunting wildlife and endangered, precious, and rare animals in their breeding or migration seasons. Nonetheless, there are currently no documents

specifying the breeding and migration seasons of wildlife species, thus creating difficulties in the penalization of crimes.

Fourthly, regarding the handling of case evidence, Resolution 05/2018/NQ-HDTP guided as follows: i) Regarding exhibits being wildlife; endangered, precious, and rare animals which are alive, as soon as assessment conclusions are reached, they must be handed over to specialized management agencies for releasing back to the wild, or assigned to rescue centers, nature reserves, national parks or to other agencies or organizations as prescribed by law. ; ii) Regarding exhibits being dead animals or products from wildlife, endangered, precious and rare animals that are perishable and difficult to preserve, they shall be destroyed or assigned to competent specialized management agencies for handling according to regulations; iii) Other material evidence shall be confiscated or destroyed in accordance with the law. However, there are currently no documents providing detailed guidance on "other physical evidence" in cases of wildlife, endangered, precious, and rare animals. Hence it can lead to ambiguous interpretations in the handling procedures.

The aforementioned limitations in regulations have caused challenges and obstacles in handling violations of wildlife protection. This demonstrates the urgency to issue detailed guidelines on how to remedy the shortcomings and problems, thereby helping the prosecution agencies avoid difficulties in applying the Penal Code in investigating, prosecuting, and adjudicating wildlife-related cases, contributing to the effective prevention of this dangerous crime and conservation of animal genetic resources in danger of extinction, especially endangered, rare and precious wild species.

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Photo: Do Doan Hoang

Shortcomings & Recommendations in handling wildlife violations

 Täng Xuân Phương*

 * Forest Protection Department

Wild animals are invaluable resources of the nation, especially endangered, precious and rare species, because their extinction will entail unpredictable consequences for the entire ecosystem. Vietnam boasts rich biodiversity and possesses numerous endemic and endangered species, but profits from illegal wildlife trade combined with the demand for rare species have made Vietnam gradually become one of the hot spots for illegal wildlife consumption and transshipment in the region and in the world. The number of wildlife violations remains huge every year, involving many objects, organizations, rings and their activities have become increasingly sophisticated and daredevil. Although the authorities in general and the Forest Protection Force, in particular, have made great efforts in preventing, combating, and handling wildlife violations, there are still obstacles and inadequacies in regulations on wildlife management and protection which have more or less hindered this enforcement effort.

Fighting, preventing and dealing with the illegal hunting, trading, and transporting of wildlife is always a stressful, complicated, and dangerous battle. Violators often have good means, and modern communication equipment; operate in strictly-organized rings or even form transnational criminal organizations. In case of being detected, these offenders are ready to fight back against the authorities at

all costs violently. Meanwhile, the authorities still expose many limitations in terms of means, equipment, and human resources. Even worse, there have been cases of officials being injured or even losing their lives while on duty.

Regarding enforcement forces that are forest rangers, the activities of investigating, arresting and handling wildlife violations are even much more difficult. Although it is a task force dedicated to protecting forest animals, this is only one of the various tasks that Forest Rangers have to undertake, along with other duties such as fighting forest fires, combating illegal logging and deforestation, and statistical monitoring of forest resource changes, forest development, etc. When it comes to remote areas, a single ranger usually has to be in charge of 2 to 3 communes in the absence of funds, facilities, and human resources. Therefore, local forest rangers constantly encounter tremendous obstacles in organizing any propaganda campaign in a village to mobilize people not to participate in trapping, hunting and shooting wild animals, not to mention the need to regularly carry out patrols to detect, confiscate and handle snaring tools in an area of hundreds or thousands of hectares of woodland.

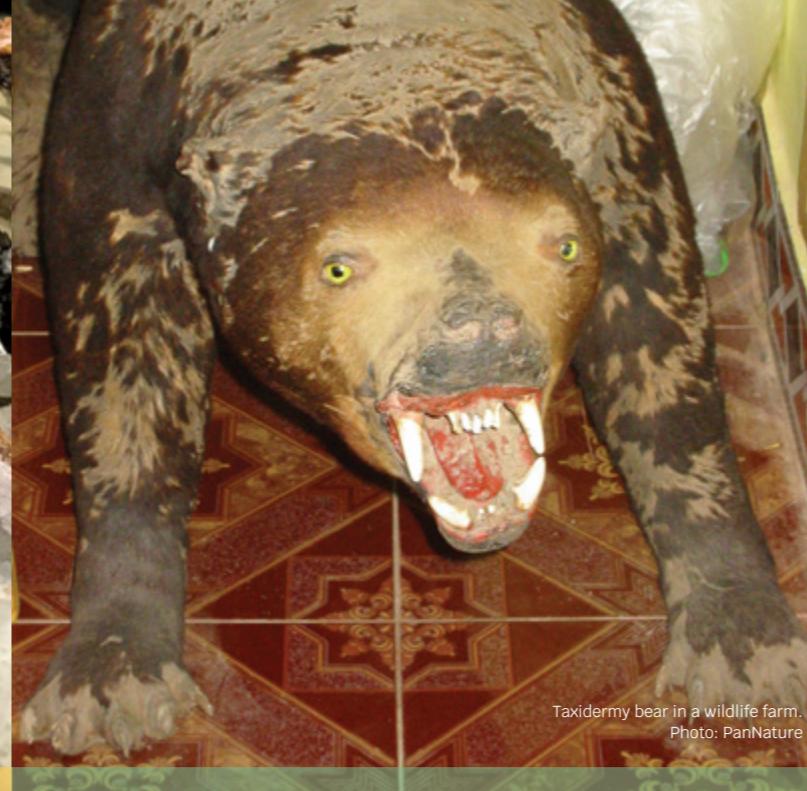
In addition, difficulties also arise in the case of detecting, documenting, and handling violations. Accordingly, it is necessary to conduct animal assessments and valuation in accord-



Photo: PanNature



Photo: Do Doan Hoang



Taxidermy bear in a wildlife farm.
Photo: PanNature

ance with the provisions of the law in combination with raising, caring for, and preserving exhibits, while the forest rangers are not trained in veterinary medicine and have no basic facilities to raise and keep wildlife; and the re-inspection procedure is quite complicated. Also, if the procedure of confiscation, care, and assessment of wildlife is not properly followed, the personnel in charge shall automatically become violators and be complained and disciplined. On the other hand, forest rangers are not armed forces or investigative agencies, so they do not have investigators and can only perform some activities in criminal investigations. Professional investigation training is still exposing inadequacies, thus making it difficult to prevent and handle large-scale and complex violations.

Inadequacies in regulations on management and protection of wildlife

Regarding the enforcement of wildlife management and protection as well as prevention and handling of violations, Vietnam has issued many legal documents, ranging from essential laws such as the Criminal Law, the Forestry Law, and the Law on Biodiversity to guidelines and amendments. However, besides some achievements, there are still many shortcomings in regulations on management and handling of violations on wildlife protection.

Firstly, in order to apply the management regime and determine the authority to manage and protect wildlife, it is crucial to clearly define the object of wildlife management, which herein is a consistent understanding of "wildlife". However, in current legal documents, the interpretation of such phrases as "wildlife", "wildlife in nature", "captive-breeding wildlife", "forest animals", and "common forest animals" is not specific and clear, making it difficult to apply in practice.

The 2017 Forestry Law does not explain what "forest animals" are, although Clause 16, Article 2 of this Law stipulates that "forestry products are products harvested from forests, including forest plants, forest animals and other including timber, non-timber forest products, processed wood products such as rattan and bamboo of different kinds". In this sense, "forest animals" must be directly harvested from forest to be deemed a forestry product, which means that wildlife species not harvested from forests such as wild birds, migratory birds that are trapped or caught in rice paddies shall not be defined as forest products and are not subject to management in the forestry sector. Currently, there is no legal document that stipulates that this group of wildlife is under the management of the Forest Protection Department.

Although Clause 13, Article 3 of the Law on Biodiversity 2008 (amended and supplemented

in 2018) explained that "wild species are animals, plants, microorganisms and fungi that live and develop naturally", this interpretation is very broad due to the fact that it is difficult to define a specific species as wildlife in the natural habitats, within and beyond the forest and it is not possible to distinguish terrestrial wildlife from aquatic wildlife, or farmed wildlife from natural wildlife.

Regarding the term "common forest animals", Clause 8, Article 3 of Decree 06/2019/ND-CP on the management of endangered, precious and rare forest plants and animals and the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora stipulates: "Common forest animals are forest animals belonging to the classes of mammals, birds, reptiles, amphibians and not included in: List of plant species; endangered, precious and rare wild animals promulgated by the Government or the List of species included in the CITES Appendix; List of animals raised and tamed into livestock according to the provisions of the law on husbandry". Thus, in order to determine what is a "common forest animal", it is necessary to first identify it as a "forest animal". However, there is currently no legal document regulating "forest animals", hence a complete lack of grounds to define "common forest animals", making it challenging to identify subjects, management authority and handle violations.

On September 22, 2021, Decree No. 84/2021/ND-CP amending and supplementing a number of articles of Decree No. 06/2019/ND-CP, of which Clause 4, Article 1 stipulates: "Wild flora and fauna are animal and plant species that live and grow in natural or artificial habitats or animals and plants that are raised or grown in a controlled environment but are not domestic species according to the law on animal husbandry, in one of the following cases":

- a) Endangered, precious and rare animal and plant species under prioritized protection;
- b) Endangered, precious and rare species of forest plants and animals;
- c) Endangered species of wild fauna and flora listed in the CITES Appendices;
- d) Common forest animals;
- e) Other terrestrial animals belonging to the classes of birds, mammals, reptiles and amphibians, except for a number of species on the List announced by the Ministry of Agriculture and Rural Development in coordination with the Ministry of Natural Resources and Environment and relevant agencies.

Thus, in addition to the animals on the lists of endangered precious and rare species specified at Points a, b, c and other terrestrial animals that shall be announced under the provisions of Point d of this Clause, There is still no explanation as to what "forest animals" are to serve as a basis for identifying "common forest animals". This also means that the shortcoming in Clause 8 Article 3 of Decree 06/2019/ND-CP has not yet been resolved.

Particularly, Clauses 1 and 2 of Resolution 05/2018/NQ-HDTP of the Judicial Council of the Supreme People's Court guiding the application of Article 234 on crimes of violating regulations on wildlife protection and Article 244 on crimes of violating regulations on protection of endangered, rare and precious animals provide the definition of "wildlife", however, its connotation is limited to the scope of the Penal Code. Specifically: "1 – Wild animals defined in Article 234 of the Penal Code are animals on the List of endangered, precious and rare forest plants and animals of Group IIB according to the Government's regulations or Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; 2 – Other wildlife

specified in Article 234 of the Penal Code are common wild animals as prescribed by law and endangered wildlife in Appendix III of the Convention on International Trade in Fauna and Flora endangered wildlife". In addition, according to the provisions of Clause 2, Article 2 of this Resolution, it is necessary to first determine what a "common forest animal" is and this is again a bottleneck as mentioned above because there has been no written document explaining this phrase.

Secondly, Article 44 of the Law on Biodiversity 2008 (amended and supplemented in 2018) stipulates that the exploitation of wild species in nature "must be done in accordance with the law on forest protection and development, the law on fisheries and other relevant laws. The Ministry of Agriculture and Rural Development coordinate with the Ministry of Natural Resources and Environment in providing specific stipulation on protection of wild species prohibited from being naturally exploited and the exploitation of wild species that are conditionally exploited in the natural environment; periodically publishes the List of wild species prohibited from being naturally exploited and the exploitation of wild species that are conditionally exploited in the natural environment". However, up to now, only the List of endangered, precious, and rare forest plants and animals has been issued together with Decree 06/2019/ND-CP on management of endangered, precious, and rare forest plant and animal species and implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, submitted by the Ministry of Agriculture and Rural Development to the Government for promulgation (amended and supplemented in Decree No. 84/2021/ND-CP). However, there is no document regulating the protection of wild species prohibited from being naturally exploited and the exploitation of wild species that are conditionally exploited in the natural environment, and there is no List of wild species prohibited from being naturally exploited and no List of wild species that are conditionally exploited in the natural environment announced according to the provisions of Article 44 of the Law on Biodiversity. This causes great difficulties for forest rangers because when it comes to bird migration season, rangers have no legal basis for determining which birds are prohibited from hunting and hence fail to handle acts of spreading nets and traps for catching wild birds, migratory birds... in many localities across the country.

Thirdly, regarding the authority to sanction violations in the forestry sector, Decree 35/2019/ND-CP dated April 25, 2019, stipulates Forest Rangers, People's Committees at all levels, specialized

inspectors, police officers, Border Guards, Coast Guards, Market Managers, Customs officers have the authority to impose penalties for violations of regulations on protection of wild animals, body parts or products of wild animals/common forest animals without mentioning the authority of these agencies to sanction violations of regulations on wildlife protection. Similarly, Clause 35, Article 1 of Decree 55/2021/ND-CP amending and supplementing a number of articles of Decree No. 155/2016/ND-CP on penalties for administrative violations in the field of environmental protection only stipulates the competence to sanction administrative violations of Forest Rangers, Border Guards, Coast Guards, People's Public Security, and Presidents of People's Committees at all levels for "illegal exploitation of wild species not on the list of endangered precious and rare species under prioritized protection in the strictly protected zones of the nature reserve", without mentioning any stipulation of the illegal exploitation of wildlife outside the strictly protected zone of the nature reserve and sanctioning authority for these similar acts of violation.

Fourthly, regarding the valuation of exhibits and material evidence being wildlife and wild animals of endangered, precious, and rare

species as a basis for handling violations, Article 60 of the Law on Handling of Administrative Violations 2012 (amended and supplemented in 2020) stipulates that it is necessary to "determine the valuation of material evidence and means of administrative violations as a basis for determining the penalty frame and sanctioning competence" or in case the value of the evidence cannot be determined, a Valuation Council shall be established. One of the bases for asset valuation (defined in Decree No. 30/2018/ND-CP detailing the establishment and operation of the Asset Valuation Council; the order and procedures for asset valuation in criminal proceedings) is the price quoted on the market. However, exhibits that are wild animals or endangered, precious and rare forest animals are

not circulated on the market. Hence there is no legal basis for determining the value of such exhibits and material evidence, which causes huge obstacles in handling violations.

Recommendations

From the above-mentioned limitations in regulations on wildlife management and protection, it is necessary to review the terminology and clearly explain the terms "wildlife", "wildlife in the natural environment", "forest animals", "common forest animals", "raised/farmed animals", etc., from which there are sufficient grounds for applying appropriate management regimes and stipulating legal authorities to sanction violations of management agencies, ensuring effective enforcement of legislation on wildlife.

Meanwhile, it is necessary to amend management regulations, sanctions, and legal authorities over handling violations of wildlife exploitation in the wild outside the strictly protected zone of the nature reserve, for example, acts of hunting, trapping, and catching migratory birds and wild birds on the edge of forests, on beaches, in paddy fields..., which contributes to preventing and controlling hotspots of hunting, trapping wild species or migratory birds.

Regarding the valuation of wildlife exhibits and material evidence, it is necessary to consider additional grounds based on volume, quantity, class/species to determine the level of violation and penalty framework to meet the requirements for handling violations of regulations on wildlife management and protection.

In addition to legal documents, the Government has also issued many directives on wildlife management and protection, of which in Directive No. 29/CT-TTg dated July 23, 2020, on a number of urgent solutions to wildlife management, the Prime Minister assigned the Ministry of Agriculture and Rural Development to take the lead, and coordinate in amending, supplementing, and completing the legal system on wildlife management. It is hoped that the process of amending and supplementing legal policies on wildlife management and protection will soon be promoted in order to enable law enforcement agencies, including forest rangers, to prevent and effectively handle violations, contributing to species conservation and biodiversity conservation in Vietnam.

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Photo: Do Doan Hoang

Management of endangered, precious, and rare wild animals: INADEQUACIES & RECOMMENDATIONS

Bùi Thị Hà *



Over the past years, Vietnam has promulgated and revised many legal policies on wildlife protection, such as the Law on Fisheries 2017, the Law on Forestry in 2017, and the Law on Biodiversity in 2008. Along with that, the authority over wildlife management and conservation is also assigned to the two ministries of Agriculture and Rural Development (MARD) and Natural Resources and Environment (MONRE). However, besides some progress from amending and supplementing policy gaps, there are still many shortcomings arising from overlapping regulations and assignment of responsibilities.

Photo: Pixabay

 * Education for Nature (ENV)

Overlapping regulations on the management of endangered, precious, and rare wild wildlife

There are currently many lists of endangered, precious, and rare wildlife species issued together with legal documents. These include the *List of endangered, precious and rare species of forest plants, animals, and fisheries-Group I*, the *List of endangered, precious and rare aquatic species of Group I* promulgated together with the Investment Law 2020; the *List of endangered precious and rare species under prioritized protection* promulgated together with Decree 160/2013/ND-CP on criteria for species identification and species management regime on the *List of endangered precious and rare species under protection priority* (amended by Decree 64/2019/ND-CP, hereinafter referred to as Decree 160 and Decree 64 respectively); *The list of endangered, precious and rare forest plants and animals* promulgated together with Decree 06/2019/ND-CP on management of endangered, precious and rare forest plants and animals and the implementation of the Convention on international trade in endangered wild fauna and flora (amended and supplemented by Decree 84/2021/ND-CP, hereinafter referred to as Decree 06); *The list of endangered, precious and rare aquatic species* promulgated together with Decree 26/2019/ND-CP detailing a number of articles and measures to implement the Law on Fisheries (hereinafter referred to as Decree 26 for short). In addition, the *Annexes of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)* are also applied in the legal documents of

There are many coexisting lists of endangered and rare species, which has led to overlapping and confusion in the application process.

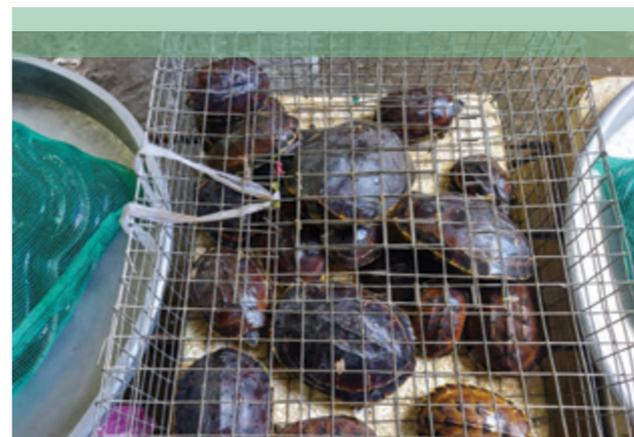


Photo: PanNature

Vietnam (these Annexes are translated and published according to Notice No. 296/TB-CTVN-HTQT dated November 27, 2019, of the CITES Management Authority of Vietnam).

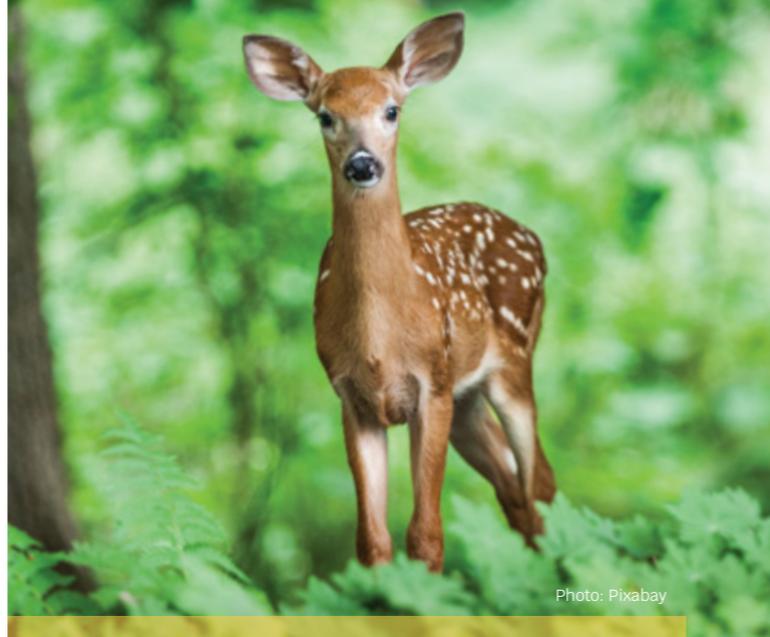
There are many coexisting lists of endangered and rare species, which has led to overlapping and confusion in the application process. A typical example of this overlap is the two documents, Decree 64 and Decree 06. Accordingly, 86/96 species in the List of endangered, precious, and rare species under prioritized protection of Decree 64 are simultaneously included in the List of endangered, precious, and rare forest plants and animals of Decree 06, in which specifically, there are 80 species of group IB and six species of group IIB; the remaining ten species are on the List of endangered, precious and rare species under prioritized protection including: The Sunda flying lemur (*Galeopterus variegatus*), The tiger (*Panthera tigris*) except for the Indochinese tiger subspecies (*Panthera tigris corbetti*); The kouprey (*Bos sauveli*) The Indo-Pacific humpback dolphin (*Sousa chinensis*); The dugong (*Dugong dugon*); The loggerhead sea turtle (*Caretta caretta*); The green sea turtle (*Chelonia mydas*); The hawksbill sea turtle (*Eretmochelys imbricata*); The olive ridley sea turtle (*Lepidochelys olivacea*); The leatherback sea turtle (*Dermochelys coriacea*). All of these ten species, except for the The Sunda flying lemur, are in CITES Appendix I. However, from November 30, 2021, when Decree 84/2021/ND-CP amending and supplementing a number of articles of Decree 06 came into effect, in the list of endangered, precious, and rare forest plants and animals, The Sunda flying lemur was added to the group IB. This means that the number of overlapping species between the List of endangered, precious, and rare species under prioritized protection and the List of endangered, precious, and rare forest plants and animals is 87/96 species, which also means only nine aquatic species are subject to the full regulation of Decree 160.

Regarding the overlapping species between the two lists, Clause 3, Article 40 of Decree 06 stipulates: "For those species on the list of endangered, precious and rare forest plants and animals and concurrently on the list of endangered, precious and rare species under prioritized protection, the management regime prescribed in this Decree shall apply, except for exploitation and creation of initial seed sources for scientific research". This means that most of the activities carried out for 87/96 species on the List of endangered, precious, and rare species under prioritized protection of Decree 64 will be applied as specified in Decree 06. Regarding the remaining nine species on the list of

endangered, precious, and rare species under prioritized protection, because 9/9 species are also in Appendix I CITES, according to Clause 1, Article 9 of Decree 06, the management regulations for these nine species are also subject to Decree 06.

Thus, although the two legal documents were issued based on the proposal of the two ministries of MARD and MONRE at two different times, in fact, in the list of endangered, precious and rare species under prioritized protection, only nine species remain under the full regulation of Decree 160 (because these nine species are also included in the CITES Appendix, some regulations still have to apply the provisions of Decree 06), while 87/96 other species can only be adjusted with activities of exploiting to create initial seed sources for scientific research. This is an overlap that causes waste of resources and also makes it difficult for law enforcement.

Notably, the overlap in species management regimes between Decree 160 and Decree 06 also affects the types of wildlife farming establishments. According to the provisions of Decree 06, there are two types of establishments raising endangered, precious, and rare wildlife, of which the first one is not for commercial purposes (including diplomatic service activities; scientific research; zoological gardens; museums; exhibitions; circus performances) and the second one is for commercial purposes (these establishments will be granted an IDs/codes). The Law on Biodiversity and Decree 160 also stipulate two types of biodiversity facilities related to wildlife farming, of which the first one is raising endangered, precious and rare species under prioritized protection for the purpose of biodiversity conservation, scientific research, eco-tourism, and the second one is wildlife rescue facilities (raising all wildlife species, including species under prioritized protection). Thus, except for the purpose of rescue and conservation, the type of biodiversity conservation facility basically achieves the same goals as the non-commercial endangered, precious, and rare species rearing establishment of Decree 06. Since Decree 84/2021/ND-CP took effect on November 30, 2021, the operational objectives of biodiversity conservation facilities and endangered, precious, and rare species raising establishments not for commercial purposes are coincident. In this case, Clause 3, Article 40 of Decree 06 stipulates: establishments wishing to raise wildlife for biodiversity conservation purposes in Decree 06 and Decree 160 must register as non-commercial wildlife rearing facilities according to Decree 06. This is also the reason why since the effective date of Decree 06, there has been no new establishment



registered as a diversity conservation facility according to Decree 160 even though there is already a master plan prescribed in Decision 45/QĐ-TTg in 2014 approving the National Biodiversity Conservation Master Plan till 2020, with a vision to 2030. According to this master plan, by 2020, our country must have 38 biodiversity conservation facilities established, but so far, only seven establishments have been established, none of which are included in this plan.

In addition to the overlapping of the species list with Decree 160, a number of species belonging to Group IB- the List of endangered, precious, and rare species of forest plants and animals promulgated together with Decree 06 are also included in Appendix IX of the List of aquatic species banned from export issued together with Decree 26. Specifically: overlapping species include The big-headed turtle (*Platysternon megacephalum*), The Three-banded Box Turtle (*Cuora trifasciata*), The Indochinese box turtle (*Cuora galbinifrons*), The Vietnamese pond turtle or Annam leaf turtle (*Mauremys annamensis*), The Asian giant softshell turtle (*Pelochelys cantorii*), Swinhoe's softshell turtle (*Rafetus swinhoei*). The overlap in these two forestry areas - fishery also significantly influences the management and handling of violations against regulated wildlife species.

Overlapping authority over wildlife management and protection

The authority over wildlife management and conservation is currently assigned mainly to the two ministries of MARD and MONRE. In particular, MARD performs state management functions in the fields of agriculture, forestry, and fisheries, while MONRE is responsible for nature conservation and

biodiversity, including the conservation of species belonging to the list of endangered, precious, and rare species under prioritized protection; management of invasive alien species, biodiversity conservation facilities, excluding plant varieties and livestock breeds. However, in practice, the competence of the two ministries overlaps, leading to difficulties in the management and enforcement of relevant legal provisions.

While the wildlife-related management competence of MARD is mainly specified in the provisions of the 2017 Forestry Law and Decree 06, the MONRE's authority in this area is provided for in the Law on Diversity biology in 2008 and Decree 160. Accordingly, both are competent in the investigation, assessment, management, exploitation, and cultivation of endangered, precious, and rare wild species. Specifically: according to Decree 06, MARD has the authority to manage endangered, precious, and rare species of forest flora and fauna, while under Decree 160, MONRE has the management authority over endangered, precious, and rare species under prioritized protection. However, as pointed out above, most endangered, precious and rare species under prioritized protection are also endangered, precious, and rare forest animals. Therefore, the same target group is subject to two different management mechanisms by two different regulatory bodies.

Not only does the overlap occur in management authority at the central level, but local management levels also lack consistency due to ambiguous regulations. For example, the Law on Biodiversity and related documents assign the authority over issuing certificates of biodiversity conservation facilities to the provincial-level People's Committees. Accordingly, in some localities, the authority over granting permits and managing operations of the same biodiversity establishment is assigned to the Department of Natural Resources and Environment, while in other localities, it is assigned to the Department of Agriculture and Rural Development. Even worse, in other places, it is still not known which agency to assign the task to. This causes confusion for some local management agencies in the process of managing and implementing the Plan for biodiversity conservation across the country.

A need to review regulations on breeding/farming wildlife

Currently, according to relevant legal documents, wildlife farming/breeding activities can be classified into three forms: farming for commercial

purposes, farming for non-commercial purposes, and farming for the purpose of biodiversity conservation. According to regulations, species listed in Appendix I, II and III CITES; List of endangered, precious, and rare forest plants and animals according to Decree 06; common forest animals and the List of endangered, precious, and rare aquatic species under Decree 26 can be farmed in all three types in case relevant conditions are satisfied. Regarding species on the list of endangered, precious, and rare species under prioritized protection under Decree 64, due to the overlap in the species list with Decree 06, 95/96 of these species can still be farmed for all the three purposes.

In fact, the regulation that species included in all three CITES Appendices can be farmed for commercial purposes is not contrary to the provisions of the Convention. Specifically, paragraph 4, Article VII of the Convention states: "A specimen of an animal species of Appendix I captive-bred for commercial purposes, or of a plant species artificially grown for commercial purposes, shall be deemed to be specimens of Appendix II species." Similarly, those on the List of endangered, precious, and rare species under prioritized protection (except The Sunda flying lemur) and the List of endangered, precious, and rare forest plants and animals of Vietnam can be farmed for commercial purposes without any contravention of current applicable laws.

However, the regulation that allows farming of the majority of endangered, precious, and rare wildlife species for commercial purposes is not consistent with reality because not all species have the ability to (i) reproduce and grow well in a controlled environment and (ii) generate economic benefits from commercial farming. In fact, very few species can guarantee either of these goals. On the other hand, point c, clause 1, Article 15 of Decree 06 stipulates that the conditions for farming endangered wildlife species in the CITES Appendix for commercial purposes must be "species declared by the CITES Scientific Authority of Vietnam to be capable of reproducing through successive generations in a controlled environment"; and certified in written form by the CITES scientific agency of Vietnam that captive breeding, rearing and growing does not affect the existence of farmed species and related species in the wild. This is a reasonable regulation because the promulgation of a list of species capable of captive breeding for commercial purposes will facilitate farmers and authorities in the process of application as well as orientation for activities of commercial farming of wildlife. In fact, not all wildlife species are able to reproduce

in a controlled environment, and only a few wildlife species are suitable for farming, economic development, and farming activities do not severely affect the existence of wildlife populations in nature. However, according to the new regulations in Decree 84/2021/ND-CP, point c, Clause 1, Article 15 of Decree 06 has been amended and supplemented: "Wildlife species in Appendix CITES belonging to the classes of mammals, birds, reptiles registered to be raised at the facility for the first time must be certified in written form by CITES Scientific Authority of Vietnam that the captive breeding, rearing, and growth do not affect the existence of the species being raised and other relevant species in the wild". Although the scope of point c, Clause 1, Article 15 of Decree 06 has been adjusted, meaning that the CITES Scientific Authority does not need to publish a list of species capable of continuously reproducing over many generations in a controlled environment, according to the stipulation in Article 34 of Decree 06 (not amended by Decree 84/2021/ND-CP), the CITES Scientific Authority of Vietnam still plays an advisory role to the CITES Management Authority in the work of "Publishing the list of species capable of being bred for commercial purposes". This list, whether issued by any agency, is necessary and should be implemented soon to support the orientation and management of commercial wildlife farming in Vietnam.

On December 31, 2020, the hotline 1800 1522 of the Education Center for Nature (ENV) received information about two subjects selling 11 individuals of The Malayan snail-eating turtle (*Malayemys subtrijuga*) belonging to group IIB Decree 06/2019 /ND-CP and some snakes at the market in Tram Chim town, Tam Nong district, Dong Thap province. After transferring information to the local authorities, on January 6, 2021, ENV learned that all these turtles' origin could be proved by legal permits from a wildlife farming facility in Tram Chim, owned by the seller. Due to the legal origin, the sale of these individual turtles shall not violate the law but only needs to comply with regulations on legal forestry product records. However, through consultation with a number of experts, most of the opinions confirmed that **Malayan snail-eating turtle is one of the most difficult turtle species to be raised in artificial/captive conditions**. They are susceptible to diseases and parasites in captivity. Even the eggs of this species taken from the wild have a high hatching rate, but very few individuals can reach adulthood in captivity. Therefore, experts warn that the Malayan snail-eating turtle should not be allowed to be captive-bred because this species is definitely not suitable for breeding for commercial purposes. Another reason is that allowing breeding in captivity will be a loophole exploited by traffickers to cover up their illegal wildlife trade.

One of the greatest concerns in wildlife farming is that the conditions and requirements related to the approval of breeding for commercial, non-commercial purposes, or conservation wildlife farming are still very sketchy and uncertain. Also, these regulations have failed to ensure the strict supervision mechanism of the management agencies, from the stage of delivering the input animals, ensuring the legal source of breeds, monitoring the reproduction, production, sale, and exchange processes... This loophole is believed to be the main cause leading to the alarming situation that many farming facilities have become the cover-up to legalize wildlife of illicit origin.

In addition, the current regulations do not address the case of whether or not a non-commercial wildlife breeding facility is allowed to simultaneously raise the same species for commercial purposes. For instance, whether a research establishment specializing in medicinal ingredients from snakes should be permitted to sell snake-soaked wine, snake glue, and other products from snakes? It is noteworthy that although it has not been regulated by law, this worrying situation has existed in some localities, especially at establishments managed by the private sector, posing highly potential risks to the conservation and protection of endangered, precious, and rare wildlife. In particular, due to ambiguous legal regulations, the activity of raising endangered, precious, and rare wildlife for ornamental purposes is also carried out by a group of people without any management mechanism. According to the provisions of Decree 84/2021/ND-CP, this activity has been officially legalized with the requirements of management registration (for endangered, precious, and rare species) and notification (for common forest animals and other wildlife species). However, it is still necessary to rethink this regulation because wildlife farming for ornamental purposes not only stimulates the demand for wildlife consumption and use but also poses the potential risk of spreading dangerous wildlife-borne diseases to humans.

Recommendations

Firstly, with the aim to limit situations in which the overlap in regulations on the protection of wildlife species entails the overlap in management competence among State agencies, policymakers should consider amending Clause 3, Article 40 of Decree No. Decision 06 in the direction: for species on the list of endan-



A bear in the Vietnam Bear Rescue Centre. Photo: PanNature

gered, precious, and rare forest plants and animals and also on the list of endangered, precious, and rare species under prioritized protection, the management regime according to the provisions of the Decree No.160; and for activities of captive-breeding, rearing, planting and artificially transplanting species on the list of endangered, precious and rare species under prioritized protection and the exchange, export, import, purchase, sale, donation, transportation of species on the list of endangered, precious and rare species under prioritized protection and their products for commercial purposes and other issues not yet specified in Decree 160, the provisions of Decree 06 shall be applied. However, in the long term, it is advisable to end the situation in which the same wildlife species belong to many lists with different management mechanisms; and, at the same time, clearly define the responsibilities of the relevant management agencies, namely the MARD and MONRE. It is possible to reconsider the responsibilities of ministries according to the purpose of implementing activities. For example, MONRE shall manage conservation activities in nature and activities of raising, exchanging, trading, donating... endangered, precious, and rare species for conservation and other non-commercial purposes; while MARD shall manage the exploitation, exchange, purchase, sale, donation, and farming of endangered, precious and rare species for commercial purposes.

Secondly, regarding the farming of wild species for non-commercial purposes, the State needs to stipulate that breeding facilities shall not simultaneously operate or have a relationship with commercial wildlife breeding establishments. This content can be further studied and supplemented in the documents amending Decree 160 and/or Decree 06 or Decree 26.

Thirdly, for commercial farming of wildlife, Vietnam should only allow commercial farming of species that have had a thorough impact assessment and have scientific evidence that commercial farming does not affect their populations in the wild. The list of species that are allowed to be farmed for commercial purposes should also be timely published by the CITES Management Authority (after consultation with the CITES Scientific Authority) together with guidelines for technical standards and controls to support people in farming activities as well as authorities in inspection and supervision.

Fourthly, it is advisable to clearly define the types of non-commercial and conservation wildlife breeding facilities into five groups: (i) rescue, (ii) research and conservation breeding, (iii) educational or eco-tourism, (iv) wildlife welfare, (v) animal circus and those established prior to the effective date of the regulation. These facilities need to be detailed in terms of objectives, permitted and prohibited activities, licensing conditions, etc. Only when all requirements are met will the establishment be granted operation licenses.

Regarding the regulation of wildlife farming, it is also necessary to fully internalize the provisions of CITES and relevant international treaties in order to achieve consistency between legal provisions and in line with practical requirements. Aspects to focus on include: conditions for establishment of farming facilities; a mechanism to ensure the legal and sustainable operation of the establishment (legally sustainable sources of breeds; methods of rearing to avoid cross-breeding, inbreeding...); the facility owner's reporting regime; wildlife handling plans in cases of violations by the establishments; dealing with the consequences of withdrawing licenses or deactivating the establishment code...

The time has come for an objective and comprehensive assessment of the promulgation and enforcement of all laws and regulations related to wildlife in order to ensure the sustainability and effectiveness of wildlife conservation in Vietnam, especially endangered, precious and rare species.

TURTLES

are critically endangered due to trade & consumption

Phan Bích Hường*, Hoàng Văn Hà**

Vietnam has a high number of chelonian species. With 32 native turtle species (5 species of sea turtle, 27 species of tortoise, and freshwater turtle), Vietnam ranks 9th out of 29 countries with the highest level of turtle diversity in the world, accounting for 9% of the total number of turtle species of the world and 36% of turtle species distributed in Asia (Turtle Taxonomy Working Group [Rhodin, AGJ, Iverson, JB, Bour, R., Fritz, U., Georges, A., Shaffer, HB, and van Dijk], 2021). The sad thing is that there are currently 29 species (accounting for 90.6%) that are facing the risk of extinction to varying degrees. In particular,

illegal trade in tortoises, freshwater turtles, and sea turtles is one of the main causes leading to the endangered status of most native turtle species. According to IUCN's 2021 assessment, the populations of most turtle species in Vietnam have been reduced by 50-90%, which means that the number of turtles in the wild is dropping to an alarmingly low level. This poses a huge challenge to the conservation of turtles in general, and the native turtle species of Vietnam in particular, in the face of increasing pressure from smuggling, which is going on extremely complicatedly.



A Keeled Box Turtle was kept as a pet for almost ten years and was rescued after going blind and skipping food for half a year. Photo: ATP



* Asian Turtle Program (ATP) – Indo-Myanmar Conservation (IMC)
** Asian Turtle Program (ATP) – Indo-Myanmar Conservation (IMC)



A Southern Vietnam Box Turtle, one of the 25 most endangered fresh water and tortoise. Photo: ATP

Many native turtle species are endangered

In recent years, IUCN's turtle expert group has issued a warning about the conservation status of endangered turtle species in the world, including native species of Vietnam. In 2018, IUCN announced the 4th update of the list of 25 most endangered tortoise species and freshwater turtles in the world, of which Vietnam ranked second in the number of endangered turtle species with four species (accounting for 14.8%), after China with six species (22.2%). Four endangered species include the Swinhoe's softshell turtle or commonly known as Hoan Kiem turtle (*Rafetus swinhoei*), The Vietnamese Pond Turtle (*Mauremys annamensis*), The southern Vietnamese box turtle (*Cuora picturata*), the Zhou's box turtle (*Cuora zhoui*) – the species whose distribution status in Vietnam has not been confirmed. With an expanded list of 50 most endangered tortoise and freshwater turtle species in the world, Vietnam is still ranked second in the number of endangered species with eight species (16%), after China with 11 species (22%). (Stanford et al., 2018).

In 2021, the IUCN Red List continued to update the conservation status of endangered turtle species, in which 24 species of tortoise and freshwater turtle of Vietnam are in danger of extinction to varying degrees, 01 threatened species, 01 species not yet evaluated. Of the 24

species threatened with extinction, 15 species (57.69%) are critically endangered (CR), eight species (30.77%) are endangered, and one species (accounting for 3.85%) is vulnerable (VU). Five species of sea turtles, including The green sea turtle (*Chelonia mydas*), The hawksbill sea turtle (*Eretmochelys imbricata*), The olive ridley sea turtle (*Lepidochelys olivacea*), The loggerhead sea turtle (*Caretta caretta*) and The leatherback sea turtle (*Dermochelys coriacea*) are also included in the IUCN Red List, of which there are 01 critically endangered species, 01 endangered species and 03 vulnerable species.

Turtle smuggling boom

The increase in endangered status of native turtle populations is due to hunting, habitat loss, and rampant smuggling, which has caused a sharp decline in turtle species in the wild. From eggs, meat, shells, babies to adults and body parts – all are exploited and smuggled for food, medicine, pets, jewelry, and decoration, mainly in the Asian market. A 2010 TRAFIC report showed that in data confiscated from the illegal wildlife trade between 1996 and 2008, up to 70% of the individuals were reptiles, with the majority being turtles. In 2016, the CITES Report also confirmed that 61% of seizures were turtles, with 77% of the individuals alive.

Turtles are distributed across all continents, but Asia is home to 17 turtle species out of a total of 25 most threatened species in the world

(IUCN, 2011). An estimated 12 to 20 million tortoises and freshwater turtles are consumed in Asia each year, negatively impacting the wild populations of at least 61 native Asian turtle species and five indigenous American turtle species (Gong et al., 2009; Sandra Altherr and Freyer, 2000). Among Asian countries, China and India are the two key markets for turtle smuggling. In India, at least 111,310 tortoises and freshwater turtles were smuggled between 2009 and 2019, equivalent to more than 11,000 individuals being illegally traded each year or at least 200 individuals being trafficked every week since 2009 (Dr Saket Badola, 2019). As for the Chinese market, a TRAFFIC survey from 2000 to 2008 confirmed that mainland China is definitely a huge market for illegal sea turtle trade, with 150 intact specimens and 7,217 processed turtle shell products available for sales in 117 stores with a value of nearly half a million USD (Lam, T., Xu Ling, Takahashi, S., and Burgess, 2011). However, this figure only accounts for a tiny proportion of the general demand for turtle products in the country of billions of people, because a survey of 684 commercial farms

An estimated 200,000 tortoises and freshwater turtles are trafficked in Vietnam each year, with most native species observed in the illegal trade, which can include up to 90% of turtle and freshwater turtle species smuggled from Vietnam to China.

in China alone showed that more than 300 million turtles are sold each year with a total value of about 750 million USD (Shi Haitao, James F Parham, Fan Zhiyong, 2008). In the three markets of Indonesia, Malaysia, and Vietnam, the WCS survey from 2015 to July 2019 also showed that at least 2,354 individuals, both alive and dead, with more than 91,000 turtle eggs, nearly 3,000 shells and 1.7 tons of meat were seized in 163 cases (Lalita Gomez, Kanitha, 2019). Between 2013 and 2017, Vietnam also confiscated 26,221 turtles/tortoises, accounting for nearly a third of all wildlife individuals seized during the same period (WCS, 2018).

Many studies show that turtles in Vietnam are mainly illegally exported to China. This illegal trade has been carried out since the 1980s - when Vietnam opened its international commercial markets, including China. With a huge

population, an economic growth rate of more than 10% for 30 consecutive years (World Bank, 2021) along with a thousand-year tradition of using wild animals, especially turtles, for food, medicine, pets (van Dijk et al., 2000), China has seen a rise in the needs to import turtles from Vietnam and other Southeast Asian countries. An estimated 200,000 tortoises and freshwater turtles are trafficked in Vietnam each year, with most native species observed in the illegal trade, which can include up to 90% of turtle and freshwater turtle species smuggled from Vietnam to China. (Duc and Broad, 1995).

Not only trading overtly in many localities, but turtle smuggling activities on social platforms are also equally active. WildAct's survey on Facebook from October 2015 to April 2016 recorded 46 accounts with 2,490 ads and 26,498 wildlife products found, of which turtles were the second most common product group, only after elephant products. A total of 12 accounts were found promoting live turtles and turtles as pets, 903 ads, and 2,625 individuals of 13 species of tortoises and freshwater turtles, of which 90% of the species advertised are endangered and 6% critically endangered. Another study also tracked turtle sales on Facebook from 2013 to 2018 and recorded 481 ads related to 5,758 turtles belonging to 53 species and 12 families. In which, native species accounted for 22 species and more than 36% of individuals were trafficked. Most native species are trafficked as young adults and adults while exotic species are trafficked as babies and juveniles - indicating the prevalence of illegal trade of turtles in the wild (poaching). (Pham et al., 2019)

Notably, the management, control, and law enforcement of turtle sales on social platforms face many difficulties because account holders often keep a closed group mode or use a virtual identity for account registration. This is one of the new challenges for the authorities in the fight against wildlife crime and the protection of native turtle species in Vietnam.

Pet turtle trend

In the past, the legal trade and use of turtles as pets were mainly prevalent in Western countries, including European countries and the United States (Walker et al., 2004). Much of this trade, however, declined significantly after 1999, when many Asian tortoises and freshwater turtles were included in the annexes of the Convention on International Trade

in Endangered Species of Wild Fauna and Flora (CITES). In recent years, the pet market has become more popular in the major metropolises of Southeast Asia.

In Vietnam, the market for trading turtles as ornamental animals has existed for a long time, from retail markets to pet stores with a number from a few to hundreds of individuals, mainly in Hanoi and Ho Chi Minh City. Turtles are often sold at food stalls. If the purpose of purchase is for food or medicine, customers usually choose large-sized turtle individuals. Meanwhile, those who buy turtles as pets pay more attention to species classification and color and prefer baby or juvenile turtles. Therefore, it has posed a noticeable threat to the turtle population in the wild. Currently, most shops selling pet turtles, especially native species, under legal protection, are conducting business secretly in the form of closed associations and groups to avoid detection. On the other hand, shop-owners promote advertisements and sales of turtles on social platforms and consider the internet as the main vehicle for illegal trade. According to a survey by the Asian Turtle Program (ATP), from September 2020 to September 2021, up to 1,912 turtles were for sale online, mainly endemic turtle species in the South such as The Malayan

The trend of raising turtles as pets or for ornamental purposes also contributes significantly to promoting illegal hunting and trading of native and exotic turtle species to serve the increasing demand in big cities



A Southern Vietnam Box Turtle was transferred for rescue after being paralyzed in the hind limbs through being raised as a pet. Photo: ATP

snail-eating turtle, The southern Vietnamese box turtle, and The elongated tortoise...

The trend of raising turtles as pets or for ornamental purposes also contributes significantly to promoting illegal hunting and trading of native and exotic turtle species to serve the increasing demand in big cities (Gong et al., 2009). This not only puts pressure on native turtle populations that are already depleted but also exposes turtle farmers to legal risk as many species have been placed on official protected lists. Specifically: eight species of tortoises and freshwater turtles and five species of sea turtles are included in Group IB under Decree 160/2013/ND-CP on criteria for species identification and species management regime on the List of endangered, precious, and rare species under prioritized protection and Decree 64/2019/ND-CP amending Article 7 Decree 160/2013/ND-CP; 9 species of group IB and 15 species of group IIB according to Decree 06/2019/ND-CP on the management of endangered, precious and rare forest plants and animals and implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora and Decree 84/2021/ND-CP amending a number of articles of Decree 06/2019/ND-CP). All acts of illegally hunting, killing, raising, confining, possessing, transporting, or trading wild animals, body parts, or products of wild animals, especially endangered, precious and rare species under prioritized protection are strictly punished with the maximum penalty specified in the Penal Code of up to 15 years in prison or a fine of 2 billion VND for individuals and 15 billion VND for legal entities.

In addition to legal risks, keeping turtles and wild animals as pets presents many potential health threats for sellers, buyers, and the whole ecosystem. Statistics show that up to 15 federal pandemic outbreaks were linked to the bacterium *Salmonella* spp. stemming from exposure to pet turtles in the United States between 2006 and 2014 (Bosch et al., 2016). Infectious diseases caused by these bacteria



Swinhoe's Softshell Turtle. Currently, only three individuals have been recorded in the world. Photo: ATP

can cause typhoid, diarrhea, fever..., and even death for children and people with a weak immune system. Each year, the bacterial group *Salmonella* spp. sicken approximately 1.35 million people with 26,500 hospitalizations and 420 deaths in the United States (Centers for Disease Control and Prevention, 2021). In addition, keeping wild turtles as pets also poses a potential risk of epidemic outbreaks in the future because our understanding of pathogens, especially turtle-borne virus strains, is still limited (Marschang, 2011).

Notably, the pastime of keeping turtles as ornamental pets also causes dispersion of alien species, especially invasive alien species, which significantly affect native biodiversity (Convention on Biological Diversity, 2019). Invasive species can predate on or compete for resources with native species, carry new pathogens, disrupt ecological balance, and cause economic losses. Since the early 2000s, exotic turtles have been introduced and illegally traded in Vietnam, China, and some other Southeast Asian countries (van Dijk et al., 2000), mainly for ornamental and pet purposes. At this time, however, the most common is the red-eared terrapin/slider (*Trachemys scripta elegans*), native to North America, which is among the most dangerous invasive alien species in the world (Lowe et al. 2000). Over the past decade, as the pastime of pet turtles has grown, exotic turtles have appeared more and more on the black market. The survey from 2013 to 2018 recorded 31 alien turtle species with 3,653 individuals for sale on Facebook. These turtles have

diverse origins, from China, Malaysia, Cambodia, Thailand, Madagascar, Mozambique, Tanzania, Sudan, and several other countries (Pham et al., 2019).

In Vietnam, the Project on preventing and controlling invasive alien species until 2020 was approved in Decision No. 1896/2012/QĐ-TTg. However, the project only focused on plant species and some exotic species causing economic losses in agriculture, such as Golden apple snail (*Pomacea canaliculata*), giant sensitive tree (*Mimosa pigra*)... In 2018, MONRE issued Circular No. 35/2018/TT-BTNMT stipulating criteria for identification together with a list of 19 invasive alien species and 61 potentially invasive species, including red-eared terrapins. However, the supervision/prevention of dispersal of this species in the wild is still lax and limited. This can be easily observed in such places as temple gates, pagoda ponds, pet stores, and social networks where this turtle species is still widely sold for the needs of raising and releasing (out of religious beliefs). This turtle species is sold at a relatively cheap price (15-20 thousand VND/individual). At young ages, these turtles have an eye-catching color, so many people buy them for the purposes of raising or setting them free (out of religious beliefs) without paying attention to the origin of the species. These buyers also lack basic knowledge and understanding of how to take care of this species, and the farming conditions are not guaranteed. As an adult, this turtle species changes in size and color, are no longer eye-catching and consumes a large amount of food. Therefore, many

of their owners indiscriminately release them into lakes, ponds, or back into the wild, posing a risk of ecological imbalance or spreading pathogens and increasing pressure on species conservation, especially native turtle species.

Notably, the release of intentionally-caught animals in many areas of temples and religious establishments is now setting free many turtle species and other invasive species back into the wild. Many native turtle species are released into the wrong habitat (e.g., tortoises released into rivers and lakes or vice versa), leading to high rates of recapture and mortality. In particular, this activity further promotes the demand for illegal hunting and trading of turtle species for the "release belief."

Commercial turtle farming

One of the major threats to the survival of turtle species in general and Vietnamese turtles in particular is the need to use turtles for

food and medicinal products. However, as this demand continues to grow over the years, commercial farming has opened up as a new livelihood model for people and is encouraged in many countries to serve domestic needs and international export.

According to 2019 data from the Administration of Forestry, Vietnam has 224 registered farming establishments for 15 native turtle species with a total number of 64,808 individuals. Specifically, The giant Asian pond turtle (*Heosemys grandis*), The yellow pond turtle (*Mauremys mutica*), Amboina Box Turtle (*Cuora amboinensis*), The yellow-headed temple turtle (*Heosemys annandalii*), The elongated tortoise (*Indotestudo elongata*), Wattle-necked Soft-shelled Turtle (*Palea steindachneri*), Oldham's leaf turtle (*Cyclemys oldhamii*) and The eastern black-bridged leaf turtle (*Cyclemys pulchristriata*) are registered species for farming in large numbers (Figure 01).

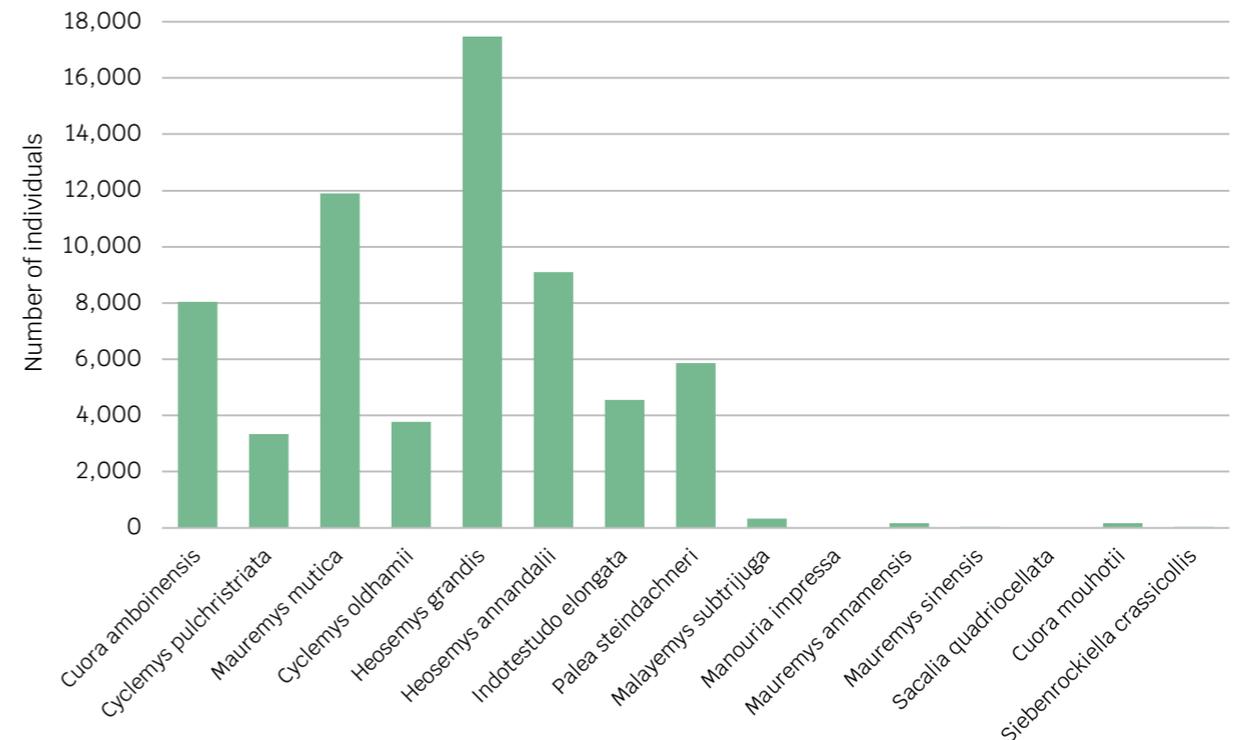


Figure 01: Number of individuals in registered turtle farms. Source: Vietnam Administration of Forestry 2019.

Breeding/farming of wildlife, as well as tortoises and freshwater turtles, is legally permitted with the goal of economic development, reducing pressure on wildlife populations in the wild, and supporting species conservation in the wild through the maintenance of genetic resources of endangered, precious, and rare animals. However, a survey of conservation organizations shows that the commercial breeding/farming of wildlife, including turtles, is putting on many disguises and exerts negative impacts on wildlife populations in the wild. The Education for Nature's (ENV) 2017 report surveying 26 farms found that all 26 facilities engaged in some degree of wildlife "laundering" practices through the purchase of permits for transporting and selling wild animals of unknown origin; or bribing forest rangers... (Vu et al., 2017). Many investigative press reports also recorded the guise of legalizing permits to sell turtles and wild animals with the confidential assistance of local rangers (Lang Quan, 2018). This demonstrates that commercial farming is not a sustainable option (Bulte & Damania, 2005), even fueling high demands for illegal turtles and wildlife. Many native species of turtles are captive-bred such as The elongated tortoise, Asian pond turtle, The giant Asian pond turtle, The yellow pond turtle, Amboina Box Turtle, Wattle-necked Soft-shelled Turtle, Oldham's leaf turtle, and The eastern black-bridged leaf turtle... but each day they still have to face a high risk of extinction in the wild (IUCN, 2021).

More worrisome is that commercial farms or hatcheries pay little attention to investment in breeding facilities and techniques, while their understanding of the ecology and reproductive characteristics of turtle species and biosecurity issues still exposes many limitations. As a result, it is highly likely to cause cross-breeding or hybridization and contamination of genetic resources for farm animals, not ensuring biosecurity and posing potential risks of spreading diseases to other livestock species as well as to wildlife populations and human communities.

The control of wildlife-borne epidemic is an urgent task today, especially in the context that the Covid-19 pandemic still casts its looming shadow on all socio-economic development activities of countries around the world including Vietnam. However, there is ample evidence that wildlife trafficking in general and turtle trafficking, in particular, has shown no signs of abating prior to and during the pandemic. Turtles are still illegally hunted, transported, and traded openly or secretly in many provinces and cities across the country (Phan et al., 2021). At the Turtle Conservation Center in Cuc

Phuong National Park, Ninh Binh province, the number of turtles rescued from seizures due to illegal trade did not see any positive reduction compared to the figures in the last five years. Vietnam's native turtle species continue to be illegally hunted and traded despite the pandemic.

Recommendations

Vietnam has issued multiple legal documents with highly strict penalties, but wildlife protection has not been effective. One of the reasons for this worrying situation is that the regulations on wildlife management and protection still reveal some shortcomings and inadequacies... Therefore, the review, amendment, and supplementation aiming to gradually improve the legislation system on wildlife are critically important. It is even more vital to consider the option of developing a separate law on wildlife protection.

In addition, it is necessary to strengthen the prevention of illegal trade in wild turtle species on both physical and online markets through interdisciplinary coordination between forest rangers, customs, border guards, environmental police, and market management; actively investigate, prosecute, and bring to trial illegal turtle smuggling cases in order to punish the ring leaders and wildlife crime rings. Moreover, the acts of illegally raising turtles and releasing invasive alien turtles into the wild should also be focused on and handled as a form of deterring and preventing cumulative consequences from seemingly small, harmless activities.

As regards commercial turtle farming, it is necessary to strictly supervise farms in terms of both animal origin, management, pandemic control, and turtle transport and trade in any form; resolutely eliminate the situation of "laundering" animals of illegal origin through farms with the complicity or under the secret umbrella of law enforcement.

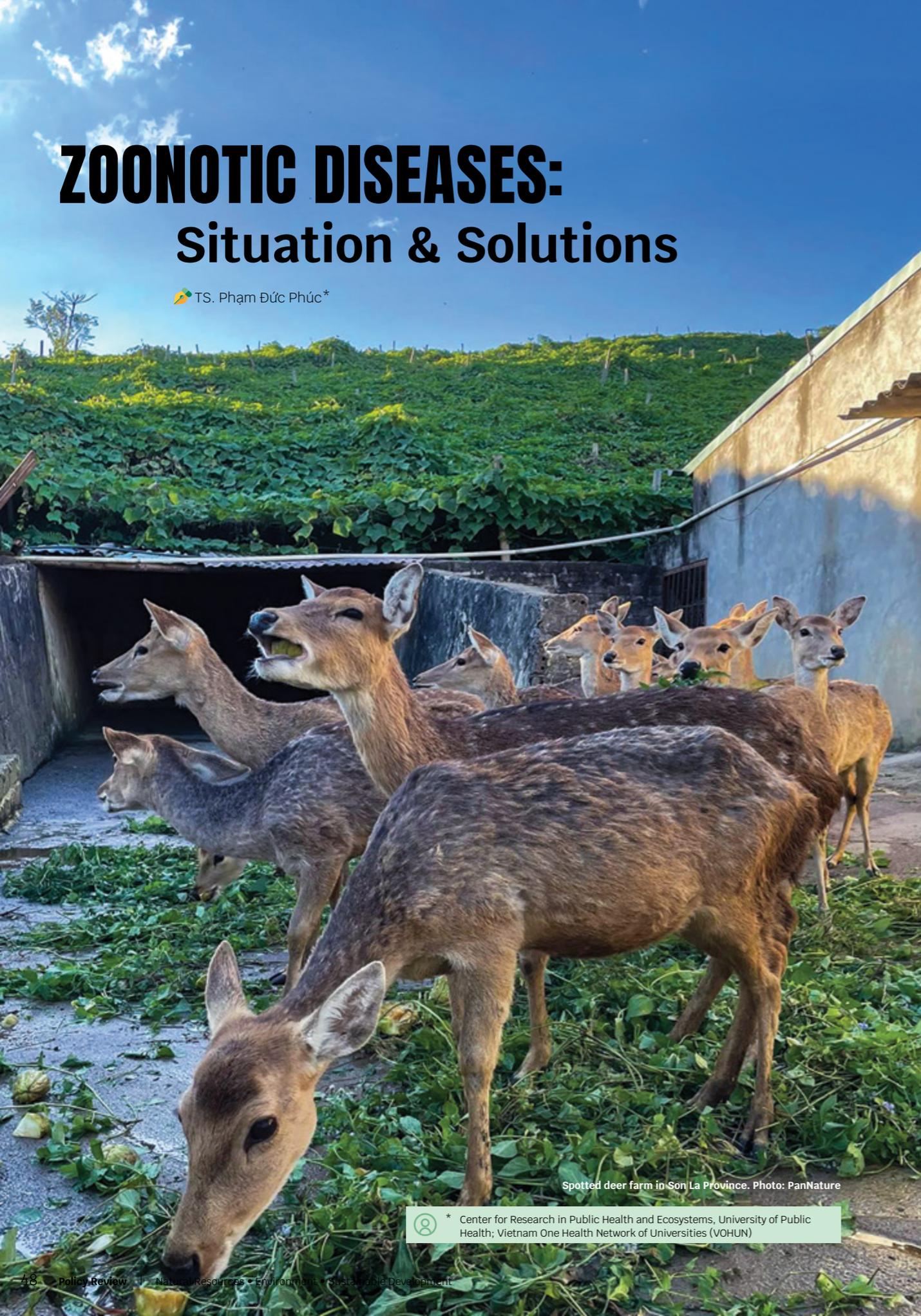
In addition, there is a need to focus on promoting communication and raising public awareness about the health risks of consuming and coming into contact with turtle species as well as the danger to native turtle species in particular, and wild animals in general with the aim of reducing the demand for illegal turtle use and consumption; and promote conservation initiatives and ideas towards ensuring turtle and wildlife welfares.

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ZOONOTIC DISEASES: Situation & Solutions

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Spotted deer farm in Son La Province. Photo: PanNature

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Researchers have long presented evidence that more than 60% of infectious diseases in humans are caused by pathogens that originate in wildlife or domestic animals. These pathogens and diseases include Leptospira, tapeworms, cestodes, toxoplasmosis, anthrax, brucellosis, rabies, malaria, Rift Valley fever, severe acute respiratory syndrome (SARS), dengue fever, Ebola, HIV/AIDS (LH Taylor, SM Latham, 2001). Recently, the World Health Organization (WHO) also warned that about 70% of emerging dangerous infectious diseases in humans have their sources in animals, mainly in wildlife. This shows that the relationship between humans and animals in general, and wildlife in particular, plays a vital role in promoting or curbing deadly diseases. However, zoonotic diseases, especially emerging infectious diseases, have not received adequate attention in accordance with the risks they pose. It was only when SARS-CoV-2 appeared and broke out into a global pandemic that shook most countries in the last two years, that people overturned the serious warnings about infectious diseases and began to pay more attention to research and prevention of animal-borne pathogens through

personal defense measures, social distancing and limiting physical contact with pets and wildlife or temporary bans on wildlife trade.

Threats from emerging and re-emerging infectious diseases

Emerging infectious diseases are diseases caused by newly identified species or strains (e.g., SARS, HIV/AIDS). A re-emerging infectious disease is one that may have progressed from a known infection (e.g., influenza) or spread to a new population (e.g. West Nile Fever) (Anthony S Fauci, 2005). The fundamental similarity of these diseases is that most of them are of animal origin and show the potential to have rapid and far-reaching consequences on humans, livelihoods, economic development, and many other social problems.

In 2001, researchers listed 1,415 identified pathogens among humans, of which up to 61% were of animal origin (Kate Burgess, 2020). Animals in general and wildlife in particular have long been involved in the epidemiology of most zoonotic diseases and serve as major reservoirs for the transmission of zoonotic pathogens to livestock/pets and humans. Wildlife-borne infectious diseases are often caused by various bacteria, viruses, and parasites.

In 2001, researchers listed 1,415 identified pathogens among humans, of which up to 61% were of animal origin

Some common diseases transmitted by wildlife such as Ebola, SARS, MERS, rabies; malaria, dengue fever, Zika, West Nile fever, yellow fever; Lyme disease, Rocky Mountain spotted fever; rodent-borne plague, salmonellosis, hantavirus pulmonary syndrome (Kate Burgess, 2020). As for COVID-19, there is evidence that the genetic origin of the SARS CoV-2 virus is most likely a coronavirus that dwells in horseshoe bats. However, current science is still inconclusive about where, when, and through what species this virus develops before infecting humans (Chaolin Huang, Yeming Wang, 2020).

While some pandemics cause only local outbreaks like Ebola, others cause significant economic disruption, such as Zika in 1952, HIV/AIDS first detected in the 1980s, Influenza A/H5N1 in 1997, SARS in 2002 - 2003, and MERS in 2012. The outbreak of COVID-19 by the end of November 2021 has claimed the lives of more than 5 million people, and the number of casualties still shows no sign of halting.



Photo: PanNature

Factors related to the emergence of infectious diseases in wildlife

Among the factors driving the outbreak and spread of zoonotic diseases, the interaction between humans and domestic animals or wildlife is identified as one of the greatest potential risks. Centuries ago, domestic animals transmitted most zoonotic diseases to humans, such as ringworm from domestic cats. Later on, when humans encroach on wildlife habitats through development activities such as deforestation, land-use change, etc., the risk of disease transmission from non-domesticated/untamed species to human populations has risen due to higher exposure rates.

Today, both legal and illegal wildlife trade activities push people to come into close contact with new species, including endangered, precious, and rare species, many of which are disease hosts/vectors. Wildlife is often trafficked for food, traditional medicine, or pets, with each supply chain link potentially at risk of zoonotic disease transmission. Most wildlife species, including live and dead individuals, are collected, kept in captivity, displayed for sale, and slaughtered in wet markets in cramped and unsanitary conditions, making it easy to create favorable conditions for wildlife-borne pathogens to grow and spread.

Experts on emerging infectious diseases at the University of Guelph, Canada, say outbreaks may also originate from activities like hunting, but wildlife markets are where the virus is transmitted to humans at the fastest rate. Wet markets greatly increase the risk of zoonotic disease transmission by bringing more wildlife closer to people (Chaolin Huang, Yeming Wang, 2020).

As regards illegal trade, the risk can be even higher than the markets because many wild species in their natural habitats are inherently incubated or contain pathogens that can be transmitted to humans and become intermediate hosts/vectors of zoonotic diseases. In Vietnam, due to the lack of awareness about the risk of wildlife-borne diseases and the mistaken belief about the exaggerated effects of traditional medicines from animals, many people still seek to buy wildlife products such as bear bile, tiger bone glue, rhino horns, pangolin scales... without knowing they are all illegal products and have no medicinal uses as advertised, even potentially posing many risks of diseases if directly consumed, used and traded.

In addition to hunting, storing, transporting, and trading wildlife, the commercial farming/



Zoonotic diseases are likely to become increasingly common and unpredictable, causing serious damage to both people and property if not promptly prevented. Therefore, it is necessary to adopt integrated solutions to minimize the possibility of occurrence and outbreak of infectious diseases and pandemics.

Tonkin snub-nosed monkeys in Khuu Ca in Khuu Ca Nature Reserve, Ha Giang Province.
Photo: Nguyen Duc Tho

breeding of wildlife on farms also contains many risks. Many farms pay little or no attention to ensuring stable conditions, safety, and hygiene requirements and have almost no plans to respond to and prevent diseases for their animals; not to mention a number of farms that also become places for "laundering" illegal wildlife that carries inherent risks of pathogens.

Besides the interaction between humans and animals, environmental and climatic factors also play a certain role in promoting the emergence of zoonotic diseases. For example, rising temperatures allow mosquitoes to expand into new densely populated areas or cause wildlife to migrate to cooler areas.

Despite great potential threats posed to human health, so far, there have been very few studies evaluating and warning about disease risks from wildlife species in Vietnam. The United Nations Environment Program report of May 8, 2021, also affirmed that pandemic outbreaks are the inevitable result of the long-lasting destruction of nature and that it is high time for the world to rethink the relationship between people, nature, and wildlife. The emergence of COVID-19 has indeed awakened humanity and emphasized the importance of investing in in-depth research on infectious diseases as well

as focusing on nature conservation, respecting nature and wildlife.

Recommendations and solutions

Zoonotic diseases are likely to become increasingly common and unpredictable, causing serious damage to both people and property if not promptly prevented. Therefore, it is necessary to adopt integrated solutions to minimize the possibility of occurrence and outbreak of infectious diseases and pandemics.

Firstly, it is necessary to strengthen law enforcement to completely eradicate illegal wildlife trade activities, including illegal wildlife advertising on social networks and e-commerce platforms. As regards the legal trade and management of commercial wildlife farms, there is an urgent need to strictly control the entire supply chain with the aim of monitoring the risks of zoonotic diseases and pandemics. In addition, it is vital to promote communication to raise people's awareness about the legal and health risks of illegal wildlife consumption; and absolutely do not advocate the culture of dishes or medicinal remedies derived from wildlife.

Secondly, more importance should be attached to surveying and assessing the risk of

each group of wildlife species, in which it is necessary to have supervision measures for groups of species at high risk of triggering and spreading diseases. Monitoring and risk assessment of wildlife helps screen and detect new viruses, providing early warnings for transmitting infectious diseases from animals to humans.

Thirdly, a focus should be given to building and developing human resources with sufficient knowledge and skills for interdisciplinary cooperation under the One Health approach to be ready to timely respond to pandemics originating from wildlife. The One Health approach acknowledges that human health, animals, and the environment are inseparably linked and must be considered together to address complex health threats. Furthermore, sustainable interventions require collaborative efforts on an interdisciplinary basis, including public health, veterinary medicine, agriculture, environment, biology, ecology...

Finally, promote a healthy lifestyle with easy access to and use of food sources of clear origin, ensuring food safety and hygiene, and say no to the consumption of wildlife species, especially endangered, precious and rare species under prioritized protection. Meanwhile, it is necessary to encourage organizations and individuals to participate in programs and projects on forest restoration and nature conservation, species conservation, minimize forest encroachment, and contribute to preserving habitats for species in nature, and reduce wildlife-born pathogens.

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Photo: Vietnam's National Institute of Medicinal Materials

Consequences caused by the use of WILDLIFE FOR MEDICINAL PURPOSES and alternatives from medicinal plants

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Since time immemorial, mankind has relied on plants and animals to improve their well-being, often species that are locally available and not threatened. Knowledge of folk medicine is also therefore accumulated and passed on from generation to generation, becoming more and more enriched and complete. According to the World Health Organization (WHO), nearly 80% of the world's population depends on traditional medicines of plant and animal origin for their primary health care needs (Dale Hoiberg, 2007). This figure in Vietnam is 75% (Nguyen Dao Ngoc Van, Nguyen Tap, 2008)... Nowadays, this folk medicine system is associated with the term "traditional medicine", in which the treatment and remedy continue to strongly exploit raw materials from wild animals and plants, especially endangered, precious and rare animals that are facing the risk of extinction such as tigers, rhinoceros, elephants, pangolins, bears... However, the misinterpretation of the original content of ancient remedies along with intentionally distorted marketing efforts of wildlife body part suppliers and captive-breeding animal farms have somewhat falsified the good nature of traditional medicine. Under the influence of rumors, most rare and precious wildlife products or parts are illegally traded at sky-high prices. The exaggerated effects of medicinal use of wildlife spread by words of mouth such as their ability to treat cancer and cure all fatal diseases, thus, increasingly stimulating the consumption needs of a group of wealthy people in society. It is the ignorance of most consumers about the traditional remedies using wildlife and the blind faith in the effectiveness of these treatments or therapies that has caused many people to incur worsening health conditions; or even face legal risks because precious and rare wildlife products are now protected under Vietnamese and international laws. Therefore, it is necessary to properly understand the nature of animal-related remedies in traditional medicine and consider alternatives from herbal remedies of equal value.

Use of animal-related remedies in traditional medicine: How to get the right interpretation?

Despite being mentioned in ancient documents, the actual use of wildlife body parts is very limited compared to medicinal herbs. Statistics show that there are more than 5,000 species of plants used in traditional medicines in Vietnam, but only 400 species of animals are used in traditional remedies, with 71 species of

animals listed in the IUCN Red Book (Nguyen Dao Ngoc Van, Nguyen Tap, 2008). In traditional Chinese medicine, the number of animal species used in medicine is only about 36 species, while the number of plant species is up to 1,000 (Dale Hoiberg, 2007).

Since ancient times, among the treasures of traditional oriental medicine in China and Vietnam, it has been mentioned that several remedies or medicines make use of animal parts such as honey, oyster, bear bile, pangolin scales, rhino horns, seahorses, cuttlebone... Among these, bear bile, pangolin scales, and rhino horns are currently the most sought after because many people believe that they can cure cancer and many deadly diseases as rumors spread via words of mouth. However, are they that magical?

Despite having certain medicinal properties, in most cases, the use of remedies that rely on bear bile to cure diseases can only be explained by traditional Chinese theory, and so far, there are very few studies to verify the clinical efficacy of these remedies as well as traditional Chinese medicine products with animal ingredients.

Among these, bear bile, pangolin scales, and rhino horns are currently the most sought after because many people believe that they can cure cancer and many deadly diseases as rumors spread via words of mouth.



Photo: PanNature



Bear bile extraction in a bear farm. Photo: PanNature

It is such vague, mistaken beliefs and limited awareness that make bear bile a sought-after commodity, prompting people to seek, hunt, and keep bears in captivity for bile at any cost. As a result, many bear species decline in population and face the risk of extinction.

In China, bear bile is mainly used in medicine to lower body heat, boost eyesight, detoxify the body, cleanse the liver, and reduce liver fat... However, according to the theory of traditional Chinese medicine, bear bile has no hepatoprotective function and cannot be used to treat visual disturbances caused by liver and kidney failure. In addition, due to its great bitterness and cold nature bear bile is very easy to injure spleen and stomach, hence it is contraindicated in cases of patients with weak spleen and stomach or cold-temperated bodies.

In Vietnam, based on certain features and uses of bear bile, many oriental (traditional) medicine practitioners also prescribed bear bile for treatment. However, this rate has decreased remarkably. According to a 2019 survey by Animals Asia Foundation, 97% among thousands of physicians and members of Oriental traditional medicine associations interviewed said that they no longer prescribe bear bile for treatment. This figure is very impressive compared to the results in 2013, when about 40% of Oriental medicine physicians still prescribed bear bile to their patients (Animals Asia Foundation, 2019). Particularly for people with relevant diseases, according to their belief in oral (or words-of-mouth) culture, they still wish to be treated with bear bile, even though in most cases they do not fully understand the remedies that use this ingredient. They consume bear bile simply because they think that bile is a precious, rare, and expensive product, which was used in the past, thus, it certainly has a miracle effect. These people are not aware that nowadays, most bear bile products are extracted from captive bears and the process of extracting bile is very brutal, barbaric and contains many pathogens because the bear is infected leading to an abscess; therefore; the medicinal healing effect of bear bile is also greatly reduced. It is such



Frozen tiger in Quang Binh province. Photo: Do Doan Hoang

vague, mistaken beliefs and limited awareness that make bear bile a sought-after commodity, prompting people to seek, hunt, and keep bears in captivity for bile at any cost. As a result, many bear species decline in population and face the risk of extinction. Since 2007, the International Union for Conservation of Nature (IUCN) has warned that 6/8 species of bears in the world are threatened with extinction, accounting for 75% (IUCN, 2007). Early last year, China even allowed the use of Tan Re Qing, an injectable drug containing bear bile, goat horn and three other herbs to treat severe Covid-19 infections with the main source of bile from captive bear individuals. Notably, promoting the use of bear bile from farmed sources does not help to relieve pressure on wild populations, and conservationists argue that products like bear bile should not be relied upon to fight a lethal wildlife-borne virus.

Particularly in Vietnam, in recent years, the positive signal is that consumers are no

longer interested in this product. A recently published study (Elizabeth O Davis, Diogo Verissimo, 2021) indicates that less than 1% of users out of more than 2,400 respondents reported consuming natural bear bile in 2020. The low rate of bear bile consumption has resulted from the fact that people no longer see high therapeutic values in this type of bile, and a large number of people have lost their interest in bear bile. They declared "not to use bear bile anymore" while bear farms in Vietnam are gradually closing, which means that the bear bile industry in Vietnam is dying. It was even more encouraging when 15.7% of respondents said that they used an alternative herb called bear bile plant (grass) to treat bruises and inflammation.

Regarding pangolin scales, similar to bear bile, China also allows its use in medical treatment, although the usage scope has been narrowed down. From being considered as the main ingredient of traditional Chinese medicine, currently, pangolin scales are only included as a supporting ingredient in certain special medicines. Pangolin scales are therefore still hunted for medicinal purposes, which makes pangolins the world's most trafficked mammal with an estimated 200,000 individuals sold for their scales or meat each year (WildAid, 2021).

Statistics from the Wildlife Justice Commission (WJC) show that between 2016 and 2019, an estimated 206.4 tons of pangolin scales were seized from 52 smuggling cases globally, of which Vietnam was involved in nearly 70% of large-scale seizures of 143.6 tonnes of pangolin scales. With the misguided belief that pangolin scales can be a cure-all, some Vietnamese people hunt for pangolin scales and are willing to buy them at high prices, which has invisibly turned Vietnam into a market for transshipping pangolin scales to other countries as well as a consumption hotspot. In terms of medicinal properties, pangolin scales are salty and cold which only help to clear the meridians; cure leprosy; activate blood; eradicate acnes; stimulate milk production among mothers, etc... They are definitely not a panacea that can cure diabetes; enhance fertility and strength; cure cancer or sinusitis... as rumor has it. Even worse, if used incorrectly, it can be dangerous because pangolin scales contain toxins and may cause cancer.

As for rhino horns and tiger bone glue, due to the promotion of poaching and trading followed by the increasing consumption demand, the number of these two species is decreasing day by day. As of 2019, the world only has about 3,900 wild tigers and about 27,300 rhinos in the wild. Theoretically, rhino horn has such properties as bitterness and cold nature, which helps to cool the body, detoxify; and is used to treat ailments like high fever, typhus, convulsions...; while the tiger bone glue, according to traditional medicine, is spicy and hot, which has an analgesic effect and is used to treat rheumatism, osteoarthritis, etc. However, the therapeutic effects of rhino horn or tiger bone glue are still based on words of mouth, because so far no scientific research has determined their effectiveness in medical treatment, let alone considered as a panacea that can cure all diseases in a short time. Even in 2019, in Ho Chi Minh City, there was a case of a 22-month-old patient suffering from rhino horn poisoning after being given rhino horn powder to treat fever by his family.



Tiger bone glue. Photo: Do Doan Hoang

As for rhino horns and tiger bone glue, due to the promotion of poaching and trading followed by the increasing consumption demand, the number of these two species is decreasing day by day.

It is worth mentioning that these products are only medicinal ingredients, not a remedy, so the individual use of rhino horn and tiger bone glue does not mean much in medical treatment with once in a blue moon chance of success. In Oriental medicine, there is no single remedy using rhino horn (Dr. Nguyen Xuan Trung, 2019), and currently, Oriental medicine almost

no longer uses products from rare and precious wildlife to treat diseases because most of them are illegal products. Any violation shall be severely punished, for example, imprisonment of up to 15 years or a fine of up to 2 billion VND for individuals and 15 billion VND for legal entities. Notably, instead of taking a lot of legal risks and even health risks if medicinal animals are used incorrectly, plus having to spend a huge amount of money for illegal purchases, not to mention the high chance of buying fake horn and glue, consumers can consider switching to using alternative remedies from herbs, which are benign, cheaper, effective and equivalent to those from wild animals, thereby contributing to the conservation of wild species and the natural world. This is also consistent with the principle of traditional medicine, which is towards achieving balance in the body and also in the ecological environment. If using animal ingredients for medicine is unavoidable, these animal body parts should only come from individuals who die of natural causes, not from human pressure, as all unnatural products are unsustainable. (Joshua Rapp Learn, 2021).

Alternatives from herbs

With a rich and diverse source of plants, the traditional medicine system in general and Vietnam, in particular, has long used a number of medicinal plants, ingredients, and herbal remedies with effects equivalent to other products from wildlife whose use does not negatively affect nature. In particular, as regards bear bile, for many years, various individuals and agencies at home and abroad have researched and searched for medicinal plants as alternatives for bear bile in medical treatment.

According to Anonymous (2005) and Young Sung

Ju et al. (2008), with the assistance of a group of traditional medicine doctors in the UK, the research groups have classified four main effects and use of bear bile: (i) cooling, detoxifying; (ii) cooling the liver due to internal heat; (iii) brightening the eyes by laxative of the liver; (4) brightening the eyes and cooling the liver due to internal heat (Anonymous, 2005) (Young Sung Ju et al., 2008). Since then, surveys of traditional medicine doctors have been conducted in Australia, Canada, the USA, the UK, and Korea, thereby building a list of 73 medicinal herbs (70 species of medicinal plants, 01 species of mushroom and three species of medicinal animals) that can replace bear bile with 31 species found in Korea, 54 species in Canada, Australia, USA, and the UK. Among these, medicinal herbs are divided into groups of uses as follows:

- 51 plants - animals have medicinal effects of cooling the body, anti-inflammatory, treating convulsions, epilepsy caused by high fever such as *Aloe vera*, *Andrographis paniculata*, *Baphicacanthus cusia*, *Belamcanda chinensis*, *Cassia tora*, *Celosia argentea*, *Clerodendron cyrtophullum*, *Hedyotis diffusa*, *Lonicera japonica*, *Plantago asiatica*...;
- 12 medicinal plants have detoxifying effects namely *Chrysanthemum indicum*, *Sophora japonica*, *Houttuynia cordata*...;
- 9 medicinal plants have liver tonic and liver laxative effects namely *Celosia argentea*, *Eclipta prostrata*, *Cassia obtusifolia*, *Rehmannia glutinosa*, *Dendrobium nobile*, *Polygonum multiflorum*, *Lycium barbarum*...;
- 7 medicinal plants have anti-inflammatory effects namely *Acorus calamus*, *Coptis chinensis*, *Glycine max*, *Salvia miltiorrhiza*, *Prunella vulgaris L. var. lilacina*, *Rheum palmatum*;
- 13 medicinal plants have effects of brightening the eyes namely *Celosia argentea*, *Chrysanthemum morifolium*, *Cassia obtusifolia*, *Cassia tora*, *Haliotis diversicolor*, *Sargentodoxa cuneata*, *Buddleia officinalis*, *Morus alba*, *Fraxinus chinensis*...;
- 01 medicinal plant has the effect of treating dyspepsia: *Amomum tsao-ko*.

In addition to the above-listed medicinal

plants, one of the frequently mentioned alternatives for bear bile is *Prunella vulgaris-Lamiaceae*. In 2005, the World Society for the Protection of Animals (WSPA) also published a list of many herbal species considered to have some of the same indicators as bear bile. For instance, *Lobelia chinensis* and *Hedyotis diffusa* have medicinal effects of reducing body heat and detoxifying, while *Gentiana spp* is used to cool the liver... Since the publication of these findings, WSPA has continuously encouraged oriental medicine associations worldwide to utilize a variety of valuable alternative herbs instead of bear bile. In 2006, a report by the Department for Environment, Food and Rural Affairs (DEFRA) and the International Fund for Animal Welfare (IFAW) supporting research into the properties of plants with similar uses to bear bile also suggested that some species can replace bear bile such as *Gardenia jasminoides*, *Scutellaria baicalensis*... Another study also showed that some species which belong to the genus *Coptis* have similar medicinal effects such as detoxification, liver tonic, brightening eyes, treating convulsions, epilepsy, heat-related seizures, heat-related acnes, and boils, dermatitis, pharyngitis, hemorrhoids.

With a rich and diverse source of plants, the traditional medicine system in general and Vietnam, in particular, has long used a number of medicinal plants, ingredients, and herbal remedies with effects equivalent to other products from wildlife whose use does not negatively affect nature.

In Vietnam, the Animals Asia Foundation (AFF) is one of the most active organizations promoting bear conservation and researching alternative medicinal herbs for bear bile. In 2010, AFF carried out a survey on the use of bear bile among 152 traditional medicine doctors and practitioners. The results showed that there were 07 cases of poisoning due to the use of bear bile with 4/7 deaths; 39 species of herbs and 13 remedies with effects similar to bear bile were mentioned. Of the 39 species of medicinal plants listed, the majority of the feedback mentioned the "bear bile" grass. In addition, some other species were also mentioned, namely *Biancaea sappan*, *Prunus persica Stokes*, *Carthamus tinctorius*... However, these species have only been proposed in reports without empirical

scientific evidence. Therefore, systematic studies, including analysis of chemical composition, pharmacology, and clinical efficacy, are needed to verify the therapeutic effects of herbal species as feasible alternatives for bear bile.

In the period 2010 - 2011, the National Institute of Medicinal Materials cooperated with WSPA to conduct the survey "Investigation and collection of information on some medicinal plant species in Vietnam with similar effects to bear bile" on traditional medicine doctors and practitioners in 10 provinces and cities including Hanoi, Hung Yen, Thai Nguyen, Nghe An, Bac Kan, Lao Cai, Da Nang, Kon Tum, Ho Chi Minh City, Vinh Long. The findings listed 46 species of medicinal plants that are available in Vietnam, such as *Hedyotis diffusa*, *Eurycoma longifolia*, *Radix Scutellariae barbatae*, *Paris Polyphylla Sm.*, *Uncaria rhynchophylla*, *Tinospora sinensis Merr.*, *Illicium verum*, *Momordica cochinchinensis*, *Zingiber officinale Rose*, *Caulis et Radix Fibraurea*, *Lonicera japonica*, *Strychnos nuxvomica*, *Crinum asiaticum L.*, *Cinnamon*, *Rhizoma Homalomenae occulta*, *Andrographis paniculata*... In addition, the research team also collected 29 remedies that are being utilized by traditional medicine doctors to treat similar diseases without resorting to bear bile.

Also in the period of 2020 - 2021, under the sponsorship of the United States Agency for International Development (USAID), a group of experts in the field of medicinal materials, pharmacology, and traditional medicine surveyed and synthesized information and analysed data to compile 02 documents: "Some species of medicinal plants and herbs have effects similar to rhino horn" and "Some species of medicinal plants and herbs have effects similar to pangolin scales". In particular, the former introduces 23 species of medicinal plants and herbs including: *Bletilla striata (Thunb.) Reichb.f.*, *Clerodendron gragrans Vent.*, *Hedyotis diffusa*, *Seoparia dulcis L.*, *Uncaria rhynchophylla*, *Eclipta prostrata L.*, *Imperata cylindrica*, *Abutilon indicum*, *Flos Chrysanthemi*, *gardenia jasminoides*, *Clerodendrom cytophyllum Turcz.*, *Salvia miltiorrhiza*, *Rehmannia glutinosa*, *Styphnolobium japonicum (L.)*, *Phellodendron amurense Rupr.*, *Coptis chinensis*, *Scrophularia nodosa*, *Cordyline terminalis Kunth*, *Polygonatum odoratum*, *Polygonatum odoratum*, *Arctium lappa*, *Wolfiporia extensa*, *Platyclusus orientalis*, *Andrographis paniculata*. The another document on medicinal plants and medicinal herbs that have similar functions



A pangolin was rescued in Cuc Phuong National Park. Photo: Minh Khue.

to pangolin scales also introduce 25 species of medicinal plants and herbs such as *Lactuca indica*, *Hibiscus sabdariffa*, *Glycyrrhiza uralensis* Fisher, *Euphorbia pilulifera* L., *Houttuynia cordata*, *Spica Prunellae*, *Rhizoma Dioscoreae*, *Scutellaria baicalensis*, *Ocimum tenuiflorum*, *Leonurus japonicus*, Golden Turmeric, Honey-suckle, *Elsholtzia ciliata*, *Aristolochiaceae*, *Trichosanthes kirilowii*, *Abelmoschus sagittifolius*, *Ficus racemosa*, *Loranthus gracilifolius* Schult, *Morus alba* L., *Gleditsia australis* Hemsl. ex Forbes et Hemsl., *Tetrapanax papyrifer*, sponge gourd, *Semen Sesami*, *Ficus pumila*, *Iris domestica*. Both documents introduce medicinal plant species and herbs with detailed information, including Vietnamese name, scientific name, synonym name, family, morphological characteristics, fruit season, harvest season, collection method, distribution, and ecology, used parts, chemical composition, usage, effects, dosage and precautions for use. This is basic information for oriental medicine doctors, students, and concerned readers to consult and make references, contributing to the conservation of pangolins and rhinos. These documents would also help people to absolutely say no to consumption of pangolins, rhinos, and wildlife in general, especially endangered, precious, and rare species under prioritized protection.

In order for herbal remedies to be further replicated as alternatives for those using wildlife, it is vital that the State, relevant agencies, and research institutions invest more in systematically monitoring and evaluating medicinal plant species and, at the same time, publish documents and widely promote the value of traditional Vietnamese medicine.

In addition, to fuel the fight against illegal wildlife trade, the Vietnamese traditional medicine system can also join hands by not prescribing medicines using wildlife, especially endangered, rare and precious species, under legal protection; encouraging consumers to opt for alternatives from medicinal plants of equivalent value, all contributing to the conservation of wildlife species and promote the quintessence of Vietnamese medicine.



Photo: Vietnam's National Institute of Medicinal Materials

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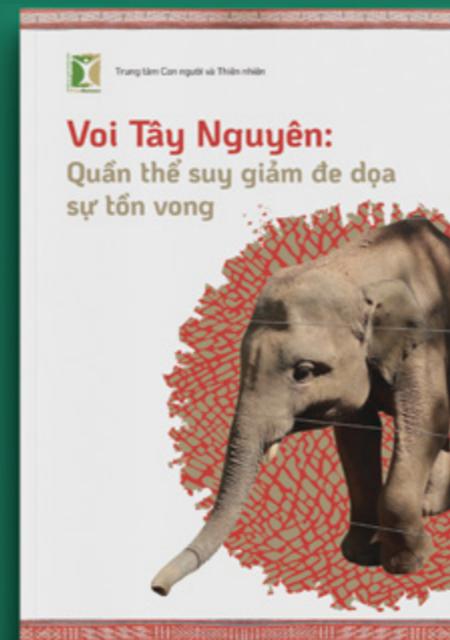
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Further details at: <https://bit.ly/voitaynguyen>



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Further details at: <https://bit.ly/3OR8RS1>



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The Policy Bulletin analyzes the illegal wildlife trade in Vietnam, difficulties in law enforcement and conservation; some policymaking and legal limitations; and recommendations to authorities to revise policies and tighten enforcement of wildlife protection laws.

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Release wildlife back into the forest
in Cuc Phuong National Park.
Photo: PanNature



People and Nature Reconciliation (PanNature) is a Vietnamese not-for-profit organization dedicated to protecting and conserving the diversity of life and improving human well-being in Vietnam by seeking, promoting, and implementing feasible, nature-friendly solutions to important environmental problems and sustainable development issues.

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